Güvenal
Kalıp Elemanları A.Ş.

Mould Components - Mould Manufacturing Equipments

EXPERIENCE PRODUCES - THE SECTOR GAINS



Reliable Label

GTH
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Catalogue Content Information, Definitions & Benefits;

* In order to use product correctly, we presented information. Our aim is to ensure that our customers use our products correctly.
* We have designed products with technical drawings. We have tried to determine where you should use the product with schemes or practical information.
* In order to use the products correctly, we have explained precautions. Also, we have specified the disadvantages.
* We divided the mould group inside the catalogue into two group (2 INDEX), PART 1 **PRESS MOULD GROUP Until Page 200and PART 2 INJECTION MOULD GROUP From Page 200 to Page 336.**
* We presented the products according to the order of usage.
* We have classified products as quality and economically.
* We have presented quite technical information of the products. We have put accurate and quality products with plenty of options. The selected products are selected by our engineers punctiliously according to the mould system.
* We have specified possible adverse effects of products on human health or we have taken care to select accurate ineffective products.
* We have endeavored to reply to your demands especially with mould materials and other tolls at your workshop or your factory.
* **This way, we prove that the correct products that you bought are the cheapest ones (while you are using them).**

Our Customer Services;

* During standard mould components, please provide order codes with our company's related department by measuring technical drawings inside special production catalogue or informing drawing data.
* At your orders, we recommend you to use fax or e-mail for right transactions **(Pls. don't give order on phone)**. Price offers or your orders are replied / delivered during the day.
* Conversation right of technical information in our catalogue according to the current conditions, is reserved by our company.
* Since we published our latest catalogue, all our previous catalogues have lost their validity.
* The Most Important Advantage of Competition is quality human resource. We consider learning for success as a cultural phenomenon. We are at your service together with our whole team; we provide solution rapidly but still expect some tolerance, even homes nods.
* Hundreds of world brands and thousands of product range save money & time with Quick Supply System from a single address. You can spend more time to your business, calculate once and feel comfortable.

TOLERANCE TABLE

(0.001mm) DIN ISO 286 PART / II

SOME (Selected) Data Micron Value

EXTERNAL DIAMETER TOLERANCE (Shaft)

Symbol	From 3 to 6	From 6 to 10	From 10 to 18	From 18 to 30	From 30 to 50	From 50 to 80
d9	- 30 - 60	- 40 - 76	- 50 - 93	- 65 - 117	- 80 - 142	- 100 - 174
e7	- 20 - 32	- 25 - 40	- 32 - 50	- 40 - 61	- 50 - 75	- 60 - 90
e8	- 20 - 38	- 25 - 47	- 32 - 59	- 40 - 73	- 50 - 89	- 60 - 106
f7	- 10 - 22	- 13 - 28	- 16 - 34	- 20 - 41	- 25 - 50	- 30 - 60
f8	- 10 - 28	- 13 - 35	- 16 - 43	- 20 - 53	- 25 - 64	- 30 - 76
h3	0 - 1.5	0 - 2.5	0 - 3	0 - 4	0 - 4	0 - 5
h4	0 - 4	0 - 4	0 - 5	0 - 6	0 - 7	0 - 8
h5	0 - 5	0 - 6	0 - 8	0 - 9	0 - 11	0 - 13
h6	0 - 8	0 - 9	0 - 11	0 - 13	0 - 16	0 - 19
h7	0 - 12	0 - 15	0 - 18	0 - 21	0 - 25	0 - 30
h8	0 - 18	0 - 22	0 - 27	0 - 33	0 - 39	0 - 46
h9	0 - 30	0 - 36	0 - 43	0 - 52	0 - 62	0 - 74
h 11	0 - 75	0 - 90	0 - 110	0 - 130	0 - 160	0 - 190
g5	- 4 - 9	- 5 - 11	- 6 - 14	- 7 - 16	- 9 - 21	- 10 - 23
g6	- 4 - 12	- 5 - 14	- 6 - 17	- 7 - 20	- 9 - 25	- 10 - 29
j6	+ 6 - 2	+ 7 - 2	+ 8 - 3	+ 9 - 4	+ 11 - 5	+ 12 - 7
js 5 js 6	+ 2.5 + 4	+ 3 +4.5	+ 4 +5.5	+ 4.5 + 6.5	+ 5.5 + 8	+ 6.5 + 9.5
k6	+ 9 + 1	+ 10 + 1	+ 12 + 1	+ 15 + 2	+ 18 + 2	+ 21 + 2
m 5	+ 9 + 4	+ 12 + 6	+ 15 + 7	+ 17 + 8	+ 20 + 9	+ 24 + 11
m 6	+ 12 + 14	+ 15 + 6	+ 18 + 7	+ 21 + 8	+ 25 + 9	+ 30 + 11
n5	+ 13 + 8	+ 16 + 10	+ 20 + 12	+ 24 + 15	+ 28 + 17	+ 33 + 20
n6	+ 16 + 8	+ 19 + 10	+ 23 + 12	+ 28 + 15	+ 33 + 17	+ 39 + 20

SOME (Selected) Data Micron Value

INTERNAL DIAMETER TOLERANCE (Hole)

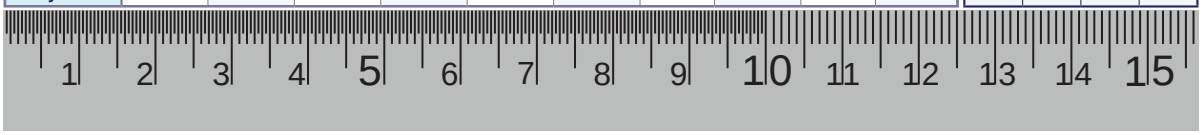
Symbol	From 3 to 6	From 6 to 10	From 10 to 18	From 18 to 30	From 30 to 50	From 50 to 80
E8	+ 28 + 14	+ 38 + 20	+ 47 + 25	+ 59 + 32	+ 73 + 40	+ 89 + 50
F7	+ 16 + 6	+ 22 + 10	+ 28 + 13	+ 34 + 16	+ 41 + 20	+ 50 + 25
G6	+ 8 + 2	+ 12 + 4	+ 14 + 5	+ 17 + 6	+ 20 + 7	+ 25 + 9
G7	+ 12 + 2	+ 16 + 4	+ 20 + 5	+ 24 + 6	+ 28 + 7	+ 34 + 9
H4	+ 3 0	+ 4 0	+ 4 0	+ 5 0	+ 6 0	+ 7 0
H5	+ 4 0	+ 5 0	+ 6 0	+ 8 0	+ 9 0	+ 11 0
H6	+ 6 0	+ 8 0	+ 9 0	+ 11 0	+ 13 0	+ 16 0
H7	+ 10 0	+ 12 0	+ 15 0	+ 18 0	+ 21 0	+ 25 0
H8	+ 14 0	+ 18 0	+ 22 0	+ 27 0	+ 33 0	+ 39 0
H9	+ 25 0	+ 30 0	+ 36 0	+ 43 0	+ 52 0	+ 62 0
H 10	+ 40 0	+ 48 0	+ 58 0	+ 70 0	+ 84 0	+100 0
H 11	+ 60 0	+ 75 0	+ 90 0	+106 0	+130 0	+160 0
H 12	+100 0	+120 0	+150 0	+180 0	+210 0	+250 0
J6	+ 2 - 4	+ 5 - 3	+ 5 - 4	+ 6 - 5	+ 8 - 5	+ 10 - 6
JS 5	+ 2 - 2	+ 2,5 - 2,5	+ 3 - 3	+ 4 - 4	+ 4,5 - 4,5	+ 5,5 - 5,5
K6	0 - 6	+ 2 - 6	+ 2 - 7	+ 2 - 9	+ 2 - 11	+ 3 - 13
K7	0 - 10	+ 3 - 9	+ 5 - 10	+ 6 - 12	+ 6 - 15	+ 7 - 18
K8	0 - 14	+ 5 - 13	+ 6 - 16	+ 8 - 19	+ 10 - 23	+ 12 - 27
M6	- 2 - 8	- 1 - 9	- 3 - 12	- 4 - 15	- 4 - 17	- 4 - 20
M7	- 2 - 62	0 - 12	0 - 15	0 - 18	0 - 21	0 - 25
N7	- 4 - 14	- 4 - 16	- 4 - 19	- 5 - 23	- 7 - 28	- 8 - 33
P7	- 6 - 16	- 8 - 20	- 9 - 24	- 11 - 29	- 14 - 35	- 17 - 42

General Tolerances for Length Measures

Length Units	Nominal Measure Limits									
	0.5	> 3	> 6	> 30	> 120	> 400	> 1000	> 2000	> 4000	> 8000
Tolerance Groups	...3	...6	...30	...120	...400	...1000	...2000	...4000	...8000	...12000
	Deviations									
h Fine	± 0.05	± 0.05	± 0.1	± 0.15	± 0.2	± 0.3	± 0.5	-	-	-
o Medium	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2	± 3	± 4
k Coarse	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2	± 3	± 4	± 5	± 6
c Very Coarse	-	± 0.5	± 1	± 1.5	± 2	± 3	± 4	± 6	± 8	± 10

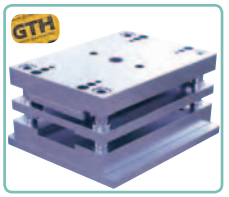
Hardness Conversion Table

Tension Strength N /mm²	Vickers Hardness HV	Brinell Hardness HB	Rockwell Hardness HRC
835	260	247	24
850	265	252	24.8
865	270	257	25.6
880	275	261	26.4
900	280	266	27.1
915	285	271	27.8
930	290	276	28.5
950	295	280	29.2
965	300	285	29.8
1030	310	295	31
1060	320	304	32.2
1095	330	314	33.3
1125	340	323	33.4
1155	350	333	33.5
1190	360	342	36.6
1220	370	352	37.7
1255	380	361	38.8
1290	390	371	39.8
1320	400	380	40.8
1350	410	390	41.8
1385	420	399	42.7
1420	430	409	43.6
1455	440	418	44.5
1485	450	428	45.3
1520	460	437	46.1
1555	470	447	46.9
1595	480	-456	47.7
1630	490	-466	48.4
1665	500	-476	49.1
1700	510	-485	49.8
1740	520	-495	50.5
1775	530	-504	51.1
1810	540	-513	51.7
1845	550	-523	52.3
1880	560	-532	53
1920	570	-542	53.6
1955	580	-551	54.1
1995	590	-561	54.7
2030	600	-570	55.2
2070	610	-580	55.7
2105	620	-589	56.3
2145	630	-599	56.8
2180	640	-608	57.3
-	650	-618	57.8
-	660	-	58.3
-	670	-	58.8
-	680	-	59.2
-	690	-	59.7
-	700	-	60.1
-	720	-	61
-	740	-	61.8
-	760	-	62.5
-	780	-	63.3
-	800	-	64
-	820	-	64.7
-	840	-	65.3

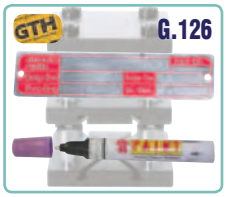


GTH Coding / Identification Table of Products in Our Mould Components Production

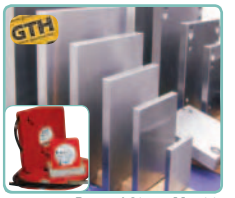
Product Code	Page No	GTH Mould Components Product Definition
G.01	21	Guide Pillar With Collar- Ford
G.02	21	Guide Pillar - Ford
G.03	23	Guide Pillar - Cnomo
G.04	22	Guide Pillar - PSA
G.05	22	Guide Perforated Pillar-PSA
G.06	20	Guide Pillar-FIAT
G.07	20	Guide Perforated Pillar-FIAT
G.08	25	Scraper Ball - Guide Pillar
G.09	19	Guide Pillar - Slotted
G.10	17	Guide Pillar-With Centre Collar
G.11	29	Lubricated Guide Pillar
G.12	36-37	G.12/D Guide Pillar
G.13	33-35	With Collar - G.13/D Guide Pillar
G.14	31	Threaded Core Guide Pillar
G.15	16	Thickbacked Guide Pillar AKK
G.16	32	Injection Back Striker
G.17	28	Plain Guide Pillar
G.18	30	Guide Pillar - Ball
G.19	18	Guide Pillar - Ball
G.20	24	Cast Block Guide Pillar
G.21	30	Ejector Plate, Support Guide Pillar
G.22	27	Guide Pillar Protection Flange
G.23	27	Sheet Lifting Guide Pillar
G.24	18	Plain, Threaded Guide Pillar
G.25	41	Self-lubricating, SB Bush
G.26	40	Self-lubricating, OFB Bush
G.27	41	Self-lubricating, KSB Bush
G.28	38	Steel, Retaining Pin
G.29	43	OFB Ejector Ball Bush
G.30	39	Steel, Guide Bush
G.31	38	Steel, With Collar Bush
G.32	39	Steel, OFB Bush
G.33/ K	48/49	Long Steel Thin Bushes
G.34/ K	48/49	Short Steel Thick Bushes
G.35	47	Steel, Bronze Long Bush
G.36	47	Steel, Bronze Short Bush
G.37	44	Steel, Ball Long Bush
G.38	44	Steel, Ball Short Bush
G.39	136	6 Guide Screws/Locking
G.40	53	Self-lubricating F. Bush NAAMS
G.41	52	Self-lubricating C. Bush CNOMO
G.42	53	Self-lubricating C. Bush NAAMS
G.43	52	Self-lubricating Slit Bush VDI
G.44	51	Self-lubricating Guide Bush with Collar DIN
G.45	51	Self-lubricating Guide Bush DIN
G.46	73	Conical Locking Guide Screw
G.47	83	Threaded Set Eyebolt VDI
G.48	40	Self-lubricating Plain Bush
G.49	50	Short, Steel Self-lubricating Bush
G.50	50	Long,Steel Self-lubricating Bush
G.51	84	FORD Mould Bearing Shaft
G.52	84	VDI Mould Bearing Shaft
G.53	85	Transport Brackets FIAT
G.54	83	Threaded Core DIN / ISO
G.55	84	FIAT Bearing Shaft
G.56	86	FIAT Safety Pins
G.57	86	VDI Safety Pins
G.58	86	FORD Safety Pins
G.59	71	Support Washer C. Locking
G.60	71	Conical Locking Element
G.61	31	Core Pin Bearing
G.62	70	Centering Pin
G.63	73	Conical Centering /NAAMS
G.64	72	Conical Centering / Plate
G.65	70	Centering Pin
G.66	70	Centering Pin
G.67	69	Mechanical Sheet Thrust
G.68	69	Control Parted Thrust
G.69	27	Tij Shaft - Ventilation
G.70	145	Ball, Bronze Cage / Spring
G.71	134	Inter Safety Bolt
G.72	26	Guide Pillar Carrier Block Slot
G.73	26	Bush Carrier Block Slot
G.74	43	Bearing Guide Bush
G.75	43	OSB Bearing Bush
G.76	63	Bronze Cam Return G / B
G.77	62	Bronze Cam Support Y / D
G.78	62	Steel Cam Support Y / D
G.79	25	Cast Block Sets / 5
G.80	24	Cast Block Bushes /10
G.81	20	Centering Block - Fiat
G.82	20	Trimming Ball - Fiat
G.83	54	Self-lubricating Bronze Plate 5 mm
G.84	55	Self-lubricating Bronze Plate 10 mm
G.85	54	Self-lubricating Bronze Plate 10 mm
G.86	55	Self-lubricating Bronze Plate 12 mm
G.87	55	Steel Guide Plate 12 mm
G.88	56	Self-lubricating Bronze Plate 20 mm
G.89	56	Self-lubricating Bronze Plate 20 mm
G.90	57	**Self-lubricating Plate 20 - Stock**
G.91	57	Self-lubricating Bronze Plate 20 mm
G.92	57	Steel Guide Plate 20 mm
G.93	58	Self-lubricating Bronze Block Plate
G.94	58	Self-lubricating E Type Bronze Plate
G.95	58	Steel E Type Guide Plate
G.96	58	Self-lubricating Two Way Block
G.97	68	Mould Guide Screw / A - Spring
G.98	68	Cylindrical Mould Guide Screw
G.99	68	Power Routing Block
G.100	46	Guide Pillar/Bush Fishplate
G.101	46	Bush Fishplate
G.102	46	Bush Fishplate
G.103	82	Mould Safety Latch
G.104	59	Self-lubricating L Guide
G.105	59	Plate Graphite L Guide Plate
G.106	60	Self-lubricating Bronze GuidePlate
G.107	60	Steel Guide Plates
G.108	60	**Cam Guide Plate C - B**
G.109	61	**Cam Blocks A - B - C - D**
G.110	16	Mould Mounting Flange
G.111	61	G.111 V - U Cam Block
G.112	22	Guide Pillar Snap Ring
G.113	128	Die Gas Spring Shock Inhibitor
G.114	32	Thick Mounting Washer
G.115	239	M. Automatic Ejector System
G.116	239	H. Automatic Ejector System
G.117	32	Back StrikerMounting Kit
G.118	52	Bush Sleeve Dual
G.119	22	Guide Pillar Retaining Flange
G.120	30	Plate Thrust Tablet
G.121	42	Inj. Self-lubricating "T" Shape
G.122	42	Inj. Self-lubricating Plain Plate
G.123	42	Inj. Self-lubricating, Two Way
G.124	77	Product Counter / Mounting
G.125	12	Inj. Mould ID Card
G.126	12	Press Mould ID Card
G.127	75	Square Group Locking Block
G.128	75	Square Locking Blocks
G.129	75	Conical Centering Block
G.130	74	Sliding Centering
G.131	74	Centering Blocks
G.132	76	Parallel Centering Block
G.133	241	Inclined Ejector Pin Unit
G.134	85	**KTB Transport Bracket**
G.135	241	Inclined Inner Unit
G.136	241	Angular Spherical Bush
G.137	63	Self-lubricating Bronze Cam Setting
G.138	62	Steel Small Cam Support
G.139	62	Steel Cam Support Plate
G.140	89	Two Way Rotary Eye bolt
G.141	89	Fixed Load Eyebolt
G.142	78	Round - Tube Counter
G.143	46	Walled Bush Sleeve
G.144	232	Plate Thrust (Dust Cover)
G.145	135	Spring Clamping Screw
G.146	135	Spring Fastening / Guide Screw
G.147	236	Core Bottom Guide Block
G.148	236	Spring Fastening / Guide Screw
G.149	237	Core Bottom Guide Block
G.150	237	Core Side Guide Block



Page 14 Press /Sheet Mould Ready Standard Mould Sets



Page 12 Press / Sheet Mould Identity Card Writing Pen



Page 13 Press / Sheet Mould Ground Plate Liner Band/Shim



Page 16 Press / Sheet Mould Thick backed Guide Pillar



Page 16 Press /Sheet Mould Screwed Flange Mould Inner Support



Page 17 Press / Sheet Mould STANDARD Guide Pillar with Centre Collar



Page 18 Press / Sheet Mould Internal Threaded Plain Guide Pillar



Page 18 Press / Sheet Mould Press Inner Type Plain Guide Pillar



Page 19 Press / Sheet Mould Heavy Type, Slotted Guide Pillar



Page 20 Slotted - Int. Perforated Guide Pillar Reference : FIAT



Page 20 Cylindrical - Perforated Trimming Ball Reference : FIAT



Page 21 Slotted Guide Pillar Reference : Ford



Page 22 Slotted - Int. Perforated Guide Pillar Reference : PSA



Page 23 Slotted Plain Guide Pillar Reference : CNOMO



Page 24 Cast Block Plain Slotted Guide Pillar



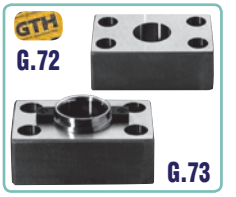
Page 24 Cast Block Connection, with Collar Bush Series



Page 25 Cast Block Guide Pillar / Bush Kit Series



Page 25 Scraper Connected Ball - Bush Guide Pillar



Page 26 Rectangular Type Steel - Bronze Bushes



Page 27 Guide Pillar Protection Washer-Flange Connecting Hole



Page 27 Sheet Band Lifting Retaining Guide Pillar Spring Lifting Pin



Page 27 Press / Sheet Mould Tij Shaft Ventilation Pin



Page 28 Press Mould Inner Unlubricated Guide Pillar



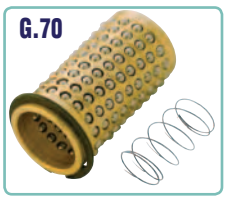
Page 29 Press Mould Inner Lubricated Guide Pillar



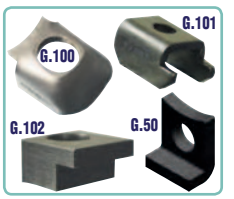
Page 43 Bearing Bush Ball / Steel Guide Bush



Page 44 Ball Bush System Short / Long Steel Bushes



Page 45 Press / Sheet Mould Ball Cage Bronze Bush



Page 46 Demountable Guide Pillar / Bush Fishplates



Page 47 Bronze Bearing Short / Long Steel Bushes



Page 50 Bronze - H. Self-lubricating Short / Long Steel Bushes



Page 48 Thick Type Lubricated Short / Long, Steel STANDARD Bush



Page 49 Thin Type Lubricated Short / Long, Steel STANDARD Bush



Page 51 Self-lubricating / Bronze Guide Bush with Center Collar Reference: DIN 9834



Page 51 Self-lubricating / Bronze Guide Bush with Center Collar Reference: DIN 9834



Page 52 Self-lubricating/ Bronze Guide Bush Reference: CNOMO



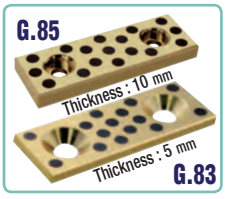
Page 52 Self-lubricating / Bronze Slit Guide Bush with Collar Reference : VDI



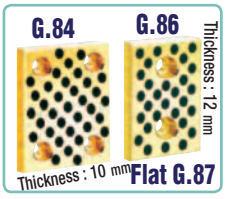
Page 53 Self-lubricating / Bronze Guide Bush Reference: NAAMS



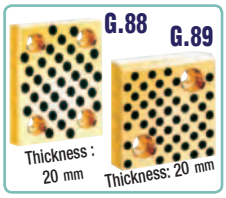
Page 53 Self-lubricating / Bronze Guide Bush with Collar Reference: NAAMS



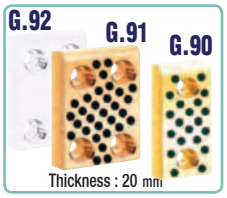
Page 54 Self-lubricating / Bronze Sliding Guide Thin Plates



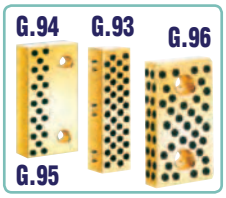
Page 55 Self-lubricating / Bronze Sliding Guide Thin Plates



Page 56 Self-lubricating / Bronze Perforated Steel Guide Plates



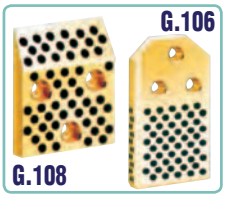
Page 57 Self-lubricating / Bronze Guide Plates Standard Type



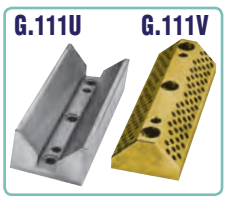
Page 58 Self-lubricating / Bronze E Type/ Block Guide Plates



Page 59 Bronze / Self-lubricating L Type Guide Plates



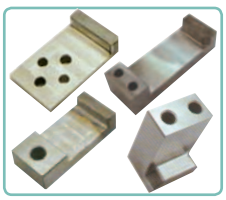
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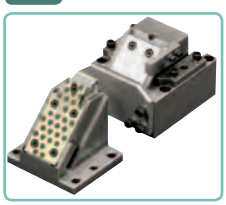
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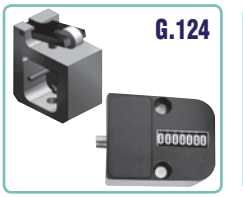
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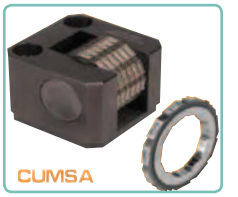
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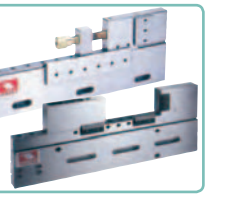
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Page 80 Wire Erosion Chucks Vise



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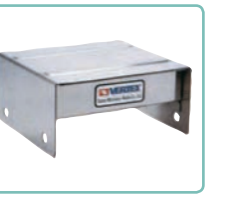
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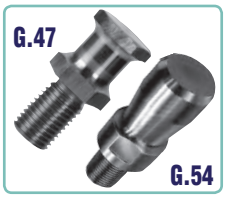
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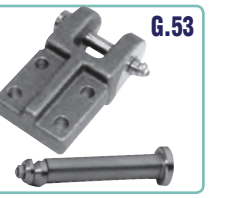
Page 82 Mould Handling Eye Bolt Heavy Duty



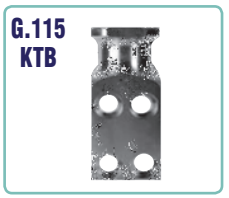
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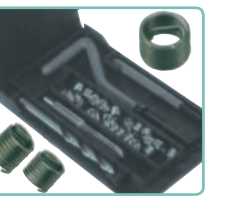
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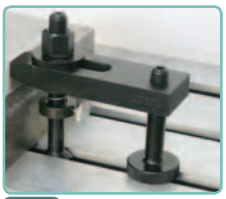
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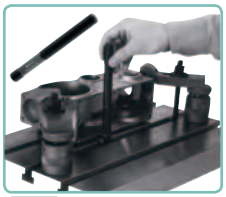
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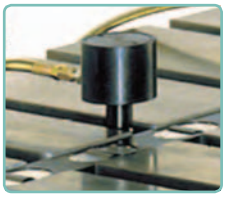

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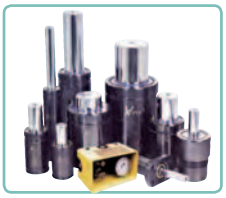

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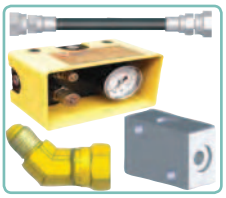

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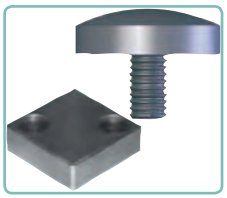

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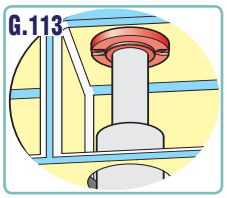

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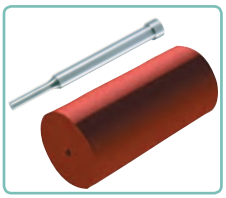

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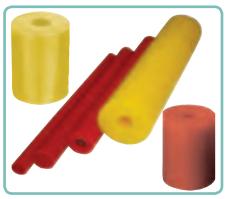
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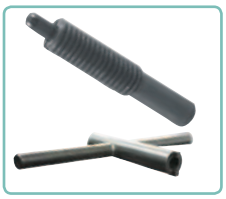

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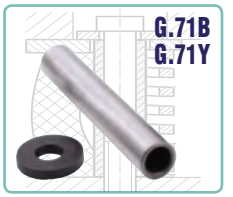

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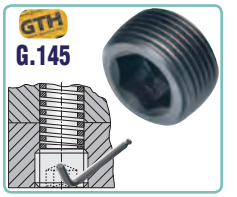

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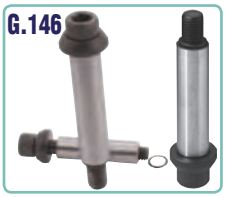
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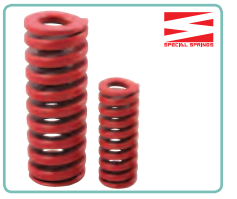
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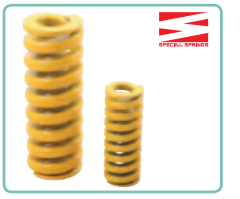
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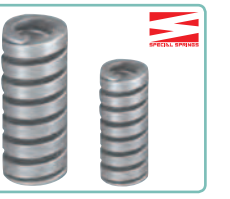
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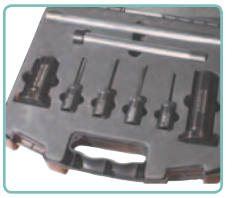
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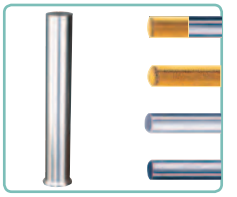
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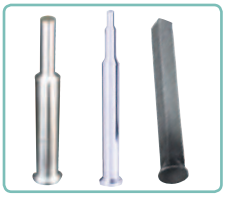
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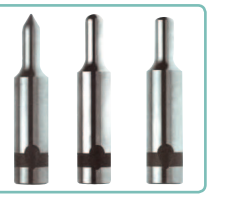
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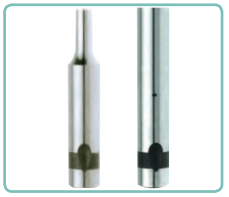
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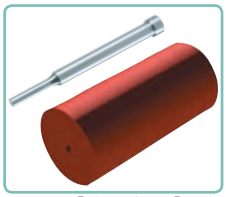
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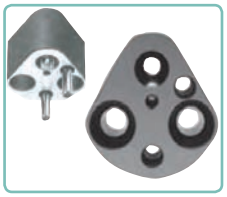

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Page 166 Heavy Duty Ball Locking Wide Ended Punch


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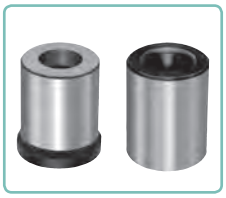

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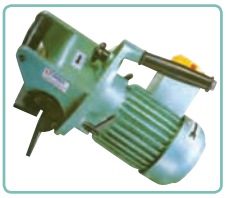

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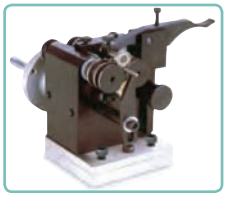

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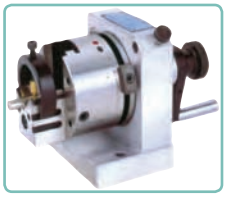

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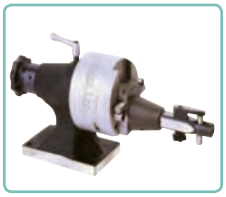

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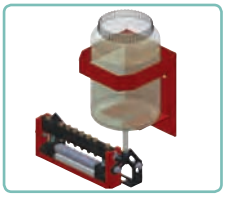

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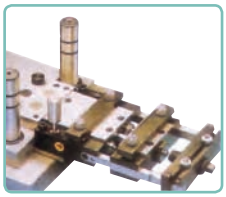

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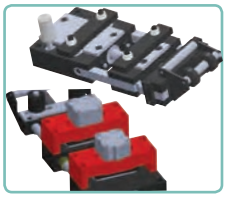

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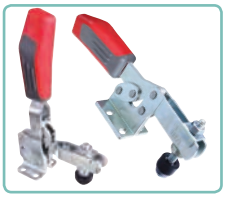

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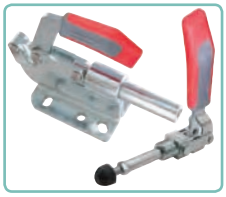

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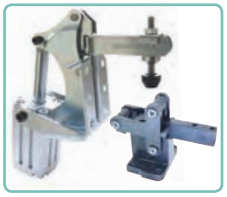

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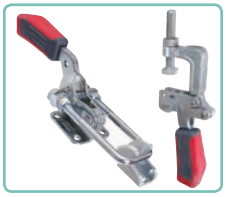

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Page 190 Slide / Slidable Combine Sleeve Threaded / T Channel


Page 192 Mould and Production Chemicals



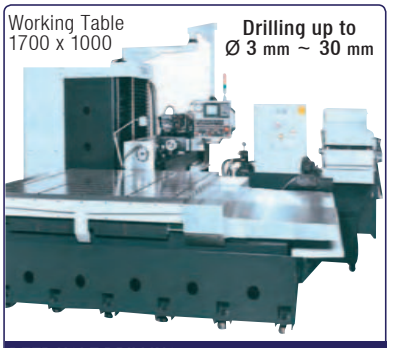
EKS

STANDARD Guide Pillar & Bushes and Bolted Con.
PROCESSING Injection Ready Sets (From 01up to 67)



EDS **ESI**

GRINDED PLATE SPECIAL
PROCESSING Injection Ready Sets (From 01up to 67)

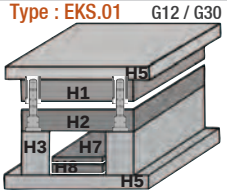


DEEP HOLE DRILLING With Our Counter 2000 mm
Angular and Plain, Ejector and Water Runners are processed.

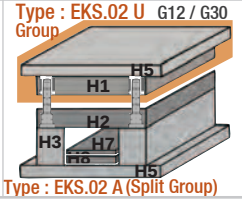
Standard, Injection Ready Mould Sets and Diversification

Production (Our Company) : GTH

Type : EKS.01 G12 / G30

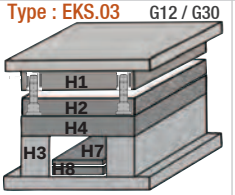


Type : EKS.02 U G12 / G30 Group

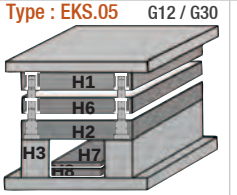


Type : EKS.02 A (Split Group)

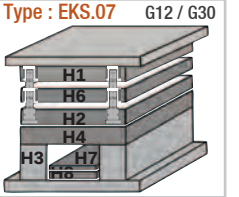
Type : EKS.03 G12 / G30



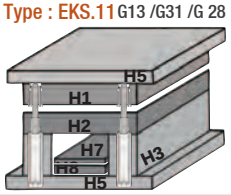
Type : EKS.05 G12 / G30



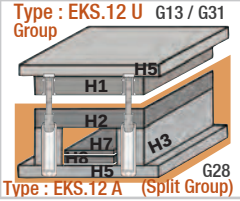
Type : EKS.07 G12 / G30



Type : EKS.11 G13 /G31 /G 28

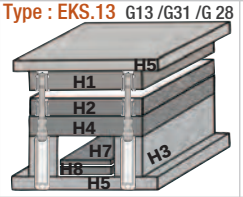


Type : EKS.12 U G13 / G31 Group

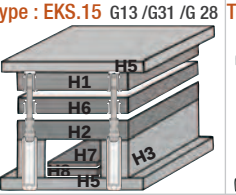


G28
Type : EKS.12 A (Split Group)

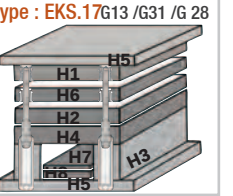
Type : EKS.13 G13 /G31 /G 28



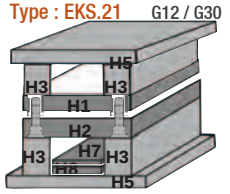
Type : EKS.15 G13 /G31 /G 28



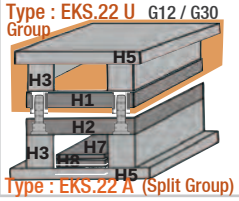
Type : EKS.17 G13 /G31 /G 28



Type : EKS.21 G12 / G30

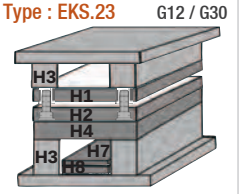


Type : EKS.22 U G12 / G30 Group

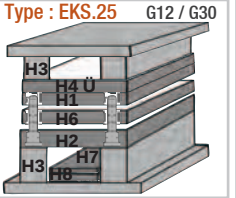


Type : EKS.22 A (Split Group)

Type : EKS.23 G12 / G30



Type : EKS.25 G12 / G30



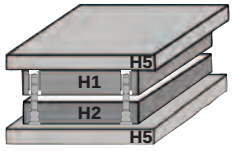
Type : EKS.30



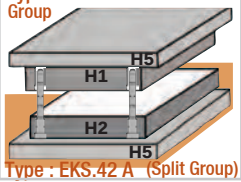
Type : EKS.32 G12 / G30



Type : EKS.41 G12 / G30

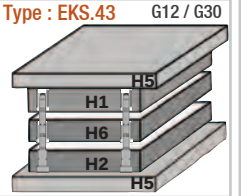


Type : EKS.42 U G12 / G30 Group

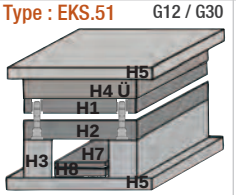


Type : EKS.42 A (Split Group)

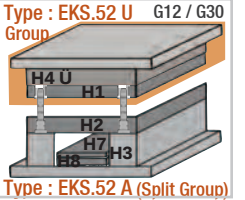
Type : EKS.43 G12 / G30



Type : EKS.51 G12 / G30

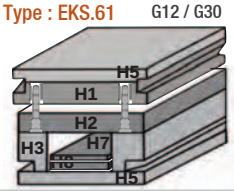


Type : EKS.52 U G12 / G30 Group

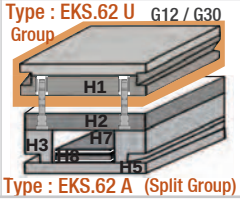


Type : EKS.52 A (Split Group)

Type : EKS.61 G12 / G30

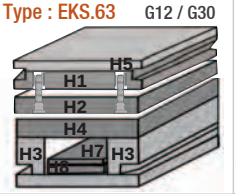


Type : EKS.62 U G12 / G30 Group

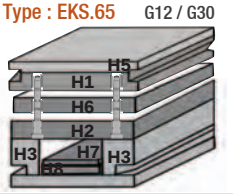


Type : EKS.62 A (Split Group)

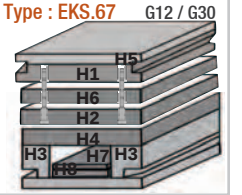
Type : EKS.63 G12 / G30



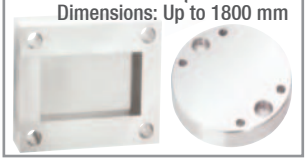
Type : EKS.65 G12 / G30



Type : EKS.67 G12 / G30



Production As Per Request/GTH
Dimensions: Up to 1800 mm

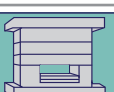


You can always trust our experience, expertise and GTH quality.

CNC Processing (3D) can be done as per request in plate works of your standard or figured moulds.
Some diversification at our production are specified above and their cycles can be done by you.

- **EKS.01 ~ EKS.07** Plastic Injection Standard Ready Sets (Guide Pillar Bush Equipped with Bolt Connection) Mould Base
- **EKS.11 ~ EKS.17** Plastic Injection (With Collar Overall Guide Pillar System Bolt Connecting) Mould Base
- **EKS.21 ~ EKS.25** Plastic Injection (Hot Runner / Manifold Created Plate Connecting) Mould Base
- **EKS.30 ~ EKS.32** Injection Moulds (Holder Plate Group H1 - H2) can be done connecting channelled as per request.
- **EKS.41 ~ EKS.43** Plastic Injection (Located excluding Plain Holder Set - Ejector Plates and Wedges)
- **EKS.51 ~ EKS.52** Plastic Injection (Female Holder - Support Plate / H.4 Added, Standard Sets)
- **EKS.61 ~ EKS.67 METAL Injection** (Connecting System, Connecting Cover and Female Holder have been created).

Diversification: Your Mould Base can be produced as per desired (EKS - EDS - ESI) position, for other mould types, cycles can be done by you according to the table. Example: ESI.01 for mould numbered 01 from ESI.serial.



Section Injection Mould

External Dimension		Mould Plate Thickness Measurement Selection mm								Plate Axis mm						Guide Pillar Bush		Bolt	
A	L	H5	H1	H2	H6	H4	H7	H8	H3	A1	A2	A3	A4	L1	L2	d1 Ø	d2	M	m
156	156	27 37	27 37 47 57 67	27 37 47 57 67	27 37 47 57 67	27 37 47 57 67	17	17	47 57 67	196	114	80	56	114	60	16	24	M. 10	M. 8
	196													154	100				
	246													204	150				
	296													254	200				
	346													304	250				
196	196	27 37	27 37 47 57 67 77	27 37 47 57 67 77	27 37 47 57 67 77	27 37 47 57 67 77	17	17	47 57 67	246	154	120	96	154	100	16	24	M. 10	M. 8
	246													204	150				
	296													254	200				
	346													304	250				
	396													354	300				
246	246	27 37	27 37 47 57 67 77	27 37 47 57 67 77	27 37 47 57 67 77	27 37 47 57 67 77	17	17	47 57 67 77 87 97	296	194	148	126	194	130	20 25	28 34	M. 12	M. 8
	296													244	180				
	346													294	230				
	396													344	280				
	446													394	330				
296	296	27 37	27 37 47 57 67 77 87	27 37 47 57 67 77 87	27 37 47 57 67 77 87	27 37 47 57 67 77 87	17	17	57 67 77 87 97	346	244	198	176	244	180	25	34	M. 12	M. 8
	346													294	230				
	396													344	280				
	446													394	330				
	496													444	380				
346	346	27 37	37 47 57 67 77 87 97	37 47 57 67 77 87 97	37 47 57 67 77 87 97	37 47 57 67 77 87 97	17	22	57 67 77 87 97	396	294	228	202	294	220	25	34	M. 12 M. 16	M. 10
	396													344	270				
	446													394	320				
	496													444	370				
	546													494	420				
396	396	27 37	37 47 57 67 77 87 97	37 47 57 67 77 87 97	37 47 57 67 77 87 97	37 47 57 67 77 87 97	17	22	57 67 77 87 97	446	324	278	252	324	230	30	39	M. 16	M. 10
	446													374	280				
	496													424	330				
	546													474	380				
	596													524	430				
446	446	27 37 47	37 47 57 67 77 87 97	37 47 57 67 77 87 97	37 47 57 67 77 87 97	37 47 57 67 77 87 97	17	22	57 67 77 87 97	496	374	328	302	374	280	30	39	M. 16	M. 10
	496													424	330				
	546													474	380				
	596													524	430				
	646													574	480				
496	496	37 47 57	37 47 57 67 77 87 97	37 47 57 67 77 87 97	37 47 57 67 77 87 97	37 47 57 67 77 87 97	17	22	57 67 77 87 97	546	424	378	348	424	330	30	39	M. 16	M. 10
	546													474	380				
	596													524	430				
	646													574	480				
	696													624	530				

546	546
	596
	646
	696

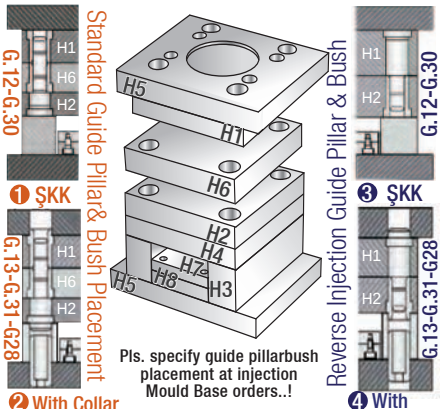
596	596
	646
	696
	746

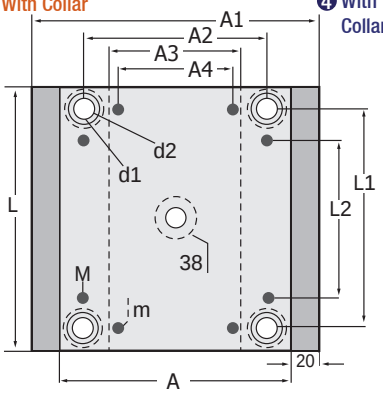
646	646
	696
	746
	796

696	696
	746
	796
	846

746	746
	796
	846
	896







Type : A x L
H1-H2-H4/H6/H3

Material: CK 45 Steel
Production As Per Request

Injection (Plastic / Metal) Ready Mould Sets:

Quality - Economic - Mould Sets
Standard- Precision Guide Pillar Bushes
are produced in our company with fast delivery.

Standard & Special Production Ready Mould Sets

Mould locking and counter place opening process, hot/ cold runner place and manifold plate processes, drilling of cooling water runners (Diameter 8-30 mm), die chaser, flange slots works, angular or plain pool and core places are prepared with customer drawing at special characterized moulds.
The creation of ejector pin and back striker holes are presented as CNC Production suitable to ejector mould 3D data and that all plates are connected or with guide pillar bush as per request at plain plates, also as split pieces, standard mounted or ground plate with fastest delivery periods. You can always trust our experience and expertise quality.

BOTH Produces Sells
Affordable Prices



Mercury Steel Material DIN 17006

Mercury Steel: Cylindrical recess material very suitable for production sector/ mounting industry, especially mould production.
Ensures compliance to usage with its suitable hardness - surface brightness - stainless - flexibility, it is an essential product for equipment and tool production, mercury steel material (BOHLER) can be supplied with a wide variety and high quality selection from our company stocks. The desired hardness can be obtained with simple heat processing method as per request.

Mercury Steel, is a tool steel hardening with water.

Forging Anneal : 1050 - 800° C
Soft Anneal : 700 - 720 ° C
Anneal Hardness : Maximum 280 HB
Stress Relief Annealing : 600° C
Pre-heat for hardening : 650 ° C
Hardening(Quenching) : Up to 12 mm, at 780-800° C Oil
Up to 12-20 mm, at 780-800° C Water
Up to 20-40 mm, at 780-820° C Water
Up to 40- 60 mm, at 810 - 830° Water
Temper : 180- 200° - 1 Hour / 25 mm.

Dia. mm	Length Kg/mt.	Dia. mm	Length Kg/mt.	Dia. mm	Length Kg/mt.
2.0	0.040	9.0	0.500	19	2.300
2.5	0.050	9.5	0.560	20	2.500
3.0	0.060	10	0.620	21	2.800
3.5	0.080	10.5	0.700	22	3.000
4.0	0.10	11	0.750	23	3.300
4.5	0.130	11.5	0.820	24	3.600
5.0	0.160	12	0.900	25	3.900
5.5	0.200	12.5	0.980	26	4.200
6.0	0.230	13	1.050	27	4.500
6.5	0.280	14	1.250	28	4.900
7.0	0.310	15	1.400	30	5.600
7.5	0.400	16	1.600	32	6.400
8.0	0.410	17	1.800	35	7.600
8.5	0.450	18	2.000	40	9.900

CC . Dia. Piece: (Length)

Chemical Analysis: % C1,15-CR 0.70-V 0.10

Material : 115 CR V 3 According to DIN 17006

Presentation: Mercury holes specified in Table is presented as 2 Meter / Length. From 2. 0 mm up to 8,5 mm (1 length is 2 meter.)
As per request: 1 Meter can be taken from 9.0 mm - to 25 mm.

Injection Moulds



Press Mould



Mould ID Card



Red Colour Mould ID card is for plastic injection moulds



Black Colour Mould ID card is for metal injection moulds.



Red Colour Narrow Mould ID card is for general press injection moulds.

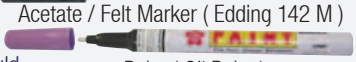
Dispatch: ID Card, 4/2 Pieces Mounting Rivet, Mounting Instruction



ID Card Marking and Writing Pens



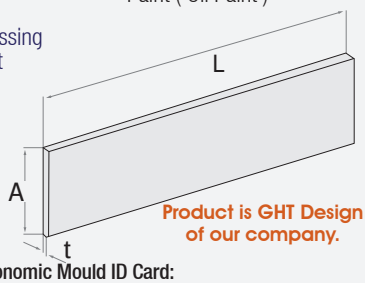
Acetate / Felt Marker (Edding 142 M)



Paint (Oil Paint)



Mould Set Pressing Unit



Product is GHT Design of our company.

Simple Mounting - Quite Economic Mould ID Card:
Your ID Card will add style to your mould prepared as a result of long run labour. Also, ID Card will gain high value with your company information and will present a concession.
Your mould ID Card; will be referred with your information on it - company definition- establishment date - coding and important short information. Your mould ID Card, will not be exposed to unwanted intervention among multi moulds (Dirty Painting /Dirty Text /Scraping etc.) at production, mould monitoring facility always will be presented to the mould user with important technical messages specified on card, will be provided working of mould safely with monitoring, your problems such as repeatable possible / frequent mould repair will be decreased, the safety will be ensured with warnings, will be shown different at multi mould shelf system - it is a useful product to be appreciated at long term productions.

Order	A	L	t	Aluminium Sheet
G.125	44	90 mm	0,5 mm	Injection Mould ID Card
G.126	22			Press Mould ID Card

Standard ID Card; They are presented from quite economic stocks.
Special ID Card; Pls. request price unit price" **for ID card with company logo as per request** or data sheet involving different definition.
Other Special ID Card; Pls. request price unit price" for your designs with different dimension and material.
Mounting Instruction; ID Card is presented with mounting rivet in its packing. The slots are opened by retaining to suitable place from hole places on ID Card (Diameter 2,5 x 10 mm Depth) with electrical drill. The rivets with its card is swelled with hammering in its slot, your simple easy mounting has finished, you can be proud of your work created with small detail.

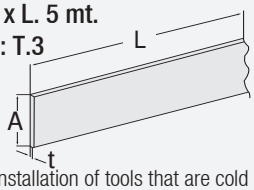
Adjusting Shim, Gauge - Band

Thickness Adjustment Detection - Precision Liner



Precision Liner Band

A .13 mm x L. 5 mt.
Tolerance: T.3



It is used for installation of tools that are cold rolled, spring hardness, high plain precision shim, steel strip and resistant to corrosion and acids, adjusting of equipment, balancing tolerances, feeding bottom of assemblies, rectifying of counters, establishing of mould, setting of bearing clearance, running in of setting devices, setting of cutting blades, rectifying of work piece all kinds of tolerance measurements.

Precision Liner Band

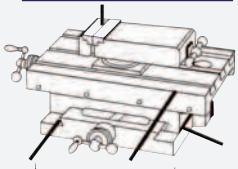
HLB Order Form

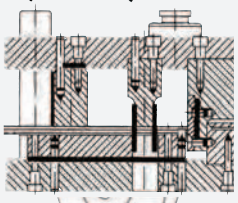
Length can be adapted by cutting.

HLB .t
Band Thickness

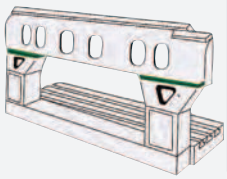
Packing: Width 13 mm
Length: 5 m. In plastic box

Material : Stainless Hardened Shiny Surface







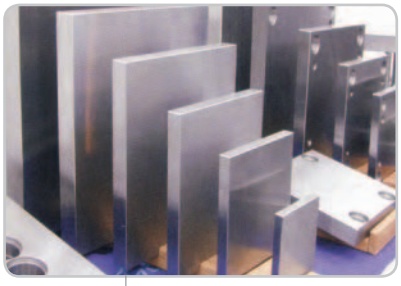


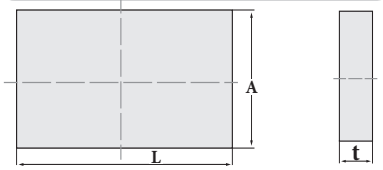
Thickness t (mm)	Tolrnc. D ±
0.01	0.002
0.02	
0.03	0.003
0.04	
0.05	
0.06	
0.07	0.004
0.08	
0.09	
0.10	
0.12	
0.15	0.005
0.20	0.006
0.25	0.007
0.30	
0.35	0.008
0.40	0.009
0.45	
0.50	0.010
0.60	
0.70	0.012
0.80	0.013
0.90	
1.00	0.017

Grinded, Steel Plate Selection Table

Wid.xLeng.		Thickness(t) Dimensions are in mm								
A	L	27	37	47	57	67	77	87	97	107
156	156	■	■	■	■	■	■			
	196	■	■	■	■	■	■	■	■	
	246	■	■	■	■	■	■	■	■	■
	296	■	■	■	■	■	■	■	■	■
	346	■	■	■	■	■	■	■	■	■
196	196	■	■	■	■	■	■	■	■	
	246	■	■	■	■	■	■	■	■	■
	296	■	■	■	■	■	■	■	■	■
	346	■	■	■	■	■	■	■	■	■
	396	■	■	■	■	■	■	■	■	■
246	246	■	■	■	■	■	■	■	■	■
	296	■	■	■	■	■	■	■	■	■
	346	■	■	■	■	■	■	■	■	■
	396	■	■	■	■	■	■	■	■	■
	446		■	■	■	■	■	■	■	■
	496		■	■	■	■	■	■	■	■
296	296	■	■	■	■	■	■	■	■	■
	346	■	■	■	■	■	■	■	■	■
	396	■	■	■	■	■	■	■	■	■
	446		■	■	■	■	■	■	■	■
	496		■	■	■	■	■	■	■	■
	546		■	■	■	■	■	■	■	■
346	346	■	■	■	■	■	■	■	■	■
	396	■	■	■	■	■	■	■	■	■
	446		■	■	■	■	■	■	■	■
	496		■	■	■	■	■	■	■	■
	546		■	■	■	■	■	■	■	■
	596		■	■	■	■	■	■	■	■
396	396	■	■	■	■	■	■	■	■	■
	446	■	■	■	■	■	■	■	■	■
	496	■	■	■	■	■	■	■	■	■
	546		■	■	■	■	■	■	■	■
	596		■	■	■	■	■	■	■	■
	646			■	■	■	■	■	■	■
446	446	■	■	■	■	■	■	■	■	■
	496	■	■	■	■	■	■	■	■	■
	546	■	■	■	■	■	■	■	■	■
	596		■	■	■	■	■	■	■	■
	646		■	■	■	■	■	■	■	■
	696			■	■	■	■	■	■	■
496	496	■	■	■	■	■	■	■	■	■
	546		■	■	■	■	■	■	■	■
	596		■	■	■	■	■	■	■	■
	646		■	■	■	■	■	■	■	■
	696		■	■	■	■	■	■	■	■
	746			■	■	■	■	■	■	■
	796			■	■	■	■	■	■	■

500 x 500 mm Large Plates; The production for lifting lug is done by tapping.





Precision Grinded, Ready Steel Plates

Precision milled, grinded plates are prepared as rectangular, square or as per request in the desired dimensions, also hole, pool, core space and similar processes can be done on plate, the desired precision tolerances excluding standard dimensions (Table) are applied. Side surfaces are milled / precision perpendicularity and roughness are provided, wide surfaces grinded plates with CK 45 Ereğli / Work Tool Steel Material are available at our stocks normatively or can be supplied in 2-3 days. In addition, except for our standard materials, our production from desired materials (Alloy Aluminum or Quality Steel Material) is possible. All of these processes are produced within the structure of our company, then they are presented to our customers by providing cost saving. We are an accomplished and dedicated and customer oriented company with our experience and knowledge, advantages of being ahead and with our presentations of GTH mould equipment improved by us and needed by the whole market and with unquestionable quality.

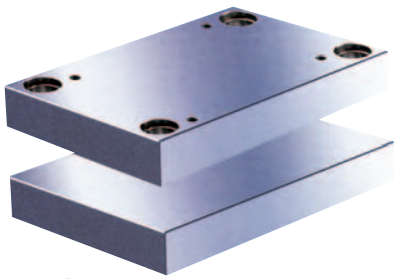
Ground Plate
Type : A x L x t

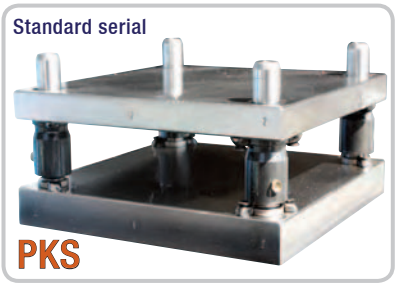
Special: 3D technical drawing
Standard: Technical drawing

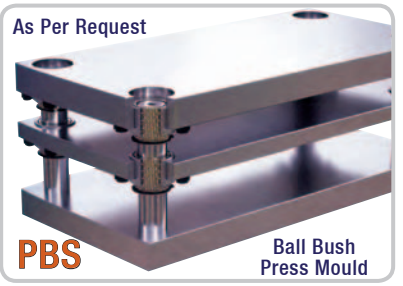
Material : CK 45 Steel
Production As Per Request

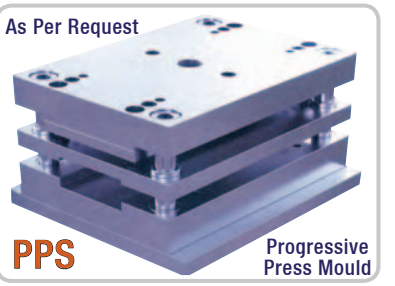
Precision Grinded, Ready Steel Plates Order Form:

Your standard order is selected from Table or for your special orders, technical drawing is required.









You can always trust our experience, expertise and GTH Quality.

Güvenal A.Ş.: We have started with our precious masters in 1976 at Süleymaniye/Istanbul. Our mould passion has continued with mould experience /skill for many years. Even in the absence of machine/tool, we continued the development of mould making profession by using levelling technique unselfishly .

O ur company has been accelerated in workshop equipment as well as with a variety of mould system (mechanical springs, ejector / punch) presentations, standard ready press mould sets and guide pillar bush works. We have established our machine sales company in 1997, we added value to the sector related to mould and counter by adding cutting tool sales / manufacturing/ technical support subjects,

In addition, our mould polishing leadership (it has accelerated works) with our hot runner interest has provided technological attacks to the sector. By opening 3. company store in 2010, we have approximated sales services through it to our customers. Today, our 145 employees are honored to contribute to the industry with technical office works including industrial cities,

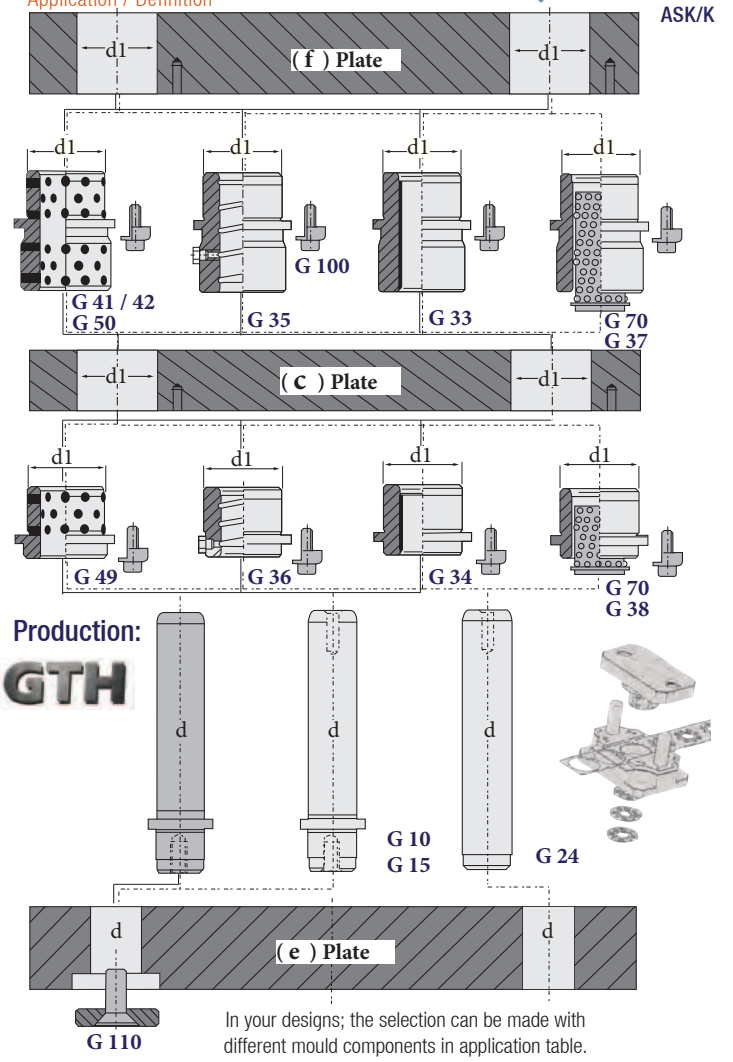
GTH mould equipmen and our ready set manufacturing companies. **GÜVENAL** that has given itself over to its job will continue **"Suitable Mold Prices"** Policy with 2. generation team having the same vision value as solution partner to our industry with your supports.

Standard&Special Ready Press Mould Sets;

In Our Production; precision surface grinding of Mould Base plate as well as circumferential perpendicularity precision are made by using machining power and our CNC machinery as well as new requirements of design engineering. The connections are completed with 12.9 Cylinder Head Cap Screw by providing reference points, using **GTH** guide pillar Bush components that are produced by us sensitively at all sets. In addition, 1 or 2 eyebolt holes (according to the load) are opened for mould lifting and mounting (Mould lock can be inserted as per request). Ereğli / CK 45 (Work tool steel) are used at our production, also as per request, Aluminum Alloy or quality steel material can be used. Thickness and circumferential tolerance values applied as standard are ± 0.1-0.2. The sets and plates up to 1600 x 800 mm are produced with fast delivery. **Thus, our national capital is protected.** In order to avoid possible errors of measurement in the customer drawings at special character moulds, all operations are reviewed by GTH, information flow of assortment is provided within mutual information, the most important one is to follow customer delivery times by our company meticulously. Note : We deliver standard sets in 2-3 days or partially from our stocks according to the urgency of your work.

Standard & Special Press Mould Sets

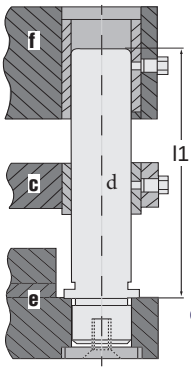




In your designs; the selection can be made with different mould components in application table.

Aluminum alloy as per request - High quality Steel Material Mould Base Production is done.
CNC Precision works as per request - Pool Draining- Die Spaces - Core Slots with short delivery.

Press Mould Base - Guide Pillar Bush Selection:



Type : Plain Guide Pillar
(Standard)
Sliding Bearing

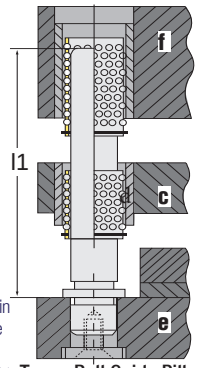


Plain Guide Pillar Application



Reverse Guide Pillar Application

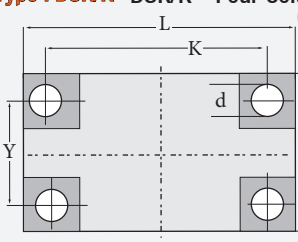
Suggestion: Pls. note that shrink fits are not suitable for four columned moulds ! Generally, two or three diversification can be chosen in cases that Guide Pillar space geometry is irregular. To know required space for mould Guide Pillar or preloading is important



Type : Ball Guide Pillar
(As per request)
Shrink Fit

DIVERSIFICATION of Press Mould Base - Selection as per request

Type : DSK/K DSK/K Four Columnar



Guide Pillar Bush Refer Page 5.

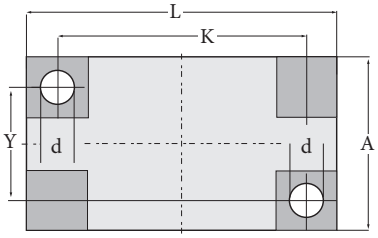


Type : DSK



Type : DSK K

Type : CSK/K CSK/K Cross Columnar



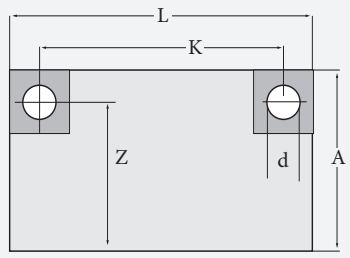


Type : CSK



Type : CSK K

Type : ASK/K ASK/K Rear Columnar



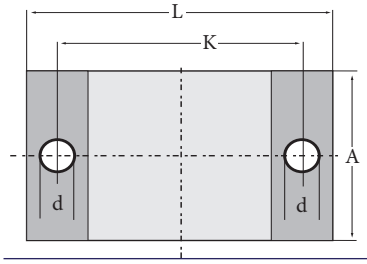


Type : ASK



Type : ASK K

Type : OSK/K OSK/K Center Columnar





Type : OSK



Type : OSK K

Type : A x L
e.f.c. x d x l1

Special: 3D technical drawing
Standard: Technical drawing

Material: CK 45 Steel
Production As Per Request

Press Mould Base - Measurement Table

Mould Measure mm		Plate Thickness mm			K	Y	Z	Guide Pillar x Len.
A	L	e	f	c	mm	mm	mm	ø d x l1
156	156	27 37	27 37	27	100	100	128	Ø 20: 100 112 125 140 160 200
	196					140		
	246					190		
	296					240		
196	196	27 37 47	27 37 47	27	132	132	164	Ø 25: 100 112 125 140 160 180 200 250
	246					182		
	296					232		
	346					282		
	396					332		
246	246	37 47 57	37 47 57	27	174	174	210	Ø 30: 112 125 140 160 180 200 250 315
	296					224		
	346					274		
	396					324		
	446					374		
296	296	37 47 57	37 47 57	27	224	224	260	Ø 30: 112 125 140 160 180 200 250 315
	346					274		
	396					324		
	446					374		
	496				212	412	254	Ø40
346	346	37 47 57	37 47 57	27	274	274	310	Ø 30: 112 125 140 160 180 200 250 315
	396					324		
	446					374		
	496				262	412	304	Ø 40
	546					462		
396	396	47 57 67	47 57 67	37	312	312	354	Ø 40: 125 140 160 180 200 250 315 355
	446					362		
	496					412		
	546					462		
	596				300	500	348	Ø50
446	446	47 57 67	47 57 67	37	362	362	404	Ø 40: 125 140 160 180 200 250 315 355
	496					412		
	546					462		
	596				350	500	398	Ø 50
	646					550		
496	496	57 67	57 67	37	400	400	448	Ø 50: 140 160 180 200 250 315 355 400
	546					450		
	596					500		
	646					550		
	696					600		

546	546	**596**	596	**646**	646	**696**	696
	596		646		696		746
	646		696		746		796
	696		746		796		846

As per request, CNC Precision Works - Pooling Draining - Die Spaces - Core Slots with short delivery

Production: GTH Mould Base Production

THICKBACKED



G. 15

THICKBACKED G. 15

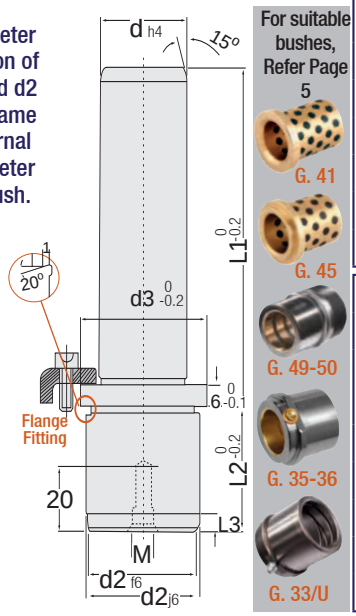
Guide Pillar with Centre Collar

Ø d	L1	d2	d3	L2	L3	M
20	100	28	34	23	4	M.8
	125					
	140					
	160					
	180					
	200					
25	100	34	39	30	6	M.8
	125					
	140					
	160					
	180					
	200					
	220					
	240					
30	125	39	44	37	6	M.8
	140					
	160					
	180					
	200					
	220					
	240					
	260					
	315					

GTH Mould Columns; are polished with Surface Polishing Machine (Surface Finish) at the final stage of production (After grinding)

Guide Pillar with Centre COLLAR

Diameter section of mould d2 are same external diameter of bush.



For suitable bushes, Refer Page 5

G. 41

G. 45

G. 49-50

G. 35-36

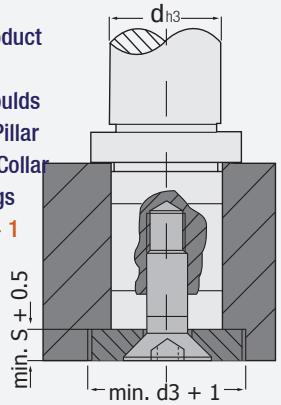
G. 33/U



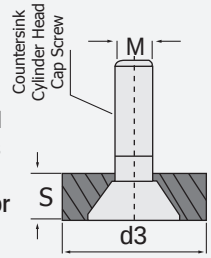
Guide Pillar with Centre Collar MOUNTING FLANGE G. 110

Reliable Product Used at Press Moulds and Guide Pillar with Centre Collar Mountings

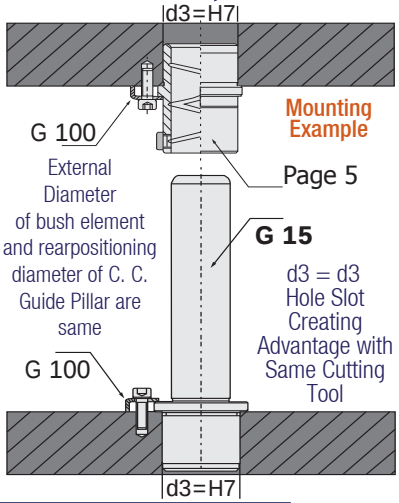
Min. d3 + 1



Injection Mould can be used as support at bottom of ejector plates etc.



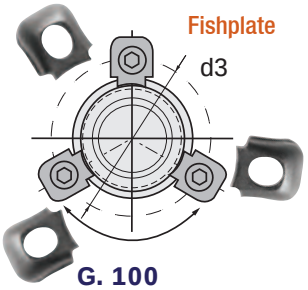
Thick backed Guide Pillar G15: It is used as centering element at cutting and form press mould sets. In processing of **Guide Pillar / Bush** Slots on mould, processing of Guide Pillar and bush holes also are provided with the same dimensional tools (Drill/Reamer). Thus; the necessity of using different tool will disappear. Advantaged Product **G.41 /G.45 / G.42 /G.49 -G.50 /G.35 - G.36 /G.33-U / G.34-U** (Index Section: Page 5) **are used with bush components as set.**



Order: **G.15.** d x L1 x L2

Material : 1.7131 (16 MnCr 5) Case Hardening
Hardness : 61 - 63 HRC (Heat Treatment)

Operating Elements : G.100 - G.33 /G.34 G.35 /G.36 -G.40 /G.42 - G.49 /G.50



G. 100

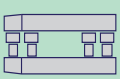
Guide Pillar with Centre Collar MOUNTING FLANGE G. 110

Ø d 3	Guide Pillar Dia. d	Flange S	Bolt M
22	Ø 15 / **16**	5.5 mm	M8 x 20
25	Ø 19 / **20**		
32	Ø 24 / **25**		
40	Ø 32 / **30**	7.5	
50	Ø 38 / **40**	9.5 mm	
60	Ø 48 / **50**		
73	Ø 60 / **63**		
93	Ø **80**	12	M12 x 20

Order : **G.110** x d3

Material : CK 45 Steel
Grinded Mould Component

Operating Elements: As Guide Pillar mounting, also as thrust between mould plates.



Section Press Mould

BOTH Produces Sells Affordable Prices

STANDARD C.C.C Guide Pillar with Centre COLLAR G. 10

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Lug d5	M M.1	r r1
38 **40**	125	37	6	50	50	M8 M8	r. 3,5 r.1 30
	140						
	160						
	180						
	200						
	224						
	250						
	280						
	315						
	355						
48 **50**	140	47	8	63	60	M8 M8	r. 3,5 r.1 30
	160						
	180						
	200						
	224						
	250						
	280						
	315						
	355						
	400						
60 **63**	160	47	8	80	70	M8 M8	r. 4 r.1 30
	180						
	200						
	224						
	250						
	280						
	315						
	355						
	400						
80	200	60	8	95	93	M 12 M 12	r. 4 r.1 30
	224						
	250						
	280						
	315						
	355						
	400						

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Lug d5	M M.1	r r1
15 **16**	100	20	4	22	22	M8 M8	r. 2 r.1 15
	112						
	125						
	140						
	160						
	180						
	200						
	220						
	250						
	300						
19 **20**	100	23	4	25	25	M8 M8	r. 2,5 r.1 20
	112						
	125						
	140						
	160						
	180						
	200						
	220						
	250						
	300						
	320						
24 **25**	100	30	6	32	32	M8 M8	r. 3 r.1 20
	112						
	125						
	140						
	160						
	180						
	200						
	224						
	250						
	320						
	350						
32 **30**	112	37	6	40	40	M8 M8	r. 3 r.1 30
	125						
	140						
	160						
	180						
	200						
	224						
	250						
	280						
	315						
	320						
	350						
	400						

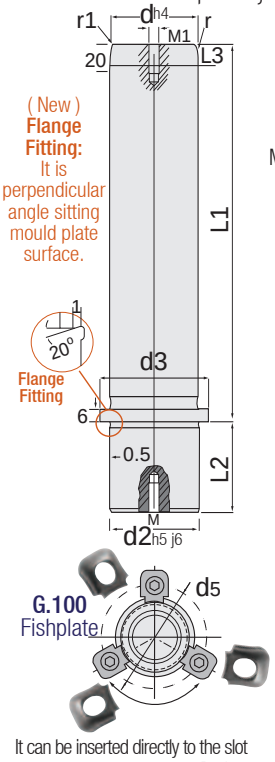
All dimensions are promptly delivered from our stocks.
It is suitable to use with demountable pillars, ball cage and all other bushes. Mould Producers; should be paid attention to choose products suitable to the tolerances/standards in Guide Pillar-bush selection, to prevent reverse closing of mould, three pieces main dimension and one piece auxiliary dimension (15-19-24-32-38-48-60) can be used, these products are limited in our stock and can be produced as per request.

GTH Mould Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding)



G.10
STANDARD C.C.C Guide Pillar with Centre COLLAR

At all cutting and form moulds, it has suitable standards to all bush operating components.





G.110 Guide Pillar Mounting Flange



It can be inserted directly to the slot opened on the mould plate. During mounting, absolutely no shrink punch should be done. It can be positioned via shrink fit to the slots and fishplates or mounting flange with suitable tolerances or also with chemicals.

Info: For mounting dimension and tolerances, refer to Page 46.

Don' t use two products without oil groove together. One of the products should be with oil groove.

Order : **G.10.** d x L1 x L2

Material: Ø 30 ≤ 1.7131 (16 MnCr5)
Hardness : 60 - 64 HRC
Ø 40 ≥ C 45 With Induction

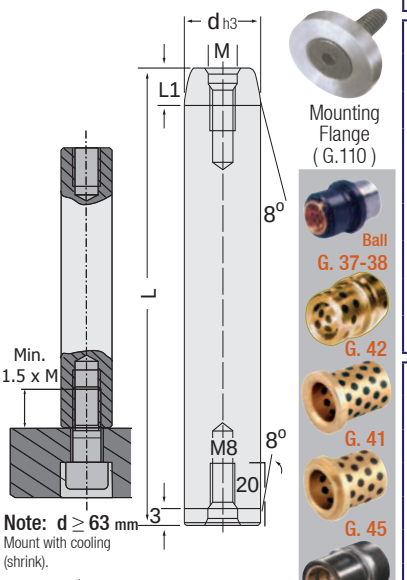
Operating Elements : All sliding systems also can be used with ball bush tools.

Plain Guide Pillar G.24

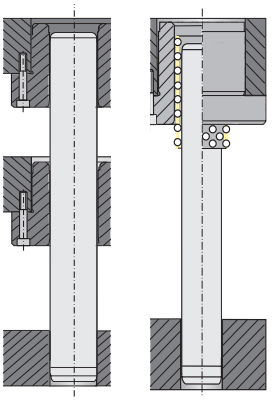


GUIDE PILLAR G.24

Mould Guide Pillar, Internal Screwed



Note: d ≥ 63 mm
Mount with cooling (shrink).



In Friction System Applications

In Ball Bush System Applications

Ø d	L mm	L1 mm	M
16	100	4	M.8
	112		
	125		
	140		
15	160		
	180		
	200		
19	100	4	M.8
	112		
	125		
	140		
20	160		
	180		
	200		
	224		
	250		
24	100	6	M.8
	112		
	125		
	140		
	160		
25	180		
	200		
	224		
	250		
	280		
	315		
32	112	6	M.8
	125		
	140		
	160		
	180		
30	200		
	224		
	250		
	280		
	315		
38	125	6	M.8
	140		
	160		
	180		
40	200		
	224		
	250		

Ø d	L mm	L1 mm	M
38	280	6	M.8
	315		
	355		
40	400		
48	140	8	M. 12
	160		
	180		
	200		
	224		
50	250		
	280		
	315		
	355		
	400		
60	200	8	M. 12
	224		
	250		
	280		
63	315		
	355		
	400		
80	250	8	M. 16
	280		
	315		
	355		
	400		
	450		
	500		

Not: Section (d), two different products are to avoid reverse closing of mould during mounting, three pieces main dimension and one piece
d= Ø 15 -19 -24 -32- 38-48 -60 mm
d = 48 /50 - 60 /63 - 80 are produced as per request.

GTH Mould Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding)

If Extreme Lateral Forces are occurred at press moulds, in these cases, frictional Self lubricating plates should be used with pillars.

Order : G.24. d x L

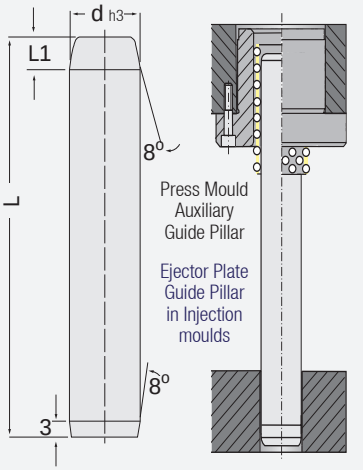
Material : Ø 30 ≥ 1.7131 (16 MnCr5)
Hardness : 60 - 64 HRC Ø 40 ≥ C 45 With induction

Operating Elements : It can be used with all sliding systems as well as ball bush tools.

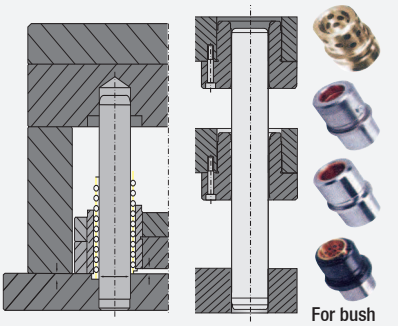


GUIDE PILLAR G.19

Inner Press Type, Mould Guide Pillar



It is used as auxiliary centering guide component at press / sheet moulds or progressive mould plates. It can be used with all sliding system or ball bush sets. When precision and iterative high speeds are required at injection mould ejector plates, it is suitable to use together with ball set and also with sliding and self-lubricating bush mould components.



For bush selection Refer Page 5

Plain Guide Pillar G.19

Order : G.19 d x L

Material : Ø 30 ≥ 1.7131 (16 MnCr5)
Hardness : 62 ± 2 HRC

Operating Elements : It can be used with all sliding systems as well as ball bush tools.

Ø d	L mm	L1 mm
12	100	6
	125	
18	125	6
	160	
30	160	7
	240	

GUIDE PILLAR Mould Pillars, Slotted and Heavy Type G.09

Ø d	L mm	d2 Hole	d5 mm	L1 mm	L2 mm	L3 mm
80	200	-	M12 x24 Guide Pillar Lifting Hole	10	4	100
	224					
	250					
	280					
	315					
	355					
	400					
100	224	50	72	10	4	125
	250					
	280					
	315					
	355					
	400					
	450					
125	315	65	90	12	5	140
	355					
	400					
	450					
	500					
160	400	95	132	12	5	180
	450					
	500					
	560					

Ø d	L mm	d2 Hole	L1 mm	L2 mm	L3 mm
25	125	-	8	4	40
	140				
	160				
	180				
	200				
	224				
32	140	-	8	4	45
	160				
	180				
	200				
	224				
	250				
40	140	-	8	4	56
	160				
	180				
	200				
	224				
	250				
	280				
50	160	-	10	4	70
	180				
	200				
	224				
	250				
	280				
	315				
	355				
63	180	-	10	4	80
	200				
	224				
	250				
	280				
	315				
	355				
	400				

Order : G.09 d x L

Material : 1.7131 (16 MnCr5)
Hardness : 58 - 60 HRC Depth : 1.5 + 1 mm

Operating Elements :
Self Lubricating Bushes are recommended

The importance of alignment sensitivity of punch and matrix at moulds is very obvious. This alignment depends on accuracy and protection of sensitivity, correct placement of Guide Pillar/ bush groups, quality and abrasion resistance. It is especially demountable. We make an effort to expand this product range with newly created supplements such as guiding components.

GTH Mould Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding)

GTH Mould Components, are designed and produced by persons who achieved perfection.

Special production can be done as per request.

Production GTH



GUIDE PILLAR G.09

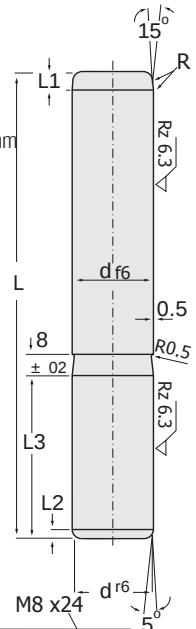
Mould Guide Pillar, Slotted Type

Heavy Type Press Moulds

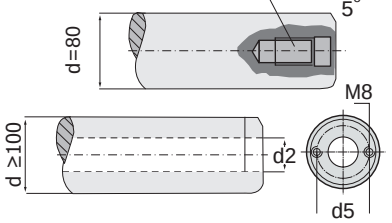
Application:
Grinded surface is Holeless up to Ø d = 80 and Ø 80 = M.12 x 24 mm has one lifting hole.
From Ø d = 100, it has hollow (d2) and 2 pieces M.8 x 24 mm lifting holes.

Note :
Hole tolerance should be H7. It is recommended to use mould Guide Pillar only with self lubricating beddings

Compatible Bushes:
Self-lubricating Bronze Bushes DIN 9833 Guide Columns

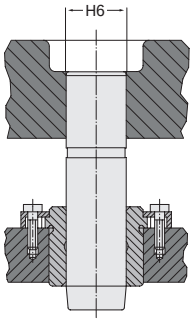


Standard serial
d=25-32-40-50-63



Mounting Example



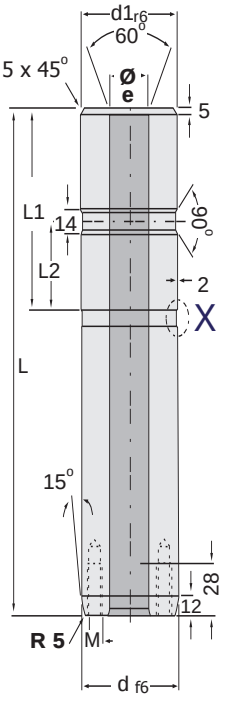


Mould Pillars **DIN 9833**
Large Size **ISO 9182-3**



GUIDE PILLAR G. 07

Large Size Slotted /Perforated

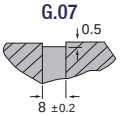


Reference:
FIAT STQ 10002
DIN 9833
FIAT

For Suitable Bushes, Refer Page 5.



X - Detail G.07



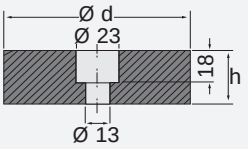
It has Ø d = Follow M.8, two pieces lifting holes.

GUIDE PILLARSLOTTED - PERFORATED G.07

Ø d	L mm	d2	e	L1 mm	L2 mm	M
80	250	80	40	100	50	M.12
	280					
	315					
	355					
100	315	100	50	125	60	M.16
	355					
125	355	125	65	140	70	M.16
	400					



Balancing / Centering Cylindrical Blocks G.81-82



d	h
80	25
	30
100	25
	30
120	25
	30

FIAT Balancing Block G.82

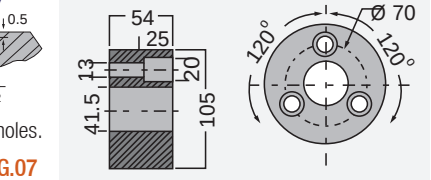
FIAT Q 1001 (TDC)

Material : 1.6511
Hardness : HRC 46-48

G.81 Centering Drawing
G.82.d x h

FIAT Centering Blocks G.81





FIAT 230 GSG.74.01

Material : 1.6511
(36 CrNiMo 4)

For your extra orders, G.81 Ø 105

GUIDE PILLAR G.06 G.07

Reference : FIAT STQ 10002
DIN 9833 FIAT

Order : G.06 / G.07 d x L
FIAT STQ 10002 DIN 9833

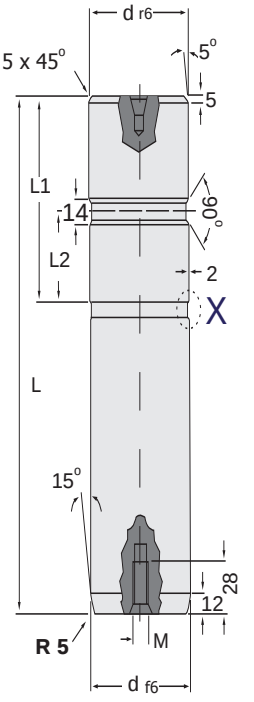
Material : 1.7131 (16 MnCr5)
Hardness : 58 - 60 HRC Depth ≥ 0.8 mm

Operating Elements :
Self lubricating bushes are recommended.



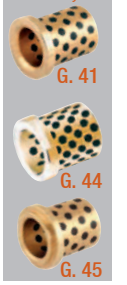
GUIDE PILLAR G. 06

Large Size - Slotted

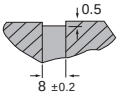


Reference:
FIAT STQ 10002
DIN 9833
FIAT

For Suitable Bushes, Refer Page 5.



X - Detail G.06



Hole tolerance should be H7.
It is recommended to use mould pillars with self lubricating bedding.

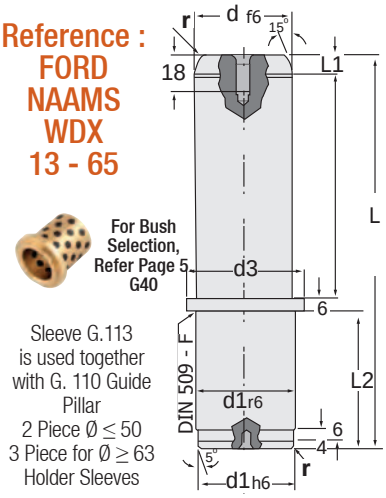
FIAT GUIDE PILLAR SLOTTED G.06

Ø d	L mm	d2	L1 mm	L2 mm	M
80	250	80	100	50	M.12
	280				
	315				
	355				
100	315	100	125	60	M.16
	355				
125	355	125	140	70	M.16
	400				



G. 01 GUIDE PILLAR

Reference :
FORD
NAAMS
WDX
13 - 65



For Bush Selection, Refer Page 5. G40

Sleeve G.113 is used together with G. 110 Guide Pillar
2 Piece Ø ≤ 50
3 Piece for Ø ≥ 63
Holder Sleeves



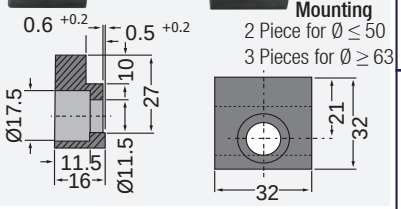
GUIDE PILLAR G. 02
Large Size - Slotted

d	L	d1	r	L1	L2
25	140	25	2	4	40
	160				
	180				
32	140	32	2	8	45
	160				
	180				
	200				
40	160	40	2	8	56
	180				
	200				
	224				
	250				
50	160	50	2.5	10	70
	180				
	200				
	224				
	250				
	280				
	315				
63	200	63	2.5	10	80
	224				
	250				
	280				
	315				
	355				
	400				
80	250	80	3	10	100
	280				
	315				
	355				
	400				
	450				
	500				
100	315	100	3	10	125
	355				
	400				
	450				
	500				
	550				
	600				

GUIDE PILLAR
Reference : FORD WDX 13 - 60 -1001
Bush and Guide Pillar Holder Sleeve

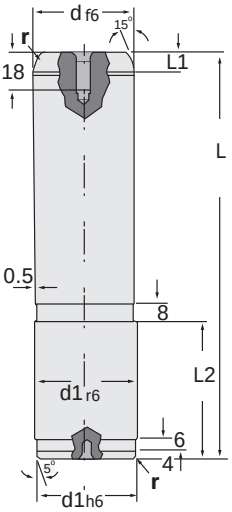


G.102



Mounting
2 Piece for Ø ≤ 50
3 Pieces for Ø ≥ 63

G. 02 GUIDE PILLAR
FORD
NAAMS
WDX 13 - 65



Lifting purpose M.12 x 18 thread is opened Ø 80 and 100 Guide Pillar Sizes.

For Suitable Bushes, Refer Page 5.



Order : G.01 / G.02 d x L
FORD WDX13 - 65

Material : 1.6523 (21 NiCrMo2)
Hardness : 57 - 62 HRC Depth ≥ 08 mm

Operating Elements :
With all lubricated bush components.

GUIDE PILLAR G. 01
Large Size - With Collar

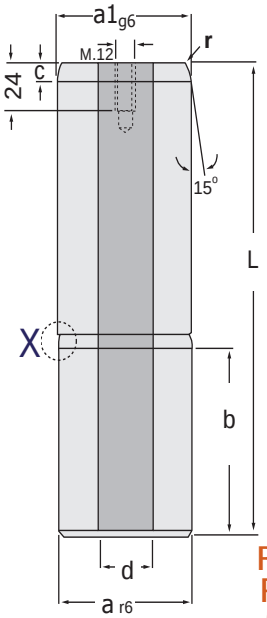
Ø d - d1	L mm	Ø d3	r	L1 mm	L2 mm
25	140	33	2	4	40
	160				
	180				
32	140	40	2	8	45
	160				
	180				
	200				
40	160	50	2	8	56
	180				
	200				
	224				
	250				
50	160	60	2	10	70
	180				
	200				
	224				
	250				
	280				
	315				
63	200	80	3	10	80
	224				
	250				
	280				
	315				
	355				
	400				
80	250	90	3	10	100
	280				
	315				
	355				
	400				
	500				
100	315	110	3	10	125
	355				
	400				
	500				

For your extra orders, G.01-02 No, can be used.



GUIDE PILLAR G. 05

Mould Pillars, Slotted /Perforated



For Suitable Bushes, Refer Page 5



Reference PSA E 24. 52.105.G

GUIDE PILLAR G. 05

MouldPillars, Slotted /Perforated

Plain Type Guide Pillar, Slotted

Ø a	L mm	b mm	c mm	d Ø	r
100	315	125	10	-	3
	355				
	400				
125	400	140	12	-	4
	450				

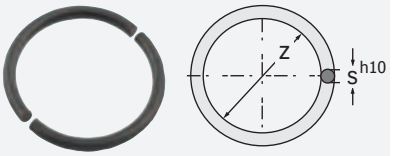
Perforated Type Guide Pillar, Slotted

100.D	315	125	10	50	3
	355				
	400				
125.D	400	140	12	65	4
	450				

CIRCLIP G.112

Reference : PSA E24.52.105 G

Order : A102 - 01 x Guide Pillar Diameter

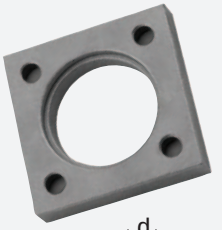


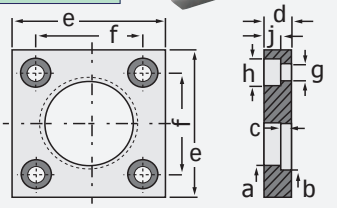
RETAINING FLANGE G.119

Reference : PSA E24.52.105 G

Order
PSA E24.52.105 G
a (Guide Pillar Dia.)

Material :
1.0503(C 45)
R ≥ 480 N / mm

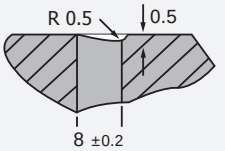




RETAINING FLANGE G.119

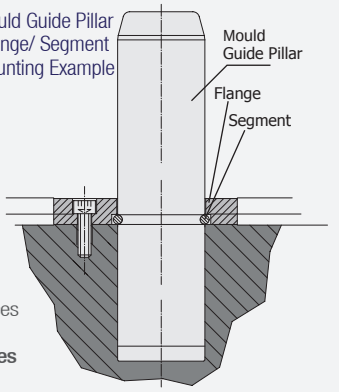
a	b	c	d	e	f	g	h	j
25	45	2.7	10	45	31	6.6	12	7
32	37	4.2	10	56	36			
40	45		12	70	50			
50	55		14	80	55	9	16	9
63	70	6.2	18	100	70	11	18	11
80	87		20	110	80	14	22	13

X - Detail (G.05)



Products; It is given together with Guide Pillar + Flange and ring as a group.

Mould Guide Pillar Flange/ Segment Mounting Example



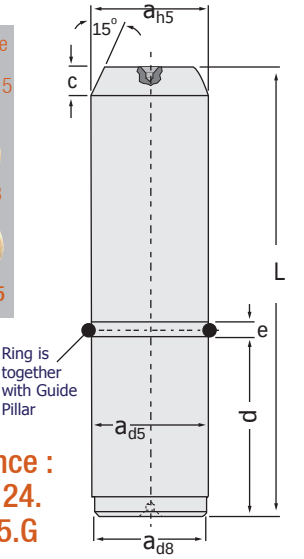


GUIDE PILLAR G. 04

Large Size - Slotted

For Suitable Bushes, Refer Page 5





Reference : PSA E 24. 52.105.G

GUIDE PILLAR G. 04

Large Size - Slotted

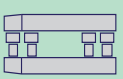
Ø a	L mm	c mm	d mm	e mm	Segment z	Segment s
40	180	12	63	4.2	36	4
	200					
	220					
50	220	16	80	4.2	46	4
	250					
	280					
63	250	16	100	6.2	57	6
	315					
80	315	16	125	6.2	74	6
	355					

For your extra orders, G.04-05 No can be used.

Order : PSA E24.52.105.G
Order : G.04 G.05 a x L

Material : 1.0503 (C45) T7
Hardness : 60 - 62 HRC Depth: 1.5 - 2 mm

Operating Elements :
With all lubricated bush components.



Section Press Mould

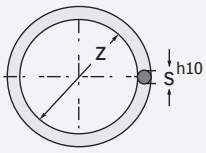
BOTH Produces Sells Affordable Prices GTH

CIRCLIP G.112

Reference: CNOMO EM 24.52.100

Material : 1.0301 (C10)





a	z	s
25	22.5	2.5
32	28	4
40	36	4
50	46	4
60	57	6
80	74	6
100	94	6

The products; are given together guide pillar and flange ring.

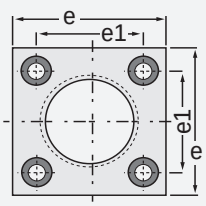
For your extra orders, orders are given by using product codes.
Example : G.112 x a

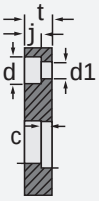
RETAINING FLANGE G.119

Reference: CNOMO EM 24.52.100

Material : 1.0301 (C10)







RETAINING FLANGE G.119

a	e	e1	t	j	d	d1	c
25	45	31	10	7	12	6.6	2.5
32	56	36					4
40	70	50	12				
50	80	55	14	9	16	9	
63	100	70	18	11	18	11	6
80	110	80	20	13	22	14	
100	140	100					

The products; are given together with guide pillar and flange ring as a group.

For extra orders, order are given by using product codes. **Example:** G.119 x a It is recommended to use mould pillars only with self lubricating bushes.

The pillars are precision mould components providing working of punch groups on same position. According to the proportion in diameter, it is heat treated by producing quality steels and are grinded in precision dimensions.

CNOMO - GUIDE PILLAR
Large Size -Slotted G.03

a	L	b	l1	l2	l3	k	r
25	100	22.3	25	8	8	2.5	2
	125						
	140						
	160						
	180						
	200						
	224						
32	125	27.8	32	10	12	4.2	2
	140						
	160						
	180						
	200						
	224						
	250						
40	180	35.8	63	12	12	4.2	2
	200						
	224						
	250						
	280						
	315						
50	200	45.8	80	16	12	4.2	2.5
	224						
	250						
	280						
	315						
	355						
	400						
63	250	56.8	100	16	18	6.2	2.5
	280						
	315						
	355						
	400						
	450						
	500						
80	315	73.8	125	16	18	6.2	3
	355						
	400						
	450						
	500						
100	355	93.8	160	16	18	6.2	3
	400						
	450						
	500						

The products; are given together with guide pillar+ Flange and Ring as an order.
For extra orders, order can be given by using product codes. (Example: G.03 x a x l)



GUIDE PILLAR - CNOMO
Large Size -Slotted G.03

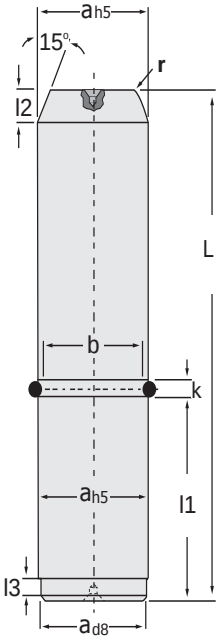
Reference: CNOMO EM 24.52.100

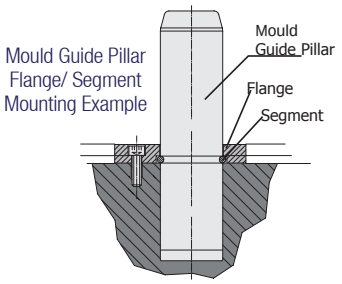
For Suitable Bushes, Refer Page 5


G. 43


G. 45


As per request





CNOMO EM 24.52.100
Order : a x L

Material : 1.6523 (21NiCrMo2)
Hardness : 60 - 64 HRC Depth: 0.8 ≥ mm

Operating Elements :
With all lubricated components.

For your extra orders, G.03 No can be used.

Suitable for extra usage
G.24 (Page 18)
Guide Pillar



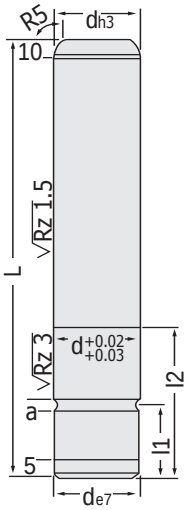
RECTANGULAR, CAST BLOCK GUIDE PILLAR

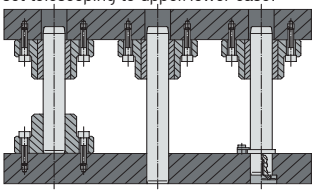
Large Size
Slotted

G. 20

Cast Block Guide Pillar

G.20 Plain Guide Pillar Type Bedding is used with G.80 Cast Block With Collar Bushes. At Sheet Cutting Progressive Form Pres Moulds, it is reduced disassembly assembly period of Guide Pillar & bush. No opening of Guide Pillar bush holes on mould holder is required, it reduces labour cost and also saves time by shortening production period of mould, they are mould components forming bush / Guide Pillar set telescoping to upper/lower case.



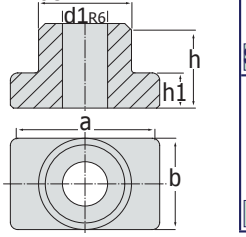


Ø d	L	l1	l2	a
40	180	37	77	8
	220			
	260			
	300			
	355			
	400			
50	200	47	95	8
	240			
	280			
	315			
	355			
	400			
	450			
63	240	60	120	8
	280			
	315			
	355			
	400			
	450			
80	240	60	120	8
	280			
	315			
	355			
	400			
	450			
	500			

RECTANGULAR, CAST BLOCK GUIDE PILLAR

G. 80 - 10



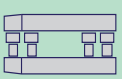


Order : G.20. d x L
(Cast Block, Guide Pillar)

Material : 1.1213 (Cf 53)
Hardness : 62 ±2 HRC With induction

Operating Elements :
Rectangular, Cast Block - Bushes

Absolutely, control the perpendicularity of pillars after mounting.



Section Press Mould







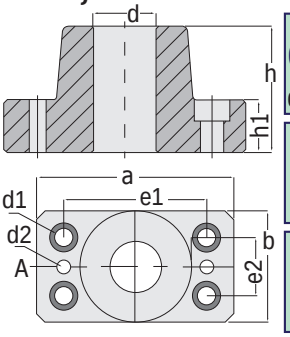






Rectangular, Cast Block BUSHES G.80

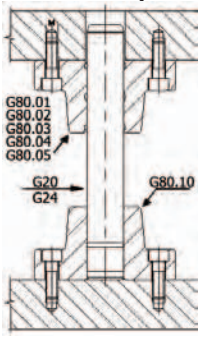
Rectangular Connection Flange Cast Bearing



Order : G.80 Type 01~10 x d

Material : GG 25

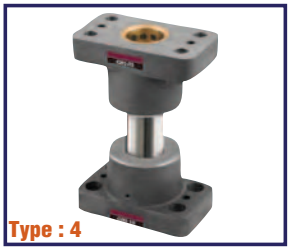
Operating Element : G.20 G.24

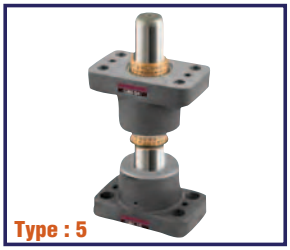


Cast Block Bush	Ø d	d1	d2	h	h1	a	b	e1	e2	M
G.80. 01	40	13	10	77	30	130	80	95	45	12
	50	15	10	95	35	160	96	118	55	14
	63	17	12	120	35	180	110	132	62	16
STEEL Bearing	80	21	14	120	40	215	130	160	75	20
G.80. 02	40	13	10	77	30	130	80	95	45	12
	50	15	10	95	35	160	96	118	55	14
	63	17	12	120	35	180	110	132	62	16
BRONZE Bearing	80	21	14	120	40	215	130	160	75	20
G.80. 03	40	13	10	77	30	130	80	95	45	12
	50	15	10	95	35	160	96	118	55	14
	63	17	12	120	35	180	110	132	62	16
SINTER Bearing	80	21	14	120	40	215	130	160	75	20
G.80. 04	40	13	10	77	30	130	80	95	45	12
	50	15	10	95	35	160	96	118	55	14
	63	17	12	120	35	180	110	132	62	16
BALL Bush	80	21	14	120	40	215	130	160	75	20
G.80. 05	40	13	10	77	30	130	80	95	45	12
	50	15	10	95	35	160	96	118	55	14
	63	17	12	120	35	180	110	132	62	16
Self-lubricating Bronze	80	21	14	120	40	215	130	160	75	20
G.80. 10	40	13	10	77	30	130	80	95	45	12
	50	15	10	95	35	160	96	118	55	14
	63	17	12	120	35	180	110	132	62	16
GUIDE PILLAR Bush	80	21	14	120	40	215	130	160	75	20



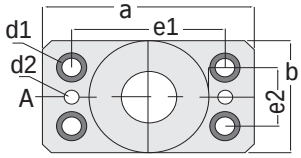


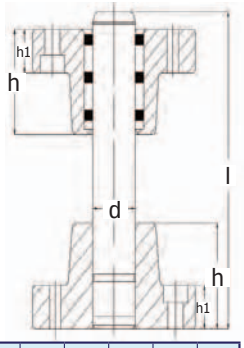




Rectangular - Cast Block SETS G.79

Connection Guide Pillar / Bush Cast Sets





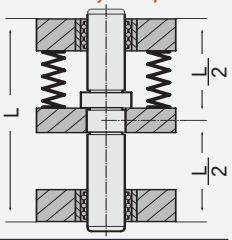
Order :G.79. d x L.Type
Block Casting,Pillar / Sign Set

Material : GG 25 / 1.7131 - 1.1213
Hardness : 62 ±2 HRC With induction

Operating Elements : SET Rectangular
Cast Block Guide Pillar / Bush

Order	Ø d	l mm	Ø d1	Ø d2	mm h	mm h1	mm a	mm b	mm e1	mm e2
G.79. 01 02 03 04 05	40	180	13	10	77	30	130	80	95	45
		220								
		260								
		300								
		355								
		400								
G.79. 01 02 03 04 05	50	200	15	10	95	35	160	96	118	55
		240								
		280								
		315								
		355								
		400								
		450								
G.79. 01 02 03 04 05	63	240	17	12	120	35	180	110	132	62
		280								
		315								
		355								
		400								
		450								
G.79. 01 02 03 04 05	80	240	21	14	120	40	215	130	160	75
		280								
		315								
		355								
		400								
		450								
		500								

Mounting Example:



Order : G.08. d x L x L1

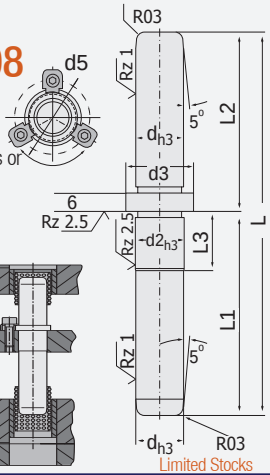
Material : 1.7131 (16 MnCr5)
Hardness : 62 ±2 HRC Depth : 1

Operating Elements :
Ball Cage / Steel Bush / Sleeve

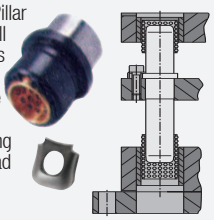


Scraper - Connection

Ball Bush System G.08



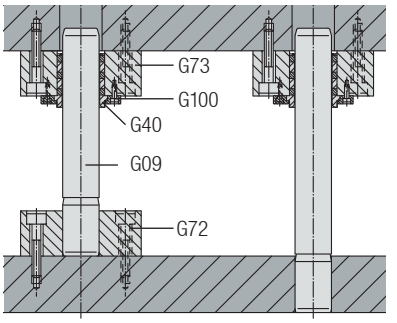
Hole tolerance for shrink fit place of mould Guide Pillar affects is N5. Securing lateral load resistance of mould beddings. In moulds with guide plates or having Guide Pillar mounted to mould from bottom or top, if the distance (L) applying power is equal, bending values of rotary and guide columns are equal.
By securing mould Guide Pillar to the guide plate, there will be important improvements at bending values of columns. Until the distance (L/2) between application point of power and fastening surface reduces to half, load lifting capacity is increased **8 times.**



Limited Stocks

d	L	L1	L2	L3	d2	d3	d5
12	120	78.5	41.5	20	12.02	16	25
16	140	80	60	16	16.05	22	31
	150	90	60				
	160	90	70				
	170	100	70				
	180	100	80				
	190	100	90				
20	160	90	70	19	20.05	26	35
	170	100	70				
	180	100	80				
	190	110	80				
	200	110	90				
	210	110	100				
25	180	100	80	22	25.05	32	41
	190	110	80				
	200	110	90				
	210	120	90				
	220	120	100				
	230	120	110				
30	180	100	80	25	30.05	38	47
	190	110	80				
	200	110	90				
	210	120	90				
	220	120	100				
	230	130	100				
	240	130	110				
	250	140	110				
40	200	110	90	27	40.05	50	59
	210	120	90				
	220	120	100				
	230	130	100				
	240	130	110				
	250	140	110				







G. 72

GUIDE PILLAR BEARING- BLOCK

Steel, Rectangular Type Slot Mould Bushes, with Connection Hole

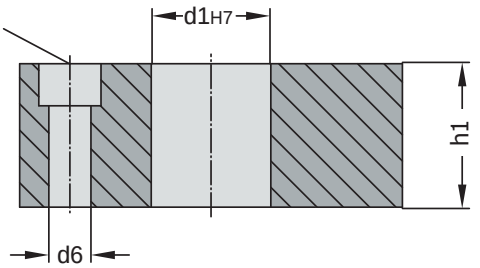
For Mould Pillars / Bush Components, also to give order, refer to Page 5.

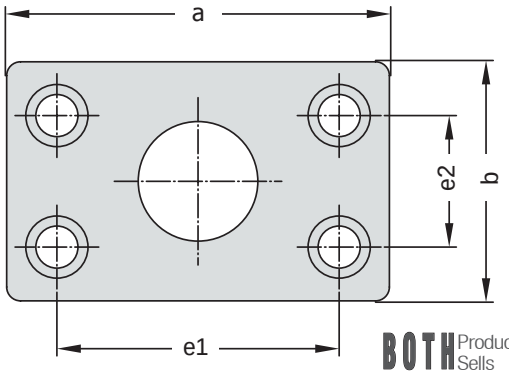
Control its perpendicularity of guide pillars after mounting.

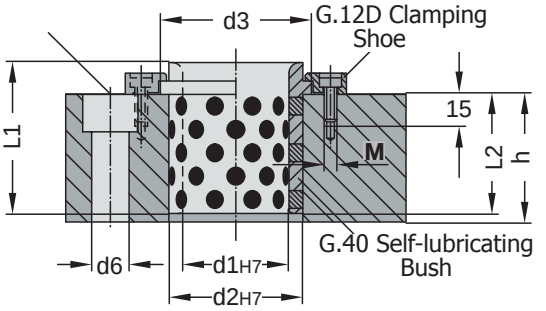
G. 73

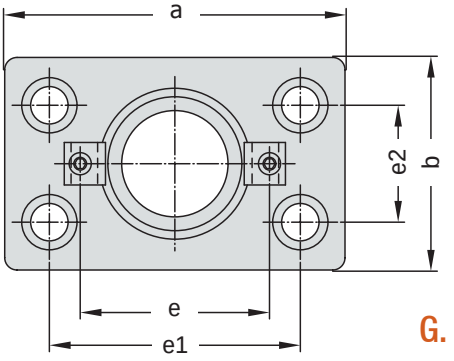
BUSH BEARING - BLOCK

Steel, Rectangular Type Slot, Self-lubricating Bush with connection hole









G. 73

BOTH Produces Sells Affordable Prices

GTH

Steel, Rectangular Type Slot, Self-lubricating Bush with connection hole. G. 72

Ø d1	h1 mm	Ø d6	a mm	b mm	e1 mm	e2 mm
Ø 50	70	17.5	160	100	118	55
Ø 63	80	17.5	180	125	132	62
Ø 80	100	21.5	215	145	160	75
Ø 100	125	21.5	230	170	168	110
Ø 125	140	25.5	270	205	203	142
Ø 160	180	25.5	315	250	243	170

Order : **G.72 d1**

Material : CK 45 Work Tool Steel, Heat Treatment as per request.

Operating Elements : Guide Pillars (Page 5)

Steel, Rectangular Type Slot, Self-lubricating Bush with connection hole.

Bush Size	Ø 50	Ø 63	Ø 80	Ø 100	Ø 125	Ø 160
d1	50	63	80	100	125	160
d2	63	80	100	125	160	200
d3	71	90	112	140	180	220
d6	17.5	17.5	21.5	21.5	25.5	25.5
a	160	180	215	230	270	315
b	100	125	145	170	205	250
e	89	123	143	168	203	243
e1	118	132	160	168	203	243
e2	55	62	75	110	142	170
h	60	70	90	110	140	180
L1	71	80	100	125	160	200
L2	56	63	80	106	132	170
M	M6x16	M10x16	M10x16	M10x16	M10x16	M10x16

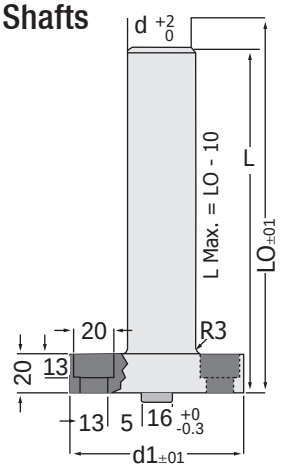
Order : **G.73 d1**

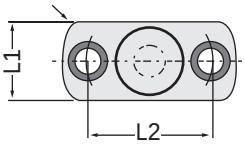
Material : CK 45 Work Tool Steel, Heat Treatment as per request.



TIJ SHAFT G. 69

Ventilation Shafts





NOTE: 'LO' Length will be produced as per request.

Bolts using in mounting of product also can be supplied separately.

TIJ SHAFT G. 69
Ventilation Shafts

d	d1	L	L1	L2
36	90	175	40	65
36	90	250	40	65
36	90	360	40	65
45	100	175	50	75
45	100	250	50	75
45	100	360	50	75

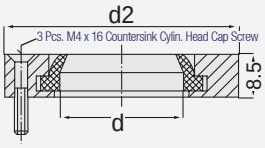
Order : **G.69** d x L

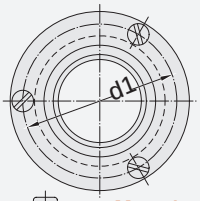
Material : CK 45
Work Tool Steel

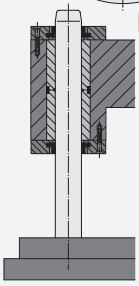
Reference : FORD WDX 17 - 70 M
VW AUDI 39 D 638 /1
BMW B2 2615 12 OPEL F 33 15



G.22
PERFORATED FLANGE
Guide Pillar Protection - Flange







Mounting Example

Different Various usage areas can be created at mould sets.

NOTE: Guide Pillar protection flange protects dirt to be occurred at moulds or thrust etc.

Order : **G.22** d

Material : CK 45
Work Tool Steel

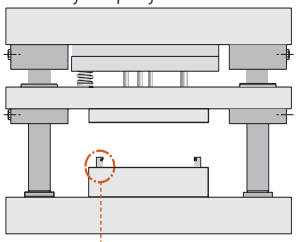
It is used at all Guide Pillar system and at other mould sets as extra.

PERFORATED FLANGE G.22
Guide Pillar Protection

d	d1	d2
24 **25**	45	55
32 **30**	55	65
38 **40**	65	75
48 **50**	78	94
60 **63**	92	110

Mounting Example

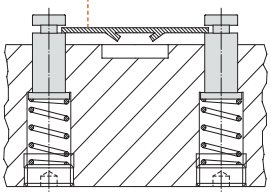
Using of sheet lifting pin provides advantage at progressive moulds.





G.74 Retaining Spring

For your spring orders, pls. refer ball cage retaining spring section.



Using of sheet lifting pin, provides advantages at progressive moulds.

G.23
RETAIINING GUIDE PILLAR
Sheet Lifting Pin

A (Guide Pillar)	S (Sheet)
L . **30**	**2** mm
	3 mm
L . **35**	**2** mm
	3 mm
L . **40**	**2** mm
	3 mm
L . **45**	**2** mm
	3 mm
L . **50**	**2** mm
	3 mm

As per request, we have production from special material and in desired dimensions. G.23 Special

Order : **G.23** A x S

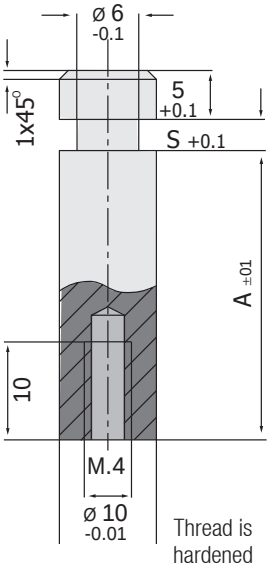
Material : 1.7131 (16 MnCr5)
Hardness : 58 - 60 HRC Depth ≥ 08 mm

Using of sheet lifting is provided advantage at progressive moulds

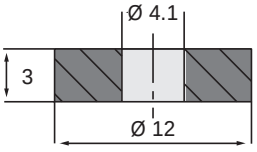
BOTH Produces Sells
Affordable Prices



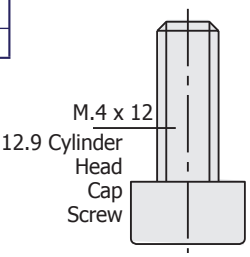
G.23
RETAINING GUIDE PILLAR
Sheet Lifting - Pin



Thread is hardened and grinded.



To secure lifter washer, cyanoacrylate can be used.



Retaining screws can be selected from our Cylinder Head Cap Screw page.



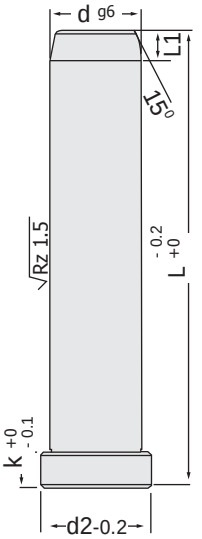
G.17

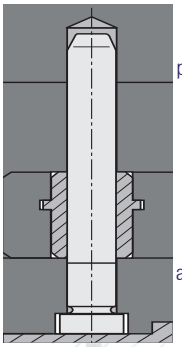
Unlubricated Plain Type Guide Pillar

Diagonal Load Pillar

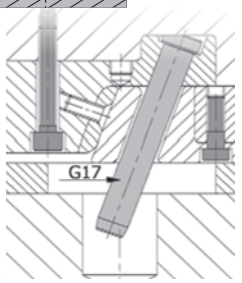
Suitable Bushes at Page 5.







It is suitable as ejector plates and core systems at injection moulds and as mould inner guide pillar in press moulds. Being without oil groove, is compatible using with bronze graphite (self lubricating) bushes and bush components with oil groove.



GUIDE PILLAR G.17 Unlubricated - Plain Type Guide Pillar

d	L	L1	d2	k
10	40	4	12	3
	60			
	80			
	100			
	120			
12	40	7	16	6
	60			
	80			
	100			
	120			
	140			
	160			
14	60	7	18	8
	80			
	100			
	120			
	140			
	160			
	180			
16	40	7	20	8
	60			
	80			
	100			
	120			
	140			
	160			
	180			
	200			
18	60	7	22	8
	80			
	100			
	120			
	140			
	160			
	180			
	200			
	240			
20	60	7	24	8
	80			
	100			
	120			
	140			
	160			
	180			
	200			
	240			
22	80	7	26	15
	100			
	120			
	140			
	160			
	180			
	200			
	220			
	240			
	300			
24	80	7	28	15
	100			
	120			
	140			
	160			
	180			
	200			
	220			
	240			
	300			
30	100	7	36	15
	120			
	140			
	160			
	180			
	200			
	220			
	240			
	300			
	360			
40	160	10	48	15
	180			
	200			
	220			
	240			
	280			
	300			
	320			
	360			
50	160	10	58	15
	200			
	240			
	300			
	360			

Order Form / Technical Info

Order : **G.17.** d x L

Material : 1.7131 (16 MnCr 5)
Hardness : 58 - 62 HRC

Operating Elements :
With all lubricated type bushes at press or injection moulds.



GTH Mould Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding)



Alternative Plain Guide Pillar



G.19

GUIDE PILLAR
Press Inner Type, Mould Guide Pillar
Other Ejector Plate Ball Guide Pillar

When precision and iterative high speeds are required at injection mould ejector plates, it is suitable to use together with ball set and also with sliding and self-lubricating bush mould components.

For bush selection, refer page 5.



G.29

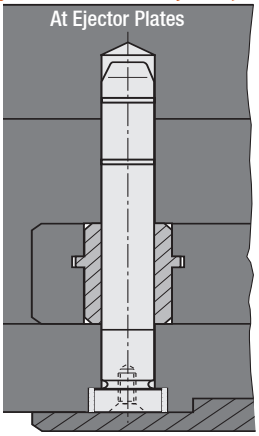
GUIDE PILLAR G.11 Oil Grooved (Chamfered) - Threaded Type

d	L	L1	L2	d2	k	M
30	100	30	7	36	15	8
	120					
	140					
	160					
	180	38				
	200					
	220					
	240					
	300					
	360					
	400					
40	160	40	10	48	15	10
	180					
	200					
	220	48				
	240					
	280					
	300					
	320					
	360					
50	160	50	10	58	15	10
	200					
	240					
	300	58				
	360					

d	L	L1	L2	d2	k	M
20	60	20	7	24	8	8
	80					
	100					
	120					
	140					
	160	24				
	180					
	200					
	240					
	250					
	300					
	320					
22	80	22	7	26	15	8
	100					
	120					
	140	28				
	160					
	180					
	200					
	220					
	240					
	300					
24	80	24	7	28	15	8
	100					
	120					
	140	30				
	160					
	180					
	200					
	220					
	240					
	300					
25	100	25	7	29	10	8
	120					
	140					
	160	34				
	180					
	200					
	220					
	250					
	300					
	320					
	350					

d	L	L1	L2	d2	k	M
10	40	10	4	12	3	-
	60					
	80					
	100	12				
	120					
12	40	12	7	16	6	-
	60					
	80					
	100					
	120	16				
	140					
	160					
14	60	14	7	18	8	-
	80					
	100					
	120					
	140	18				
	160					
	180					
16	40	16	7	20	8	8
	60					
	80					
	100					
	120					
	140	18				
	160					
	180					
	200					
	220					
	250					
	300					
18	60	20	7	22	8	8
	80					
	100					
	120					
	140					
	160					
	180					
	200					
	240					

Injection Mould Mounting Example



Order : G.11. d x L

Material : 1.7131 (16 MnCr 5)
Hardness : 58 - 62 HRC

Operating Elements :
With all lubricated type bushes at press or injection moulds.

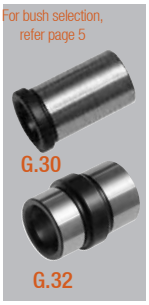
GTH Mould Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding).

GUIDE PILLAR Type

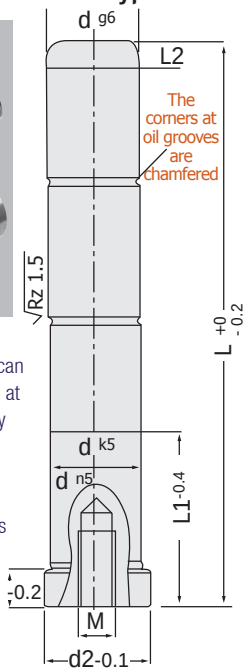


G.11

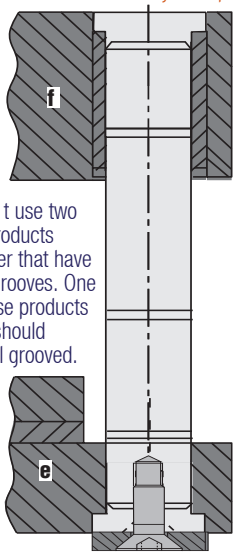
Oil Grooved (Chamfered) - Threaded Type



New product
As per request, it can be fixed by thread at cap direction. By disassembling mould without dismantling, it provides process iteration advantage



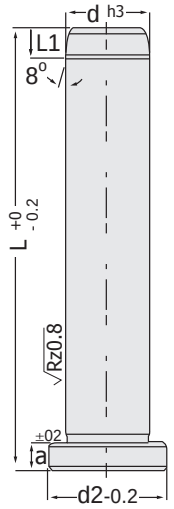
Press Mould Mounting Example



Don' t use two products together that have no oil grooves. One of these products should be oil grooved.



CAPPED PILLAR
Ball Type G. 18



Suitable Bushes at Page 5



It is used at ejector plates of injection moulds and ball bush ejector plates working precision and serially. In addition, it is compatible to work with intermediate plate of progressive press/sheet mould as auxiliary centering component.

d	L	L1	d2	a
12	80	4	16	4
	100			
	120			
18	120	7	22	6
	140			
	160			
30	160	7	36	6
	200			
	240			

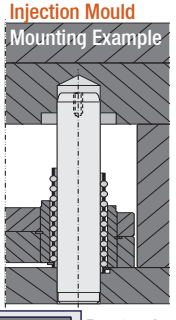
Order Form / Technical Data

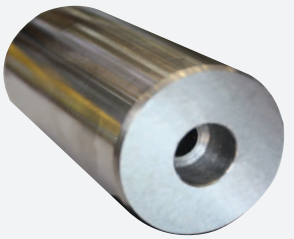
Order : G.18. d x L

Material : 1.7131
Hardness : 61 -63 HRC

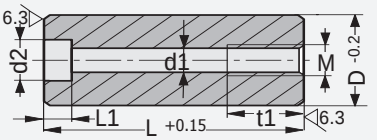
Operating Elements :
At ejector plates, ball bush precision ejector systems.

Injection Mould Mounting Example



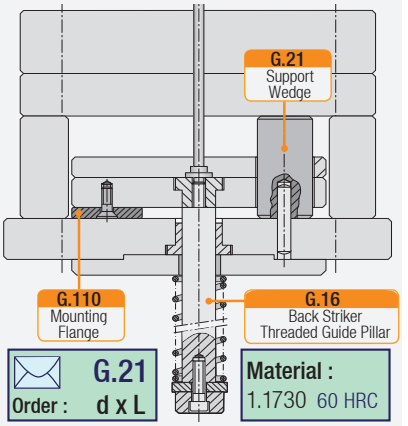


SUPPORT / WEDGE PILLAR
Support Plate - Ejector Plates G.21
Intermediate Thrust Post / Wedge



D	L	d1	d2	L1	t1	M
32	46	6.5	11	6.5	15	M8
	56					
	66					
	76					
	86					
	96					
40	46	8.5	15	9.0	20	M10
	56					
	66					
	76					
50	86					
	96					
	116					
63	56	8.5	15	9.0	20	M10
	66					
	76					
	86					
80	96	10.5	18	11	25	
	116					
	136					
	156					

At injection moulds; Thrust wedge that can be used in order to avoid dent between support plate (H4) and bottom joint plate (H5A)also can be provided working of ejector plates more rigidly and sensitively, in order to avoid clicking (Gap), G.110 Mounting Flange can be used.

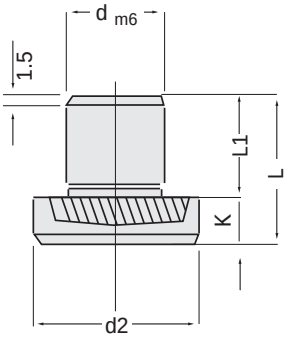


Order : G.21 d x L

Material : 1.1730 60 HRC

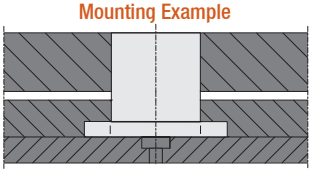


THRUST PLATE G.120
Mould Plate, Thrust Stop Pin



Stop Pin / Thrust: It is compatible to use between holder plates of injection or press moulds or as mould inner equipment

Mounting Example



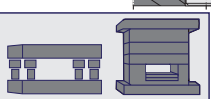
Mould Plate, Thrust Stop Pin

Product Order	G.120 Ø 8	G.120 Ø 14
d	8	14
L	17	21
L1	12	15
d2	16	24
K	5	6

Order : G.120. d x L

Material : UNI 16 Cr Ni 4
Hardened and Grinded

Operating Elements :
It is used as thrust or equipment at injection or press moulds and between holder plates.

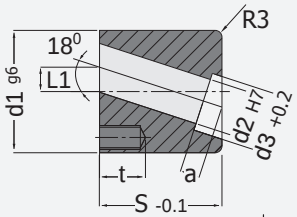


Production GTH

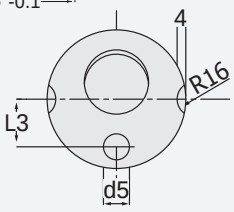


CORE ANGULAR BUSH G. 61

Inclined, Core Pin Holder







Cam Pin Bearing

This unit eliminates angular perforation requirement, to insert this unit, only a hole is perforated at the front of the mould.

Angular - Core Pin Bearing G. 61

Product Order	12	14	16	20	25
d2	12	14	16	20	25
d1	32	36	40	45	50
d3	16	18	20	25	29
d5	M.6	M.8	M.8	M.8	M.8
S	36	36	46	46	56
L1	7	7	8.5	8.5	10
L3	10	12	13.5	15	16
a	10	10	10	10	12
t	12	16	16	16	16

Order : G.61. d2

Material : 1.7131 (16 MnCr 5)
Hardness : 58 -62 HRC

Operating Elements :
G.14 Angular Pin and G.17 Guide Pillar

Injection Core Guide Pillar G. 14

d	L	L1	L2	L3	d1	R	SW
8	40	10	10	8	M.5	4	7
	50						
	63						
	80						
	100						
10	50	12	10	9	M.6	5	8
	63						
	80						
	100						
12	50	12	12	9	M.6	6	10
	63						
	80						
	100						
	125						
16	63	15	15	12	M.8	8	13
	80						
	100						
	125						
	160						
	200						
20	63	20	16	15	M. 10	10	16
	80						
	100						
	125						
	160						
	200						
	250						
25	80	20	20	15	M. 12	12.5	21
	100						
	125						
	160						
	200						
	250						
32	100	25	25	18	M. 16	16	27
	125						
	160						
	200						
	250						

Order : G.14. d x L

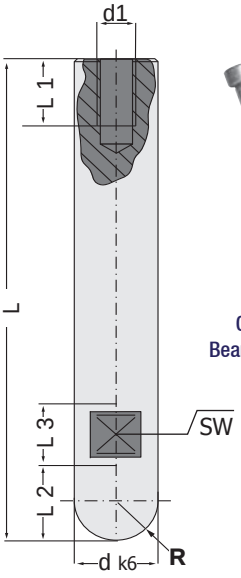
Material : 1.7131 (16 MnCr 5)
Hardness : 58 -62 HRC

Operating Elements :
It is used with G.61 Core Pin Bearing as a set.



Injection CORE GUIDE PILLAR G. 14

Inclined - Threaded, Veldon Guide Pillar



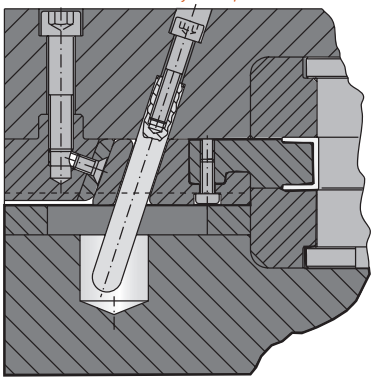


Cam Pin Bearing / Bush

GTH Mould Guide Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding).

It is compatible to use at injection moulds, angular Guide Pillar positioning, core systems as cam pin.

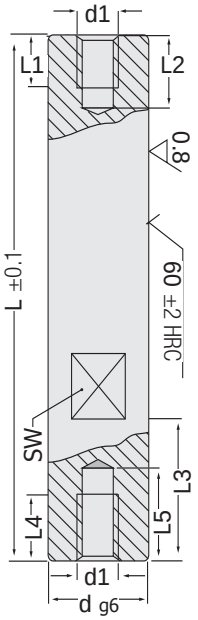
Mounting Example



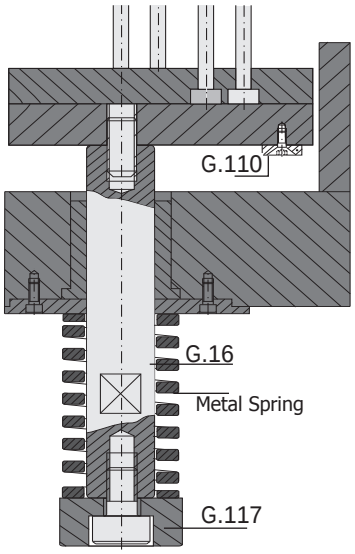


VELDON EJECTOR - THREADED GUIDE PILLAR

Injection - Back Striker G.16



GTH Mould Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding).



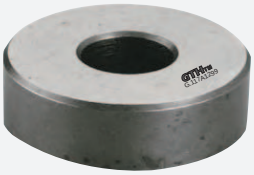
Injection - Back Striker G. 16

d	L	d1	L1	L2	L3	L4	L5	SW
10	60	M.6	9	14	30	20	25	8
	70							
	80							
	100							
	140							
14	60	M.8	12	15	32	20	25	10
	80							
	100							
	120							
	140							
	180							
16	60	M. 10	15	17	35	30	37	12
	70							
	80							
	100							
	120							
	140							
	200							
18	100	M. 10	15	17	35	30	37	14
	120							
	140							
	160							
	180							
	200							
	220							
	240							
20	120	M. 12	18	26	50	40	48	14
	140							
	160							
	180							
	200							
	240							
24	120	M. 12	18	26	50	40	48	17
	140							
	160							
	180							
	200							
	240							
	260							
34	160	M. 16	20	29	60	40	49	24
	200							
	240							
	260							
	300							

Order : **G.16. d x L**

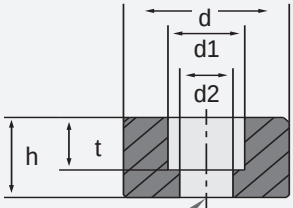
Material : 1.7131 (16 MnCr 5)
Hardness : 58 -62 HRC

Operating Elements :
G.117 Locking Washer - Installation with spring and bolt - Striker Blocker Set G.110 Mounting Flange



LOCKING WASHER G.117

Back Striker - Mounting Set



Cylinder Head Cap Screw

Back Striker - Mounting Set

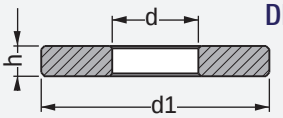
d	h	t	d1	d2
15	10	8.4	11	6.6
22	14	11	14.5	9
36	20	13.5	17.5	11
46	25	15.5	20	14
56	32	21	26	18



G.114 THICK MOUNTING WASHER

Mould Inner Mounting Washer / Thick

DIN 6340



ER-EL

Bolt	d	d1	h	Weight
M.6	6.4	17	3	6 gr.
M.8	8.4	23	4	10 gr.
M.10	10.5	28	4	16 gr.
M.12	13	35	5	35 gr.
M.14	15	40	5	40 gr.
M.16	17	45	6	60 gr.
M.18	19	45	6	60 gr.
M.20	21	50	6	75 gr.

Order : **G.117. d x h**
G.114. d x h

Material : Ck 45 DIN
Hardness : 35 -38 HRC

Operating Elements :
At mould inner mounting

SHOULDERED GUIDE PILLAR With Collar, Shouldered

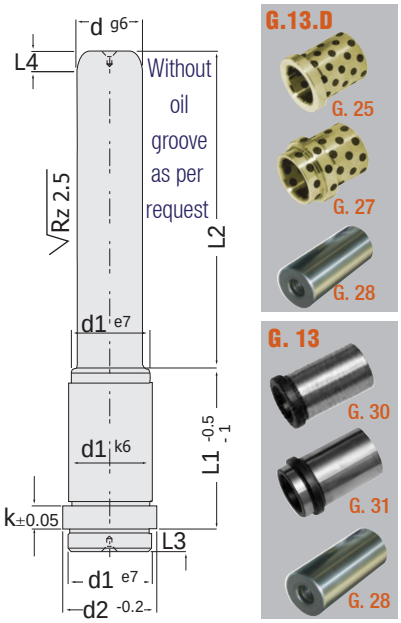
d	L1	L2	L3	L4	d1	d2	k
15 14	66	55	9	7	20	25	6
		65					
		85					
		95					
		105					
		125					
15 14	76	35	9	7	20	25	6
		55					
		75					
		95					
		125					
15 14	86	55	9	7	20	25	6
		75					
		95					
15 14	96	55	9	7	20	25	6
		75					
		95					
15 14	116	75	9	7	20	25	6
18 20	17	35	9	7	26	31	6
		55					
		75					
		120					
18 20	22	35	9	7	26	31	6
		45					
		65					
		85					
		95					
		115					
18 20	27	35	9	7	26	31	6
		45					
		65					
		85					
		105					
		125					
		165					
		225					
		245					

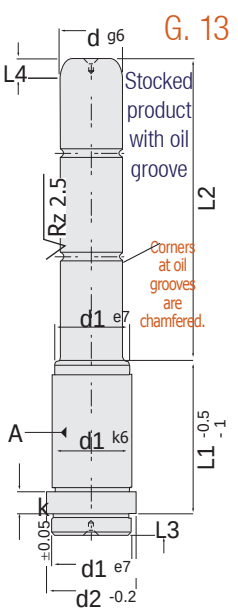
d	L1	L2	L3	L4	d1	d2	k
15 14	17	35	9	7	20	25	6
		55					
		75					
		95					
15 14	22	30	9	7	20	25	6
		50					
		70					
		90					
		110					
		125					
		150					
15 14	27	30	9	7	20	25	6
		45					
		65					
		85					
		105					
		125					
		145					
		165					
15 14	36	35	9	7	20	25	6
		55					
		75					
		95					
		115					
		125					
		145					
		155					
15 14	46	35	9	7	20	25	6
		45					
		65					
		85					
		105					
		125					
		145					
15 14	56	35	9	7	20	25	6
		55					
		75					
		95					
		135					



WITH COLLAR / SHOULDERED GUIDE PILLAR

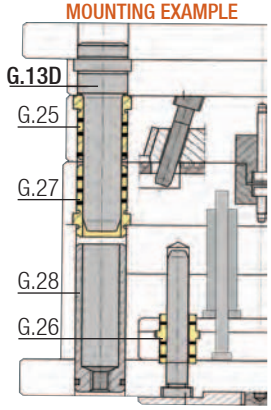
Centering Guide Pillar with / without Oil Groove



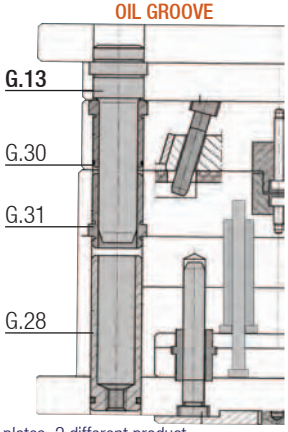


GTH Mould Guide Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding).

G 13D PLAINGUIDE PILLAR MOUNTING EXAMPLE



G 13 GUIDE PILLAR WITH OIL GROOVE



Note: To avoid reverse closing of mould holder plates, 2 different product ranges are used. Main Dimensions: 14 -20 -24 -30 -40 Other Intermediate dimensions: 15 -18 -22 -32 -42. The products with oil groove are available at our stocks. To avoid reverse closing of mould holder plates, can be used at 3 Pcs. main dimension With Collar Guide Pillar and 1 Pcs. interm. dimension With Collar Pillars.

Example:
3 Pcs. 20's
+ 1 Pcs. 18's.

Contd 34

Order :
G.13.
G.13D.
d x L1 x L2

Material : 1.7131 (16 MnCr 5)
Hardness : 58 - 62 HRC
Hardness Depth : ≥ 1.8 mm
Case Hardening

Operating Elements :
G.28 Retaining Bush
G.31 Steel With Collar Bush G.27 With Collar Self-lubricating Bush

WITH COLLAR / SHOULDERED GUIDE PILLAR

With Oil Groove G.13.D

With Oil Groove G. 13

d	L1	L2	L3	L4	d1	d2	k
18 20	36	35	9	7	26	31	6
		55					
		75					
		95					
		115					
		135					
		165					
		225					
		255					
18 20	46	35	9	7	26	31	6
		45					
		65					
		85					
		105					
		135					
		165					
		245					
18 20	56	35	9	7	26	31	6
		55					
		75					
		95					
		115					
		135					
		155					
18 20	66	35	9	7	26	31	6
		55					
		75					
		95					
		115					
		135					
		145					
18 20	76	35	9	7	26	31	6
		55					
		75					
		95					
		115					
		135					

d	L1	L2	L3	L4	d1	d2	k
18 20	86	55	9	7	26	31	6
		75					
		95					
		125					
		135					
18 20	96	55	9	7	26	31	6
		75					
		95					
18 20	116	75	9	7	26	31	6
		115					
18 20	136	135	9	7	26	31	6
22 24	17	35	9	7	30	35	6
		55					
		75					
22 24	22	35	9	7	30	35	6
		55					
		75					
		95					
		105					
		130					
22 24	27	35	9	7	30	35	6
		45					
		65					
		85					
		105					
		125					
		165					
		205					
		245					
22 24	36	35	9	7	30	35	6
		55					
		75					
		95					
		115					

d	L1	L2	L3	L4	d1	d2	k
22 24	36	135	9	7	30	35	6
		165					
		205					
		245					
		285					
22 24	46	35	9	7	30	35	6
		45					
		65					
		85					
		105					
		125					
		165					
		205					
22 24	56	35	9	7	30	35	6
		55					
		75					
		95					
		115					
		135					
		165					
		205					
22 24	66	35	9	7	30	35	6
		55					
		75					
		95					
		115					
		135					
		155					
22 24	76	35	9	7	30	35	6
		55					
		75					
		95					
		115					
		145					
22 24	86	55	9	7	30	35	6
		75					
		95					
		125					
		135					
22 24	96	55	9	7	30	35	6
		75					
		95					
		125					

d	L1	L2	L3	L4	d1	d2	k
22 24	106	55	9	7	30	35	6
		75					
		95					
		115					
22 24	116	75	9	7	30	35	6
		115					
		155					
22 24	136	95	9	7	30	35	6
		135					
32 30	27	35	9	7	42	47	6
		45					
		65					
		85					
		105					
		125					
		145					
		165					
		185					
		245					
		285					
32 30	36	35	9	7	42	47	6
		55					
		75					
		95					
		115					
		135					
		155					
		245					
		285					
32 30	46	45	9	7	42	47	6
		65					
		85					
		105					
		125					
		145					
		165					
		245					
		285					

Note: To avoid reverse closing of mould holder plates, 2 different product range are used.
Main Dimensions : 14 -20 -24 -30 -40 Other **Intermediate Dimensions: 15 -18 -22 -32 -42**
The products with oil groove are available at our stocks. To avoid reverse closing of mould holder plates, can be used at 3 Pcs. main dimension With Collar and 1 Pcs. Intermediate With Collar Guide Pillar.

Example: 3 Pcs. 20's + 1 Pcs. 18's.



BOTH Produces Sells Affordable Prices GTH

Order : G.13. G.13D. d x L1 x L2

Contd 35



Section Injection Mould

WITH COLLAR GUIDE PILLAR With/ Without Oil Groove G.13 /D

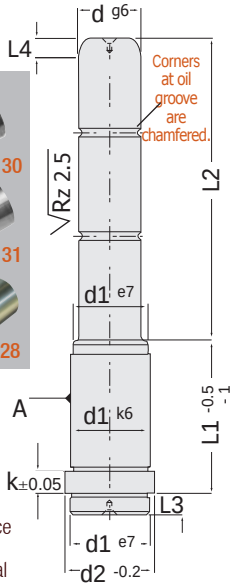
d	L1	L2	L3	L4	d1	d2	k
32 30	56	45	9	7	42	47	6
		55					
		75					
		95					
		115					
		135					
		155					
		175					
		245					
		295					
32 30	66	45	9	7	42	47	6
		55					
		75					
		95					
		115					
		135					
		155					
		175					
		245					
		295					
32 30	76	55	9	7	42	47	6
		75					
		95					
		115					
		135					
		155					
		225					
32 30	86	55	9	7	42	47	6
		75					
		95					
		115					
		135					
		155					
		225					
32 30	96	55	9	7	42	47	6
		75					
		95					
		115					
		135					
		155					
		205					
32 30	106	75	9	7	42	47	6
		95					
		115					
		125					
		145					
		165					
32 30	116	75	9	7	42	47	6
		95					
		115					
		135					
		155					
32 30	136	95	9	7	42	47	6
		115					
		135					
		155					
32 30	156	115	9	7	42	47	6
		155					
32 30	196	155	9	7	42	47	6
		195					
42 40	46	95	12	7	54	60	10
		165					
42 40	56	75	12	7	54	60	10
		115					
		155					
		195					
42 40	66	75	12	7	54	60	10
		135					
42 40	76	75	12	7	54	60	10
		115					
		175					
42 40	86	75	12	7	54	60	10
		135					
42 40	96	75	12	7	54	60	10
		115					
		155					
42 40	116	95	12	7	54	60	10
		135					
		195					
42 40	136	95	12	7	54	60	10
		135					
		215					
42 40	156	115	12	7	54	60	10
		155					
		215					
42 40	196	155	12	7	54	60	10
		195					
		235					
42 40	246	165	12	7	54	60	10
		245					



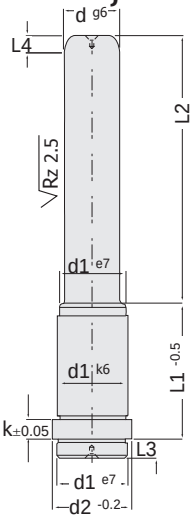
G.13
GUIDE PILLAR WITH COLLAR
With Oil Groove - Guide Pillar
With Collar Centering Guide Pillar





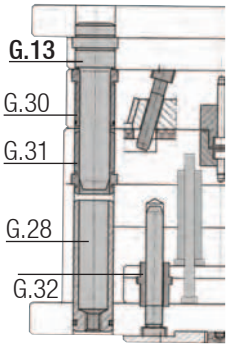


GUIDE PILLAR WITH COLLAR
Without Oil Groove G.13.D
Centering Guide Pillar

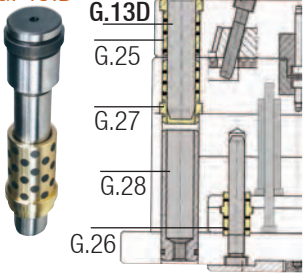


GTH Mould Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding).





Without Oil Groove
As per request
G. 13.D



Order : G.13. G.13D. **d x L1 x L2**

Material : 1.7131 (16 MnCr 5)
Hardness : 58 - 62 HRC
Hardness Depth : ≥ 1.8 mm
Case Hardening

Usage : G.28 Retaining Bush
G.31 Steel With Collar Bush
G.27 With Collar Self-lubricating Bush

GUIDE PILLAR SHOULDERED TYPE Without Oil Groove G. 12.D Without Oil Groove G. 12

d	L1	L2	d2	d3	k
40	56	156	54	58	10
		186			
40	66	66	54	58	10
		96			
		116			
		136			
		166			
		196			
40	76	76	54	58	10
		106			
		126			
		146			
		166			
		196			
		216			
40	86	86	54	58	10
		126			
		146			
		176			
		206			
		226			
40	96	96	54	58	10
		136			
		156			
		186			
		216			
		236			
40	106	106	54	58	10
		126			
		156			
		186			
		226			
		246			
40	116	116	54	58	10
		136			
		166			
		196			
		236			
		256			
40	126	126	54	58	10
		166			
		196			
		236			
		266			
40	136	136	54	58	10
		196			
		226			
		266			

d	L1	L2	d2	d3	k
30	46	66	39	43	10
		76			
		96			
		116			
30	56	36	39	43	10
		46			
		56			
		66			
		76			
		86			
		106			
		126			
30	66	36	39	43	10
		46			
		56			
		66			
		76			
		86			
		96			
		116			
		136			
30	76	36	39	43	10
		46			
		56			
		76			
		96			
		116			
		136			
30	86	36	39	43	10
		46			
		66			
		86			
		106			
		126			
		146			
30	96	46	39	43	10
		66			
		86			
		106			
		126			
		146			
30	106	56	39	43	10
		76			
		96			
		116			
		136			
30	116	56	39	43	10
		76			
		96			
		116			
		136			
40	56	56	54	58	10
		86			
		106			
		126			

d	L1	L2	d2	d3	k
25	56	56	34	38	8
		66			
		76			
		96			
		116			
25	66	26	34	38	8
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		126			
25	76	26	34	38	8
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		126			
25	86	36	34	38	8
		46			
		56			
		66			
		76			
		86			
		96			
		116			
		136			
25	96	36	34	38	8
		46			
		56			
		66			
		76			
		86			
		96			
		116			
		136			
25	106	46	34	38	8
		56			
		66			
		76			
		86			
		96			
		116			
		136			
30	36	36	39	43	10
		46			
		56			
		66			
		86			
		106			
30	46	36	39	43	10
		46			
		56			

d	L1	L2	d2	d3	k
20	66	56	28	32	6
		66			
		76			
		96			
		116			
20	76	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		126			
20	86	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		126			
20	96	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		126			
25	26	26	34	38	8
		36			
		46			
		56			
		66			
		76			
		96			
25	36	26	34	38	8
		36			
		46			
		56			
		66			
		76			
		86			
		106			
25	46	26	34	38	8
		36			
		46			
		56			
		66			
		76			
		96			
		116			
25	56	26	34	38	8
		36			
		46			

d	L1	L2	d2	d3	k
18	56	26	26	31	6
		36			
		46			
		56			
		66			
		86			
		106			
		126			
18	66	26	26	31	6
		36			
		56			
		76			
		96			
		116			
18	76	26	26	31	6
		46			
		66			
		86			
		106			
		126			
18	86	26	26	31	6
		46			
		66			
		86			
		106			
		126			
20	26	26	28	32	6
		36			
		46			
		56			
		66			
		86			
20	36	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		96			
20	46	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		86			
		106			
20	56	26	28	32	6
		36			
		46			
		56			
		66			
		76			
		96			
		116			
20	66	26	28	32	6
		36			
		46			

Order : G.12. / D
d x L1 x L2

Material : 1.7131
Hardness : 58 - 62 HRC
Hardness Depth : ≥ 1.8 mm

Usage :G.30 Steel Bush
G.25 Self-lubricating Guide Bush



Section Injection Mould

BOTH Produces Sells Affordable Prices
GTH

GUIDE PILLAR SHOULDERED TYPE G. 12

d	L1	L2	d2	d3	k
16	56	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		96			
		116			
16	66	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		86			
		106			
		116			
16	76	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		96			
		116			
16	86	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		96			
		116			
18	26	26	26	31	6
		36			
		46			
		56			
		66			
		86			
18	36	26	26	31	6
		36			
		46			
		56			
		66			
		86			
		106			
18	46	26	26	31	6
		36			
		46			
		56			
		66			
		86			
		106			
		126			

d	L1	L2	d2	d3	k
12	26	26	16	19	4
		36			
		46			
		56			
12	36	26	16	19	4
		36			
		46			
		56			
12	46	26	16	19	4
		36			
		46			
		56			
		66			
14	26	26	20	25	6
		36			
		46			
		56			
		66			
		76			
14	36	26	20	25	6
		36			
		46			
		56			
		66			
		86			
14	46	26	20	25	6
		36			
		46			
		56			
		76			
		96			
14	56	26	20	25	6
		36			
		46			
		66			
		86			
		106			
16	26	26	24	28	6
		36			
		46			
		56			
		76			
		96			
16	36	26	24	28	6
		36			
		46			
		56			
		66			
		86			
		106			
16	46	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		96			
		116			

Contd 36

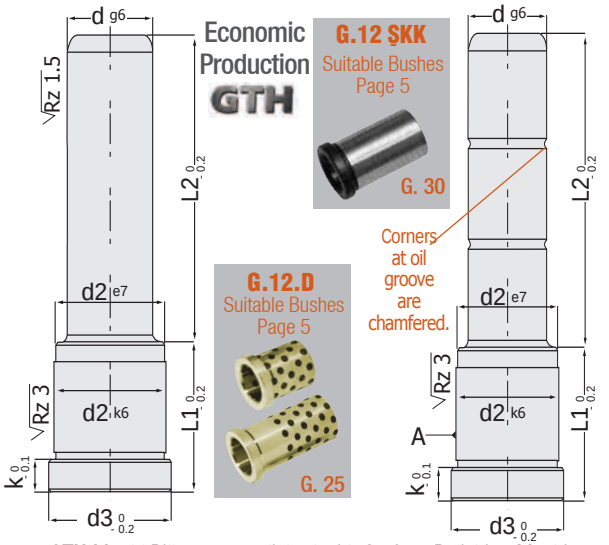
The Tolerances and Working Spaces of our Products has been Specified in Accordance With DIN 7161



G. 12.D G. 12

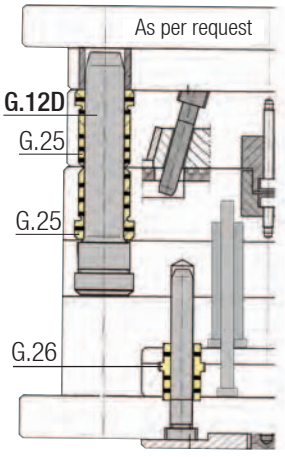
GUIDE PILLAR SHOULDERED TYPE G. 12 / D

Guide Pillar, With/Without Oil Groove

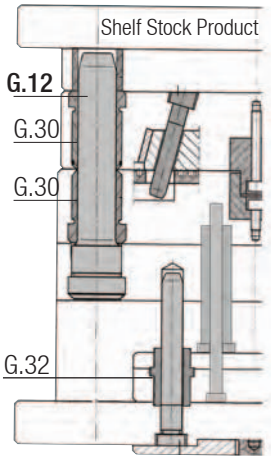


GTH Mould Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding).

G 12D PLAIN GUIDE PILLAR MOUNTING EXAMPLE



G 12 GUIDE PILLAR WITH OIL GROOVE



Material : 1.7131 (16 MnCr 5)
Hardness : 58 - 62 HRC
Hardness Depth : ≥ 1.8 mm
Case Hardening

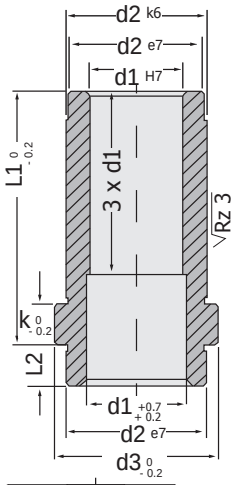
Order : G.12.
G.12D.
d x L1 x L2

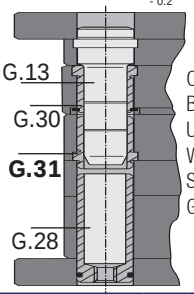
Operating Elements :
G.30 Steel Bush
G.25Self-lubricating Bush



Bush with Collar G.31

Steel Bush With Centre Collar





Centering Bushes Using With With Collar Shouldered Guide Pillar

d1	L1	d2	d3	k	L2
15 **14**	17 22 27 36 46 56 66 76 86 96 116	20	25	6	9

Order : G.31. d1 x L1

Material : 1.7131 (16 MnCr 5)
Hardness : 62 ± 2 HRC
Hardness Depth : ≥ 1.8 mm

Operating Elements :G.13 - G.28
With Collar Guide Pillar-Retaining Bush

Bush With Collar G.31

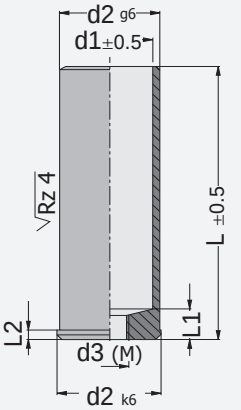
d1	L1	d2	d3	k	L2
18 **20**	17 22 27 36 46 56 66 76 86 96 106 116 136	26	31	6	9
22 **24**	17 22 27 36 46 56 66 76 86 96 106 116 136 156	30	35	6	9
32 **30**	27 36 46 56 66 76 86 96 106 116 126 136 156 196	42	47	6	9
42 **40**	46 56 66 76 86 96 116 136 156 196 246	54	60	10	12

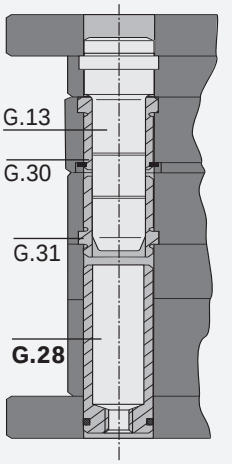


RETAINING BUSH G.28

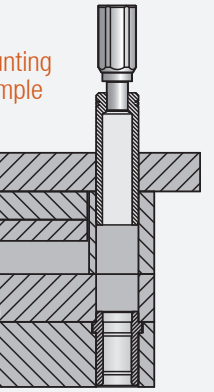
Centering Bush Steel

Centering Retaining Bush Using Shouldered Guide Pillar With Collarand Bush With Collar





Mounting Example



Retaining Bush G.28

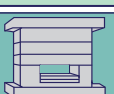
d2	L	d1	d3	L1	L2
20	30 40 60 80 100 120 140 160	16	M. 8	13	2.5
26	30 40 60 80 100 120 140 160 180	21	M. 10	13	2.5
30	40 60 80 100 120 140 160 180 200 240	25	M. 12	13	2.5
42	40 60 80 100 120 140 160 180 200 220 260 300	33	M. 12	13	4.5
54	60 80 120 160 200 240 280	43	M. 12	13	4.5

BOTH Produces Sells
Affordable Prices

Order : G.28. d2 x L

Material : 1.7131 (16 MnCr 5)
Hardness : 62 ± 2 HRC
Hardness Depth : ≥ 1.8 mm

Operating Elements : G.13 - G.31
With Collar Guide Pillar/With Collar Bush



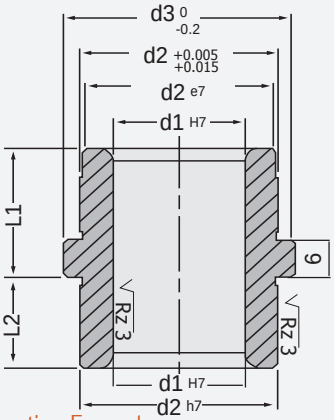
Section Injection Mould



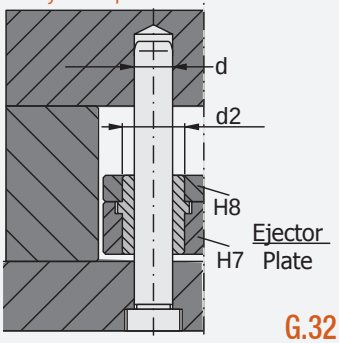
G.32

Guide Bush with Collar

Steel Bush With Centre Collar



Mounting Example



G.32

Steel Bush with Centre Collar

d1	L1	d2	d3	L2
12	16	16	19	12
14	16	20	25	12
16	16	24	28	12
18	16	26	31	12
20	16	28	32	12
24	21	34	38	16
25	21	34	38	16
30	21	39	43	16

Order : **G.32. d1 x L1**

Material : 1.7131 (16 MnCr 5)
Hardness : 62 ± 2 HRC
Hardness Depth : ≥ 1.8 mm

Operating Elements : G.11
Guide Pillar with Oil Groove

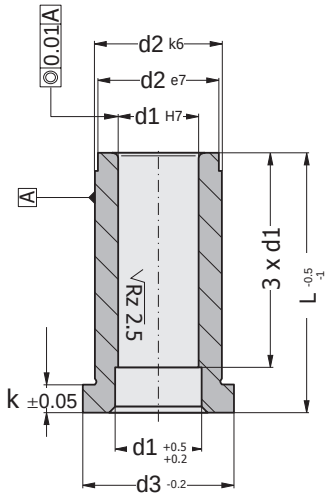
Steel Guide Bush G.30

d1	L	d2	d3	k
12	26 36 46 56 66	16	19	4
14	26 36 46 56 66 76	20	25	6
16	26 36 46 56 66 76 86	24	28	6
18	26 36 46 56 66 76 86	26	31	6
20	26 36 46 56 66 76 86 96	28	32	6
25	26 36 46 56 66 76 86 96 106	34	38	8
30	36 46 56 66 76 86 96 106 116	39	43	10
40	46 56 66 76 86 96 106 116 126 136 146	54	58	10

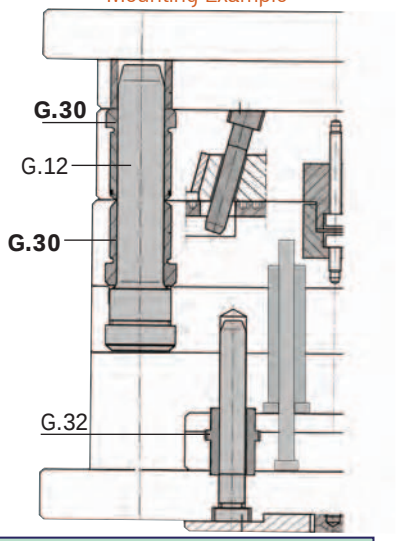


GUIDE BUSH G.30

Steel Guide Bush



Mounting Example



Order : **G.30. d1 x L**

Material : 1.7131 (16 MnCr 5)
Hardness : 62 ± 2 HRC
Hardness Depth : ≥ 1.8 mm

Operating Elements : G.11 - G.12 - G.13



Working Direction



The bushes can be worked both radial and axial.

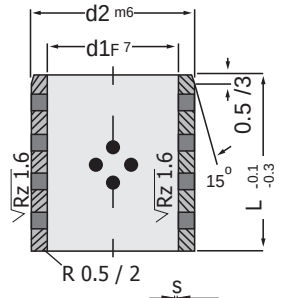


Self-lubricating used at ejector system with unlubricated Guide Pillar G. 17 at ejector plate pillaring system of injection moulds.

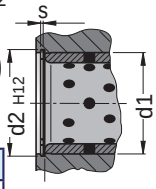
SELF-LUBRICATING BUSH G.48

Plain Bronze Guide Bush

Graphite, Self-lubricating





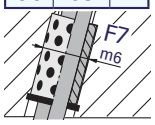


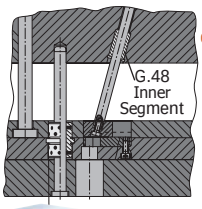
Inner Segment

d1	d2	S
25	26.2	1.2
28	30	1.2
35	37	1.5
40	42.5	1.75
50	54	2
60	63	2

Hole Tolerance For Shrink Fit : H7

Hole Tolerance To Fix with Adhesive G.7 If required, secure with sleeves or inner segment.





For your different device designs, at Machine Press - Inj. and Mould Systems



Order : **G.48. d1 x d2 x L**

Material : Bronze Graphite Self-lubricating

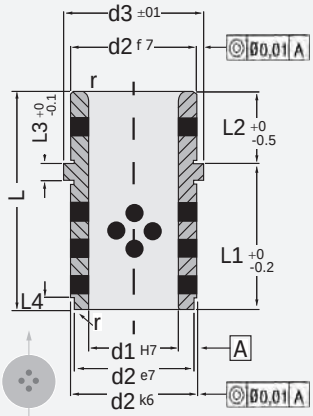
d1	L	d2
8	8	12
	10	
	12	
	15	
10	10	14
	12	
	15	
	20	
12	10	18
	12	
	16	
	20	
	25	
	30	
16	12	22
	16	
	20	
	25	
	30	
	35	
	40	
18	20	24
	25	
	30	
	35	
	40	
20	20	28
	25	
	30	
	35	30
	40	
25	20	33
	25	
	30	
	35	35
	40	
	50	
30	25	38
	30	
	35	
	40	40
	50	
	60	
32	25	38
	30	
	35	
	40	42
	50	
	60	
35	30	44
	40	
	50	45
	60	
40	25	50
	30	
	35	
	40	55
	50	
	60	
45	30	55
	35	
	40	
	50	60
	60	
50	30	60
	35	
	40	
	50	65
	60	
	70	
	80	
	100	
60	30	74
	35	
	40	
	50	75
	60	
	70	
	80	
	100	
70	35	85
	40	
	50	
	60	90
	70	
	80	
	100	
80	40	96
	50	
	60	
	70	100
	80	
	100	
	120	
	140	
100	50	120
	60	
	80	
	100	
	120	
	140	
120	80	140
	100	
	120	
	140	
150	100	170
	150	

SELF-LUBRICATING - CCB. BUSH G.26

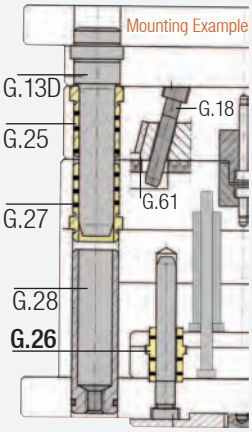
Bronze Bush with Centre Collar

Injection Moulds at Ejector Plates Pillaring System

Self Lubricating



Working Direction





Lithium Grease:
Self-lubricating Bush/Plate Lubricating Grease
Order No: 950200
To avoid abrasion of Self-lubricating mould component products at first use and to activate permanent lubricants, friction surfaces should be covered with lubricating film (One time).

SELF-LUBRICATING CCB BUSH G.26

Injection Mould at Ejector Plate Pillaring System

d1	L	d2	d3	L1	L2	L3	L4	r
★ 14	26	20	25	17	9	6	2	1
★ 16	26	20	25	17	9	6	2	1
★ 20	39	26	31	22	17	6	2	1.5
22	49	30	35	27	22	6	4	1.5
★ 25	49	30	35	27	22	6	2	2
★ 30	63	42	47	36	27	6	2	5
40	63	50	60	36	27	8	8	5
50	92	63	72	55	37	8	8	5

★Our Standard Stocks:
'd' 14 - 16 - 20
25 - 30

Production As per request:
'd' 22
40 - 50

Order : **G.26. d x L**

Material : Bronze Material Self-lubricating Providing Lubrication

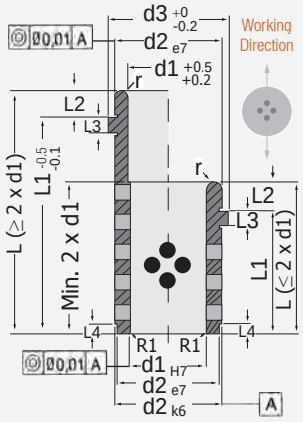
Usage: G.17 Guide Pillar without Oil Groove
G.15 Thick backed Guide Pillar (Press Moulds)



Self-lubricating Centering Bushes Using at Mould Pillaring System With Collar Shouldered Guide Pillar G.13D without Oil Groove.

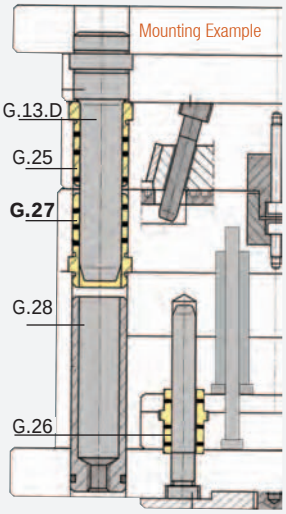


SELF-LUBRICATING - TCB. BUSH
Bronze Bush With Collar G.27



Graphite, Self-lubricating

It is used with G.13.D columns at injection moulds. By centering mould in length, more higher stability is provided. In this way, precision and long period working environment provides with other equipment (ejector - core etc., H7 tolerance is recommended at mutual working systems.



Order : G.27. d x L

Material : Bronze Graphite Self lubricating

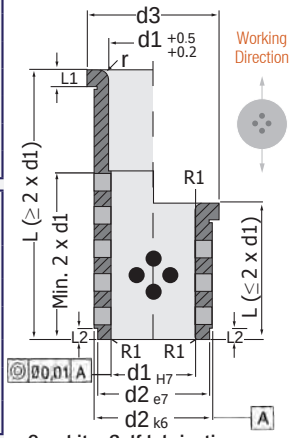
Operating Elements : G.13.D illar Guide Pillar without Oil Groove

d1	L	d2	d3	L1	L2	L3	L4	r
16	25	20	25	17	8	6	2	1
	30			22				
	35			27				
	44			36				
	54			46				
	64			56				
	74			66				
	84			76				
20	25	26	31	17	8	6	2	2
	30			22				
	35			27				
	44			36				
	54			46				
	64			56				
	74			66				
	84			76				
25	30	30	35	22	8	6	3	3
	35			27				
	44			36				
	54			46				
	64			56				
	74			66				
	84			76				
	94			86				
	104			96				
	124			116				
30	35	42	47	27	8	6	4	3
	44			36				
	54			46				
	64			56				
	74			66				
	84			76				
	94			86				
	104			96				
	124			116				
	144			136				
40	58	54	60	46	12	10	5	3
	68			56				
	78			66				
	88			76				
	98			86				
	108			96				
	128			116				
	148			136				
	168			156				
	208			196				

Self-lubricating Bushes Using with Guide Pillar with oil groove at mould pillaring.



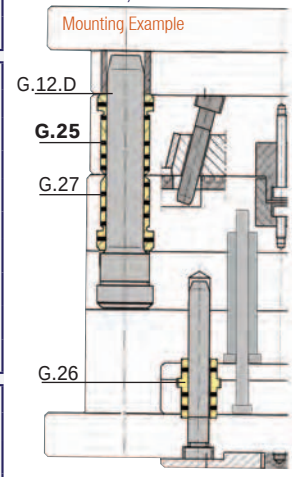
SELF-LUBRICATING - CB. BUSH
Bronze Bush G.25



Graphite, Self lubricating

It can be used with G.12.D G.17 at injection moulds. The products should be lubricated one slightly. **Temperature Resistance: 150°.** It can be worked even at humid environments. It is compatible with sudden motions (scraping and ejector) and is a product not affected from vibration and impacts.

Continuous, Stocked Products



Order : G.25. d x L

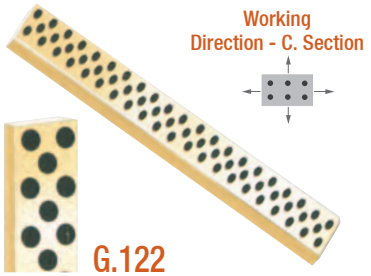
Material : Bronze Graphite Self-lubricating

Operating Elements : G.12.D Shouldered Guide Pillar without Oil Groove

d1	L	d2	d3	L1	L2	r
16	27	22	27	6	2	2
	36					
	46					
	56					
20	27	26	31	6	2	2
	36					
	46					
	56					
	66					
	76					
25	36	30	35	6	3	3
	46					
	56					
	66					
	76					
	86					
	96					
30	36	42	47	6	4	3
	46					
	56					
	66					
	76					
	86					
	96					
	116					
40	46	54	60	10	5	3
	56					
	66					
	76					
	86					
	96					
	116					
	136					

INFORMATION: Sliding bearings provide higher stability. Lubricating of these products as film is reduced negative impacts. Steel bearings produced in the past were required excessive lubrication and had breaking tendency at high strong or speeds.

SPECIFICATIONS: Perforated Structure, Oil Intake Feature - High Hardness Carbon - Nitrided Surface, Extraordinary Abrasion Resistance.

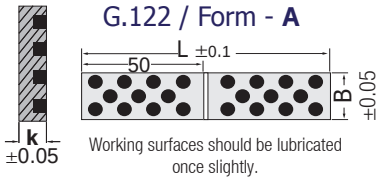


G.122

GRAPHITE-BRONZE(SELF-LUB.) PLATE

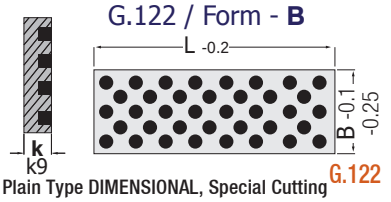
Plain Type DIMENSIONAL, Special Cutting

G.122 / Form - A



Working surfaces should be lubricated once slightly.

G.122 / Form - B

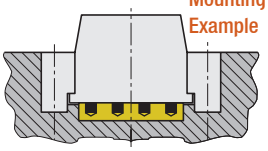


Plain Type DIMENSIONAL, Special Cutting G.122

k	L	B	Form
5.3	302	20 35 50	A
10.3	302	20 35 50	A
5	50 71 90	25	B
5	50 71 90	40	B
6	100 125 160 200	40 63	B

Long strip plates is compatible for use by opening connection holes and cutting by user (in desired length).

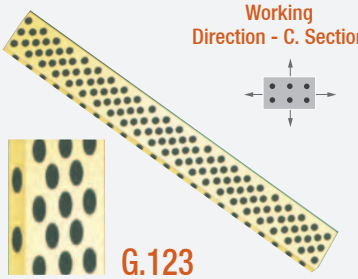
Mounting Example



Order : G.122 (One Side Self-lubricating) Form A / B : D x L x B

Material : Bronze, Graphite Self lubricating Friction Plate

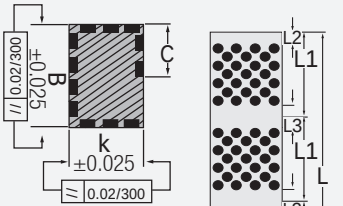
Operating Elements : Injection Moulds, Core Systems, Sliding Bearings etc.



G.123

GRAPHITE-BRONZE(SELF-LUB.) PLATE

Two Way Sliding, DIMENSIONAL, Special Cutting



Mould producers and users can be used by ordering standard product produced in 'L' length and cutting pieces suitable to their needs. Connection holes can be perforated to the pieces.

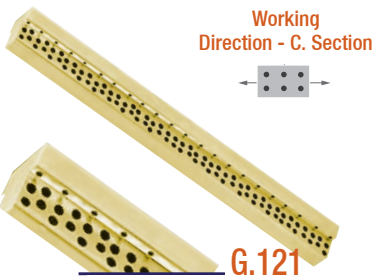
Order : G. 123 (Double Side Self-lubricating) K x B x L

Material : Bronze, Graphite Self lubricating Friction Plate

Operating Elements : Injection Moulds, Core Systems, Sliding Bearings etc.

Two Way Sliding, DIMENSIONAL, Special Cutting

k	B	C	L	L1	L2	L3
10.3	15.3	6	75 100 150 200 250 300	25	3	6
15.3	25.3	8	105 140 175 210 245 280 315 350 385 420 455 490	35	4	8
35.3	45.3	16	165 220 275 330 385 440 495	55	6	12

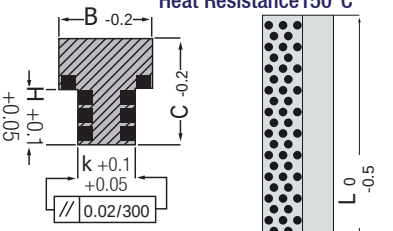


G.121

GRAPHITE-BRONZE(SELF-LUB.) PLATE

"T"Shape, DIMENSIONAL, Special Cutting

Heat Resistance150°C



STRIP / SPECIAL CUTTING

All corners are GRAPHITEBRONZE (SELFLUBRICATING) friction surfaces - grinded Self lubricating friction plates are chamfered.

Heat Resistance150°C

"T"Shape, DIMENSIONAL, Special Cutting

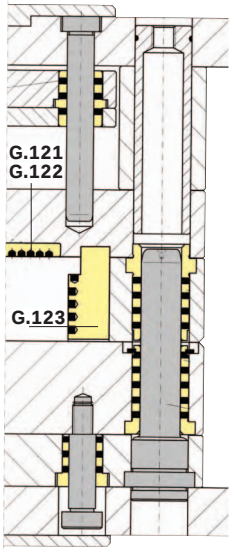
C	B	k	H	L
12	18	8	5	350
25	22	12	15	350
35	28	18	20	350

Order : ('T' Bed Self-lubricating) G.121. C x L

Material : Bronze, Graphite Self lubricating Friction Plate

Operating Elements : Injection Moulds, Core Systems, Sliding Bearings etc.

Self Lubricating Equipment provide above expected load carrying capacity at lower sliding speeds and wide temperature range, lubricant Self-lubricating orifices is positioned with suitable geometric structure. Thanks to it, maximum sliding motion provides along sliding motion. Especially, they perform well with hardened and grinded bearings. Sliding surfaces should be lubricated slightly before working.

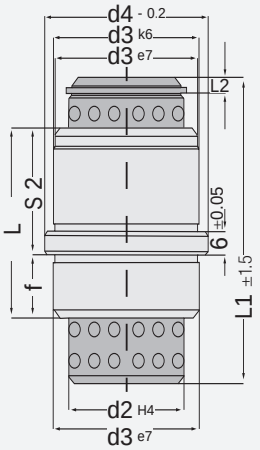




BALL BUSH BEARINGS G.29

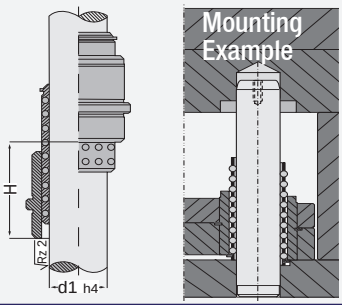
Ejector Plate Ball Bush Standard Set

Steel Short Bush / Ball Bronze Cage



It provides more precision and rapid motion of ball cage holder steel bush set and ejector plates at injection moulds.
Table that has been created set as standard.

d1 Ø	L1 mm	H Max.	L2 mm	L mm	f mm	d2 Ø	d3 Ø	d4 Ø	S2 mm
12	40	50	2.1	24	6	16	22	26	18
	56	82							
18	45	44	3	34	11	24	30	35	23
	56	66							
	71	96							
30	56	32	4.8	54	21	38	46	52	33
	75	70							
	95	110							



Order : G. 29. d1 x L1

Material : Ball Materials : 1.3505 (100Cr6)
Cage : Ms58 - Steel Bush : 1.7131 (16 MnCr 5)

Operating Elements : Injection Moulds G.18.
Ball - G.19. with Plain Guide Pillars

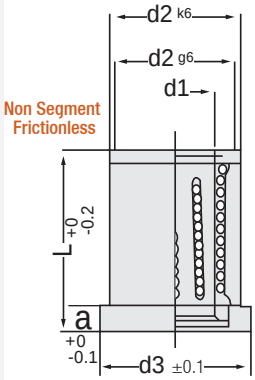




G.74 NEW PRODUCT; STEEL- BEARING BUSH G.75

BEARING BUSH

Balls are worked independently by rotating, they are not frictional.



Heat Resistance 230°C

Order : G. 74. d1 x L

Ball Materials : 1.3505 (100Cr6)
Cage : Ms58 Bronze
Steel Bush : 1.7131 (16 MnCr 5)

Usage : It is compatible to use with G.18 Guide Pillar G.19 and G.10 Guide Pillars.



GUIDE PILLAR

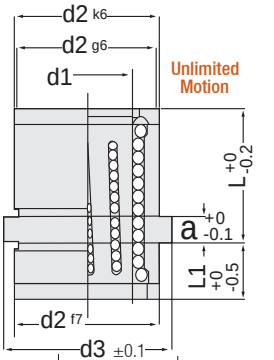
Refer page 30

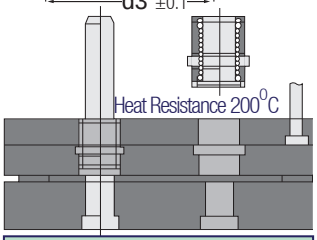
Ball Type G. 18

d	L	L1	d2	a
12	80	4	16	4
	100			
	120			
18	120	7	22	6
	140			
	160			
30	160	7	36	6
	200			
	240			

BEARING BUSH WITH CENTRE COLLAR

Free Stroke / Fast
Low Tolerance / Robust Ejector Plate Linear Ball Bearing Bush





Order : G. 75. d1 x L

Steel Bearing Bush G.74

d1 Ø	L mm	d2 Ø	d3 Ø	a mm	Ball Ø	Line Pcs.
x18	35	30	34	6	3	6
x20	35	32	36	6	3	6
	45					
	55					
x30	45	48	54	8	4	8
	63					
40	45	60	66	8	4	8
	63					

Bearing Guide Bush with Centre Collar G.75

d1 Ø	L mm	d2 Ø	d3 Ø	a mm	L1 mm	Ball Ø
12	22	24	28	6	8	3
x18	26	30	34	6	9	3
x20	26	32	36	6	9	3
	36					
25	26	40	45	6	10	3
	36					
	46					
x30	46	48	54	8	12	4
	66					
40	46	60	66	8	12	4
	66					

Material : Ball Materials : 1.3505 (100Cr6)
Cage : Ms58 - Steel Bush : 1.7131 (16 MnCr 5)

Operating Elements : Injection Moulds
G.18. Ball CC - G.19. with Plain Guide Guide Pillar

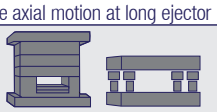
New Steel Bearing Bushes G.74 / G.75

There are balls at inclined - serial- parallel intermediate channels inside of guide and centre collar steel bushes. (Balls move by rotating in slot and frictionless.) In this way, axial motion remains limitlessly free. Also, bearing logic is provided to the steel bush. The advantage of our new product G. 75 according to other similar product G. 29.

Extra Stroke distances at unlimited axial direction and robust powerful centering is provided - Free motion unlimited with low tolerance absorbs other pinking and tauting. It is presented unlimited motion advantages with compatibility to high speeds.

The products marked with x are stocked.

Centre Collar Ejector Plate Bush G.75; Rigidity in centering with free axial motion at long ejector systems of injection moulds - Unlimited Frictional Motion. Guide Bush G.74 - Quality Control Equipments - Practical and Reliable product for machine and mould production and device design. For maintenance and cleaning: WINKEL SIGNUM SPRAY OIL is used.



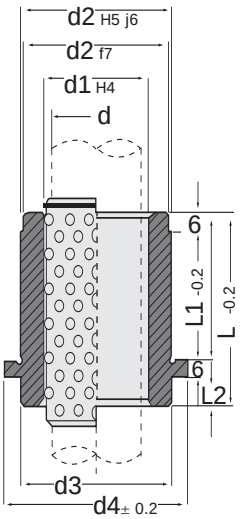




G.70.
is used with
Ball Cage
as a set.

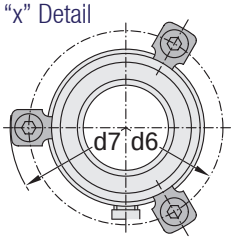
STEEL/SHORT TYPE-BALL CAGE BUSH G. 38

Press Mould Ball Cage Short Steel Guide Bush with Collar



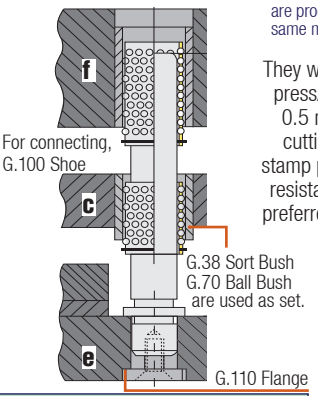
ø d	L mm	ø d1	ø d2	ø d3	ø d4	d6 d7	L1 mm	L2 mm
15 **16**	35	21 / 22	30	30	34	35	23	12
19 **20**	35	25 / 26	32	32	40	52 64.7	23	12
24 **25**	35	30 / 31	40	40	48	60 72.7	23	12
32 **30**	42	40 / 38	48	48	55	79.7 67	30	12
38 **40**	52	46 / 48	58	58	55	77 89.7	37	15
48 **50**	65	56 / 58	70	70	80	91 104	47	18
60 **63**	80	68 / 71	85	85	95	106 119	60	20
80	80	92	105	105	118	129 142	60	20

"x" Detail



Note: Two different products in Section (d) are to avoid reverse closing of mould during mounting, by using three pics. main dimensions and one pc. d= Ø 15 -19 -24 -32- 38-48 -60 mm dimensions at same mould, is avoided reverse closing of mould plate, thus symmetrical mould cluosure is ensured, side products are limited in stocks. They are produced as per request. Example : In the same mould (Ø 20 x 3 - Ø 19 x 1) = 4 Pieces

For spare sleeves, Page 46. For clamping shoe M.6 x 20 d1 = 38 mm and large sizes, 4 Pcs. Clamping Shoe.



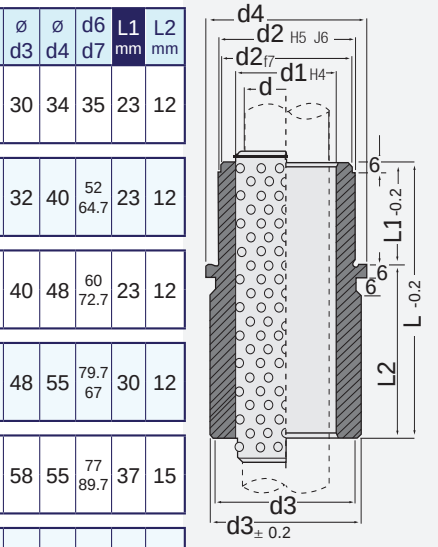
They work without problem at ball bush, press/ cutting moulds, cuttings under 0.5 mm sheet thickness and where cutting space is low and when 200 stamp per minute are exceeded. It is not resistant to the lateral loads . They are preferred in cases that sensitivity should be increased.

Order: G. 38 d x L x L1

Material : 1.7131 (16 MnCr 5)
Hardness : 61 - 63 HRC

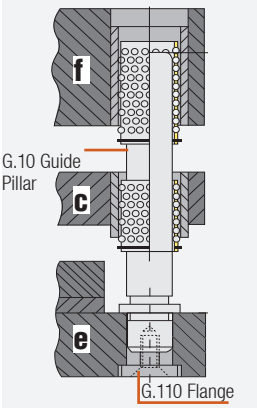
Usage : G.10 Guide Pillar, G100. Shoe x 3 are used together.

Section Press Mould



"x" Detail





STEEL / SHORT TYPE - BALL BUSH G. 37

Press Mould Ball Cage Long Steel Guide Bush with Collar





G.70.
is used with
Ball Cage
as a set.

ø d	L mm	ø d1	ø d2	ø d3	ø d4	d6 d7	L1 mm	L2 mm
15	43	21	30	32	34	35	23	20
16	59	22						36
19	43	25	32	39	40	52 64.7	23	20
20	59	26						36
24	59	30	40	46	48	60 72.7	23	36
25	79	31						56
32	75	40	48	53	55	79.7 67	30	45
30	93	38						63
38	82	46	58	63	65	77 89.7	37	45
40	108	48						71
48	97	56	70	77	80	91 104	47	50
50	127	58						80
60	116	68	85	92	95	106 119	60	56
63	150	71						90
80	120 / 150	92	105	115	118	129 142	60	60 / 90

High Precision Ball Bush: Despite providing high reliability at high speeds, contacting balls from one point, brings the system to precision status against impacts and side loads. Giving Guide Pillar diameter at upper tolerance up to the certain point, compensates this disadvantage. Working surface should be precise.

Press mould sets can be produced at special and general purpose machines, equipment and fixtures without distinction at brass ball cages, length and ball gear as per customer's requests. Mould sets and presses can be applied under normal conditions at 100ºC.

Order: G. 37 d x L x L1

Material : 1.7131 (16 MnCr 5)
Hardness : 61 - 63 HRC

Usage : G.10 Pillar, G100. Shoe x 3 are used together.

BOTH Produces Sells Affordable Prices GTH

BALL CAGE Bronze Bush G. 70

d mm	L mm	Ø d1	Ball d2	Ball r	Segment d3	Segment f	Segment s
60	160	71	73	4	87	4.8	2.5
63	180						
	200	68	70		83.1		
80	105	90	92	6	108.5	6.2	3.0
	140						
	160						
	200						
	240						



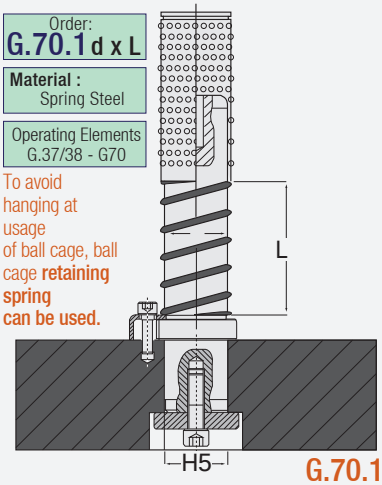
G.70.1
Ball Cage RETAINING SPRING

Order: **G.70.1 d x L**

Material : Spring Steel

Operating Elements G.37/38 - G70

To avoid hanging at usage of ball cage, ball cage **retaining spring can be used.**



G.70.1
Ball Cage RETAINING SPRING

Ø d	L mm	Note
19	Up to 40 ~ 140	Limited Stocks, production at ball systems or other mould inner designs as per request. **At L : 10 mm intervals**
20		
24	Up to 40 ~ 180	
25		
30	Up to 50 ~ 230	
32		
38	Up to 60 ~ 280	
40		
48	Up to 70 ~ 280	
50		
60	Up to 80 ~ 250	
63		

BALL CAGE Bronze Bush G. 70

d mm	L mm	Ø d1	Ball d2	Ball r	Segment d3	Segment f	Segment s
12	40	15	16	2	20.5	2.5	1.2
	56						
15	45	20	21	3	29	2.7	1.2
	56						
16	71	21	22		30.2		
18	45	24	25	3	32.6	2.8	1.2
	56						
	71						
19	45	24	25	3	33.2	2.9	1.2
	56						
	71						
20	80	25	26		34.2		
	95						
24	45	29	30	3	40.5	3.2	1.5
	56						
	71						
	80						
25	95	30	31		39.1		
	105						
	120						
32	45	39	40	4	51.4	4.0	1.8
	56						
	75						
	80						
30	95	37	38		49		
	105						
	120						
	140						
38	56	45	46	4	59.1	4.0	1.8
	71						
	80						
	95						
40	105	47	48		60.0		
	120						
	140						
	160						
48	71	55	56	4	70.2	4.3	2.0
	80						
	95						
	105						
50	120	57	58		72.6		
	140						
	160						
60	85	67	68	4	87	4.8	2.5
	95						
	105						
	120						
63	140	70	71		83.1		

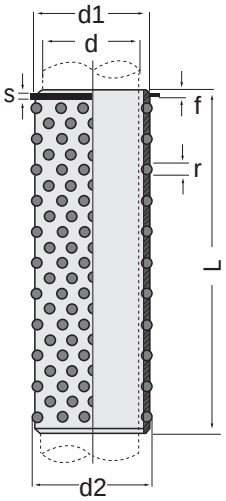
For selection of different dimensional products at table providing reverse closing of plates at press moulds, the stocks of **d:** Ø 5/16/19/24/32/38/48/60 (ball cage) products are limited, they are produced as per request.

Heat Resistance of Ball Cage is 120° C.

Ball Cages are presented with segment.

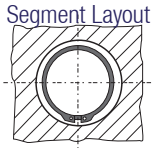


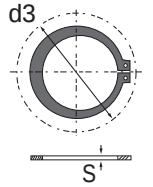
BALL CAGE Bronze Bush G. 70

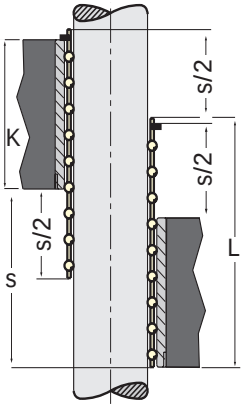


DIN 471

Segment Layout







L = K + 0.5 x s



Order: **G. 70 d x L**
With mounting segment

Material : Cage MS.58 **Ball** 100 Cr6 1.3505
Ball Sensitivity : Tolerance / +0.001

Operating Elements : Bush G 37 / G 38
Holder: G.70.1 (Spring). G70 / Segment

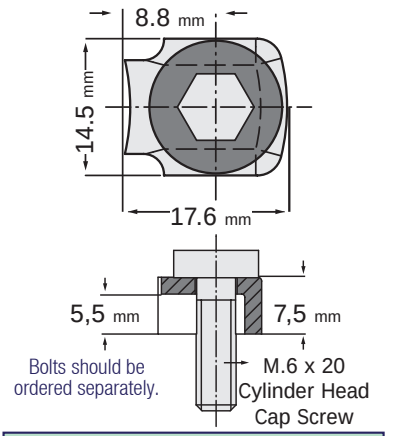
Production GTH

Section Press Mould



FISH PLATE G.100

Clamping for Demountable Guide Pillar

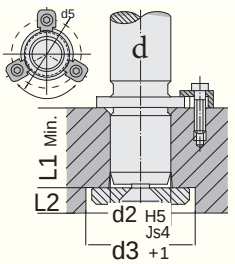


Order : G.100



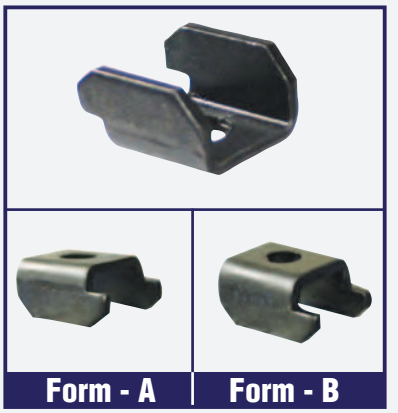
Guide Pillar Mounting Flange G.110

For product info, refer Page 16.



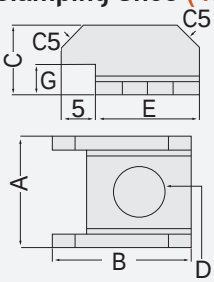
Mounting Dimensions and Tolerances of Demountable Mould Columns (Soft Shrink Fit)
Given Dimensions: Standard Centre Collar Guide Pillar G.10 has recommended for product.

d	d2 H5	d3 +1	L1	L2
15 / 16	+0.008	22	14.5	5.5
19 / 20	+0.009	25	17.5	5.5
24 / 25	+0.009	32	24.5	5.5
30 / 32	+0.011	40	29.5	7.5
38 / 40	+0.011	50	27.5	9.5
48 / 50	+0.013	60	37.5	9.5
60 / 63	+0.013	73	37.5	9.5
80	+0.013	93	48	12



BUSH HOLDER G.101

Clamping Shoe (NAAMS) A-B



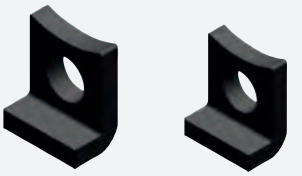
While using for Self-lubricating guide bushes and other bush components with bushes, for Ø ≤ 63' 2 Pcs. and for Ø ≥ 80' 3 Pcs. holders are used. Mounting bolts are supplied separately.

For Ø6.5 - M.6 - Ø8.5 - M.8

Clamping Shoes (NAAMS) A-B G.101

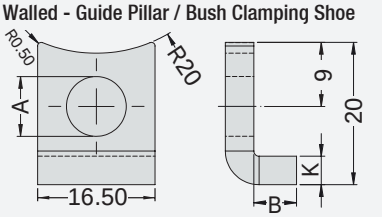
ø d BUSH	A mm	B mm	C mm	D mm	E mm	G mm	Form
32 / 40 50 / 63 63 / 80 100 115	17.5	22.5	12	6.5	18	6	A M.6 x 20
32 / 40 50 / 63 63 / 80 100 115 125	21	25.5	13.5	8.5	21	5.5	B M.8 x 20

Order : G.101.Form (A - B)



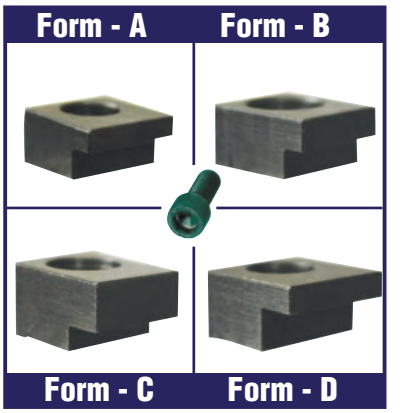
CLAMPING SHOES G.143

Walled - Guide Pillar / Bush Clamping Shoe



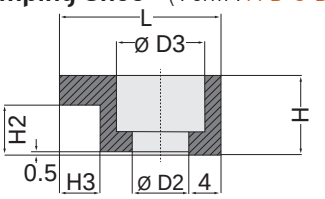
Form	A	B	K
M6	6.20	4.80	2.5
M8	8.40	5.80	4

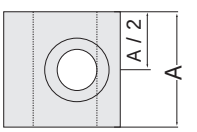
Order : G.143. (M6 - M8)



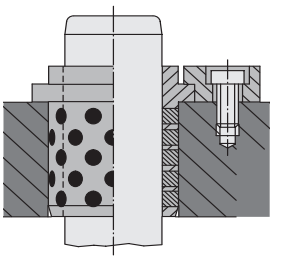
BUSH / PILLAR G.102

Clamping Shoe (Form : A-B-C-D)





Order : G.102. Form A - B - C - D



It is used to fix from cap or flange portion at guide pillar and Self-lubricating bush moulds. While using with bushes, for Ø ≤ 63'two pieces and for Ø ≥ 80' three pieces holders are used. Mould mounting bolts should be supplied separately.

Clamping Shoes G.102

Ø d1 Guide Pillar	L mm	A mm	H mm	H2 mm	H3 mm	D2 Ø	D3 Ø	Form Bolt
25 - 32 40 - 50	20	20	10	6.3	5	7	11	A M.6 x16
63 - 80 100 - 125 160	20	25	12	6.3	5	9	15	B M.8 x20
63 - 80 100 - 125	25	32	16	6.3	10	11	18	C M.10 x20
63 - 80 100 - 125 160	32	32	16	10	10	11.5	17.5	D M.10 x25

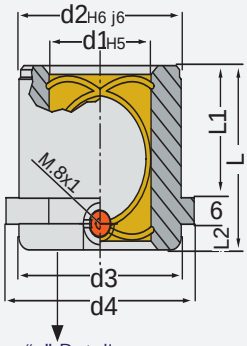
Pls. lubricate from grease nipple on bush occasionally.



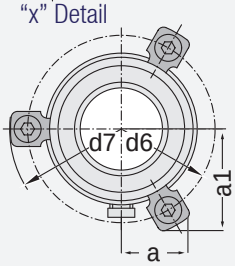


STEEL / SHORT TYPE - BRONZE BUSH

Press Mould / With Collar-Bronze Bearing Lubricated G. 36



"x" Detail



ø d1	L mm	ø d2	ø d3	ø d4	L1 mm	L2 mm	a a1	d6 d7
19 **20**	35	32	32	40	23	12	20.7 30 " x " Shoe	52 64.7
24 **25**	35	40	40	48	23	12	22.7 33.4	60 72.7
32 **30**	42	48	48	56	30	12	24.4 36.4	67 79.7
38 **40**	52	58	58	66	37	15	35.3 35.3	77 89.7
48 **50**	65	70	70	80	47	18	40.2 40.2	91 104
60 **63**	80	85	85	95	60	20	45.5 45.5	106 119
80	80	105	105	118	60	20	54.5 54.5	129 142

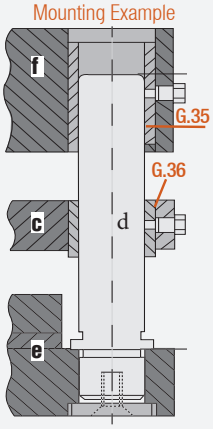
For spare shoes, refer Page 46.
Clamping shoe M.6 x 20
4 Pcs. Clamping shoes for
d1= 38 mm and long sizes.

Order:
G. 36 d1 x L x L1

Material : 1.0503 with induction d1 Bronze
Hardness : 80 HB

Operating Elements : G.01
Pillar : G.15 - G.10 - G.19 - G.24
G.17 - G.18 Clamping Shoes

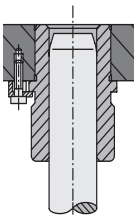
Mounting Example



Ø 19 - 24 - 32 - 38 - 48 - 60 are produced as per request. In order to avoid reverse closing of mould, it can be used with 1 Pcs. Main Dimension.

Bronze plated bushes: It has helical lubrication and inner lubrication system, its position can be lubricated with grease nipple from outside. Finally, equal distance to all lubrication points is ensured. Due to oil intake feature of bronze plated to inside it, there is no need for frequent lubrication, recommended operating speed is15-30 Mt/min. If some conditions such as lubrication clearance, stroke length, radial load and heat distribution are provided, to reach speed as 600 - 800 stroke per minute is possible.

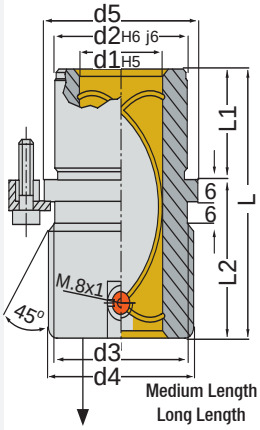
Mounting Example





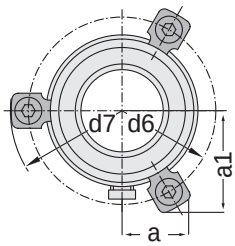
STEEL / LONG TYPE - BRONZE BUSH G. 35

Press Mould /With Collar -Bronze Bearing - Lubricated



Medium Length
Long Length
Options

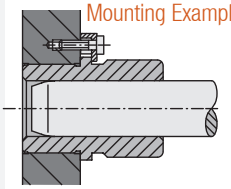
"x" Detail

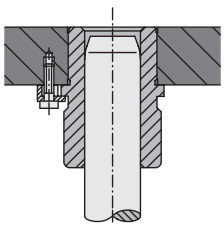


ø d1	L mm	ø d2	ø d3	ø d4	ø d5	L1 mm	L2 mm	d6 d7
19 **20**	43 59	32	32	39	40	23	20 36	52 64.7
24 **25**	59 79	40	40	46	48	23	36 56	60 72.7
32 **30**	75 93	48	48	53	56	30	45 63	67 79.7
38 **40**	82 108	58	58	63	66	37	45 71	77 89.7
48 **50**	97 127	70	70	77	80	47	50 80	91 104
60 **63**	116 150	85	85	92	95	60	56 90	106 119
80	120 150	105	105	115	118	60	60 90	129 142

For spare shoes, refer Page 46.
Clamping shoe M.6 x 20
4 Pcs. Clamping shoes for
d1= 38 mm and long sizes.

Mounting Example





Bronze Plated Bushes: Hardened steel bushing absorbs strong side thrust. Thus, vibrationless rigid operation is ensured and bronze bush is protected against strong thrust made from end head, inner layer plated bronze with centrifugal technique is resistant against abrasion factor with its high quality. In addition with its excellent heat dissipation feature is ensured rapid distribution of excessive friction temperature.

Order: **G. 35 d1 x L x L1**

Material : 1.0503 with induction
d1 Bronze Hardness: 80 HB.

Operating Elements **:** G.01
Pillar : G.15 - G.10 - G.19 - G.24 - G.17 - G.18

BOTH Produces
Sells
Affordable Prices

GTH

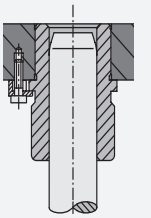


Pls. lubricate from grease nipple on bush occasionally.



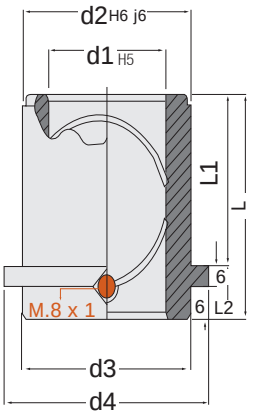


Mounting Example



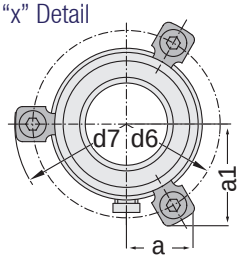
STEEL / THICK TYPE - SHORT BUSH

Press / Heavy Mould-With Collar - Lubricated Bush G. 34.K



ø d1	L mm	ø d2	ø d3	ø d4	L1 mm	L2 mm	a a1	d6 d7
19 **20**	35	32	32	40	23	12	20.7 30 " x " Shoe	52 64.7
24 **25**	35	40	40	48	23	12	22.7 33.4	60 72.7
32 **30**	42	48	48	56	30	12	24.4 36.4	67 79.7
38 **40**	52	58	58	66	37	15	35.3 35.3	77 89.7
48 **50**	65	70	70	80	47	18	40.2 40.2	91 104
60 **63**	80	85	85	95	60	20	45.5 45.5	106 119
80	80	105	105	118	60	20	54.5 54.5	129 142

"x" Detail



For spare shoes, refer Page 46. Clamping shoe M.6 x 20 4 Pcs. Clamping shoes for d1= 38 mm and long sizes.

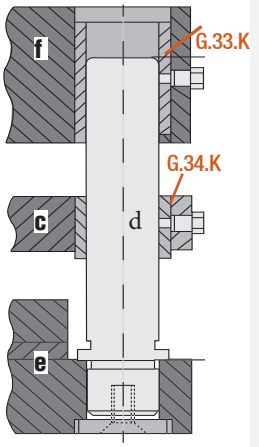
Order: **G. 34.K** d1 x L x L1

Material : 1.7131 (16 MnCr 5)
Hardness: HRC 58-62 Depth:1.2 mm

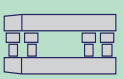
Operating Elements : G.01
Guide Pillar Type: G.15-G.10 G.24 G.11 - G.17and clamping shoe.

Thick Type Steel Bushes: To provide perpendicularity at bush and guide pillar with new design of GTH Mould Element on product - suitable flange fixation ((Balanced Layout)) on bearing area is created. During mounting, shrink punch should not be done. To avoid clamping and surface disorders at products, by inserting soft tight products to the slots, mounting can be ensured with shoes.

Ø 19 - 24 - 32 - 38 - 48 - 60 are produced as per request. In order to avoid reverse closing of mould, it can be used with 1 Pcs. Main dimension.



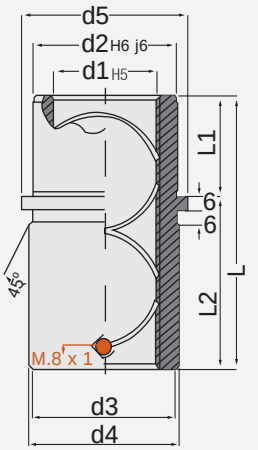
Page 48



Section Press Mould

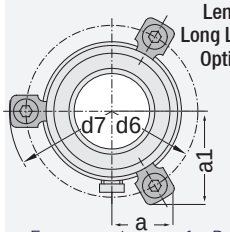
STEEL / THICK TYPE - LONG BUSH

Press / Heavy Mould-With Collar - Lubricated Bush G. 33.K



ø d1	L mm	ø d2	ø d3	ø d4	ø d5	L1 mm	L2 mm	d6 d7
19 **20**	43 59	32	32	39	40	23	20 36	52 64.7
24 **25**	59 79	40	40	46	48	23	36 56	60 72.7
32 **30**	75 93	48	48	53	56	30	45 63	67 79.7
38 **40**	82 108	58	58	63	66	37	45 71	77 89.7
48 **50**	97 127	70	70	77	80	47	50 80	91 104
60 **63**	116 150	85	85	92	95	60	56 90	106 119
80	120 150	105	105	115	118	60	60 90	129 142

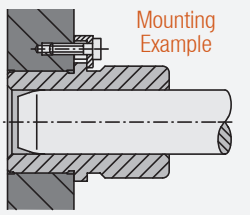
Medium Length
Long Length
Options

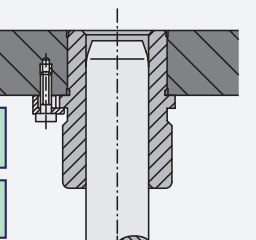


For spare shoes, refer Page 46. Clamping shoe M.6 x 20 4 Pcs. Clamping shoes for d1= 38 mm and long sizes.

Thick Type Steel Bushes: Don't use two products without oil groove together. One of product at guide pillar or bushes should be used as set with oil groove.
While using guide pillar and bush sets, should be considered that both of them have same brand. Because, grinding tolerance can be different at different guide pillar bushes. Also, this can be caused great problems during both mounting and operating. The dimensions not giving their tolerance are subjected to general tolerance. DIN 7168

Mounting Example





Order: **G. 33.K** d1 x L x L1

Material : 1.7131 (16 MnCr 5)
Hardness : HRC 58 - 62 Depth : 1.2 mm

Operating Elements : G.01
Guide Pillar: G.15 - G.10 - G.19 - G.24 G.17 - G.18 (At F plate)

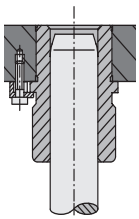
BOTH Produces Sells Affordable Prices GTH

Pls. lubricate from grease nipple on bush occasionally.





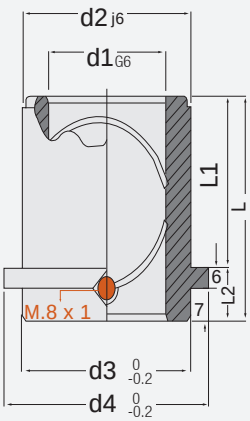
Mounting Example





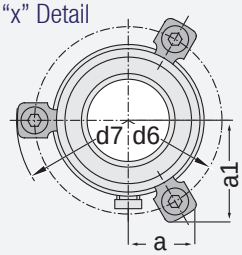
STEEL / THIN TYPE- SHORT BUSH

Press/ General Mould - With Collar - Lubricated **G. 34**



ø d1	L mm	ø d2	ø d3	ø d4	L1 mm	L2 mm	a a1	d6 d7
20	36	28	28	34	23	13	20.7 30	52 64.7
							" x " Shoe	
25	36	34	34	39	23	13	22.7 33.4	60 72.7
30	50	39	39	44	37	13	24.4 36.4	67 79.7
40	50	50	50	54	37	13	35.3 35.3	77 89.7
50	60	60	60	64	47	13	40.2 40.2	91 104

"x" Detail



For spare shoes, refer Page 46. Clamping shoe M.6 x 20 4 Pcs. Clamping shoes for d1 = 40 mm and long sizes.

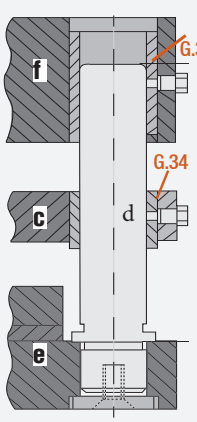
Order:
G. 34 d1 x L x L1

Material : 1.7131 (16 MnCr 5)
Hardness : HRC 58 - 62 Depth : 1.2 mm

Operating Elements : G.01
Guide Pillar Type :G.15-G.10-G.24
G.11 - G.17and clamping shoe.

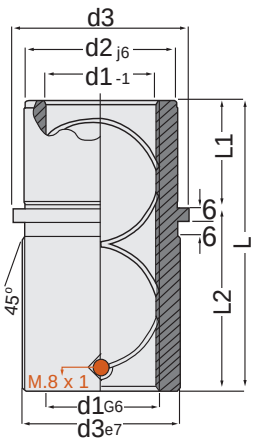
For being **GTH** Products having long life and maximum resistance against abrasion, unique sensitivity has provided at surface roughness. This is also created specific bearing system.

Thin Type Steel Bushes: To provide perpendicularity at bush and guide pillar with new design of GTH Mould Element on product - suitable flange fixation ((Balanced Layout)) on bearing area is created. During mounting, shrink punch should not be done. To avoid clamping and surface disorders at products, by inserting soft tight products to the slots, mounting can be ensured with shoes.

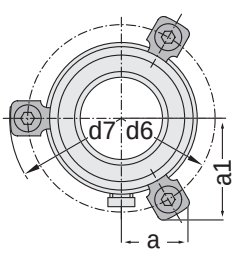


STEEL / THIN TYPE- LONG BUSH

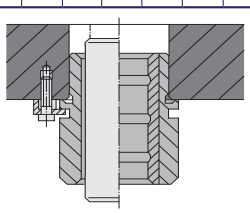
Press/ General Mould - With Collar - Lubricated **G. 33**



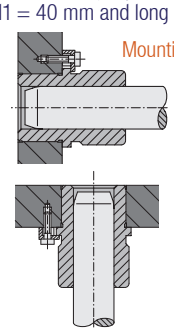
ø d1	L mm	ø d2	ø d3	L1 mm	L2 mm	a a1	d6 d7
20	70	28	34	23	47	20.7 30	52 64.7
						" x " Shoe	
25	80	34	39	23	57	22.7 33.4	60 72.7
30	90	39	44	37	53	24.4 36.4	67 79.7
40	100	50	54	37	63	35.3 35.3	77 89.7
50	120	60	64	47	73	40.2 40.2	91 104



For spare shoes, refer Page 46. Clamping shoe M.6 x 20 4 Pcs. Clamping shoes for d1 = 40 mm and long sizes.



Mounting Example



Order:
G. 33 d1 x L x L1

Material : 1.7131 (16 MnCr 5)
Hardness : HRC 58 - 62 Depth : 1.2 mm

Operating Elements : G.01
Guide Pillar : G.15 - G.10 - G.19 - .24
G.17 - G.18 (At F Plate)

Thin Type Steel Bushes: Don't use two products without oil groove together. One of product at guide pillar or bushes should be used as set with oil groove. While using guide pillar and bush sets, should be considered that both of them have same brand. Because, grinding tolerance can be different at different guide pillar bushes. Also, this can be caused great problems during both mounting and operating. The dimensions not giving their tolerance are subjected to general tolerance. DIN 7168

Section Press Mould



Page 49

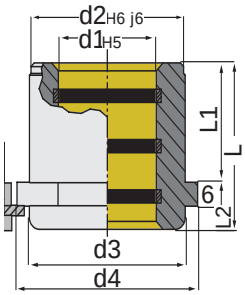


During mounting, should be lubricated once.

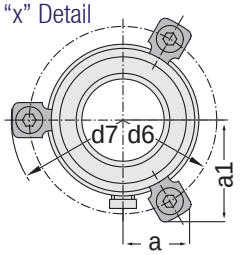


SHORT TYPE, STEEL /BRONZE /SELF-LUBRICATING BUSH

Press Mould / With Collar-Bronze Bearing / Self-Lubricating **G. 49**



"x" Detail

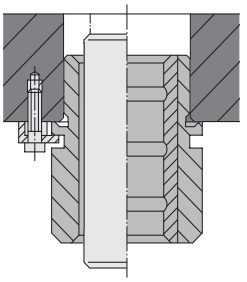


For spare shoes, refer Page 46. Clamping shoe M.6 x 20 4 Pcs. Clamping shoes for d1 = 38 mm and long sizes.

Order:
G. 49 d1 x L x L1

Material : 1.0503 (Ck 45)
Bronze Hardness:80Hb/
Self lubricating

Operating Elements : G.01
Guide Pillar Type :G.15-G.10-G.24
G.11 - G.17 and clamping shoe.



Self Lubricating Product

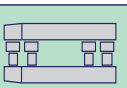
ø d1	L mm	ø d2	ø d3	ø d4	L1 mm	L2 mm	a a1	d6 d7
19 **20**	35	32	32	40	23	12	20.7 30 " x " Shoe	52 64.7
24 **25**	35	40	40	48	23	12	22.7 33.4	60 72.7
32 **30**	42	48	48	56	30	12	24.4 36.4	67 79.7
38 **40**	52	58	58	66	37	15	35.3 35.3	77 89.7
48 **50**	65	70	70	80	47	18	40.2 40.2	91 104
60 **63**	80	85	85	95	60	20	45.5 45.5	106 119
80	80	105	105	118	60	20	54.5 54.5	129 142

Ø 19 - 24 - 32 - 38 - 48 - 60 are produced as per request.

Self-lubricating Bronze Plated Bushes:
Hardened steel bushing absorbs strong side thrust and is protected bronze bush against strong thrust made from end head, inner layer plated bronze by centrifugal technique ensures its excellent heat dissipation with its high quality. **By plating Self-lubricating** inside of bronze plated bushes with special method, has brought longer effective innovation to the inner lubrication system. Finally, equal distance to all lubrication points is ensured.

Due to high oil intake feature of selflubricating plated inside of it (Lubricating during mounting once), lubrication requirement is minimized.

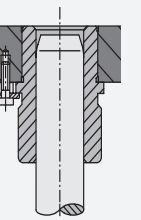
Page 50



Section Press Mould

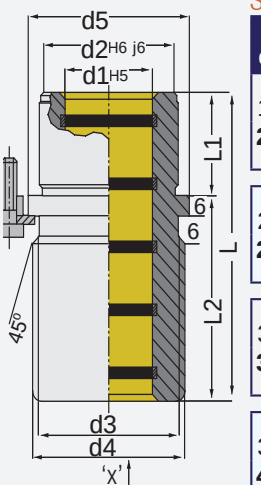


Mounting Example

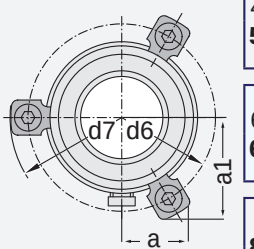


LONG TYPE, STEEL /BRONZE /SELF-LUBRICATING BUSH

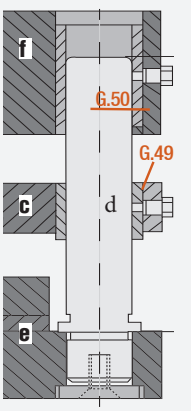
Press Mould / With Collar-Bronze Bearing / Self-Lubricating **G. 50**



Medium Length
Long Length
Options



For spare shoes, refer Page 46. Clamping shoe M.6 x 20 4 Pcs. Clamping shoes for d1 = 38 mm and long sizes.



Self Lubricating Product

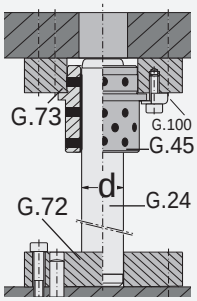
ø d1	L mm	ø d2	ø d3	ø d4	ø d5	L1 mm	L2 mm	d6 d7
19 **20**	43 59	32	32	39	40	23	20 36	52 64.7
24 **25**	59 79	40	40	46	48	23	36 56	60 72.7
32 **30**	75 93	48	48	53	56	30	45 63	67 79.7
38 **40**	82 108	58	58	63	66	37	45 71	77 89.7
48 **50**	97 127	70	70	77	80	47	50 80	91 104
60 **63**	116 150	85	85	92	95	60	56 90	106 119
80	120 150	105	105	115	118	60	60 90	129 142

Self-lubricating Bronze Plated Bushes:
Self-lubricating channels has self lubrication feature. These channels create 25 % surfaces of total bearings. After lubrication during mounting, does not require any lubrication process. In cases that should be protected from effects such as impact, failure and heat effect, this system has most appropriate usage area.

Order: **G.50 d1 x L x L1**

Material : 1.0503 (Ck 45) with induction
Bronze Hardness: 80Hb / Self-lubricating plated

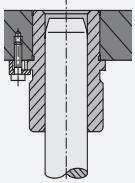
Operating Elements : G.01
Guide Pillar : G.15-G.10-G.19-G.24-G.17-G.18





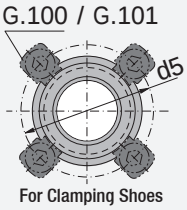
GRAPHITE / BRONZE GUIDE BUSH WITH CENTER COLLAR — G. 45

DIN 9834 / ISO 9448 Self Lubricating

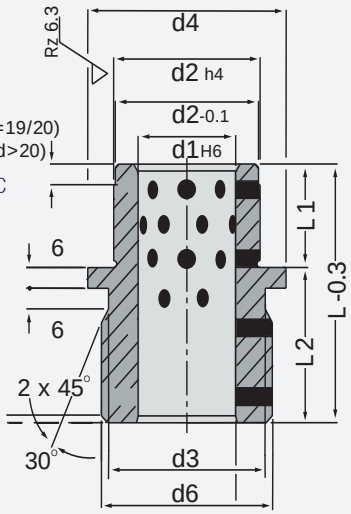


Heat Resistance : < 150°C

Working Direction



For Clamping Shoes
G.100 / G.101, Refer Page 46



BRONZE GUIDE BUSH — G. 45

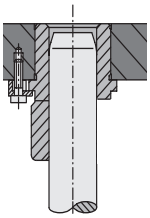
d d1	L mm	ø d2	ø d3	ø d4	ø d5	ø d6	L1 mm	L2 mm
19 **20**	**32**	32	32	40	49	-	20	12
	50					34		30
	70					34		50
24 **25**	**35**	40	40	48	57	-	23	12
	60					42		37
	80					42		57
32 **30**	**42**	48	48	56	65	-	30	12
	75					50		45
	95					50		65
38 **40**	**50**	58	58	66	75	-	35	15
	80					60		45
	110					60		75
48 **50**	**90**	70	70	80	89	74	45	45
	120							75

Order : **G. 45 d1 x L**

Material : Bronze 190 - 220 HB
Graphite providing lubrication

Operating Elements :
G. 24 - G.10
G.18 - G.19 - G.20

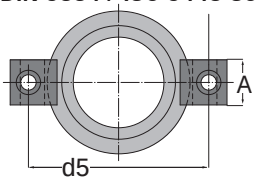
Mounting Example





GRAPHITE / BRONZE GUIDE BUSH WITH COLLAR — G. 44

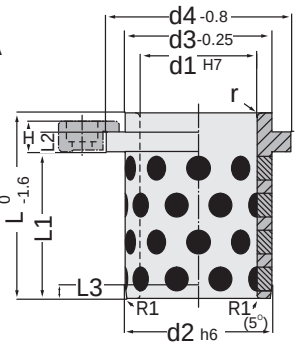
DIN 9834 / ISO 9448 Self Lubricating



For clamping shoes,
G.102 Form : A-B-C-D

2 Pcs. Holder can be used for each bush during mounting
The tolerance of bush opened for bush: H.7

Working Direction



Heat Resistance : < 150°C

DIN 9834 / ISO 9448 Self Lubricated — G. 44

ø d1	L mm	ø d2	ø d3	ø d4	ø d5	L1 mm	L2 mm	L3 mm	r	A	H
25	40	32	32	40	58	32	6.3	3	3	20	10
32	50	40	40	50	66	40	6.3	4	3	20	10
40	63	50	50	63	79	50	6.3	5	3	20	10
50	71	63	63	71	89	56	6.3	6.3	5	20	10
63	80	80	80	90	123	63	10	8	6	32	16
80	100	100	100	112	143	80	10	10	8	32	16
100	125	125	125	140	168	106	10	12.5	10	32	16
125	160	160	160	180	203	132	10	16	12	32	16
160	200	200	200	220	243	170	10	16	18	32	16

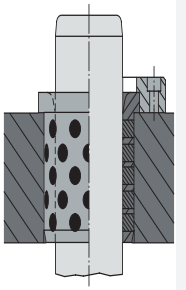
Reference ISO: 9048 - DIN 9834 Flanged Self Lubricating Guide Bush
Reference: PSA E 24.52.105.G

Order : **G. 44 d1 x L**

Material: Bronze / Graphite Providing Lubrication For **Bush Holder**, select G.102 from Page 46.

Operating Elements:
It is compatible to use with G.04 / G.05 / G.02 / G.03 G.06 / G.07 / G.09 Pillars.

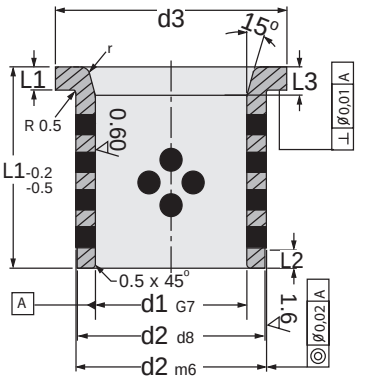




GRAPHITE / BRONZE GUİDE BUSH

CNOMO EM 24. 52. 100 — G. 43

Graphite Bush Self Lubricating, Graphite



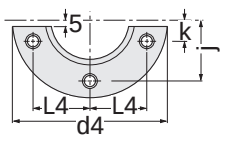
Working Direction

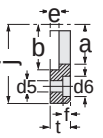
Heat Resistance : < 150°C



Shold be lubricated once during mounting.

Guide Bush, Holder (Shoe) — G.102





CNOMO EM 24. 52. 100 Bush Holders



Refer Page 46.

CNOMO EM 24. 52. 100 Graphite Bush — G. 41

ø d1	L mm	ø d2	ø d3	L1 mm	L2 mm	L3 mm	r mm	d4 c	t	a
20	32	28	32	4	3	-	2	63	10	25
25	40	35	40	5	5	-	2	72	10	32
32	50	44	50	6	5	-	3	80	12	40
40	63	52	60	8	8	-	3	100	12	50
50	80	63	71	10	8	8	3	125	16	63
63	100	80	90	12	10	10	3	140	20	80
80	125	100	112	16	10	10	4	180	25	100
100	160	125	140	20	10	10	4	200	32	125

Order : **G. 43 d1 x L**

Material : Bronze /Graphite Providing Lubrication For Alternative Bush Holder, select G.104 from Page 46.

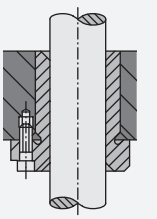
Operating Elements : **It is compatible to use with G.03 / G.04 / G.05** / G.06 / G.07 / G.09 Pillars.

Section Press Mould

BOTH Produces Sells Affordable Prices

GTH

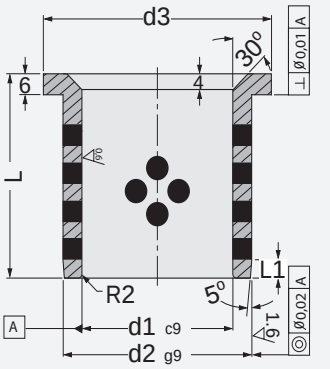




GRAPHITE / BRONZE GUİDE BUSH

NAAMS FORD WDX 13 - 80 Graphite Bush — G. 41

Graphite Bush Self Lubricating, Graphite



Working Direction



Shold be lubricated once during mounting.

Self Stock / Continous Product

Heat Resistance : < 150°C

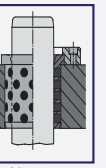
Guide Bush, Holders (Clamping Shoes) — G.101



Form - A



Form - B



For G.41 Self Lubricating Bush: Ø < 63 2 Pcs., for Ø > 80 3 Pcs. Holder can be used. Instead of this standard holder, G.102 Clamping Shoes (For clamping shoes, refer Page 46) can be used in specified pieces at Page 46 as alternative.

NAAMS FORD WDX 13 - 80 Graphite Bush — G. 41

ø d1	L mm	ø d2	ø d3	L1 mm
25	40	32	40	4
32	50	40	50	4
40	55	50	63	5
50	63	63	71	6
63	75	80	90	8
80	90	100	112	10
100	115	125	140	12
125	138	160	180	12

Order : **G. 41 d1 x L**

Material : Bronze /Graphite Providing Lubrication For Alternative Bush Holder, select G.104 from Page 46.

Operating Elements : **It is compatible to use with G.01 / G.02 / G.06** / G.07 / G.04 / G.05 / G.03 / G.09 Pillars.

Should be lubricated once during mounting

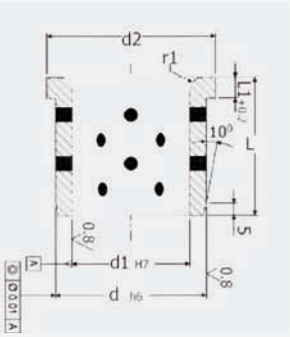




GRAPHITE / THICK GUİDE BUSH

NAAMS FORD WDX 13 - 70 Graphite Bush G. 42

Self Lubricated, Graphite Heat Resistance : < 150^{0}C



Guide Bush With collar, Holders G.102

Form - A **Form - B** **Form - C** **Form - D**



For Ø< 50 2 Pcs. - for Ø>50 3 Pcs. holders can be used.

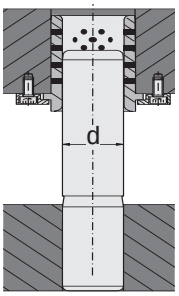
NAAMS FORD WDX 13 - 70 Graphite Bush G. 42

ø d1	L mm	ø d	ø d2	L1 mm	r1
20	35	28	36	8	2
25	40	32	40	8	4
30	55	40	50	8	6
32	55	40	50	8	6
40	70	50	60	8	6
42	70	50	60	8	6
50	75	63	75	12	8
52	75	63	75	12	8
63	80	80	90	12	8
80	100	100	110	12	8
100	125	125	135	12	8

Order : **G. 42 d1 x L**

Material : Bronze / Graphite Providing Lubrication For Bush Holder, Select G.102 (Form D) from Page 46.

Operating Elements: **It is compatible to use with G.01 / G.02** G.04 / G.05 / G.03 G.06 / G.07 / G.09 Pillars.



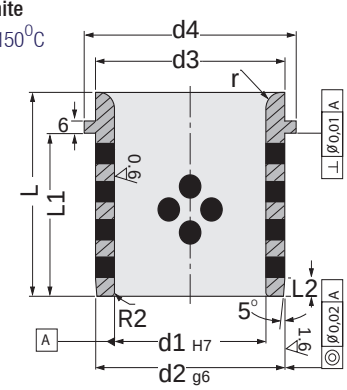


GRAPHITE / BRONZE GUIDE BUSH WITH COLLAR

NAAMS FORD WDX 13 -70 Graphite Bush G. 40

Self Lubricated, Graphite

Heat Resistance : < 150^{0}C



Guide Bush With collar, Holders (Clamping Shoes) G.102

Form - A **Form - B** **Form - C** **Form - D**



For Ø< 50 2 Pcs. - for Ø>50 3 Pcs. holders can be used.

NAAMS FORD WDX 13 -70 Graphite Bush G. 40

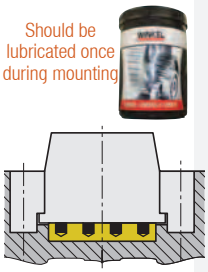
ø d1	L mm	ø d2	ø d3	ø d4	L1 mm	L2 mm	r
25	40	32	32	40	30	4	3
30	50	40	40	50	40	4	3
32	50	40	40	50	40	4	3
40	63	50	50	63	50	5	3
50	71	63	63	71	56	6	5
63	80	80	80	90	63	8	6
80	100	100	100	112	80	10	8
100	125	125	125	140	106	12	10
125	160	160	160	180	132	12	12

Order : **G. 40 d1 x L**

Material : Bronze / Graphite Providing Lubrication For Bush Holder, Select G.102 (Form D) from Page 46.

Operating Elements: **It is compatible to use with G.01 / G.02** G.04 / G.05 / G.03 G.06 / G.07 / G.09 Pillars.





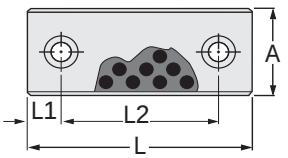
Mounting Example

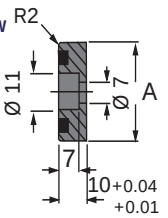
Bronze/Graphite (Self-Lubricating) GUIDE PLATES

G. 85

Thickness: 10 mm / 2 Connection Holes

Connection Bolt: 12.9 Cylinder Head Cap Screw





Self Lubricated Equipment provide load carrying capacity greater than expected at lower sliding speeds and wide temperature range. Lubricant Graphite orifices on it are placed with suitable geometric structure. Thus, they provide maximum lubricant effect along sliding motion, they work especially with hardened and grinded bearings. The sliding surfaces should be lubricated with lithium grease oil slightly during mounting before operating bearing. 25 % / 30 % of surfaces at guide pillar bearings at plain Graphite bearings, are created with Graphite lubricant pores. The parts corresponding to self lubricated bearing component should be grinded and secured parallel to sliding axis.

(For usage value, Refer Page 59.)

GRAPHITE - BRONZE GUIDE PLATES

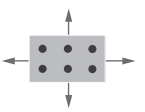
G. 85

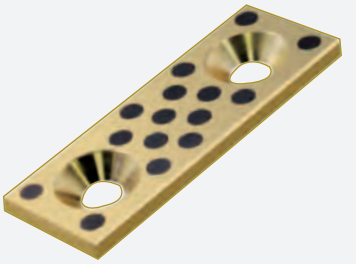
A	L	L1	L2	Hole	Bolt
G. 85 18	75	15	45	2 Pcs.	2 Pcs. M.6 x20
	100	25	50		
	125		75		
	150		100		
G. 85 28	75	15	45	2 Pcs.	2 Pcs. M.6 x20
	100	25	50		
	125		75		
	150		100		
G. 85 38	75	15	45	2 Pcs.	2 Pcs. M.6 x20
	100	25	50		
	125		75		
	150		100		
G. 85 48	75	15	45	2 Pcs.	2 Pcs. M.6 x20
	100	25	50		
	125		75		
	150		100		

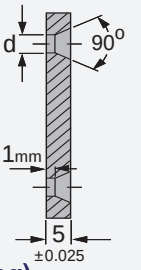
Order: G. 85 A x L

Material : Bronze, Graphite
Lubrication Cylinder Head Cap Screw M.6 x 20

Working Direction - C. Section





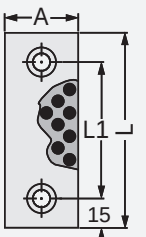


Bronze/Graphite (Self-Lubricating) GUIDE PLATES

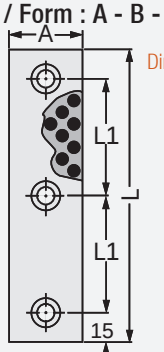
G. 83

Thickness: 5 mm / Form : A - B - C - D

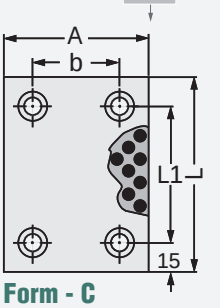
Working Direction-C. Section



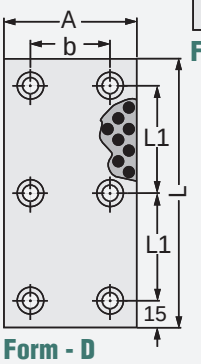
Form - A



Form - B



Form - C



Form - D

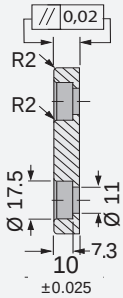
Graphite plates are preferred at large press moulds or injection moulds (at cores)due to their resistance against lateral loads, with its self lubricated feature, they work for long periods without requiring maintenance.

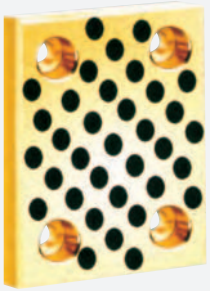
Connection Bolts: Countersunk head screws.

Order: G. 83 A x L Form

Material : Bronze, Graphite Lubrication
Countersunk head screw M.6 / M.8 x 16

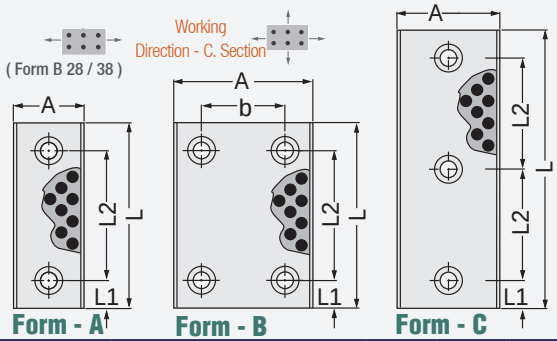
A	L	L1	b	d	Form	Bolt
G. 83 18	50	20	-	6.5	A	2 Pcs. M.6 x10
	75	45				
	100	70				
	150	60			B	3 Pcs.
G. 83 28	50	20	-	9	A	2 Pcs. M.8 x10
	75	45				
	100	70				
	150	60			B	3 Pcs.
G. 83 38	50	20	-	9	A	2 Pcs. M.8 x16
	75	45				
	100	70				
	150	60			B	3 Pcs.
G. 83 48	75	45	-	9	A	2 Pcs. M.8 x16
	100	70				
	125	95				
	150	60			B	3 Pcs.
G. 83 75	75	45	45	9	C	4 Pcs. M.8 x16
	100	70				
	125	95				
	150	60			D	6 Pcs.
G. 83 100	100	70	70	9	C	4Pcs. M.8
	125	95				
	150	60			D	6 Pcs.





Bronze/Graphite (Self-Lubricating) GUIDE PLATES

Thickness : 10 mm / Form: A - B - C G. 84



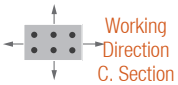
A	L	L1	L2	b	Form	Bolt
G. 84 28	75	15	45	-	A	2 Hole M10 x 20
	100	25	50			
	125		75			
	150		100			
G. 84 38	75	15	45	-	A	2 Hole M10 x 20
	100	25	50			
	125		75			
	150		100			
G. 84 48	75	15	45	-	A	2 Hole M10 x 20
	100	25	50			
	125		75			
	150		100			
	200	50	100			
G. 84 58	75	15	45	-	A	2 Hole M10 x 20
	100	25	50			
	125		75			
	150		100			
	200	50	100			
G. 84 75	75	15	45	-	A	2 Hole M10 x 20
	100	25	50			
	125		75			
	150		100			
	200		75		C	3 Hole
G. 84 100	100	25	50	50	B	4 Hole M10 x 20
	125		75			
	150		100			
	200		150			
	250		200			
G. 84 125	150	25	100	50	B	2 Hole M10 x 20
	200		150			
	250		200			
G. 84 150	150	25	100	100	B	4 Hole 10 x 20
	200		150			

Order: G. 84 A x L . Form

Material : Bronze - Graphite

Reference :
VDI 3357
VW / AUDI 390 954
BMW B2 2961 11

Bronze - Steel Plate
Technical Details
are similar.





G. 86

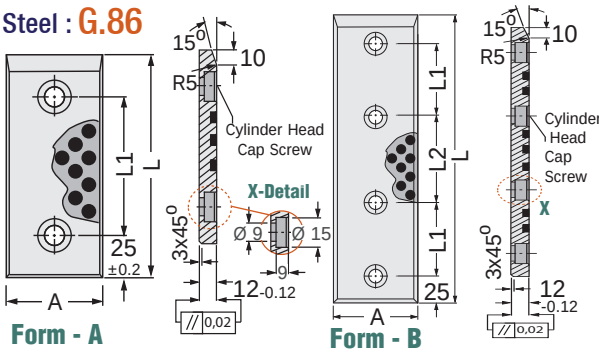


G. 87

STEEL & BRONZE, GRAPHITE PLATES

Thickness : 12 mm / Form : A - B Bronze : G. 87

Steel : G.86



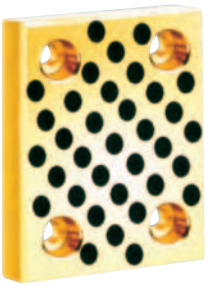
A	L	L1	L2	Hole	Form	Bolt
G. 86 G. 87 30	80	30	-	2	A	2 Pcs. M.8 x 25
	100	50				
	125	75				
	160	110				
	200	150				
G. 86 G. 87 40	80	30	-	2	A	2 Pcs. M.8 x 25
	100	50				
	125	75				
	160	110				
	200	150				
G. 86 G. 87 50	80	30	-	2	A	2 Pcs. M.8 x 25
	100	50				
	125	75				
	160	110				
	200	150				
	250	60	80	4	B	4 Pcs. M.8 x 25
	300	80	90			
	350	100	100			
	400	120	110			
G. 86 G. 87 60	80	30	-	2	A	2 Pcs. M.8 x 25
	100	50				
	125	75				
	160	110				
	200	150				
G. 86 G. 87 80	80	30	-	2	A	2 Pcs. M.8 x 25
	100	50				
	125	75				
	160	110				
	200	150				

Order: G. 86 / 87 A x L . Form

Material : Bronze - Graphite
Steel : 1.7131 **Hardness :**60-64 HRC

BOTH Produces Sells Affordable Prices GTH

Section Press Mould

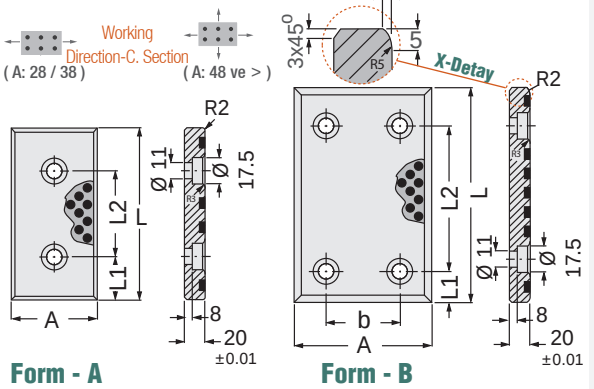




Bronze/Graphite (Self-Lubricating) GUIDE PLATES

Thickness : 20 mm / Form: A - B

G. 88



GRAPHITE - BRONZE GUIDE PLATES

G. 88

A	L	L1	L2	b	Form
G. 88 28	75	15	45	-	A
	100	25	50		
	150		100		
G. 88 38	75	15	45	-	A
	100	25	50		
	150		100		
	200		150		
G. 88 48	75	15	45	-	A
	100	25	50		
	125		75		
	150		100		
	200		150		
G. 88 58	75	15	45	-	A
	100	25	50		
	150		100		
G. 88 75	75	15	45	-	A
	100	25	50		
	125		75		
	150		100		
	200		150		
G. 88 100	100	25	50	50	B
	125		75		
	150		100		
	200		150		
	250		200		
	300		250		

A	L	L1	L2	b	Form
G. 88 125	125	25	75	50	B
	150		100		
	200		150		
	250		200		
	300		250		
	350		300		
G. 88 150	150	25	100	100	B
	200		150		
	250		200		
	300		250		
	350		300		
G. 88 200	200	25	150	150	B
	250		200		
	300		250		
	350		300		

Mounting: Cylinder Head Cap Screw M10 x 20

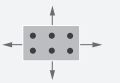
Self Lubricating Plate Usage Advantages:

- High compatibility to sudden motion
- Maximum bearing capacity at low speeds.
- It can be used under water or with chemical solutions.
- Quite wide temperature resistance
- In existence of vibration, it has impact resistance feature.

Order: **G. 88 A x L . Form**



Working Direction- C. Section

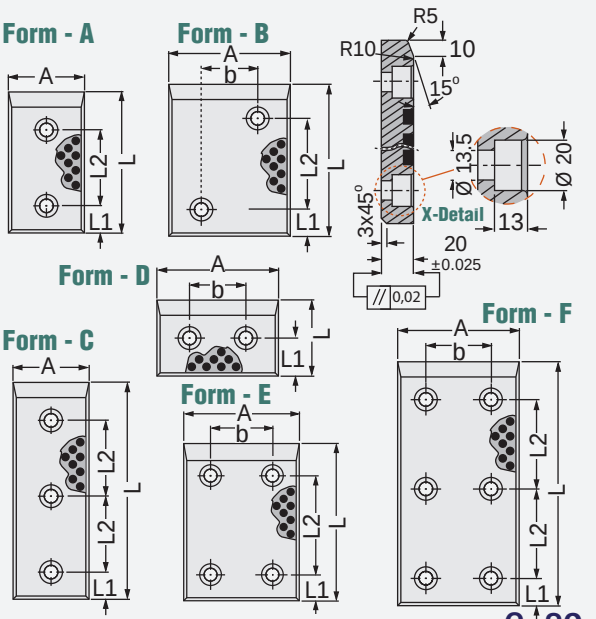


Referans : ISO 9183 - 1

Bronze/Graphite (Self-Lubricating) GUIDE PLATES

Thickness : 20 mm / Form : A -B -C -D -E -F

G. 89



GRAPHITE - BRONZE GUIDE PLATES

G. 89

A	L	L1	L2	b	Form
G. 89 50	80	20	35	-	A
	100		55		
	125		80		
	160		115		
	200		155		
	250		100		C
G. 89 80	50	25	-	40	D
	80	20	35		B
	100		55		
	125		80		
	160		115		E
	200		155		
	250		100		F
	315		132		
G. 89 100	50	25	-	60	D
	80	20	35		B
	100		55		
	125		80		
	160		115		E
	200		155		
	250		100		F
	315		132		

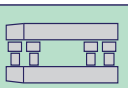
A	L	L1	L2	b	Form
G. 89 125	50	25	-	85	D
	80	20	35		B
	100		55		
	125		80		E
	160		115		
	200		155		
	250		100		F
	315		132		
G. 89 160	50	25	-	120	D
	80	20	35		E
	100		55		
	125		80		
	160		115		
	200		155		
	250		100		F
	315		132		

Reference : ISO 9183 -1 Type- A

Mounting: Cylin. Head Cap Screw M12 x 25

General Usage is up to 150° C. special products can be produced as per request

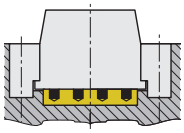
Order: **G. 89 A x L . Form**



Section Press Mould

BOTH Produces Sells Affordable Prices GTH

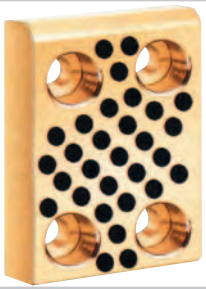
Reference :
VDI 3357
VW / AUDI 390 954
BMW B2 2961 11
FORD WDX 13-65



Mounting Example



G. 92



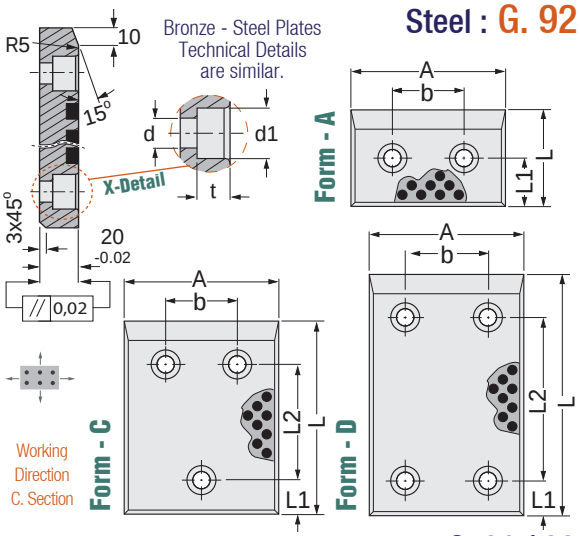
G. 91



G. 90

STEEL & BRONZE GRAPHITE GUIDE PLATES

Thickness : 20 mm / Form: A - C - D Bronze: G. 91 Steel : G. 92



GRAPHITE - BRONZE GUIDE PLATES G. 91 / 92

A	L	L1	L2	b	d	d1	t	Form	Bolt
80	50	25	-	30	9	15	9	A	M8x25
100	50	25	-	50	13.5	20	13	A	2 Pcs. M.12 x 25
	80	40							
125	50	25	-	75	13.5	20	13	A	
	80	40							
160	50	25	-	110	13.5	20	13	A	
	80	40							
125	100	25	50	75	13.5	20	13	C	3 Pcs. M.12 x 25
	125		75						
	160		110						
	200		150						
	250	40	170						
	315		235						
160	100	25	50	110	13.5	20	13	C	
	125		75						
	160		110						
	200		150						
	250	40	170						
	315		235						
160	250	40	170	110	13.5	20	13	D	4 Pcs.
	315		235						

Order: G. 91 /92 A x L . Form

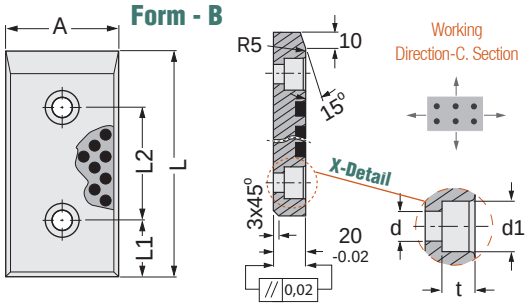
Material : Bronze - Graphite
Steel : 1.7131 **Hardness :**60-64 HRC

Reference : VDI 3357
VW / AUDI 390 954
BMW B2 2961 11
FORD WDX 13-65

General usage is up to 150º C. Special products can be produced as per request.

Bronze/Graphite (Self-Lubricating) GUIDE PLATES

Thickness : 20 mm / Form: B Cont. Stock G. 90



GRAPHITE - BRONZE GUIDE PLATES G. 90

A	L	L1	L2	d	d1	t	Form	Bolt
50	80	25	30	9	15	9	B	M8x25
	100		50	13.5	20	13		2 Pcs. M.12 x 25
	125		75					
	160		110					
	200		150					
80	80	25	30	13.5	20	13	B	2 Pcs. M.12 x 25
	100		50					
	125		75					
	160		110					
	200		150					
	250	40	170					
	315		235					
100	100	25	50	13.5	20	13	B	2 Pcs. M.12 x 25
	125		75					
	160		110					
	200		150					
	250	40	170					
	315		235					

Order: G. 90 A x L . Form

Material : Bronze - Graphite
Cylinder Head Cap Screw
12.9 (M12 x 25)

Reference : VDI 3357
VW / AUDI 390 954
BMW B2 2961 11
FORD WDX 13-65

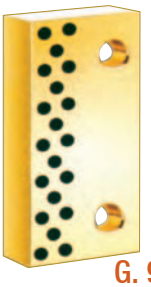
General Usage is up to 150ºC.
Continuous Product at Our Shelf Stock.

BOTH Produces Sells Affordable Prices GTH

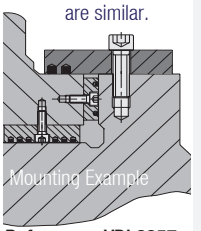
Section Press Mould



G. 94



G. 95



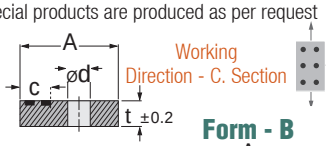
Bronze- Steel Plate Technical Details are similar.

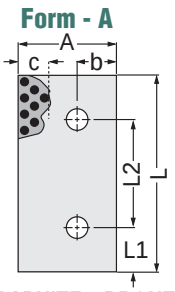
Reference : VDI 3357

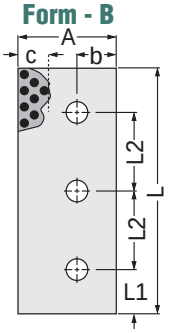
STEEL & BRONZE, GRAPHITE "E" TYPE PLATES

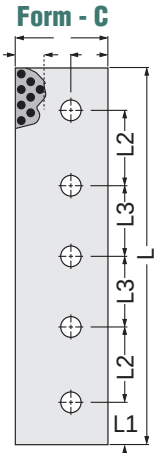
E - Type Steel : G. 94 **E-Type Bronze:** G. 95

General usage is up to 150ºC.
Special products are produced as per request









GRAPHITE - BRONZE - STEEL PLATES G. 94 / 95

A	L	L1	L2	L3	t	c	b	d	Form
35	160	45	70	-	10	10	15	11	A
	200		110						
	250		80						B
45	160	45	70	-	15	15	15	13.5	A
	200		110						
	250		80						B
55	160	45	70	-	15	20	20	17.5	A
	200		110						
	250		80						B
75	160	45	70	-	25	25	35	17.5	A
	200		110						
	250		80						B
100	160	45	70	-	25	30	40	17.5	A
	200		110						
	250		80						B
	400		80	75					C
	160		70	-	30			22	A
	200		110						
	250		80						B
	400		80	75					C
125	160	45	70	-	30	30	50	22	A
	200		110						
	250		80						B
	400		80	75					C

Order: G. 94 / 95 A x L Form

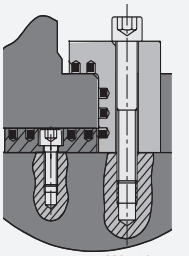
Material : Bronze - Graphite
Steel: 1.7131 **Hardness :**60-64 HRC

Section Press Mould

BOTH Produces Sells Affordable Prices GTH

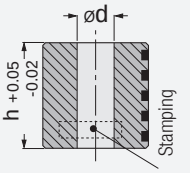


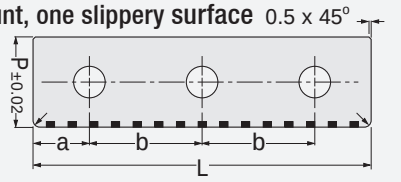
G. 93



Bronze/Graphite (Self-Lubricating) GUIDE PLATES

Block, Lateral Mount, one slippery surface 0.5 x 45°





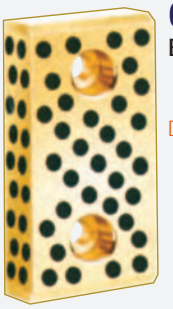
Reference : PSA E 24.52.535.G

Order: G. 93 P x L

Material : Bronze - Graphite

GRAPHITE - BRONZE GUIDE PLATE G. 93

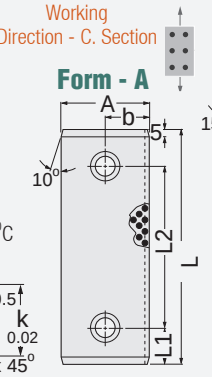
P	L	h	a	b	d	r
40	150	40	25	50	14	3
40	200	40		75	14	
50	150	60		50	18	
50	200	60		75	18	



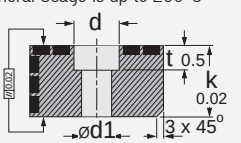
GRAPHITE PLATE G. 96

Block, Plate with two slipper surface.

Reference: VDI 3357 E TİPİ



General Usage is up to 200°C

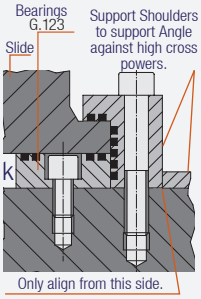


GRAPHITE - BRONZE - STEEL PLATES G. 96

A	L	L1	L2	k	b	d	d1	t	Form
25	110	25	60	12	12.5	15	9	8.5	A
	120		70						
	110		60	15		18	11	10.5	
	120		70						
60	125	25	75	30	30	20	13.5	13	A
	160		110						B
	200		75						A
	125		75	40					B
	160		110						
	200		75						

Order: G. 96 A x L Form

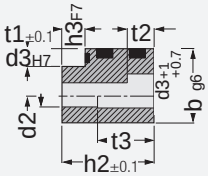
Material : Bronze - Graphite

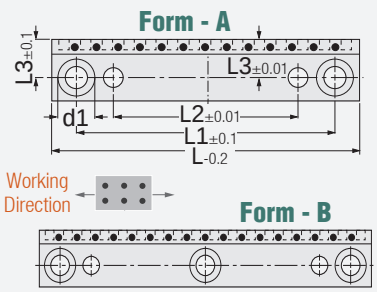




BRONZE, GRAPHITE "L"TYPE PLATES G. 104

Side Connection, Narrow Channel L Self Lubricating Plate





GRAPHITE - BRONZE L- GUIDE PLATES G.104

Form	b	h	L	L1	L2	L3	d1	d2	d3	t1	t2	t3	h2	h3
A	16	12	50	34	14	9.5	10	5.5	5	5	5.7	-	11	4
			71	55	35									
B	16	12	90	74	54	9.5	10	5.5	5	5	5.7	-	11	4
A	20	20	80	64	40	12	11	6.6	6	5	6.8	9.5	19	5
			100	84	60									
B	20	20	125	109	85	12	11	6.6	6	5	6.8	9.5	19	5
A	25	32	100	80	50	15.5	15	9	8	6	9	19	31	6
			125	105	75									
B	25	32	160	140	110	15.5	15	9	8	6	9	19	31	6
A	30	50	125	95	55	18	18	11	10	7	11	34	49	8
			160	130	90									
B	30	50	200	170	130	18	18	11	10	7	11	34	49	8

Order: G.104 Form x b x L

Material : Bronze - Graphite

Suitable loading value is determined with pressures and PV Value. It is also definited abrasion value. PV Value is consisted from multiplication of Surface Pressure (P) and Working Speed (V).

PV = P x V (N / cm^2 x m / Min.)

P = F / A (N / cm^2)

A = Used Bearing Area

USAGE VALUES

Self Lubricating Plate - Surface Pressure, Temperature, Speed and Lubrication

Surface Temp. Max. (N/cm^2)	Temp. (C^o)	Speed (m / Min.)	PV Value N/cm^2x m/Min.	Lubr.
5000	80	15	10.000	Mounting
3000	150	60	20.000	Lubrication With Pressure

Reference :
CNOMO
EM 24 52.500

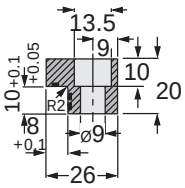


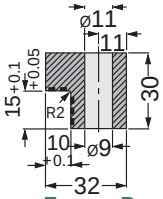
Should be lubricated once during mounting.

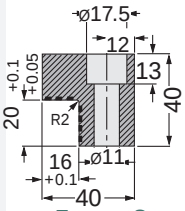


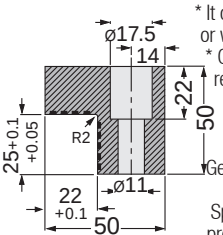
BRONZE, GRAPHITE "L" TYPE PLATES

Angular, Strip - Self Lubricated G. 105









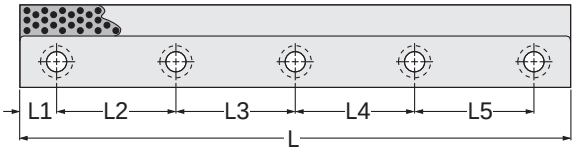
Working Direction

Advantages of Self Lubricated Equipment:

* High Compatibility to Sudden Motion
* Maximum Bearing Capacity at low speeds
* It can be used under water or with chemical solution. .
* Quite Wide temperature resistance hot and cold
* In the existence of vibration, impact resistance.

General Usage Area is up to 150ºC.

Special products can be produced as per request.



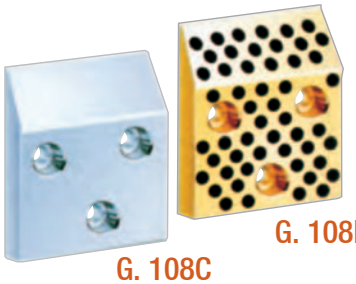
GUIDE - BRONZE L- GUIDE PLATES G.105

Form	L	L1	L2	L3	L4	L5	Hole
A	100	20	60	-	-	-	2
	150		55	55	-		3
	200		55	55	55		4
B	100	20	60	-	-	-	2
	150		55	55	-		3
	200		55	50	55		4
	250		70	70	70		4
C	160	15	130	-	-	-	2
	250			80			3
D	200	20	55	50	55	-	4
	250		70	70	70	-	4
	300		65	65	65	65	5
	350		80	75	75	80	5

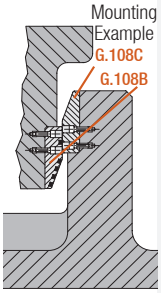
Order: G.105 Form x L

Section Press Mould

Page 59



G. 108C G. 108B





G. 107



G. 106

Bronze- Steel Plates Technical Details are similar.



Should be lubricated once during mounting.

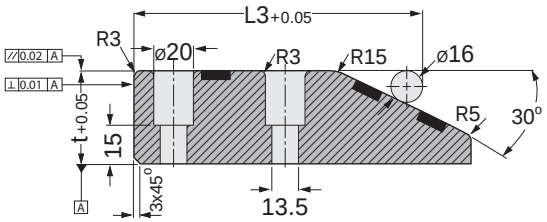
GRAPHITE / BRONZE, CAM GUIDE PLATES

Steel Pate: G. 108C **Bronze Graphite:** G. 108B

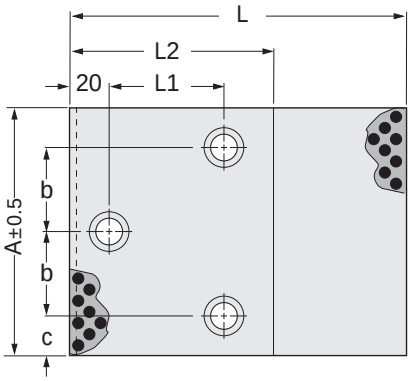
Angular Friction Plates, Reference: FORD VDX7 - 65
Cam Unit Steel for Upper and Lower Casing

Working Direction

Tolerance between hole distances are ± 0.25.
At all dimension not specified their tolerance, ± 0.25 is used.



General Usage is up to 150° C.



Bronze Steel Plates Technical Details are similar.

GRAPHITE-BRONZE-STEEL, CAM PLATES G. 108B / 108C

A	L	t	L1	L2	L3	c	b
100	125	30	50	95.14	133	20	30
	150	45	45				
	170	60					
125	125	30	50	95.14	133	20	42.5
	150	45	45				
	170	60					
160	125	30	50	95.14	133	20	60
	150	45	45				
	170	60					

Order: G.108B /C A x L Form

Material : Bronze -Graphite, Cam Plates.
Steel : 1.7225 **Hardness :**56-60 HRC

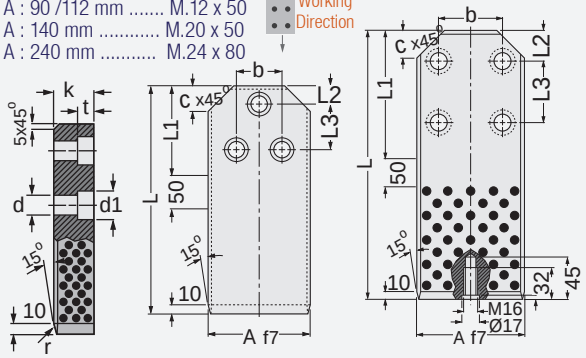
GRAPHITE / BRONZE GUIDE PLATES

Steel Plate: G. 107 **Bronze Graphite:** G. 106

Mounting Bolts: Imbus
A : 63 /71 mm ..... M.12 x 40
A : 90 /112 mm ..... M.12 x 50
A : 140 mm ..... M.20 x 50
A : 240 mm ..... M.24 x 80

Working Direction

Reference : VDI 3387
VW AUDI 39 V 1159

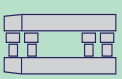


GRAPHITE - BRONZE - STEEL PLATES G. 106 / 107

A	L	k	L1	L2	L3	b	c	t	d	d1	r	Form
63	180	36	90	20	50	36	18	16	14	20	16	A
	200											
	224											
71	180	36	90	20	50	36	18	16	14	20	16	A
	200											
	224											
90	200	36	100	20	50	50	28	21	18	26	25	A
	224											
	250											
	200	45										
	224											
	250											
112	200	45	100	20	50	50	28	21	18	26	25	A
	224											
	250											
140	315	45	150	40	80	90	36	25.5	22	33	31.5	B
	355											
	400											
	315	56										
	500											
190	315	45	150	40	80	90	36	25.5	22	33	31.5	B
	400											
	315	56										
	400											
240	500	56	250	40	160	160	36	30.5	26	40	31.5	B
	630											
	500	71										
	630											

Order: G.106/107 A x L Form

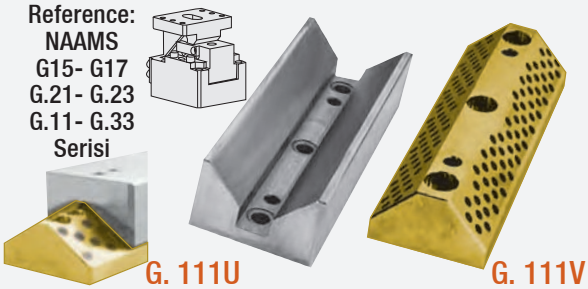
Material : Bronze - Graphite
Steel : 1.7131 **Hardness :**60-64 HRC



Section Press Mould

BOTH Produces Sells Affordable Prices GTH

Reference:
NAAMS
G15- G17
G.21- G.23
G.11- G.33
Serisi



G. 111U G. 111V

GRAPHITE / BRONZE, CAM GUIDE PLATES

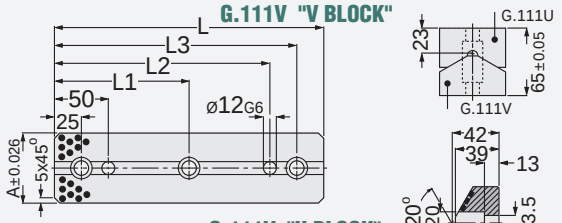
Bronze, Self Lubricated - "U / V" Bearings

Reference : NAAMS G.15 - G.17 - G.21 - G.23

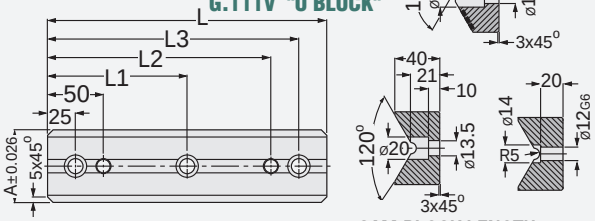
Steel : G. 111U
Bronze : G. 111V

Bronze, Steel Plate Technical Details are similar, Heat Resistance 150°C

G.111V "V BLOCK"



G.111V "U BLOCK"

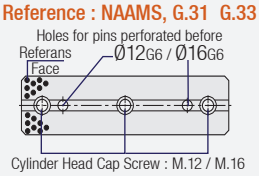


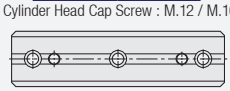
CAM GUIDE BLOCKS LENGTH : 65 / 75
Reference : NAAMS, G.15 / 17 / 21 / 23

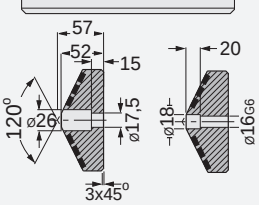
CAM BLOCK LENGTH : 125
Reference : NAAMS, G.31 G.33

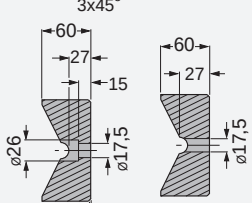
A mm	L mm	L1 mm	L2 mm	L3 mm	Bolt Pin
65	150	-	100	125	2 2
	200	-	150	175	2 2
	250	125	200	225	3 2
	300	150	250	275	3 2
75	150	-	100	125	2 2
	200	-	150	175	2 2
	250	125	200	225	3 3
	300	150	250	275	3 3
125	150	-	100	125	2 2
	200	-	150	175	2 2
	250	125	200	225	3 2
	300	150	250	275	3 2

Holes for pins perforated before







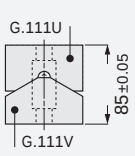


Between connection holes, ± 0.12 Tolerant
Between pin holes, ± 0.12 Tolerant.

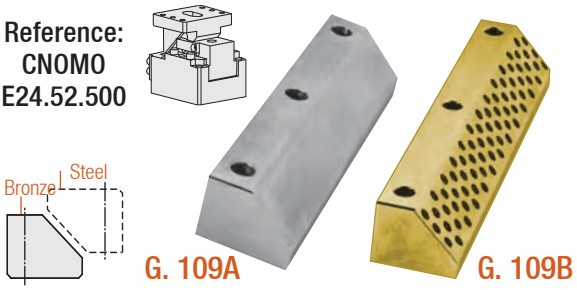
Order: G.111 U / V A x L

Material : Bronze and Graphite
1.503 (C45) Hardness: 56 - 60 HRC
Hardness Depth: > 1.0 mm

Bronze Steeel Plates Technical Details are similar.



Reference:
CNOMO
E24.52.500



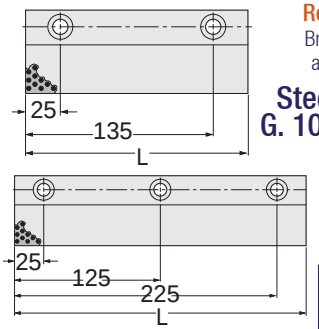
G. 109A G. 109B

GRAPHITE / BRONZE, CAM GUIDE PLATES

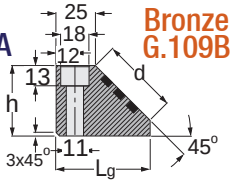
Bronze, Self Lubricated - Steel 'V' Bearings

Reference : CNOMO E24.52.500

Bronze, Steel Plate Technical Details are similar, Heat Resistance 150°C



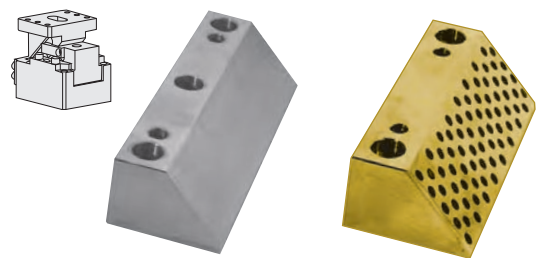
Steel G. 109A



Bronze G.109B

Order: G.109 A-B-C-D x L

Form	L	Lg	h	d
A	160	60	45	50
B	250			
A	160	80	60	80
B	250			



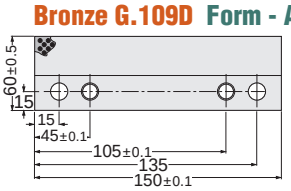
G. 109C G. 109D

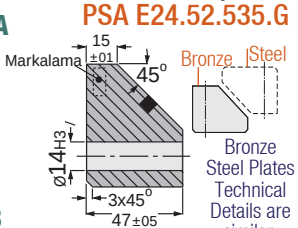
GRAPHITE - BRONZE, CAM GUIDE BLOCKS

Bronze, Self Lubricated - Steel 'V' Bearings

PSA E24.52.535.G

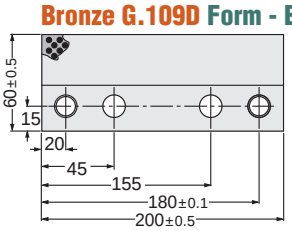
Bronze G.109D Form - A

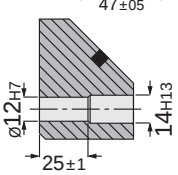




Bronze Steel Plates Technical Details are similar.

Bronze G.109D Form - B





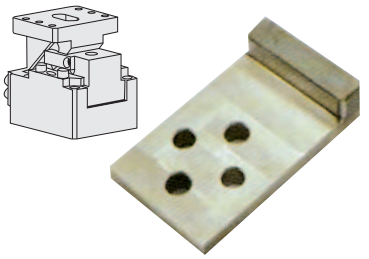
Bronze G.109.D

Steel G.109.C

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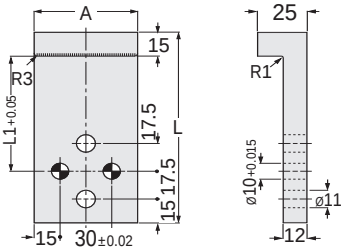
Section Press Mould





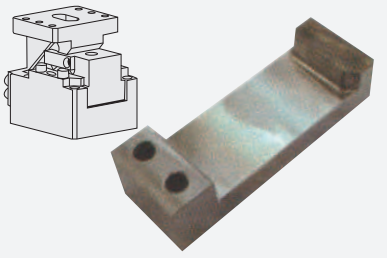
CAM RETURN PLATE G. 139

Steel, Mandatory Return-Support



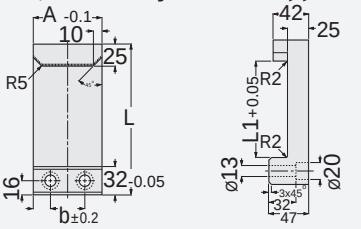
A	L	L1
60	100	52.5
	120	72.5

Order: G.139 A x L



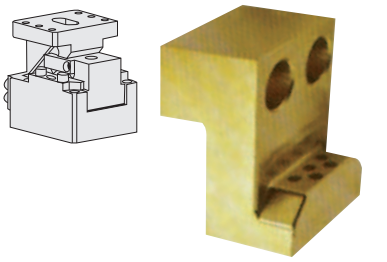
CAM RETURN PLATE G. 78

Steel, Mandatory Return-Support



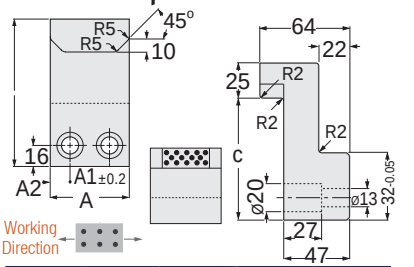
A	L	C	b	L1
60	171	30	15	114
	191			134
80	171	40	20	114
	191			134

Material : 1.0503 (C 45) HRC : 52 - 54
Partly Induction /// Surface Hardening

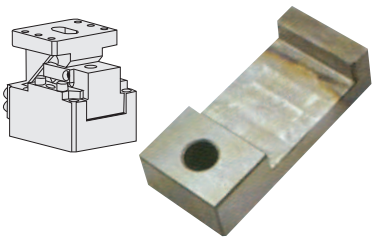


CAM SUPPORT PLATE G. 77

Bronze - Graphite Plate for Cam

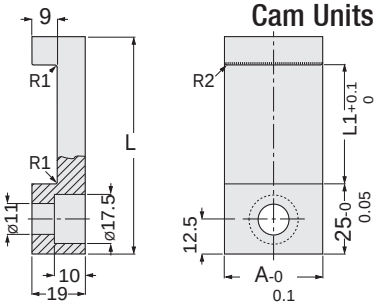


A	L	A1	A2	c
60	82	30	15	57
	102			77
	112			87
80	82	40	20	57
	102			77
	112			87



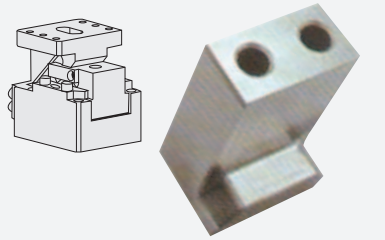
SMALL CAM SUPPORT G.138

Support Plate for Steel, Small Cam Units



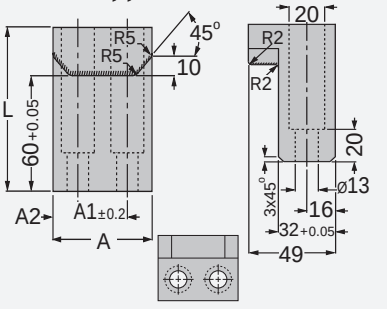
A	L	A2
30	67.5	32.4
35	77.5	42.4

Order: G.138 A x L



CAM SUPPORT PLATE G. 78.D

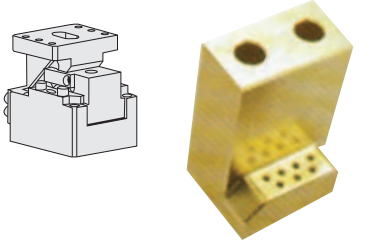
Steel - Support Plate for Cam



A	L	A1	A2
60	85	30	15
80		40	20

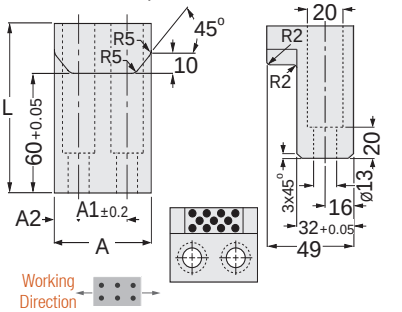
Order: G.78.Y - G.78.D A x L

Material : 1.0503 (C 45) HRC : 52 - 54
Partly Induction /// Surface Hardening



CAM SUPPORT PLATE G. 77.D

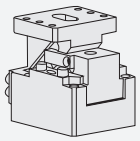
Bronze - Graphite Plate For Cam



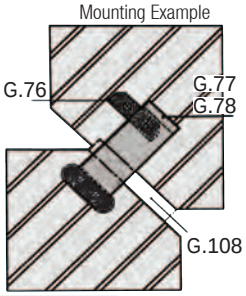
A	L	A1	A2
60	85	30	15
80		40	20

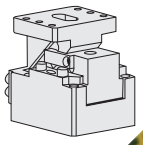
Order: G.77.Y - G.77.D A x L

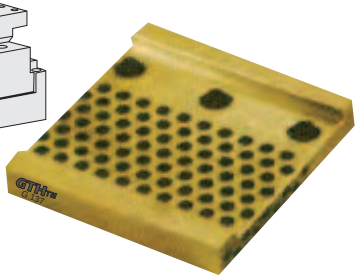
Material : Bronze and Graphite Providing Lubrication







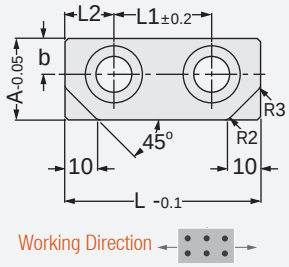




FIXED CAM RETURN PLATES

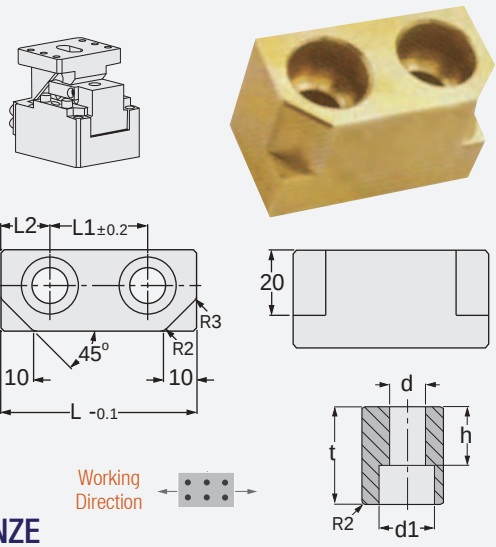
Bronze and Graphite, Self Lubricated

G.76.G



FIXED CAM RETURN PLATES
BRONZE, GRAPHITE (SELF LUBRICATED) **G. 76.G**

Form	A	L	b	t	L1	L2	d	d1	h
G.76 G	25	60	11	30	30	15	11	17.5	18
	32	60	16	38	30	15	13	20	23
	32	80	16	38	40	20	13	20	23



BRONZE
FIXED CAM RETURN PLATES

G.76.B

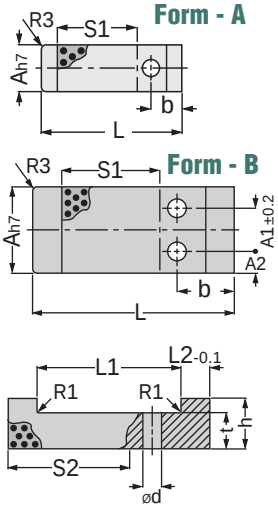
Form	A	L	b	t	L1	L2	d	d1	h
G.76 B	25	60	11	30	30	15	11	17.5	18
	32	60	16	38	30	15	13	20	23
	32	80	16	38	40	20	13	20	23

Order: G.76.G / G.76.B A x L

Material : Bronze and Graphite Bronze

SELF LUBRICATING - CAM PLATES **G. 137**

Cam Motion Distance Adjusting Plate



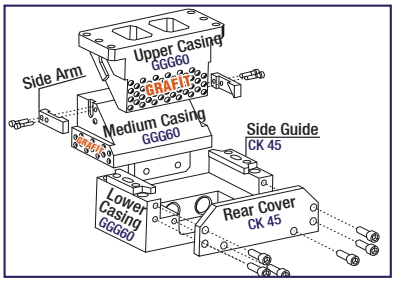
Mounting Bolts: Imbus
Form A : ..... M.10 x 30
Form B / 60 : ..... M.12 x 40
Form B / 100 : ..... M.16 x 40
Form C : ..... M.16 x 40

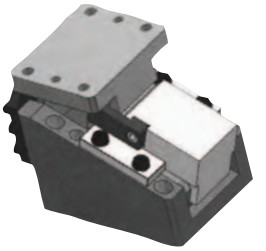
GRAPHITE - BRONZE - STEEL, CAM PLATES **G. 137**

Form	A	L	h	L1	L2	A1	A2	S1	S2	b	d	t
A	30	70	17	50	10	-	-	30	40	20	11	12
		90		70				50	60			
B	45	70	25	50	10	22	11.5	30	40	20	11	15
		90		70				50	60			
B	60	120	35	80	20	30	15	40	60	40	13	25
		140		100				60	80			
		160		120				80	100			
B	100	120	35	80	20	70	15	40	60	40	18	25
		140		100				60	80			
		160		120				80	100			
C	150	120	35	80	20	60	15	40	60	40	18	25
		140		100				60	80			
		160		120				80	100			
		180		140				100	120			

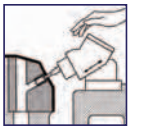
Order: G.137 Form x A x L

Material : Bronze - Graphite



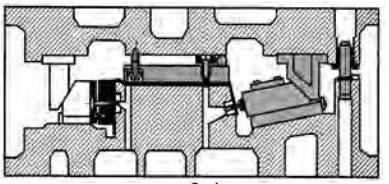


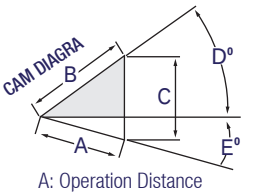




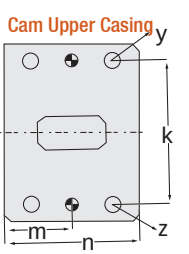
Mounting Example

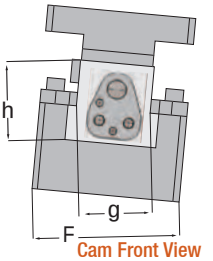
CAM UNITS, DKA Serial HORIZANTAL Self Lubricating ANGULAR CAM UNIT Serial: DKA



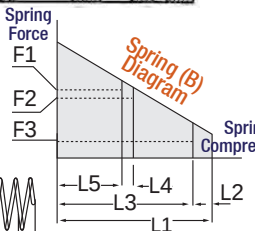


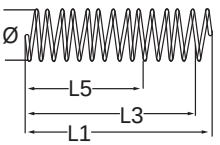
A: Operation Distance
B: Spring Motion Distance
C: Press Motion Distance
D°: Pushback Angle
E°: Operation Angle

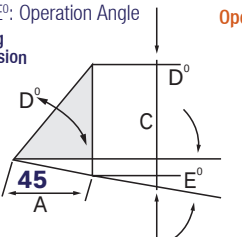




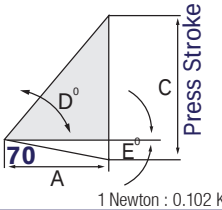
For spring diagram descriptions Refer Page 65

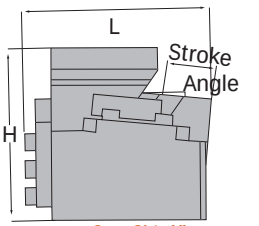






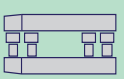
Operation



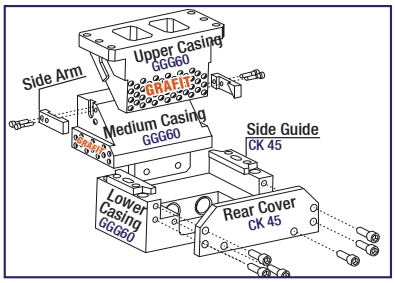


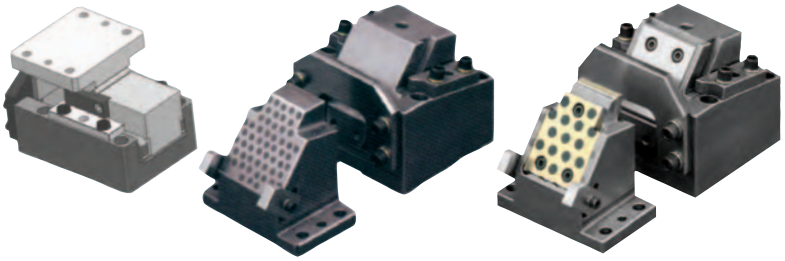
1 Newton : 0.102 Kg.

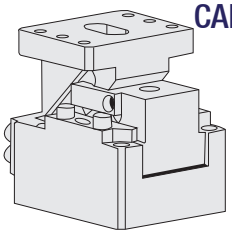
Order Type Model	Standard Operation (kN) Tone	Possible Operation Tone	CAM Stroke A	Press Stroke C	CAM Angle (E°)	Push Back D-E	Punch Space g /h	CAM Dimensions F x L x H	CAM Upper Casing k x m x n	Spring Force Newton F1 - F2 - F3	SPRING (B) Dimension x Operation Ø x L1	L2	L3	L4	L5	CAM Kg.
DKA 65 05 45	2 Ton Stamp 1.000.000	4 Ton Stamp 300.000	45	67.9	5°	55°	65 x70	130x177.5x160	130x50x100	743-680-176	25x127	16	111	5	66	19
DKA 65 05 70			70	105.7		5°		130x178x160		974-918-190	25x178	20	158		88	22
DKA 65 10 45			45	60.6	10°	50°		130x180x160	130x50x100	743-680-176	25x127	16	111	5	66	16
DKA 65 10 70			70	94.3		10°		130x224x170		974-918-190	25x178	20	158		88	21
DKA 65 15 45			45	55.1	15°	45°		130x183x170	130x50x100	743-680-176	25x127	16	111	5	66	22.3
DKA 65 15 70			70	85.7		15°		130x227x170	130x55x110	974-918-190	25x178	20	158		88	22
DKA 65 20 45			45	50.8	20°	45°		130x185x170	130x50x100	743-680-176	25x127	16	111	5	66	20.8
DKA 65 2070			70	79.21		20°		130x227x170	130x55x110	974-918-190	25x178	20	158		88	21
DKA 100 05 45	4 Ton Stamp 1.000.000	8 Ton Stamp 300.000	45	67.9	5°	55°	100 x100	175x199x200	165x50x100	1109-1015-263	32x127	16	111	5	66	33
DKA 100 05 70			70	105.7		5°		175x234x200	165x60x120	1149-1081-197	32x178	18	161		91	38
DKA 100 10 45			45	60.6	10°	50°		175x205x200	165x50x100	1109-1015-263	32x127	16	111	5	66	28.4
DKA 100 10 70			70	94.3		10°		175x240x200	165x60x120	1149-1081-197	32x178	18	161		91	33.7
DKA 100 15 45			45	55.1	15°	45°		175x210x200	165x55x110	1109-1015-263	32x127	16	111	5	66	33
DKA 100 15 70			70	85.7		15°		175x244x200	165x65x130	1149-1081-197	32x178	18	161		91	38
DKA 100 20 45			45	50.8	20°	40°		175x213x200	165x55x110	1109-1015-263	32x127	16	111	5	66	28.5
DKA 100 20 70			70	79.21		20°		175x246x200	165x65x130	1149-1081-197	32x178	18	158		91	34.8
DKA 150 05 45	6.6 Ton Stamp 1.000.000	10 Ton Stamp 300.000	45	67.9	5°	55°	150 x100	260x229x220	230x55x110	1805x1652x428	32x127	16	111	5	66	62
DKA 150 05 70			70	105.7		5°		260x254x220	230x65x130	1848x1738x308	32x178	17	161		91	73
DKA 150 10 45			45	60.6	10°	50°		260x236x220	230x55x100	1805x1652x428	32x127	16	111	5	66	53
DKA 150 10 70			70	94.3		10°		260x260x220	230x65x130	1848x1738x308	32x178	17	161		91	57.6
DKA 150 15 45			45	55.1	15°	45°		260x241x220	230x60x120	1805x1652x428	32x127	16	111	5	66	65
DKA 150 15 70			70	85.7		15°		260x265x230	230x70x140	1848x1738x308	32x178	17	161		91	77
DKA 150 20 45			45	51	20°	40°		260x244x220	230x60x120	1805x1652x428	32x127	16	111	5	66	53.7



Required Stroke and Force Criteria at Angular Cams: Drive Angle - CAM Angle - Operation Stroke - Required Force (Drilling Force + Spring Force + Friction Force) - Press Force - Driver Force- Cam Force (Required Force / Drive Angle) - Press Stroke (Operation Stroke / Drive Angle)





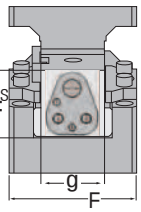


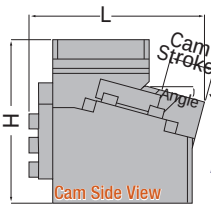
CAM UNITS, DK Serial HORIZONTAL (0⁰) / DIE MOUNTED CAM UNIT

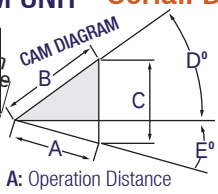
Serial: DK

Cam Units: By turning vertical motion of press to horizontal motion, drilling - cutting - form processes are provided at moulds. These cam units are standard compact design components, plain / angular or aerial cam types are available. As well as standard cam models are suitable to many general applications, also special models are produced as per request.

Kam Ön Görünüm







A: Operation Distance
B: Spring Motion Distance
C: Press Motion Distance
D: Push Back Angle
E: Operation Angle

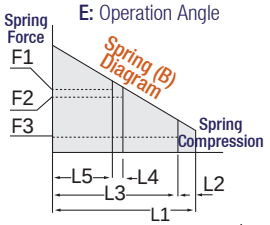
Also, upper casing holes can be finished (with Reamer / H7.K

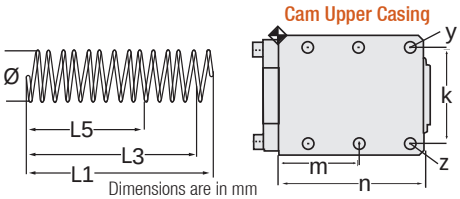
Cam Units: They are compact elements that can be turned press energy / motion from vertical motions to the different motions and can be connected to different angles. - They can be worked at wide force and stroke ranges.

Giving 10% Stroke tolerance is recommended.

Safety and working conditions: Absolutely, should be avoided from lateral loads, cam unit should not be exposed to dirt and burrs (It can be L damaged to friction and surfaces.) To protect repeated operation of cam unit, it should be secured to the mould robustly. Steel or Die Gas spring used at cam units are ensured to bring cam to same starting point at every turn at returns, in case of any adhesion, side guide arms are with safety system to provide bringing cam to starting point. When cam units are mounted with replaceable bronze plates, they should be lubricated with thin oil regularly, in case of replacement of worn plates, should be sure that all and centering elements are in their right position and if necessary, technical setting should be remade and fixed, for service pls. call our company.

Code	Description: (1N =0.102Kg.)
F1	Spring Force during final loading (N)
F2	**Spring Force at CAM operation pressure (N)**
F3	Spring Preloading (Newton)
L	Open Length Status of Spring (mm)
L2	Precompression Amount of Spring (mm)
L3	Length during precompression of spring
L4	**CAM Operation Distance (mm) Cutting - Drilling**
L5	Spring Length During Final Loading (mm)





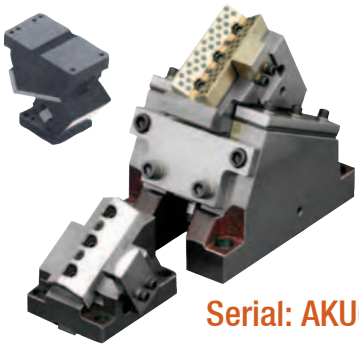
Dimensions are in mm

1 Newton : 0.102 Kg.

Serial : DK

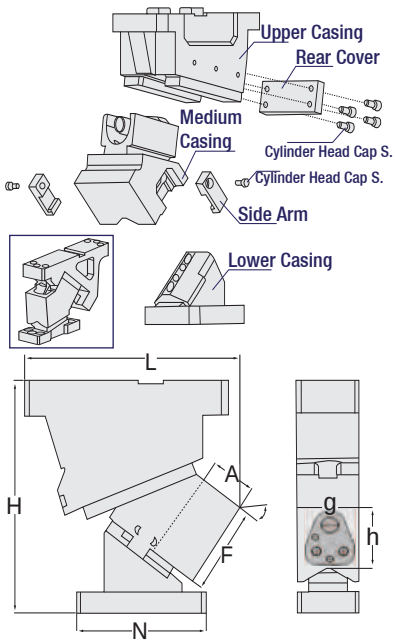
Order Type Model	Standard Operation (kN) Ton	Possible Operation Ton	Stroke A - C	Punch Space g /h	CAM Dimensions F x L x H	CAM Upper Casing k x m x n	Upper Hole Ø(y-z)	Spring Force Newton F1 - F2 - F3	SPRING (B) Dimension x Operation Ø x L1	L2	L3	L4	L5	CAM Weight Kg.
DK 52.25	1.5 Ton Stamp 1.000.000	3 Ton Stamp 300.000	**25**	g:52 h:65	98x140x140	98x40x80	Ø 9 - 14 2 x 7	594-504-144	20 x76	8	68	5	43	8.3
DK 52.40			**40**		98x155x140	98x45x90		605-542-101	20 x102	8	94		54	9.1
DK 52.60			**60**		98x200x140	98x55x110		613-571-109	20 x152	13	139		79	11.9
DK 65.40	2 Ton 1.000.000	4 Ton 300.00	**40**	65	130x167x160	130x50x100	11-18 2 x 9	749-671-125	25 x102	8	94	5	54	14.6
DK 65.60			**60**	70	130x212x160	130x55x110		760-707-136	25 x152	13	139		79	18.2
DK 100.40	3 Ton Stamp 1.000.000	6 Ton Stamp 300.000	**40**	100 100	175x218x200	165x60x120	Ø 14-20 2 x 11	1133-1015-189	32 x102	10	92	5	52	31.9
DK 100.60			**60**		175x238x200	165x70x140		1133-1063-203	32 x152	15	137		77	33.2
DK 100.80			**80**		175x277x200	165x75x150		1306-1235-170	32 x203	15	188		108	38.7
DK 150.40	6 Ton 1.000.000	9 Ton 300.00	**40**	150	260x225x220	230x60x120	11-26 2 x 15	1843-1651-307	32 x102	10	92	5	52	53.4
DK 150.60			**60**	100	260x245x220	230x70x140		1854-1727-330	32 x152	15	137		77	56.5
DK 200.40	8 Ton 1.000.000	12 Ton 300.00	**40**	200	310x236x240	280x65x130	18-26 2 x 15	2765-2577-461	32 x102	10	92	5	52	73.9
DK 200.60			**60**	110	310x256x240	280x75x150		2781-2591-495	32 x152	15	137		77	77.6
DK 300.40	12 Ton 1.000.000	18 Ton 300.00	**40**	300	410x246x270	380x70x140	15-18 2 x 15	3614-3238-602	40 x105	10	92	5	52	116.2
DK 300.60			**60**	130	410x266x270	380x80x160		3657-3407-651	40 x152	15	137		77	215.7
DK 400.60	14 Ton	21 Ton	**60**	400 150	525x356x250	360x70x140	22-32 2 x 15	9350-8596-302	50 x152	4	148	5	88	198
DK 500.60	14 Ton	21 Ton	**60**	500 150	625x361x250	360x70x140	22-32 2 x 15	9350-8596-302	50 x152	4	148	5	88	240.6

Required Stroke and Force Criteria at Die Mounted Cams: Drive Angle - CAM Angle - Operation Stroke - Required Force (Drilling Force + Spring Force + Friction Force) - Press Force - Driver Force- Cam Force (Required Force / Drive Angle) - Press Stroke (Operation Stroke / Drive Angle)

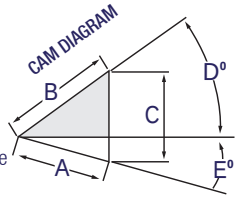


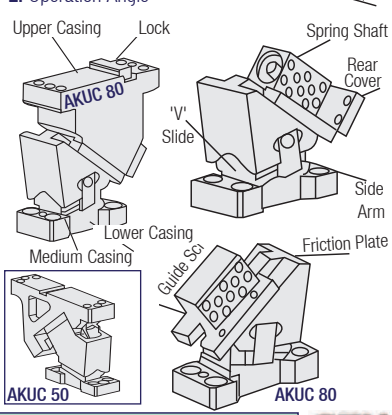
Serial: AKUC

AERIAL CAM UNITS



A: Operation Distance
B: Spring Motion Distance
C: Press Motion Distance
D: Push Back Angle
E: Operation Angle





AERIAL CAM UNITS Serial: AKUC

AKUC 50 : Standard working power is 2 Tons-Possible working 4 Tons

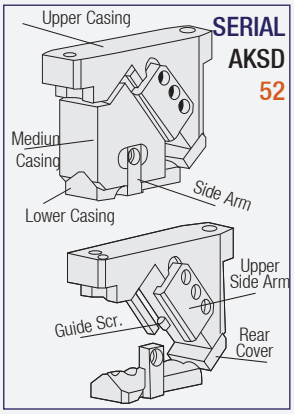
Serial Model	Stroke Angle E	Push Back D-E	Cam Stroke A	Press Stroke C	Punch Space g /h	Spring mm B	Dimensions N x F L x H	Cam Weight Kg.
AKUC 50. 0⁰	.0⁰	50⁰	30.2	36		47	118x122.5 225x200	12.7
AKUC 50. 5⁰	5⁰	45⁰ 5⁰	30.5	33.1		43	127x121.5 227x200	12.3
AKUC 50. 10⁰	10⁰	40⁰ 10⁰	30.3	30.3		39	134x120 223.7x200	11.8
AKUC 50. 15⁰	15⁰	35⁰ 15⁰	30.5	28.6		36	140x117.7 224.4x200	11.8
AKUC 50. 20⁰	20⁰	30⁰ 20⁰	30.4	26.9		33	151x114.6 221.8x200	11.5
AKUC 50. 25⁰	25⁰	25⁰ 25⁰	30	25.4	G: 50	30	158x111.8 215.9x200	11.3
AKUC 50. 30⁰	30⁰	20⁰ 30⁰	32.6	26.5		30	159x115.3 213.6x200	11.1
AKUC 50. 35⁰	35⁰	15⁰ 35⁰	35.4	28.1	h: 75	30	170x103.1 204.9x200	10.9
AKUC 50. 40⁰	40⁰	10⁰ 40⁰	38.6	30		30	177x97.3 206.7x200	10.9
AKUC 50. 45⁰	45⁰	5⁰ 45⁰	42.3	32.5		30	182x97 202x200	10.6
AKUC 50. 50⁰	50⁰	50⁰	46.7	35.8		30	186x94 195.7x200	10.6
AKUC 50. 55⁰	55⁰	5⁰ 55⁰	52.1	40.1		30	190x83.7 189.8x200	10.8
AKUC 50. 60⁰	60⁰	10⁰ 60⁰	59.1	46		30	194x75 179.3x200	11.2
AKUC 50. 65⁰	65⁰	10⁰ 65⁰	58.3	48.5	50 90	25	209x73.2 176.6x200	11.6
AKUC 50. 70⁰	70⁰	10⁰ 70⁰	57.6	50.6	50 92	20	215x64.2 177x200	12

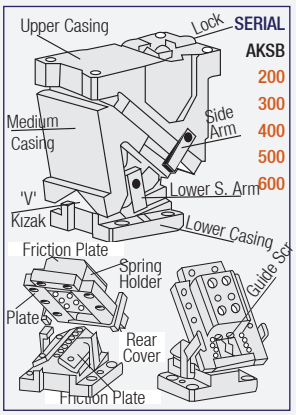
AKUC 80 : Standard working power is 4 Tons-possible working 8 Tons

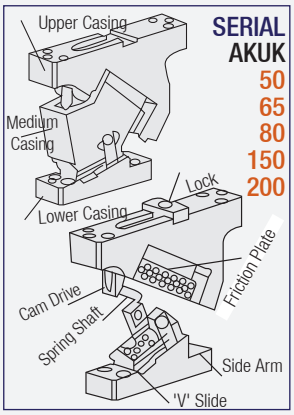
AKUC 80. 0⁰	.0⁰	50⁰	32.1	38.3		50	160x171 260x270	25.9
AKUC 80. 5⁰	5⁰	40⁰ 5⁰	38.4	35.5		50	173x160.6 273x270	26.3
AKUC 80. 10⁰	10⁰	40⁰ 10⁰	38.9	38.9		50	180x149.6 280x270	26.6
AKUC 80. 15⁰	15⁰	40⁰ 15⁰	39.7	42.4		50	186x138 286x270	25.1
AKUC 80. 20⁰	20⁰	30⁰ 20⁰	46.1	40.8		50	196x140.9 286x270	25.3
AKUC 80. 25⁰	25⁰	30⁰ 25⁰	47.8	45.2	G: 80	50	200x128.4 290x270	25.3
AKUC 80. 30⁰	30⁰	20⁰ 30⁰	54.3	44.2		50	208x135.7 283x270	23.2
AKUC 80. 35⁰	35⁰	20⁰ 35⁰	57.4	50	h: 86	50	209x122.7 284.3x270	23.4
AKUC 80. 40⁰	40⁰	10⁰ 40⁰	64.3	50		50	215x129.7 275x270	22.4
AKUC 80. 45⁰	45⁰	10⁰ 45⁰	69.6	57.9		50	214x166.6 274x270	22.4
AKUC 80. 50⁰	50⁰	50⁰	77.8	59.6		50	228x118.6 262.5x270	21.6
AKUC 80. 55⁰	55⁰	55⁰	87.2	71.4		50	225x105.9 259.6x270	21.7
AKUC 80. 60⁰	60⁰	10⁰ 60⁰	98.5	76.6		50	241x93.4 240.7x270	23.2

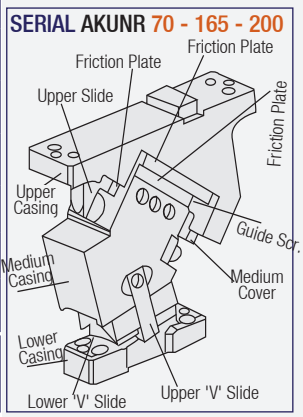
Order: AKUC 50... / AKUC 65... / AKUC 80... / AKUC 150...
Pls. request for products except Serial 50 / 80 Demounted
Shipping / Connection area can be extended.

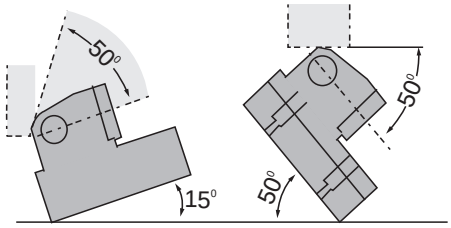
OTHER MODELS OF AERIAL CAM UNITS











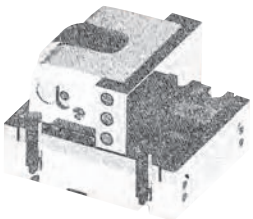
Cam Unit Handling Draft
Cylinders Eccentric Cylinders

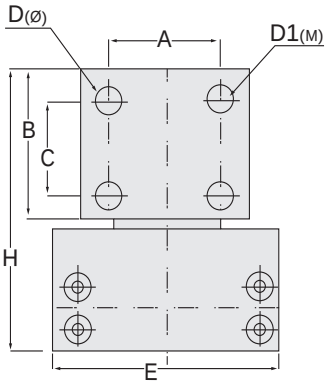


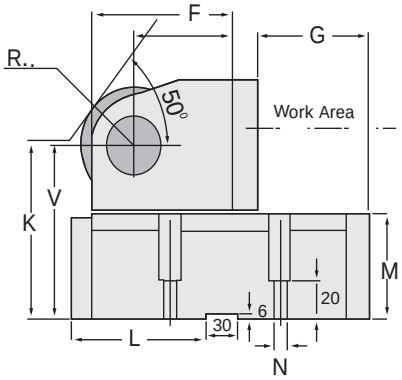


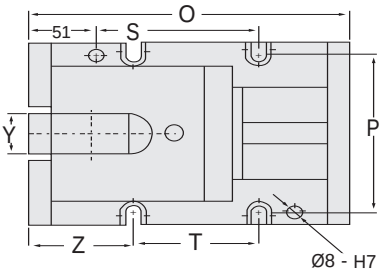
SLIDE PLAIN UNIT - ROLLER CAM

Serial: RK









Detailed Dimensions of Product Technical Drawing

Model Order Form	A mm	B mm	C mm	D D1 X2	E mm	F mm	G mm	H mm	K mm	L mm	M mm	N Ø	O mm	P mm	R mm	S mm	T mm	V mm	Y mm	Z mm
RK.01 50	43	60	43	Ø 8 M.8	94	115	43	117	60	75	52	Ø 9	190	79	R31	88	56	86	24	67
RK.01 80							73		90				220			118	86			
RK.02 50	70	74	54	Ø 8 M.8	120	115	43	140	60	75	62	Ø 9	190	105	R36	88	56	103	28	67
RK.02 80							73	140	90		62		220			118	86	103		
RK.02 100							103	157	120		79		260			158	126	120		
RK.03 50	43	63	43	M.8 X 4	63	-	43	117	86	-	-	Ø 9	190	-	R31	170	58	-	-	66
RK.03 80							118						90			220	86			
RK.04 50	70	74	54	M.8 X 4	90	-	43	104	103	-	-	Ø 9	190	70	R36	110	140	-	28	40
RK.04 80							73	104	103				220			140	170			
RK.04 100							102	260	120				260			180	210			
RK.05 50	115	90	70	M.8 X 4	135	-	43	160	115	-	-	Ø 11	190	119	R45	140	110	-	-	25
RK.05 80							73	160	115				220			170	140			
RK.05 100							102	117	132				260			210	180			
RK.06 50	176	110	86	M.8 X 4	135	-	43	182	127	-	-	Ø 13	215	170	R55	161	115	-	-	50
RK.06 80							73						245			191	145			
RK.06 100							93						265			211	165			

Product Technical Information

1 Newton : 0.102 Kg.

Model Order	Stroke mm	Recom. Stroke mm	Max. Progress Force	Return Force
RK.01 50	50	45	3000 daN	200 daN
RK.01 80	80	72		
RK.02 50	50	45	5000 daN	200 daN
RK.02 80	80	72		
RK.02 100	100	90		
RK.03 50	50	45	3000 daN	200 daN
RK.03 80	80	72		
RK.04 50	50	45	5000 daN	100 daN
RK.04 80	80	72		
RK.04 100	100	90		
RK.05 50	50	45	15000 daN	150 daN
RK.05 80	80	72		
RK.05 100	100	90		
RK.06 50	50	45	20000 daN	250 daN
RK.06 80	80	72		
RK.06 100	100	90		

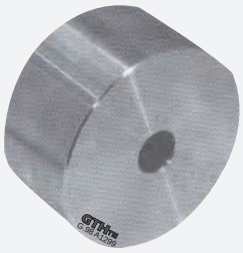

Large Type Press Mould


Large Type Press Mould



Connection bolts should be supplied separately.

Reference :
FORD WDX07 - 70
BMW B2 3001 - VW
AUDI 39B 630

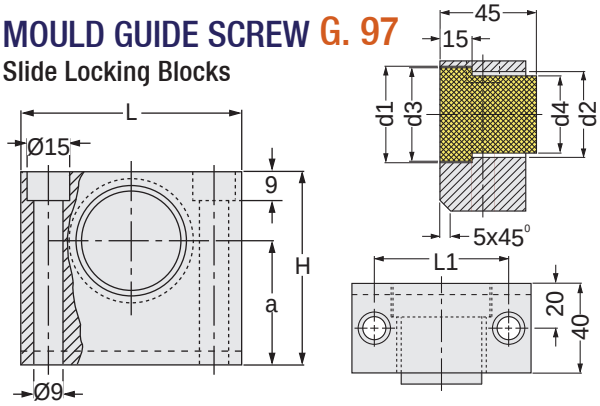


As per request, our production for desired dimension is available.

Connection bolts (Imbus) should be supplied separately.

MOULD GUIDE SCREW G. 97

Slide Locking Blocks



1 Newton : 0.102 Kg.

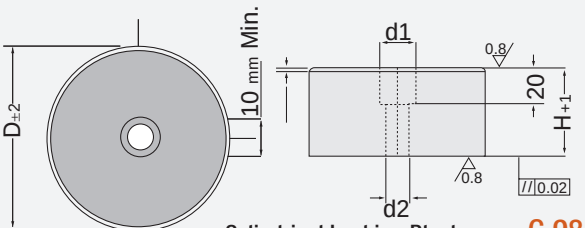
L mm	H mm	L1 mm	a mm	d1 mm	d2 mm	Ø d3	Ø d4	Max. Spring Force
65	60	45	40	35	30	34	27	5200 N
75	70	55	45	45	40	44	36	9800 N

Order: G.97 L x H

Material : 1.0503 (C 45)
Bolts can be supplied separately.

CYCLINDER MOULD GUIDE SCREW

Cylindrical Locking Blocks G.98



Cylindrical Locking Blocks G.98

D	H	d1	d2	Bold
40	30	18	11	M.10
60	50	20	13.5	M.12
100		26	17.5	M.16
150		33	22	M.20

Order: G.98 D x H

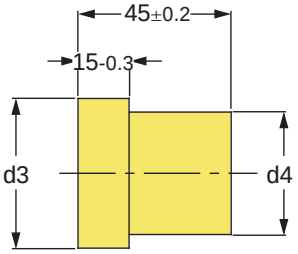
Material : 1.0503 (C 45)
With induction as per request HRC 60

MOULD Guide Screw Vulkollan Silencer G. 97.A



Hardness: 80 Shore A'. It is used with mould Guide Screw and available at mould stoppers. Also, they can be supplied for extra orders.

Reference :
FORD WDX07 - 70
BMW B2 3001 - VW
AUDI 39B 630



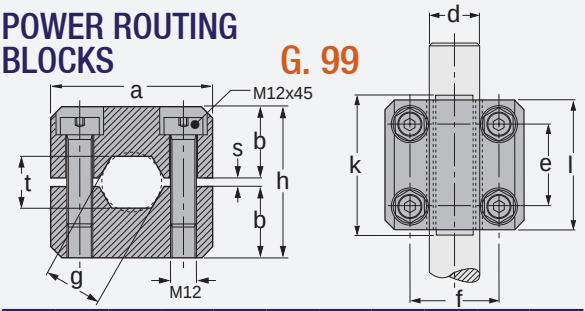
Ø d4 mm	Ø d3 mm
34	27
35	27
44	36
45	36

Order: G.97.A d2 x d3



Connection bolts (Imbus) should be supplied separately.

POWER ROUTING BLOCKS G. 99



a	l	h	b	t	s	g	e	f	k	d
65	55	56	27	19	2	25.5	30	38	65	25
75	55	70	33	24	4	30.5	30	48	65	30
75	70	70	33	24	4	30.5	44	48	80	30
90	70	80	38	30	4	40.5	44	64	80	40

Order: G.99 a x l

Material : 1.0038 (St 37)

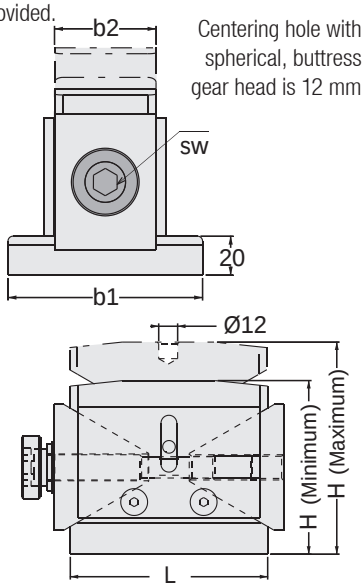


BLOCK SUPPORT Serial: 1520

Straightening Wedges '' HERCULES ''

With HERCULES Unit, lifting and sliding positions of large moulds (precision) are provided.

Centering hole with spherical, buttress gear head is 12 mm



Straightening Wedges: Block surface is machined sensitively and is designed especially supporting or lifting of heavy parts. Quite robust construction is allowed to do precision and smooth height setting as 1/10 mm sensitively, height setting can be done with Knurled Screw or Alien Key, double effects are generated precision vertical motion without great stroke and lateral sliding. It can be used at large machine tools and processing of heavy cast and forging especially after stamping.

Straightening Wedges: Serial: 1520

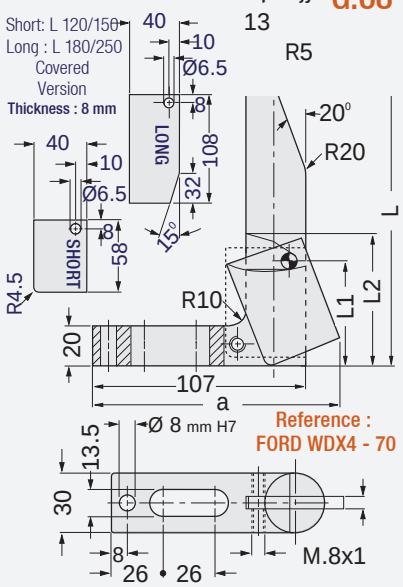
Height H /Min.-Max.	b1	b2	L	sw	Kgf ↓	Weight Kg.
50 - 63	-	40	63	8	4000	1.3
100 - 125	115	60	125	14	10000	8.6
170 - 190	145	80	175	22	25000	23.8

Order: **1520 - H . b1**



CONTROL PART SHEET THRUST

Part Position Controlled and Springy G.68

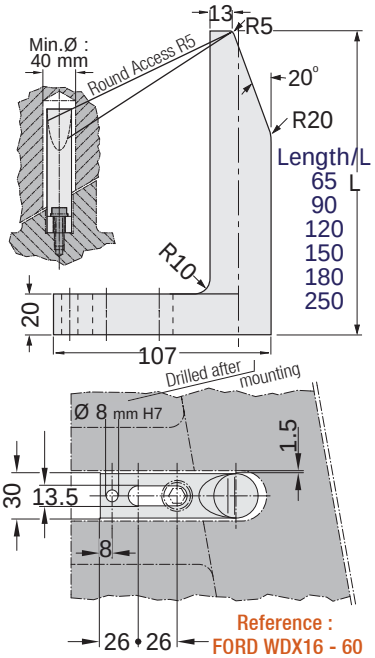


Control Part Mechanical Thrusts G.68

Model	L	L1	L2	a
Short Type	120	55	70	120
	150	55	70	120
Long Type	180	105	120	124
	250	105	120	124

Order: **G.68 . L**
As per request, sensor or connector

MECHANICAL SHEET THRUST G.67



Reference :
FORD WDX16 - 60
BMW B2 2305 17
OPEL F33 26
VW/AUDI 39D 807
PSA E24.56.200.G

L
65
90
120
150
180
250

Continous Stock

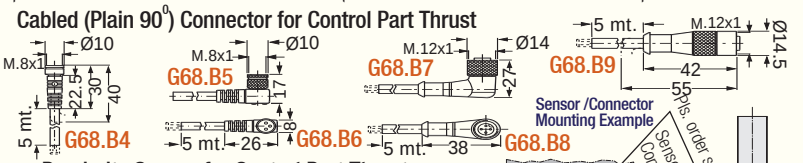
Order: **67.L**

Material : Ck 40 Forged

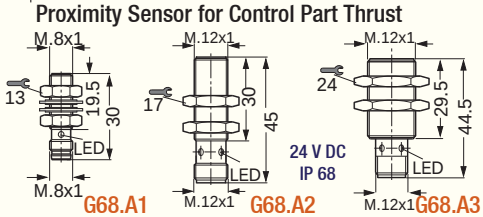
PROXIMITY SENSORS AND CONNECTORS FOR PART CONTROL THRUST

Bolts, sensors and connectors used in mounting or products are orderese parately. Also, pls. order sensors and connectors in required dimension and features with specified codes.

Cabled (Plain 90°) Connector for Control Part Thrust



Proximity Sensor for Control Part Thrust



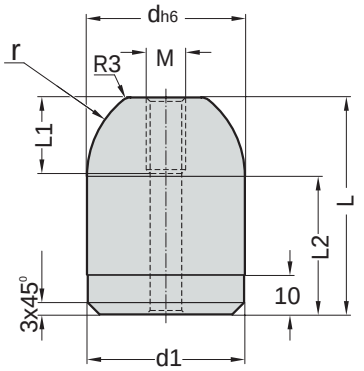
Section Press Mould
Page 69

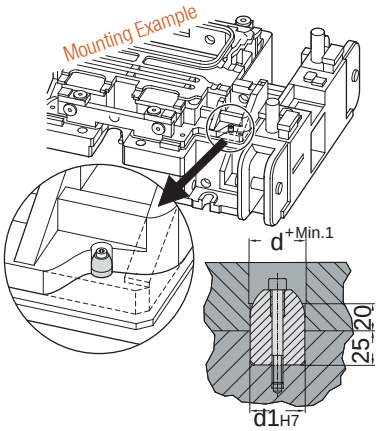


CENTERING PIN G.65

At centering of perforated parts

Overhead Screw Type





Overhead Screw Centering Pin

d	L	L1	L2	d1	M	r
22	45	16	35	21.95	M.8	15
22	55		45	21.95		
32	50	20	35	31.95	M.10	20
40	55		35	39.95		25
40	65		45	39.95		
50	55		35	49.95		

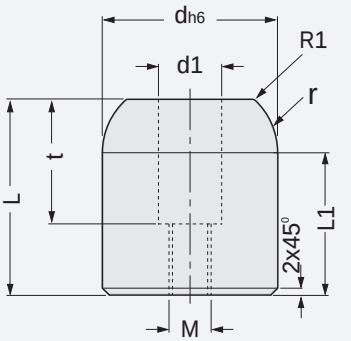
Order: **G.65 d x L**



CENTERING PIN G.66

At centering of perforated parts

Countersunk Screw Type



Centering Pins: It is used for centering of perforated parts. Using centering pin provides centering repeatedly with high sensitivity at mould and fixtures. Mounted parts are centered with high sensitivity and quickly. The bolts using during mounting of products should be supplied by users.
Example: M.8 x 70 Cylinder Head Cap Screw

Countersunk Screw Centering Pin

d	L	L1	d1	t	M	r
22	45	37.5	14	25	M.10	20
32	50	40	18	35	M.12	20
40	55	40	18	35	M.12	20
50	55	40	18	35	M.12	20

Order: **G.66 d x L**

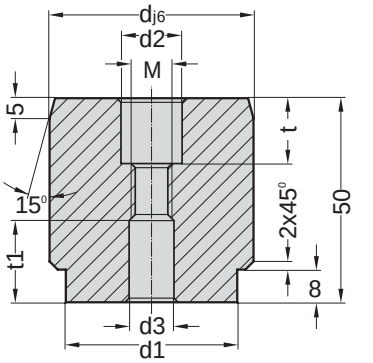
Material : 1.7131 (16 MnCr 5)
Hardness : 58 - 62 HRC Heat Threated

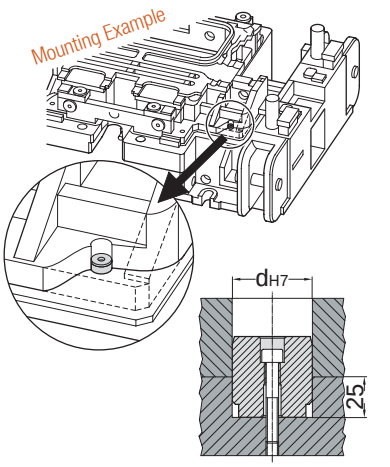


CENTERING PIN G.62

Centering Pin at Daimler Standard

Reference :
DAIMLER B8 0602 321 00 8 801



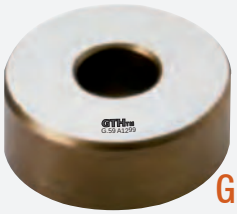


Centering Pin at Daimler Standard

d	d1	d2	d3	M	t	t1
22	16	11	9	M.8	13	16
25	18					
32	25					
40	32	15	11	M.10	16	20
50	42					

Order: **G.62 d x d1**

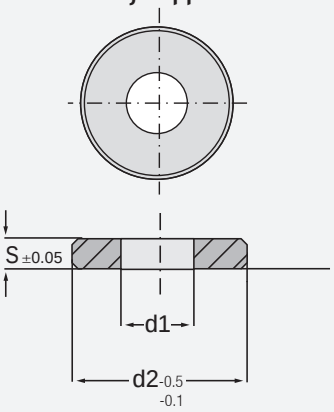
Material : 1.7131 (16 MnCr 5)
Hardness : 58 - 60 HRC Heat Threated



G. 59

CYLINDRICAL SUPPORT WASHER

Conical Locking Support Element

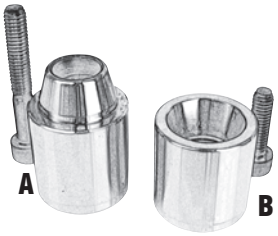


Conical Locking Support Element

d2	S	d1
12	5	4.5
	10	
14	5	5.5
	10	
16	5	5.5
	10	
	20	
20	5	8.5
	10	
	20	
	30	
25	5	8.5
	10	
	20	
	30	
30	10	10.5
	20	
	30	
	40	
42	10	10.5
	20	
	30	

It is used as conical locking support element or mould inner auxiliary tool at your designs.

Order : **G.59. d2 x S**



Conical Locking Element (Standard)
Mounting Bolts (Without Support Washer)

Ø d2	Cylinder Head Cap Screw	
	A	**B**
12	M3 X 25	M3 X 16
14	M4 X 25	M4 X 16
16	M4 X 25	M4 X 16
20	M6 X 40	M6 X 20
25	M6 X 40	M6 X 20
30	M8 X 50	M8 X 30
32	M8 X 60	M8 X 30
42	M8 X 70	M8 X 30

Conical Locking Element Mounting Bolts is included. At feeding position, (G.59) mounting bolts lengths should be changed.

Conical Locking G. 60

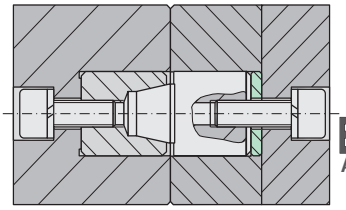
d1	L	L1	L2	L3	L4	L5	L6
12	34	16	4.5	9.6	8.6	8	7.5
14	34	16	6	12.4	6	7.5	8
16	34	16	6	12.4	5.8	7.5	8
20	54	26	9	19.7	10.6	12	9.5
25	54	26	10	19.7	9.2	11	11
30	72	35	14	25	12.2	15	13
32	72	35	14	25	12.2	15	13
42	92	45	18	27	16.8	16	13

Order : **G.60. d1 x L**

Material : 1.7131 (16 MnCr5)
Hardness : 62 ± 2 HRC Heat Threated

Operating Elements : Cylinder Head Cap Screw for fixing and Support Washer for Feeding (G.59)

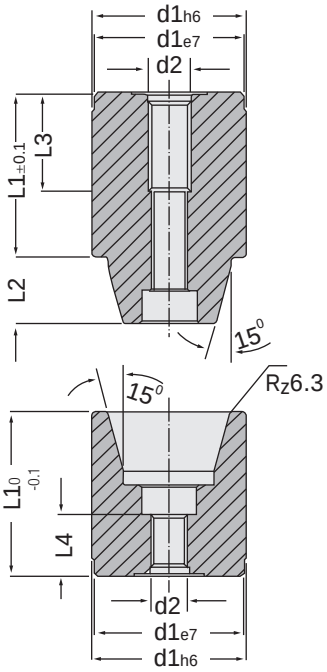
Mounting Example with Support Washer



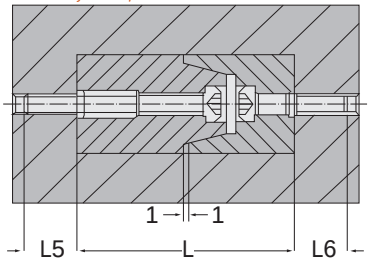


CONICAL LOCKING G. 60

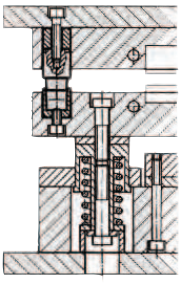
Cylindrical, Precision Centering



Mounting Example

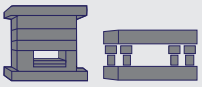


Conical Locking Units; It is to increase precision centering at moulds or repetition speed at mould (Injection / Press).



Continous Stock

BOTH Produces Sells Affordable Prices GTH







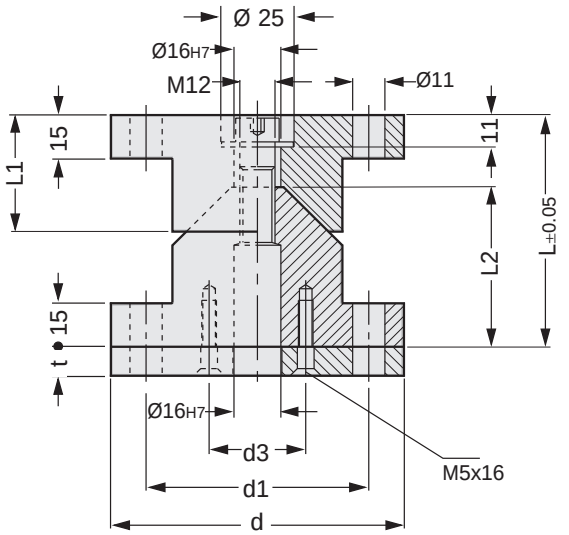
Special Productions As per Request



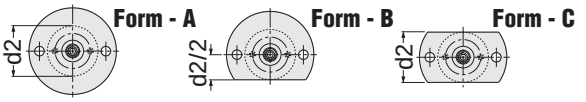


CONICAL CENTERING UNIT G.64

Adjusting Plate (As per request, Adjusting Plate A.B.C)



Adjusting Plates (Adjusting plate as per request, Form A.B.C)



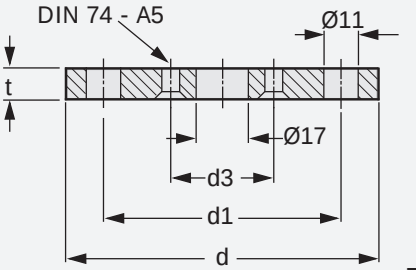
CONICAL CENTERING UNIT Special Productions As per Request

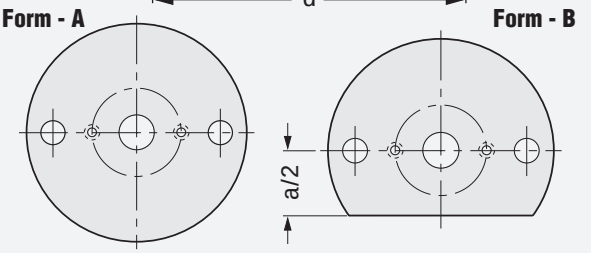
Adjusting plates, are with unit as standard and specified by their thickness with (t). Except this, other form (A - B - C) adjusting plates can be ordered as per request. Mounting bolts are excluded.

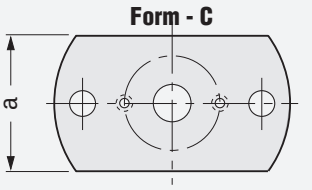
d	L	d1	d2	d3	L1	L2	t	Form
100	80	76	58	40.5	40	55	5.5	**A**
120	90	96	78	50.5	50	65		
100	80	76	58	40.5	40	55	5.5	**B**
120	90	96	78	50.5	50	65		
100	80	76	58	40.5	40	55	5.5	**C**
120	90	96	78	50.5	50	65		
100	80	76	58	40.5	40	55	10	**A**
120	90	96	78	50.5	50	65		
100	80	76	58	40.5	40	55	10	**B**
120	90	96	78	50.5	50	65		
100	80	76	58	40.5	40	55	10	**C**
120	90	96	78	50.5	50	65		
100	80	76	58	40.5	40	55	10.5	**C**
120	90	96	78	50.5	50	65		

ADJUSTING PLATES (CONICAL CENTERING) G.64.A

Adjusting Plates for Conical Centering Units



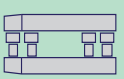




Note: The bolts using during mounting of products shall be supplied separately.

ADJUSTING PLATES FOR CONICAL CENTERING UNITS

d	t	d1	d3	a	Form
100	5.5	76	40.5	58	**A**
120		96	50.5	78	
100	5.5	76	40.5	58	**B**
120		96	50.5	78	
100	5.5	76	40.5	58	**C**
120		96	50.5	78	
100	10	76	40.5	58	**A**
120		96	50.5	78	
100	10	76	40.5	58	**B**
120		96	50.5	78	
100	10	76	40.5	58	**C**
120		96	50.5	78	
100	10.5	76	40.5	58	**C**
120		96	50.5	78	



Section Press Mould

Order : G.64.d x L x t Form

Order : G.64.A d x t . Form

Material : 1.0503 (C 45) Work Tool Steel Heat Threated as per request

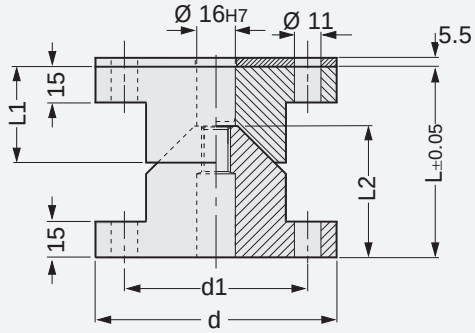
Usage : It is for G.64 conical centering unit



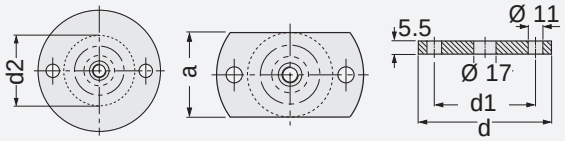
CONICAL CENTERING UNIT G.63

Adjusting Plate (Adjusting Plate A.B as per request)

Referans: NAAMS G91



Adjusting Plates (Adjusting Plates As per Request, Form A.B)



NAAMS Conical Centering Units G.63

d	L	d1	d2	L1	L2	Form
100	80	76	58	40	55	A
120	90	96	78	50	65	
100	80	76	58	40	55	B
120	90	96	78	50	65	

Adjusting plates are with conical centering unit in (5.5 mm) dimension as standard. For your adjusting plates orders as per request, you can select from the following table.

Order : G.63 d x L. Form

Material : 1.7131 16 (MnCr 5) **Hardness :** 60-64 HRc

Usage : NAAMS G.91 Conical Centering Unit

NAAMS Adjusting Plates for Conical Centering Units G.63.A

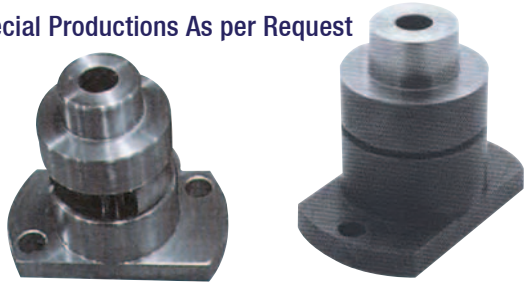
d	d1	a	Form
100	76	-	A
120	96	-	
100	76	58	B
120	96	78	

Order : G.63.A d x Form

Material: 1.0503 (C 45) Work Tool Steel Heat Threated as per request

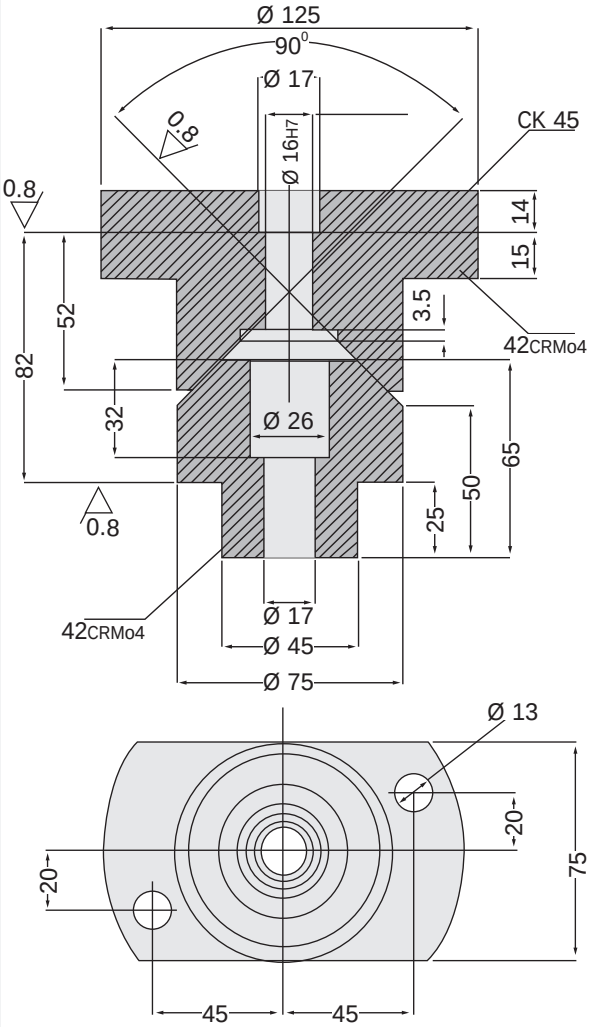
Usage : NAAMS G.91 Adjusting Plate

Special Productions As per Request



CONICAL LOCKING Guide Screw G.46

In addition, production in desired dimension as per request

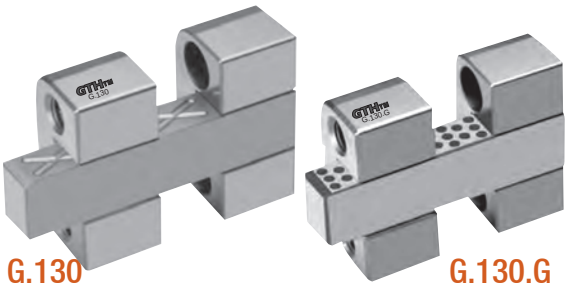


Note: In whole dimensions without tolerance, all corners are chamfered according to EN 22768 - 1 (m) standard.

Order : G.46 Technical Drawing

Material : Technical Drawing Within Details

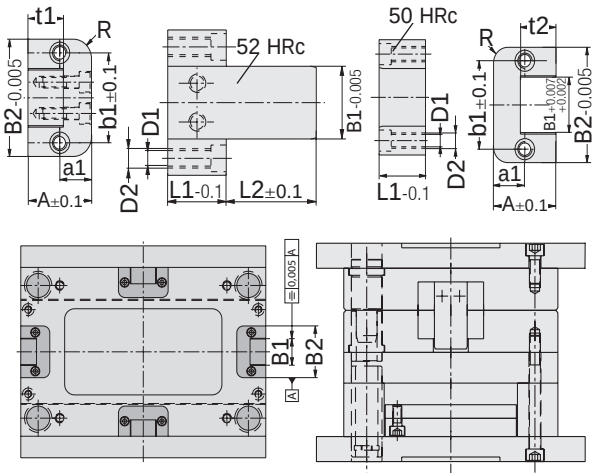
Usage : Special Production As Per Request



G.130 G.130.G

SLIDE CENTERING UNIT G.130

Injection Mould Centering Tool With Oil Groove / Self Lubricating Bearing, Modular Group G.130.G



Injection Mould Centering Tool With Oil Groove / Self Lubricating Bearing, Modular Group G.130 G.130.G

B1	L1	L2	A	B2	D1	D2	a1	b1	t1	t2	R
16	20	20	22	45	6.8	M8	11	30	11.5	12	8
		40									
30	26	40	35	60	6.8	M8	17.5	46	19.5	20	10
		63									
48	36	32	46	100	10.3	M12	23	74	25.5	26	12.5
		50									
		63									
		80									
77	56	50	60	150	14	M16	30	114	35.5	36	16
		71									
		100									

Note: Slide Conical Locking Technical Drawing Details are similar with G.130 - G.130.G

Order : G.130/G B1 x L1 x L2

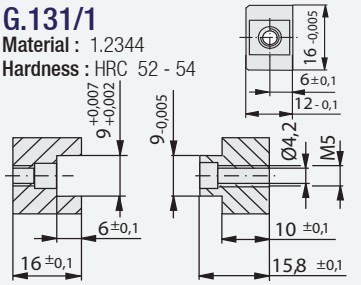
Material : 1.2343 Steel Heat Threated

Usage : Injection Mould Centering Unit

CENTERING BLOCKS

G.131/1

Material : 1.2344
Hardness : HRC 52 - 54

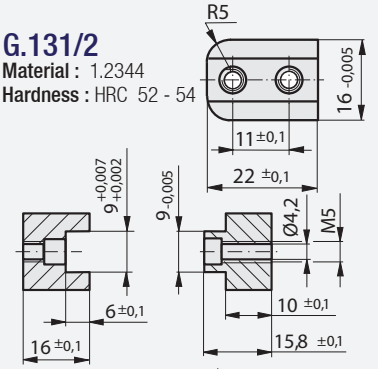


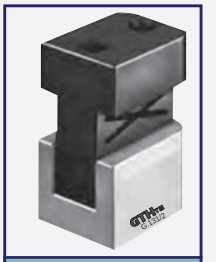


Order : G.131/1

G.131/2

Material : 1.2344
Hardness : HRC 52 - 54

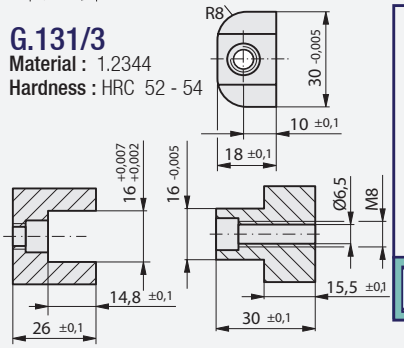




Order : G.131/2

G.131/3

Material : 1.2344
Hardness : HRC 52 - 54

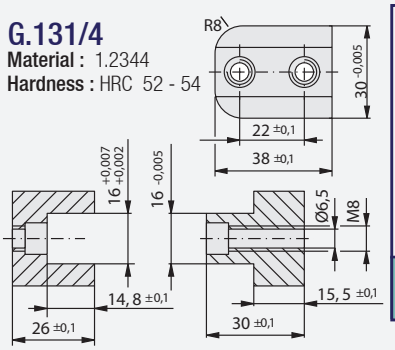


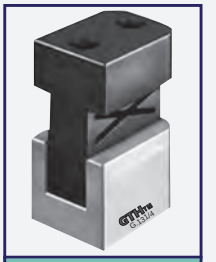


Order : G.131/3

G.131/4

Material : 1.2344
Hardness : HRC 52 - 54

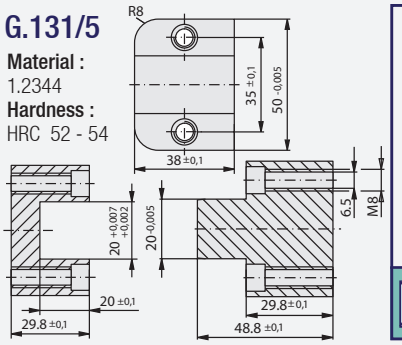




Order : G.131/4

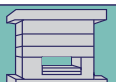
G.131/5

Material : 1.2344
Hardness : HRC 52 - 54





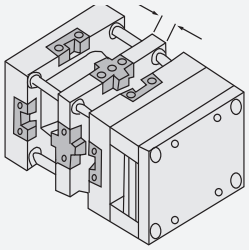
Order : G.131/5



Section Injection Mould

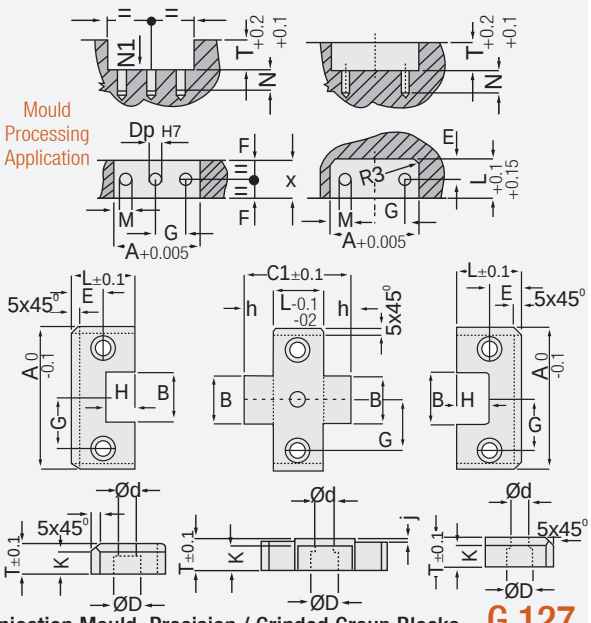
BOTH Produces Sells Affordable Prices GTH

Mounting Example





SQUARE LOCKING GROUP BLOCKS G.127



Injection Mould, Precision / Grinded Group Blocks G.127

A	X	B	C1	D	d	E	F	G	h
50	26	17	43	10.5	6.5	11	13	17	8.5
	36		53				18		
75	26	25	54	16.5	10.5	18	13	25	14
	36		64				18		
100	36	35	76	16.5	10.5	22	18	35	20
	46		86				23		
125	36	45	76	16.5	10.5	22	18	42	20
	46		86				23		

A	H	j	K	L	L1	T	M	N	Dp	N1
50	9.5	1.5	8	21.5	26	16	M6	15	6	17
					36					
75	15	1.5	12	36	26	19	M10	20	10	22
					36					
100	21	1.5	12	45	36	19	M10	20	10	22
					46					
125	21	1.5	12	45	36	25	M10	20	12	22
					46					

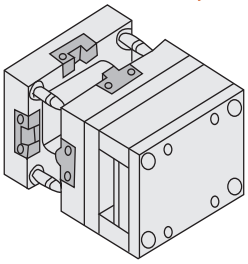
Connection bolts of centering unit products are supplied separately

Order : G.127 A . X

Material : 1.7131 Carburized **Hardness :** 58-60 HRC

Usage : Injection Mould Locking Assembly

Mounting Example



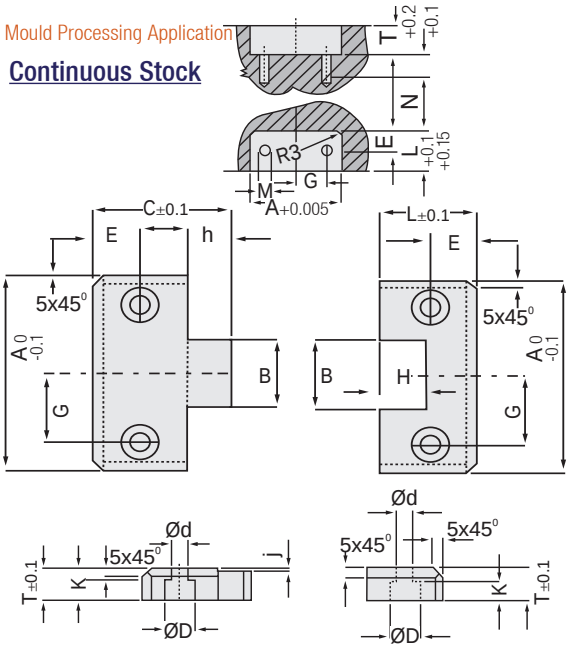


SQUARE LOCKING / CENTERING BLOCK G.128

Injection Mould, Precision / Grinded Blocks

Mould Processing Application

Continuous Stock



Injection Mould, Precision / Grinded Blocks G.128

A	G	E	M	L	T	N
38	11	7	M5	17	13	15
50	17	11	M6	21.5	16	15
75	25	18	M10	36	19	20
100	35	22	M10	45	19	20
125	42	22	M10	45	25	20

A	B	C	d	D	h	H	j	K
38	15	30	5.5	9.5	8	9	1.5	5.5
50	17	30	6.5	10.5	8.5	9.5	1.5	8
75	25	50	10.5	16.5	14	15	1.5	12
100	35	65	10.5	16.5	20	21	1.5	12
125	45	65	10.5	16.5	20	21	1.5	12

Order : G.128 A

Material : 1.7131 Carburized **Hardness :** 58-60 HRC

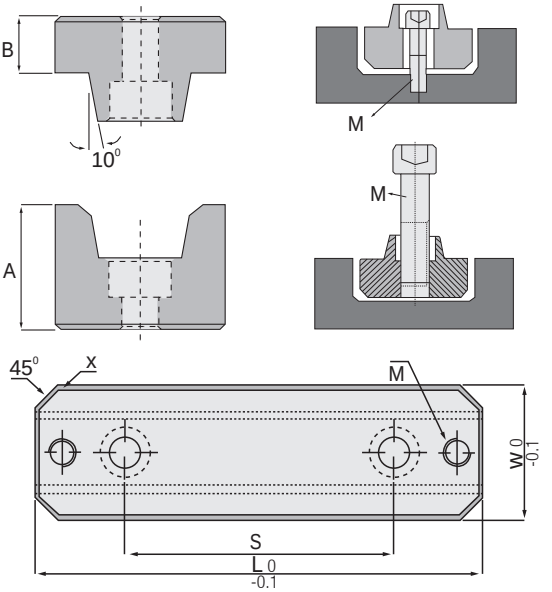
Usage : Injection Mould Locking Assembly

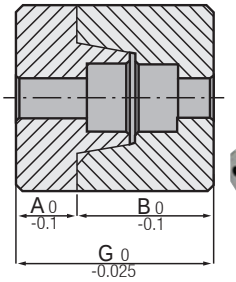
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PARALLEL CENTERING BLOCK G.132

Injection Mould, Intermediate Plate Long Thrust Block







Continuous Stock

Injection Mould, Intermediate Plate Long Thrust Block G.132

W	L	A	B	G	S	X	M
25	50	17.5	8	25.5	-	5	M5
30	100	22	10	32	60	5	M6
40	150	25	13	38	100	5	M8

Connection bolts of centering unit products are supplied separately

Order : G.132 W x L

Material : 1.1625 Steel
Hardness : 52-54 HRC

Usage : Injection Mould Locking Assembly

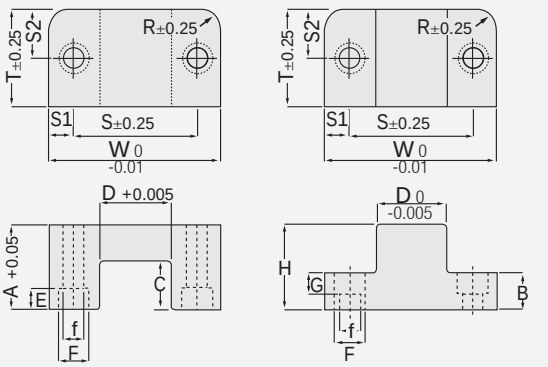


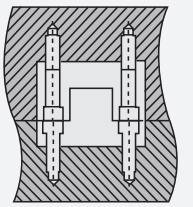
BOTH Produces Sells Affordable Prices GTH

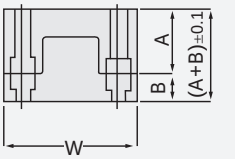


CONICAL CENTERING BLOCK G.129

Injection Mould, Plate Positioning Block



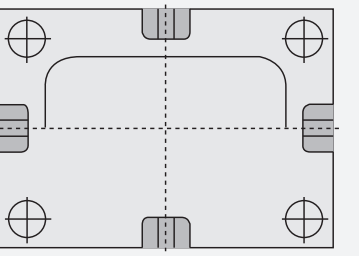




Two Part Set
Conical Centering Unit

Connection bolts of centering unit products are supplied separately.

Continuous Stock



Injection Mould, Plate Positioning Block G.129

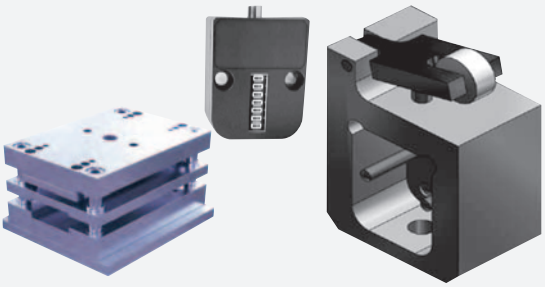
Type	W	T	A	B	C	D	E	İmbus
15	38.1	25.4	22.17	9.47	13.30	12.70	7	M5
25	63.5	38.1	34.87	15.82	19.48	25.4	8	M6
35	88.9	50.8	44.4	19	25.70	36.58	11	M8

Type	F	f	G	H	R	S	S1	S2
15	10.5	6.0	7	22.1	7	25.4	6.35	12.7
25	12	7.2	8	34.8	8.5	44.45	9.53	19.05
35	15.5	10.5	11	44.2	9.5	63.5	12.7	25.4

Order : G.129 Type

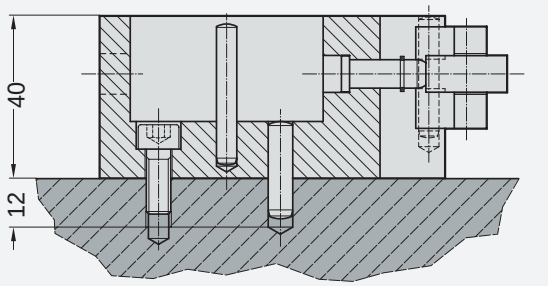
Material : 1.2510 Steel
Hardness : 52-54 HRC

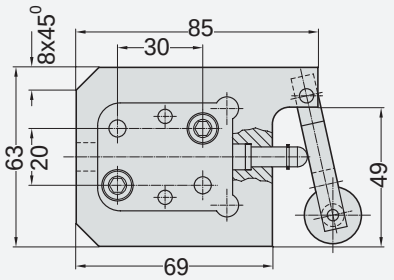
Usage : Injection Mould Locking Assembly

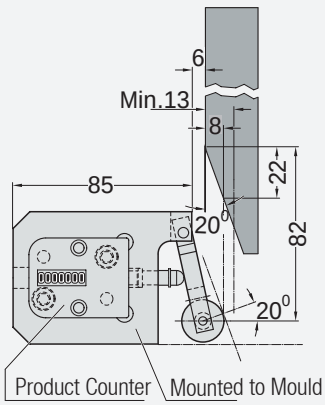


PRODUCT - COUNTER MOUNTED TO MOULD G.124P

Mounting Slot to Press Mould

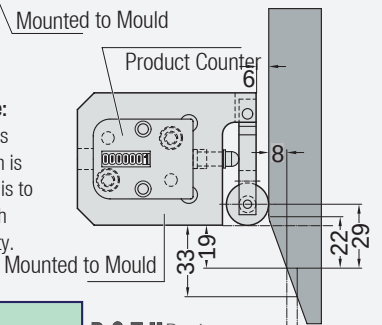






Mounting:
Pls. secure product counter to mounting frame slot. 2 Pieces Imbus Screw M6x16 and 2 Pieces Retaining Pins.

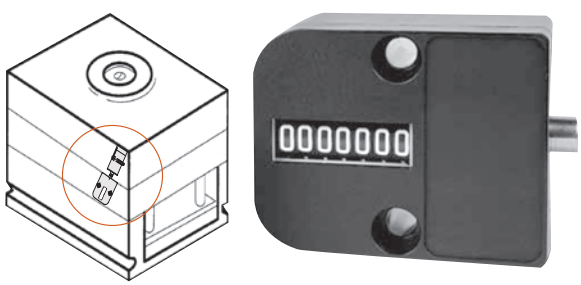
Operation Mode:
Product counter is undetachable when is mounted once. This is to avoid playing with production quantity.



Order : G.124.P

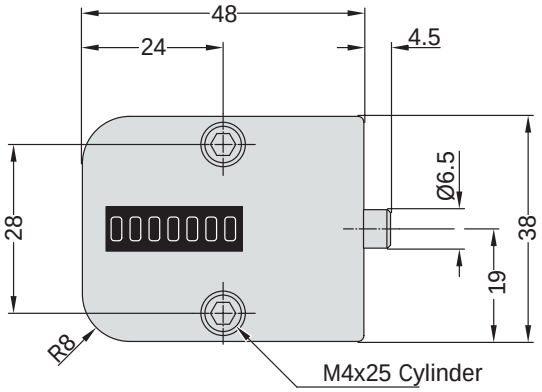
BOTH Produces Sells Affordable Prices

GTH

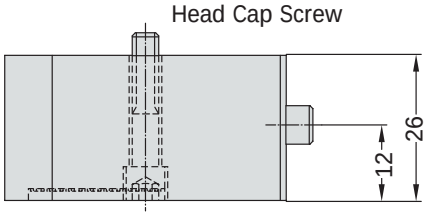


PRODUCT COUNTER G.124

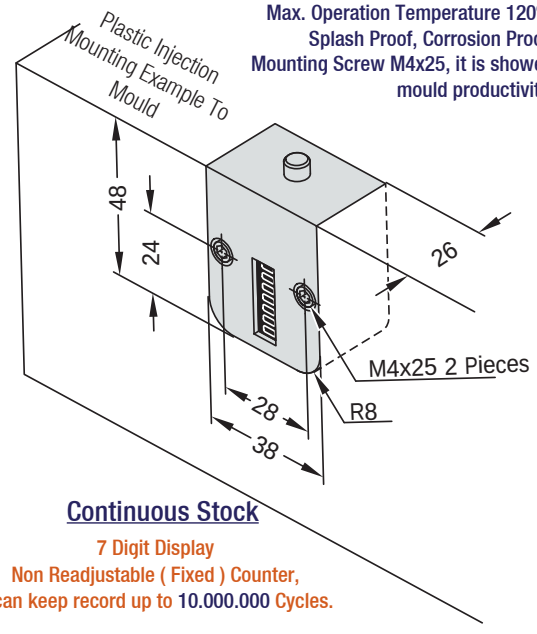
Non Resettable Counter Showing Mould Productivity



Counter Block will be generated by the user



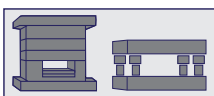
Max. Operation Temperature 120ºC
Splash Proof, Corrosion Proof,
Mounting Screw M4x25, it is showed mould productivity.



Continuous Stock

7 Digit Display
Non Readjustable (Fixed) Counter,
it can keep record up to 10.000.000 Cycles.

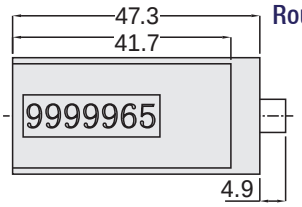
Order : G.124.E



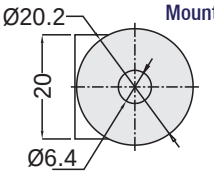


ROUND TUBE, MOULD COUNTER G.142

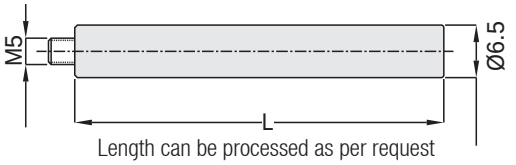
Injection Mould (Holder Plate) Practical Mount, Hole Inner



Round Mould Counter



Extension, Actuator Rod (Processable in desired dimension)



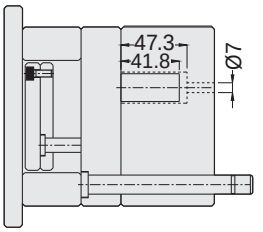
Length can be processed as per request

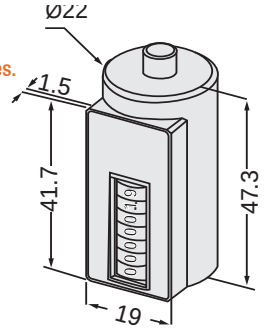
Round Mould Counter: Production Counter / Unite has round (cylindrical structure and can be mounted inside of holder plate according to the following drawings. (If your mould holder is in suitable position). In case your holder is high / long, additional operation can be provided with extension rod.

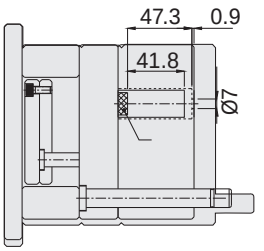
Max. OperationTemperature: 120ºC.

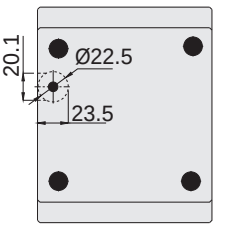
Processing Advantage: During mounting of round mould counter to mould, only mounting slot is opened with drill (22,5 mm), (42 x 17) window is generated, According to the standard model, it is provided mounting practicability at application.

7 Digit Display, Non Readjustable
Non Readjustable (Fixed) Counter, it can keep record up to 10.000.000 Cycles.

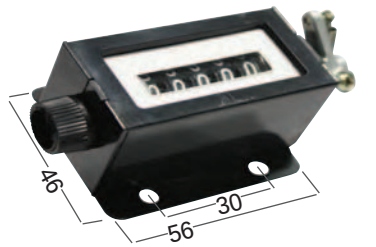








Order : G.142



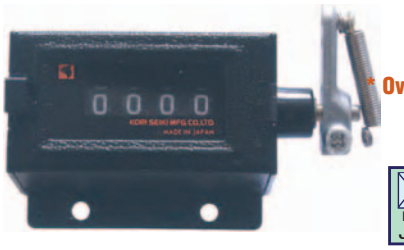
Standard Model
* 5 Digit
* Overhead Multiple
* Side Zeroing
* Economic Model

Order : 13701 (Made in P.R.C)



Professional Model
* 5 Digit
* Overhead Multiple
* Side Zeroing

Order : RS-207 (Made in Japan)



Small Size
* 4 Digit
* Overhead Multiple
* Overhead Zeroing

Order : RS-50 (Made in Japan)



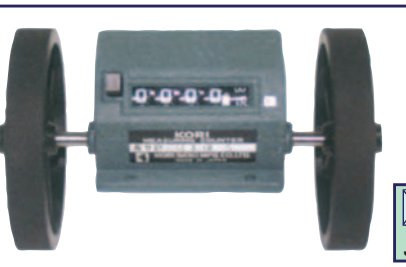
Small Size
* 5 Digit
* Overhead Multiple
* Side Zeroing

Order : RS-204 (Made in Japan)



Rotary Model
* 5 Digit
* Overhead Pulsative
* Overhead Zeroing

Order : RL- 50 (Made in Japan)



Length Counter
* 5 Digit
* Wheeled
* Overhead Zeroing

Order : BM3-10 (Made in Japan)









REV. & STRAGHT FIGURE Set	NICKEL / INOX FIGURE- LETTER	REV. & STRAGHT LETTER Set	STRING - LETTER / FIGURE SET WITH HOLDER

Percussive Figures / Letters; High Performance Steel - Precision, Depth Limited. Excellent CNC Engraving, Readable With Regard to Quality for Very Clear Text View, High Qualified, Steel Casings, Fully Hardened Handle and Percussive Places (Signs) are chemical nickel plated and are also enabled to stamp on threated materials. It can be used for marking of strength materials up to 2000 N/mm2 and is packaged as serial in plastic box.
Normal Text Stamping; So, the signs stamped on part can be read directly at marking with hammering.
Reverse&Straight Text; Character stamped on mould is showed straight on the product. (Mirror Image) **Especially, at injection moulds.**

Marking / Stamping Figure and Letter Sets - Order Table

FIGURE Set 9's Set Box Figure Size	L (mm) Dia.	Len.	Normal Stamping	Rev&Str Stamping	Nickel Stainless
1 mm Tkm.	6 x 6	65	Order : 15676	Order : 15706	Order : 15684
1.5 mm Tkm.	6 x 6	65	Order : 15677	Order : 15707	Order : 15685
2 mm Tkm.	6 x 6	65	Order : 15678	Order : 15708	Order : 15686
2.5 mm Tkm.	6 x 6	65	Order : 15679	Order : 15709	Order : 15687
3 mm Tkm.	6 x 6	65	Order : 15680	Order : 15710	Order : 15688
4 mm Tkm.	7 x 7	65	Order : 15681	Order : 15711	Order : 15689
5 mm Tkm.	8 x 8	65	Order : 15682	Order : 15712	Order : 15690
6 mm Tkm.	9 x 9	75	Order : 15683	Order : 15713	Order : 15691
8 mm Tkm.	11 x 11	76	Order : 15692	Order : 15714	Order : 15699
10 mm Tkm.	12 x 12	80	Order : 15693	Order : 15715	Order : 15700
12 mm Tkm.	14 x 14	80	Order : 15694	Order : 15716	Order : 15701
16 mm Tkm.	16 x 16	85	Order : 15696	Set In Plastic Box	Order : 15703
18 mm Tkm.	15 x 25	101	Order : 15697		Order : 15704
20 mm Tkm.	15 x 25	101	Order : 15698		Order : 15705

LETTER Set 27's Set Box Letter Size	L (mm) Dia.	Len.	Normal Stamping	Rev&Str Stamping	Nickel Stainless
1 mm Tkm.	6 x 6	65	Order : 15717	Order : 15747	Order : 15725
1.5 mm Tkm.	6 x 6	65	Order : 15718	Order : 15748	Order : 15726
2 mm Tkm.	6 x 6	65	Order : 15719	Order : 15749	Order : 15727
2.5 mm Tkm.	6 x 6	65	Order : 15720	Order : 15750	Order : 15728
3 mm Tkm.	6 x 6	65	Order : 15721	Order : 15751	Order : 15729
4 mm Tkm.	7 x 7	65	Order : 15722	Order : 15752	Order : 15730
5 mm Tkm.	8 x 8	65	Order : 15723	Order : 15753	Order : 15731
6 mm Tkm.	9 x 9	75	Order : 15724	Order : 15754	Order : 15732
8 mm Tkm.	11 x 11	76	Order : 15733	Order : 15755	Order : 15740
10 mm Tkm.	12 x 12	80	Order : 15734	Order : 15756	Order : 15741
12 mm Tkm.	14 x 14	80	Order : 15735	Order : 15757	Order : 15742
16 mm Tkm.	16 x 16	85	Order : 15737	Set In Plastic Box	Order : 15744
18 mm Tkm.	15 x 25	101	Order : 15738		Order : 15745
20 mm Tkm.	15 x 25	101	Order : 15739		Order : 15746

Steel Letter and Figure Set; can be applied to metal surfaces applicable hardness and dimensional tolerance,
" Nickel " Steel Letter and Figure Set; can be applied especially to the stainless/ inox surfaces.



106 Pieces Letter (Word Formation) Figure or Date Stamping SET

Minimum 2 pieces or maximum 3 pieces from existing letter and figures and blank (Unwritten) Characters for word formation are available in set. You can write the desired work or date by marking with hammering and also by coupling to press with press mounting arbour.

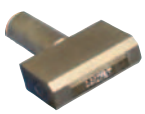
106 Pieces Letter /Figure Set (Wood Box)

Order No	Dimension mm	Length mm	Character Qty.
15758	3	19	13 Pcs.
15759	4		10 Pcs.
15760	5		8 Pcs.



PRESS MOUNTING ARBOUR

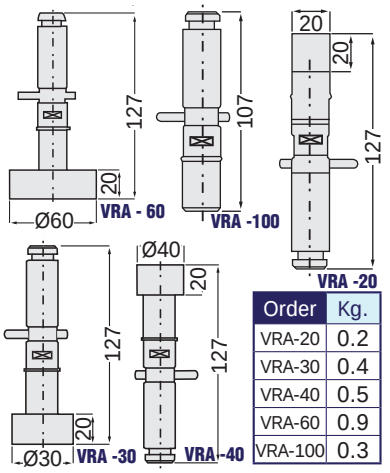
It is an inserting press machine , Letter and Figure array head for stamping, mounting connection tool



Order No	Dimension mm	Letter and Figure Array Head Connection Tool
15761	10 x 40	



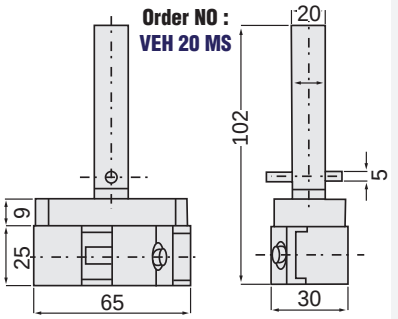
SINKING EROSION HOLDERS
EDM Chucks Kit



Order	Kg.
VRA-20	0.2
VRA-30	0.4
VRA-40	0.5
VRA-60	0.9
VRA-100	0.3



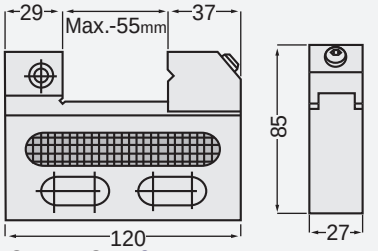
SINKING EROSION CLAMP
EDM Chucks Kit



EDM Chucks vise Stainless
Steel - Hardened HRC 58
Parallelism Sensitivity:0.003 mm / 100 mm
Flatness Sensitivity: 0.005 mm / 100 mm

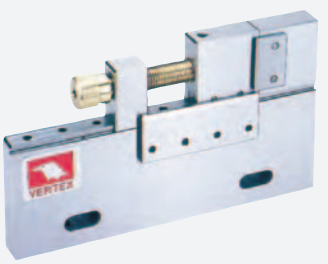


WIRE EROSION CHUCKS
Stainless Steel Holders

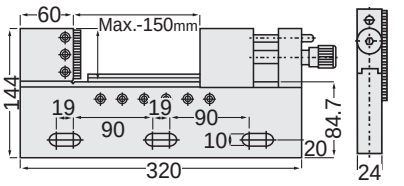


Order NO : VSTV - 50 W

All parts of wire erosion vise are stainless steel and have high abrasion resistance. It is resistant to high water pressure.
Precision Grinded and Hardened: HRC 58 - 60
Parallelism and Perpendicularity: ±0.002 mm/100mm
Max. Opening Capacity: 55 mm
Vise Height: 27 mm
Jaw Depth: 25 mm **Weight :** 1.4 Kg.



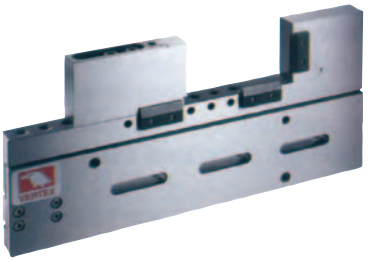
WIRE EROSION CHUCKS
Stainless Steel Holders



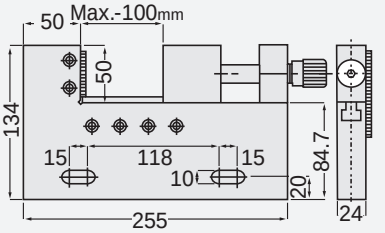
Order NO : VSTV - 150 W

Stainless Steel Clamps

All parts of wire erosion vise are stainless steel and have high abrasion resistance. It is resistant to high water pressure.
Precision Grinded and Hardened: HRC 58 - 60
Parallelism and Perpendicularity: ±0.002 mm/100mm
Max. Opening Capacity: 150 mm
Vise Height: 24 mm
Jaw Depth: 60 mm **Weight :** 8 Kg.

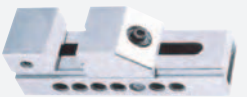


WIRE EROSION CHUCKS
Stainless Steel Holders

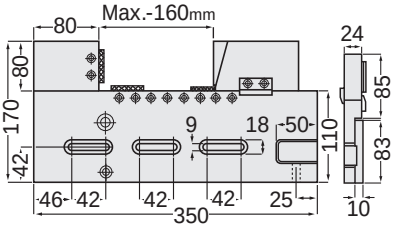


Order NO : VSTV - 100 W

All parts of wire erosion vise are stainless steel and have high abrasion resistance. It is resistant to high water pressure.
Precision Grinded and Hardened: HRC 58 - 60
Parallelism and Perpendicularity: ±0.002 mm/100mm
Max. Opening Capacity: 100 mm
Vise Height: 24 mm
Jaw Depth: 50 mm **Weight :** 4.9 Kg.



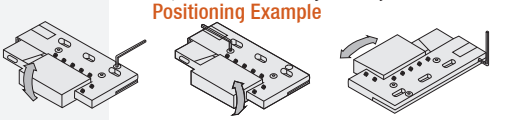
WIRE EROSION CHUCKS
Stainless Steel Holders



Order NO : VSTV - 320 W

All parts of wire erosion vise are stainless steel and have high abrasion resistance. It is resistant to high water pressure.
Precision Grinded and Hardened: HRC 45 - 55
Parallelism and Perpendicularity: ±0.003/5 mm/100mm
Max. Opening Capacity: 160 mm
Vise Height: 24 mm
Jaw Depth: 60 mm **Weight :** 8 Kg.

Positioning Example





PERMANENT MAGNETIC CARRIER

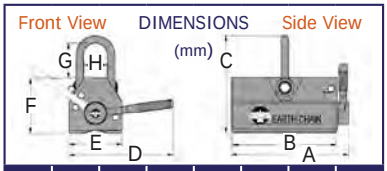
Load Bearing Magnetic Block

It is "3,5" time stronger than similar.

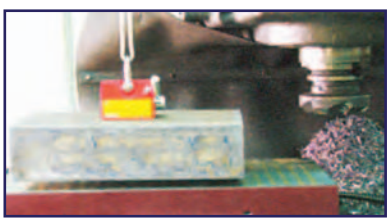
Order No / MODEL	Lifting Capacity – Balanced Lifting – Min. Load Surface Coarse	Lifting Capacity – Balanced Lifting – Max. Load Surface Clear	Platin Material – Min. Load Material Thickness Length mm	ELM Block Weight Kg.
ELM-100	100 kg	**220 kg**	15x1000	2.5 kg
ELM-300	300 kg	**660 kg**	25x1500	8.6 kg
ELM-600	600 kg	**1320 kg**	30x2000	21 kg
ELM-1000	1000 kg	**2200 kg**	40x2500	46 kg
ELM-2000	2000 kg	**4400 kg**	50x3000	118 kg
ELM-3000	3000 kg	**6600 kg**	60x3500	181 kg

Magnetic Carrier Blocks; It is compatible to carry magnetic sensitive metal work pieces, steel plates, machine parts and round metals. Lifting power can be changed according to surface cleaning, thickness of material, flatness and magnetic block and intermediate clearance of material. Self magnetic block works without requiring any power supply unit. Carrying ring is movable. It is carried in balance, with easy mounting, lifts, handles and carries load. Our products are ' CE ' Certificated.

Important: Magnetic Block works while load is on it / On Position - While is idle, should be remained Closed / OFF Position.



A	B	C	D	E	F	G	H
107	84	120	125	60	71	41	30
180	155	156	185	90	93	51	41
255	224	212	260	115	120	77	52
280	245	286	371	165	169	97	87
422	380	348	512	216	215	105	121
566	530	400	770	216	222	147	80

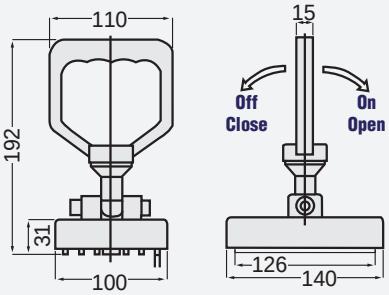




MAGNETIC SHEET PLATE CARRIER

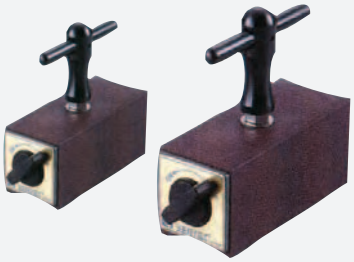
Separates - Holds - Carries Sheet Plates





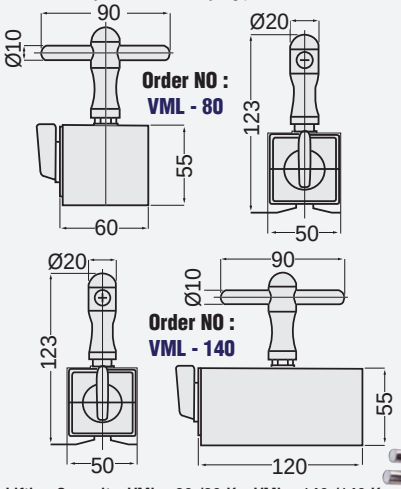
Lifting Capacity : 150 Kg.
Unit Weight : 2,5 Kg.

Order NO :
VML - 150

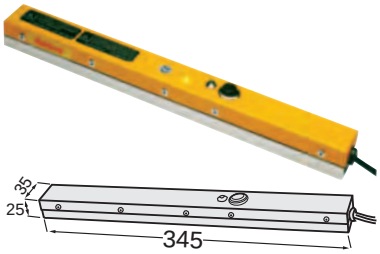


MAGNETIC PART CARRIER FOOT

Self Magnetic Strong Type



Lifting Capacity: VML - 80 /80 Kg. VML - 140 /140 Kg.
Unit Weight: VML - 80 /1.2 Kg. VML - 140 /2.2 Kg.
It holds magnetic sensitive work pieces easily and elastically and are useful products doing lifting.



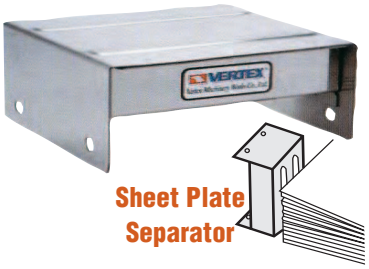
MOULD, MAGNETIC RECEIVER UNIT

Mould Inner Magnetic Absorber



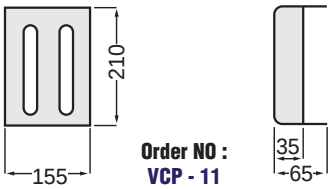
Especially removes the unwanted magnetization generated on press mould plates and guide pillar bushes. Protects mould from burrs and magnetic effects. It is worked excellent at places that are narrow and hard to reach, in addition wide surface. without demounting mould - The product demagnetizes place with **EHDB** magnetic receiver effect. It is prolonged mould and components life. By waiting 4 minutes continuously, it removes magnetic at effect area in 1 minute, Mobile / Travel Unit are used at every areas.

Order No	Current	Voltage	Effect Area	Product Kg.
EHDB-210	1.2 A	220 V	100 mm	1 Kg.



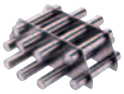
MAGNETIC EJECTOR - SHEET SEPARATOR

It is cleaned and separated sheet plates.



It is useful unit providing the removal of metals (sheet plates) especially layers of thin plates that are not separated at sheet blocks, also, in addition unwanted chips, detrisuses according to basis of pushing each other of magnetic poles.

Weight : 4.2 Kg.



MAGNENTIC SEPARATOR

Raw Material - Burr Detacher

Injection machine holds unwanted metal wastes by sieving raw material that is at the bottom part of extruder.

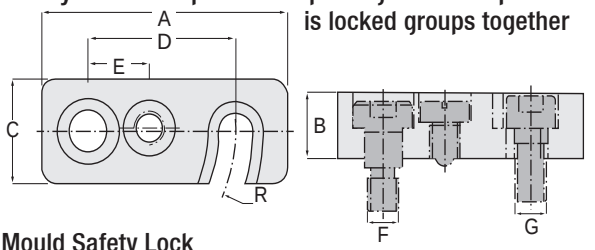
Order NO : EGM 20 C / 25 C
Weight : 2.7 Kg. / 4 Kg.





MOULD SAFETY LATCH G.103

Safety Lock that prevents opening of mould plates is locked groups together



Mould Safety Lock

G.103 Product is produced by GTH Mould Components. G.103

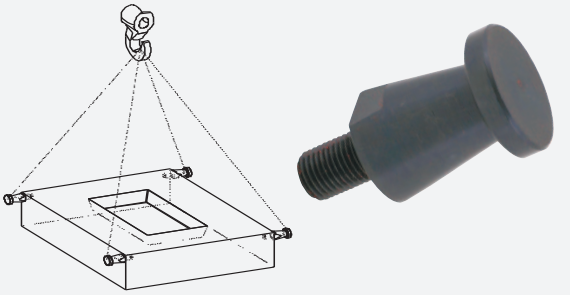
A mm	B mm	C mm	D mm	E mm	F mm	G mm	R rdy
50	12	20	30	14	M6	M6	30
63	16	25	38	17	M8	M8	38
80	20	32	48	20	M10	M10	48

Order : G.103 x A | **Material :** 1.0503 Steel Forged Blasting/Processing | **Usage :** Especially, while carrying injection mould

Mould Safety Lock: This system is mounted outside of mould. It is for moving mould as packet in safety way without opening. It is mounted to mould with an Cylinder Head Cap S., another Cylinder Head Cap S. slot is opened to the counters side, in addition, connection or easy dismantlement can be done with elevator spring piston. It s a compact product that has not any loosed parts. There are no parts protruding as connection lock.

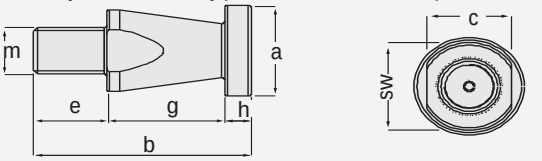


Injection Moulds



MOULD TRANSPORT LUG / HEAVY DUTY

At turning and handling processes of mould plates



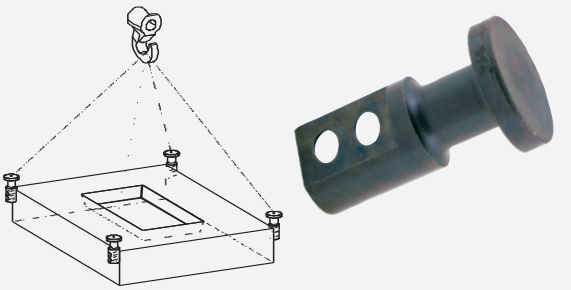
m	a	b	c	SW	e	g	h
M16 x 2	39	85	35	14 AA	30	33	9
M20 x 2.5	39	85	35	17 AA	30	33	9

Order : 2730 x m | **Material :** CK 45 DIN Black Plated | **Usage :** At Lifting/ Turning Of Mould Plates.

Transport Lug Thread Place Dimensions : M 16 x 2Thread - M20 x 2.5 Thread

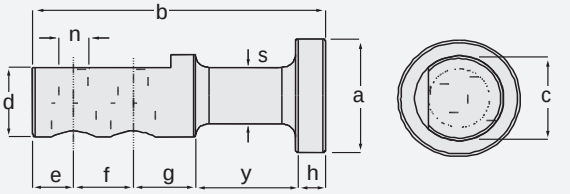
Lifting Force of A Lug : 2730.16 / 660 Kg.

2730.20 / 1000 Kg.



MOULD TRANSPORT LUG / HEAVY DUTY 2750

At turning and handling processes of mould plates



a	b	c	d	e	f	g	h	ı	n	s
44	107	32	27	15	22	23	11	37	11	22

Order : 2750 x a | **Material :** CK 45 DIN Black Plated | **Usage :** At Lifting/ Turning Of Mould Plates.

Lug Connection Bolt Dimensions : M10 x 35 Cylinder Head Cap Screw 12.9 x 2 Pcs.

Lifting Force of A Lug : 400 Kg.For Example: 4 Lug 2.5 Ton



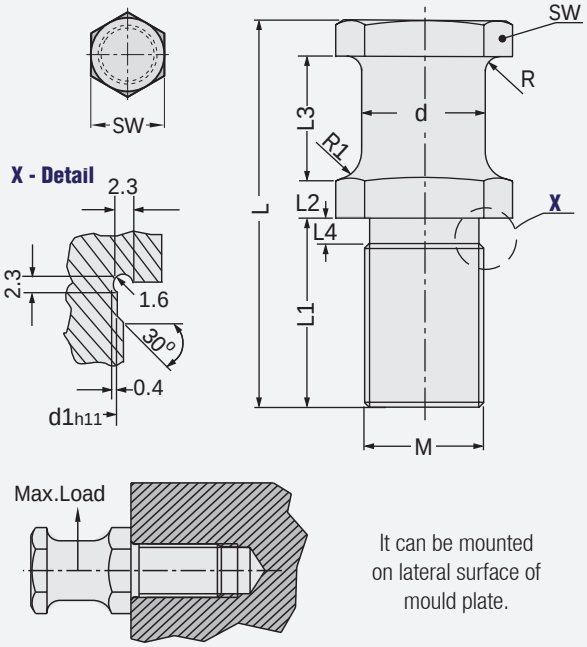
BOTH Produces Sells Affordable Prices
GTH





THREADED, MOULD BASE LUGS G.47

VDI 3366 Standard Transport Lug



It can be mounted on lateral surface of mould plate.

When used for transport purpose, 4 Pcs., when used for mould turning, 2 Pcs. Lug are used. Max. load should not be exceeded during operation.

Reference : VDI 3366
39V 1199 VW AUDI

Threaded Mould Base Lugs G.47

M Thread	1 Lug Max. Load Kg.	Ø d	Ø d1	L mm	L1 mm	L2 mm	L3 mm	L4 mm	Radius R	Radius R1	Head SW
M16	250	16	12	58	28	5	20	3	5	8	24
M20	500	20	16	68	34	6	22	3	5	8	30
M24	1000	25	19	78	38	8	25	4	6	10	36
M30	1500	32	24	95	45	10	32	5	6	10	41
M36	2500	40	30	118	56	12	40	5	8	12	50

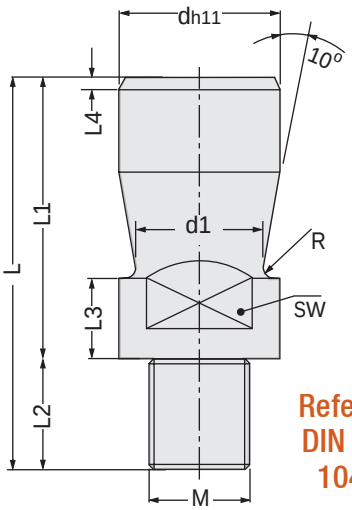
Order : G.47 x M | **Material :** 1.0503 (C-45) 700-800 N mm^2 | **Usage :** At Lifting/ Turning Of Mould Plates





THREADED, MOULD BASE LUGS G.54

DIN EN ISO 10242 - 1 Transport Lugs



Reference : DIN EN ISO 1042 - 1

Connection lugs are components providing connection of upper group of mould to the ram group of mould. Connection lug is mounted to the mould by the help of threaded, due to exposed forces such as press counting force etc., it should be mounted to the upper plate very well.

Threaded Mould Base Lugs Continous Stock G.54

M Diş	Ø d	Ø d1	L mm	L1 mm	L2 mm	L3 mm	L4 mm	r	SW
M16 X 1.5	20	15	58	40	18	12	2	2.5	17
	25	20	68	45	23	16	2.5		21
M20 X 1.5	25	20	68	45	23	16	2.5	2.5	21
	32	25	79	56		16	3		27
M24 X 1.5	32	25	79	56	23	16	3	2.5	27
	40	32	93	70		26	4	4	36
M27 X 2	40	32	93	70	23	26	4	4	36
M30 X 2	40	32	93	70	23	26	4	4	36
	50	42	108	80	28		5		41
M42 X 3	65	53	128	100	28	26	8	6.5	55

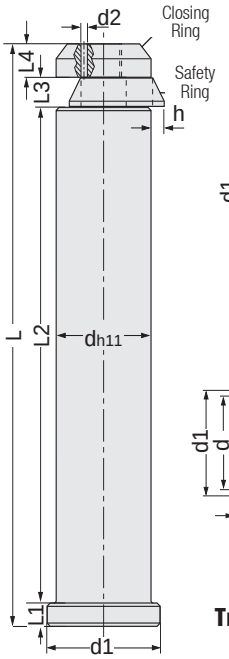
Order : G.54 M x d | **Material :** 1.0503 (C-45) | **Usage :** At Lifting/ Turning Of Mould Plates

BOTH Produces Sells Affordable Prices

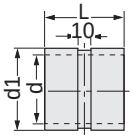


MOULD TRANSPORT SHAFT G.52

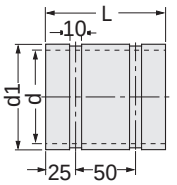
VDI 3366 Standard Mould Transport Shaft



G.52.1 Bush Form A



G.52.2 Bush Form B



VDI Standard VDI 3366 Transport Bushes

G.52 Transport Shaft

VDI 3366 Mould Transport Shaft **G.52**

Max. Load Kg.	d mm	d1 mm	d2 mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	h mm
3200	**32**	40	3 x10	175	10	145	9	10	4
5000	**40**	50	4 x12	225	10	188	13	13	6
8000	**50**	60	4 x15	273	11	230	15	16	6
12500	**63**	75	5 x20	347	14	295	17	20	7.5
31500	**76**	95	5 x25	422	15	360	19	27	8

VDI 3366 Shaft, Bush **G.52-1**

d mm	d1 mm	L mm	Form
34	44	40	A
42	52	50	
52	62	60	
65	75	80	
78	88	100	B

Reference :
VDI 3366
VW/AUDI 38D 866
BMW B2 5601 11
KARMAN 01.12.230
MAN 78-046 16
CHRYSLER B8 2002

When using shafts, don't exceed the carrying capacity. For turning and loading mould, 2 Pin can be used. Don't use damaged shafts.

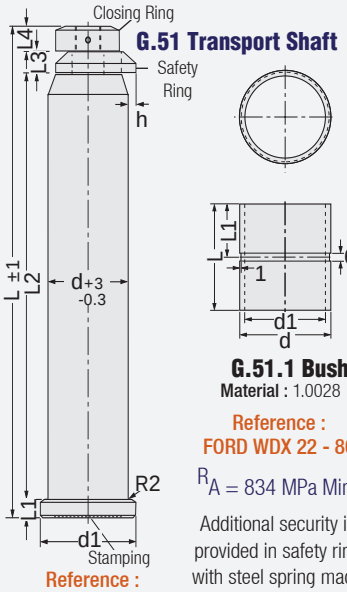
Order : G.52. x d
G.52.1/2

Material : 1.0503 (C-45)

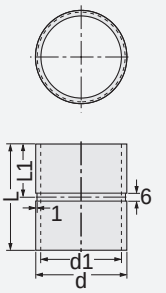


MOULD TRANSPORT SHAFT G.51

FORD WDX22 - 60 Transport Shaft



G.51 Transport Shaft



G.51.1 Bush
Material : 1.0028

Reference :
FORD WDX 22 - 80

R_A = 834 MPa Min.

Additional security is provided in safety ring with steel spring made from spring steel

Reference :
FORD WDX 22 - 60

FORD WDX 22-60 Shaft G.51.A Shaft

Max. Load Kg.	d mm	d1 mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	h mm
3000	**35**	45	165	10	124	15	10	6
10000	**50**	63	230	10	189	15	10	9
40000	**63**	76	320	10	279	15	10	9
60000	**80**	89	370	15	319	15	10	10

FORD WDX 22-80 Shaft, G.51.B Shaft

Max. Load Kg.	d mm	d1 mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	h mm
10000	**50**	63	230	10	190	16	14	5.5
40000	**63**	76	320	10	280	16	14	6.3
60000	**80**	89	370	15	320	18	17	6.3

FORD WDX 20-80 Shaft, Bush G.51.1 Bush

d mm	d1 mm	L mm
40	37	30
55	52	50
70	65	80
90	82	100

Don't use shafts with broken spring and damaged casing. When using shafts, don't exceed carrying capacity. While using for turning mould, loading should be done only with 2 Pcs. Pin.

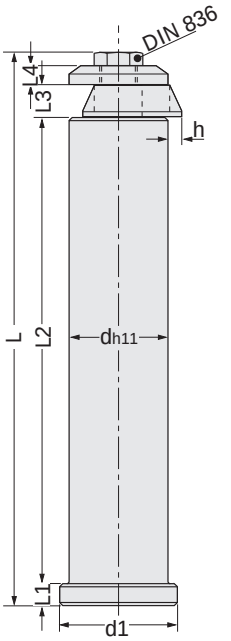
Order : G.51.A x d
G.51.B x d
G.51.1 x d

Material :
Material : 1.7225 Shaft
Material : 1.0553 Shaft
Material : 1.0028 Bush



MOULD TRANSPORT SHAFT G.55

FIAT STQ.40002 Transport Shaft



Reference :
FIAT STQ - 40002

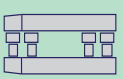
FIAT STQ.40002 Transport Shaft G.55

Max. Load Kg.	d mm	d1 mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	h mm
2000	**29**	38	178.5	6	150	9	6	4
3200	**33**	43	200.5	6	170	10	6	4
5000	**43**	53	233	8	195	12	8	6
8000	**53**	65	227	10	180	16	10	6
8000	**53**	65	282	10	235	16	10	7.5
13000	**63**	78	272.5	12	215	20	12	7.5
12000	**63**	78	352.5	12	295	20	12	8.5
30000	**78**	95	421.5	14	355	25	14	11

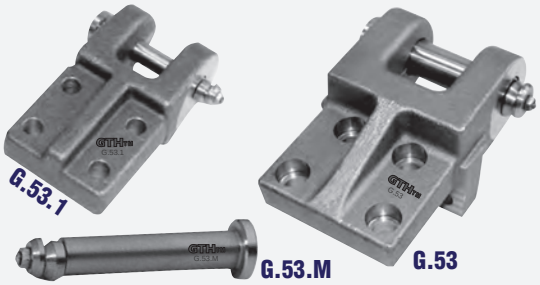
Additional safety is provided in safety ring with plastic spring made from polypropylene.
Don't use shafts with broken spring and damaged casing.
While using for turning mould, loading should be done only with 2 Pcs. Pin.

Order : G.55. x d

Material : 1.0503 (C-45)



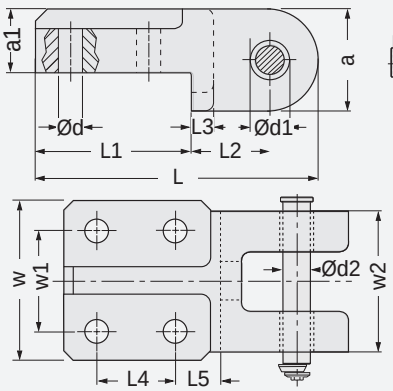
Usage: Shaft Bush Bracket

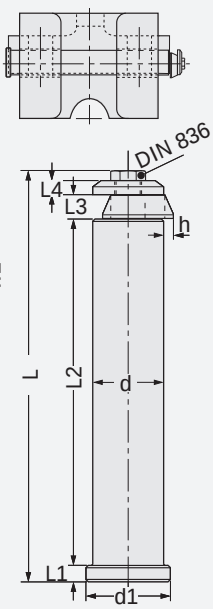


TRANSPORT BRACKET G.53

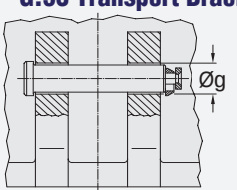
Shaft - Transport Flange

Reference : FIAT





G.53 Transport Bracket



Transport Shaft Application Example

G.53.M Transport Shaft

Shaft - Transport Flange — Transport Bracket G.53

1 Lug Max. Load Kg.	w mm	L mm	a mm	L1 mm	L2 mm	L3 mm	L4 mm	L5 mm	w1 mm	w2 mm	Ø d	Ø d1 g	Ø d2	a1
600	**80**	145	52	80	39	11	40	22.5	50	70	12.5	16	15.6	32
1000	**90**	160	56	90	42	13	40	27.5	60	79	16.5	21	20.6	36
2000	**100**	215	70	120	60	20	65	32.5	65	90	21	26	25.6	50

G.53 Transport is given with G.53.M Transport Shafts. When spare shaft is desired, select suitable product in the desired size from the Table. While turning mould, 2 Pcs. bracket can be used. While using, don't exceed load values specified in Table. Don't use worn, damaged products / it poses danger.

Transport Shaft — Reference : FIAT G.53.M

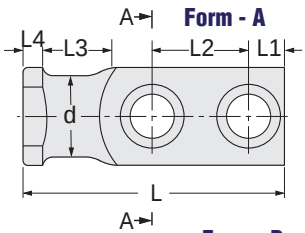
Max. Load Kg.	d mm	d1 mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	h mm	g
600	15.6	**25**	102.5	6	77	8	6.5	3.3	16
1000	20.6	**30**	113.5	6	86	8.5	6.5	3.3	21
2000	25.6	**35**	128.5	6	100	8.5	6.5	3.5	26

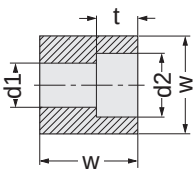
Order :	Material :	Usage :
G.53 w x d1	1.0503 (C-45) 700-800 N mm^2	With transport bracket and transport shaft.



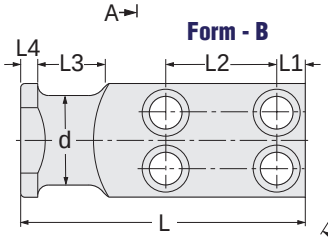
TRANSPORT BRACKET KTB / G.134

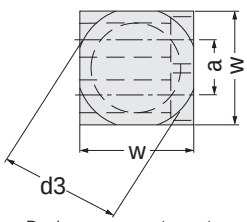
Lifting eyebolts with Cable Protection Equipment

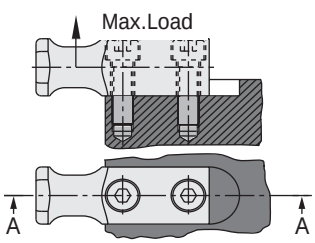




Reference :
VDI 3366
39D 876 VW AUDI







During usage, pls make sure that it is mounted to work piece smoothly. Don't exceed max load values specified in Table.

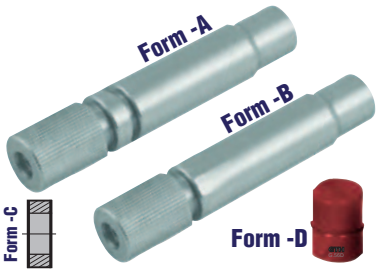
Continous Stock

Lifting Eyebolt with Cable Protection Equipment KTB

1 Lug Max. Load Kg.	Form	w mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	Ø a	Ø d	Ø d1	Ø d2	Ø d3	Head t
320 Kg	Form A	**20**	80	10	34	20	6	-	16	9.5	14.5	24	9
630 Kg		**25**	90	10	37	25	8	-	20	11.5	17.5	30	11
1250 Kg		**35**	100	12	38	30	8	-	25	14	20	40	13
2000 Kg		**40**	120	16	46	32	10	-	32	18	26	50	17.5
3200 Kg		**50**	140	18	54	40	10	-	40	23	33	60	21.5
5000 Kg		**60**	160	22	59	45	12	-	50	27	39	70	25.5
8000 Kg	Form B	**80**	200	20	78	50	12	40	63	23	33	90	21.5
12500		**100**	250	25	100	65	15	50	80	27	39	110	25.5
20000		**120**	300	30	125	80	15	60	100	33	48	130	32

Order :	Material :	Usage :
KTB Form x W	1.0503 (C-45) 700-800 N mm^2	Mould Plates Lifting / Carrying

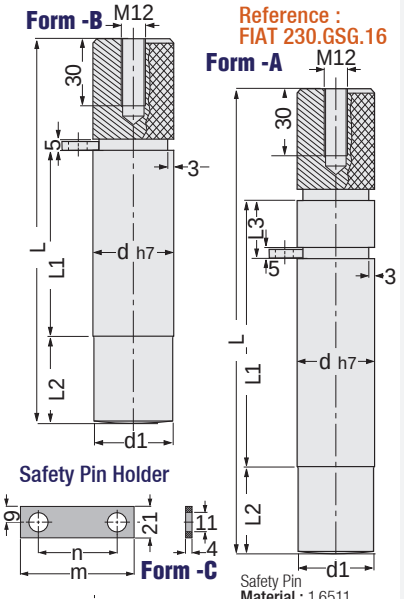
BOTH Produces Sells Affordable Prices

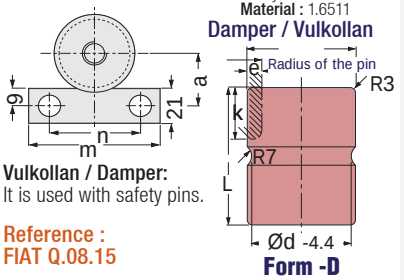


FIAT -SAFETY PINS G.56

Press Mould, Hanger Broach Guide Pillars

Reference : FIAT 230.GSG.16





Vulkollan / Damper:
It is used with safety pins.

Reference : FIAT Q.08.15

Hanger, Hanger Broach Guide Pillars G.56

Form	d	L	d1	L1	L2	L3	a	m	n
Form A	30	155	29	87	33	19	22	50	35
	40	193	39	109	39	21	27	65	45
	50	229	49	131	43	23	32	70	50
Form B	40	172	39	88	39	-	27	65	45
	50	206	49	108	43	-	32	70	50

Pin Holder Form -C

m	n
50	35
65	45
70	50

With Safety Pins

Safety Pins Damper Vulkollan Form -D

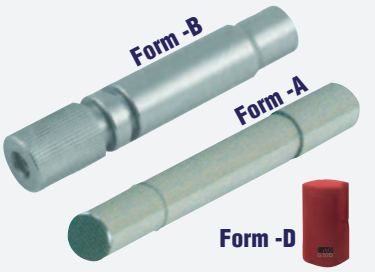
Pin Dia.	d	L	Max. Stamp	e	k
40	50	70	%16	8	25
50	63	80	%12	8	30

Page 86



Section Press Mould

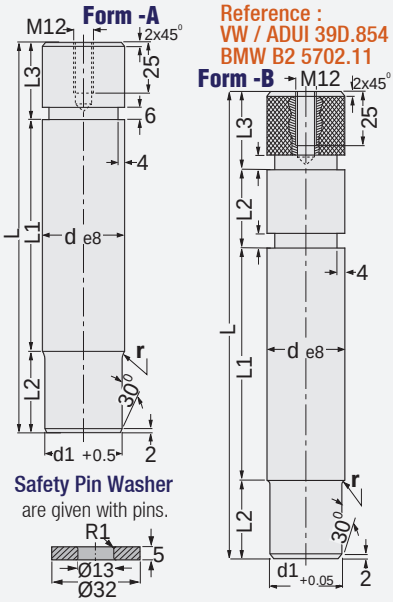
Order : G.56.d Form: A-B C-D



VDI - SAFETY PINS G.57

Press Mould, Hanger Broach Guide Pillars

Reference : VW / ADUI 39D.854 BMW B2 5702.11

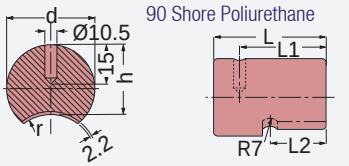


Safety Pin Washer are given with pins.

Damper / Vulkollan for Safety Pins

Selection from Table according to the pin dia and max. flexion.

90 Shore Poliurethane



Press Hanger, Hanger Broach Guide Pillars G.57

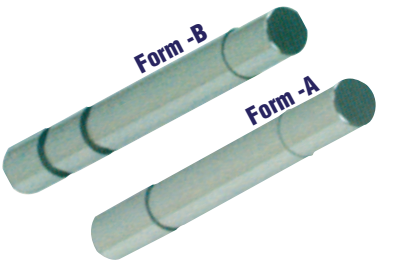
Form	d	L	d1	L1	L2	L3	r	Yük Kg.
Form A	25	100	22	58	20	22	3	1250
	32	122	29	75	25	22	4	2000
	40	139	37	75	32	32	5	3200
	50	192	47	120	40	32	6	5000
	63	237	60	155	50	32	6	9000
Form B	25	120	22	58	20	22	3	1250
	32	147	29	75	25	22	4	2000
	40	191	37	95	32	32	5	3200
	50	232	47	120	40	32	6	5000
	63	287	60	155	50	32	6	9000

Safety Pins, Damper Vulkollan Form -D

d	L	L1	L2	h	r
40	60	45	24	32	18
50	80	60	29	40	23
63	80	60	37	51	35
70	90	67.5	47	56	42

Order : Damper G.57.d G.57.d Form A.B

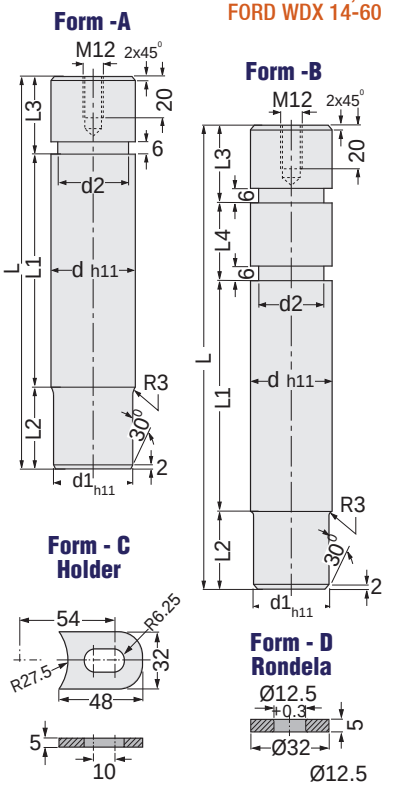
Material : 1.0503 (C-45) Polyurethane 90 Shore



NAAMS -SAFETY PINS G.58

Press Mould, Hanger Broach Guide Pillars

Reference : NAAMS R41,R42 FORD WDX 14-60



Press Hanger, Hanger Broach Guide Pillars G.58

Form	d	L	d1	d2	L1	L2	L3	L4
Form A	25	110	22	17	50	25	35	-
	35	130	32	27	65	30	35	-
	50	170	47	42	100	35	35	-
	63	210	60	55	125	45	40	-
Form B	25	130	22	17	50	25	35	20
	35	155	32	27	65	30	35	25
	50	200	47	42	100	35	35	30
	63	250	60	55	125	45	40	40

1 Pcs. Washer and(M12x20) Bolt are presented with safety pin.

G.58 Form - In mounting of A Coded Safety Pins, **Form - C** Retaining Washer is used.

G.58 Form - In mounting of B Coded Safety Pins, **Form - D** Retaining Washer is used

Order : G.58.d Form A.B

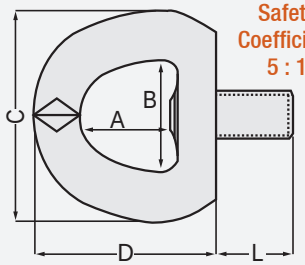
Material : 1.0503 (C-45) Holder / Washer

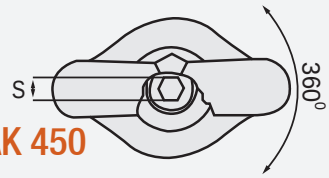


HEAVY TONNAGE EYEBOLT LUG — AK 450

Swivel (Axial Rotation) Lifting Lug

Class > 8CE Safety Coefficient 5 : 1





AK 450



Lifting Equipment manufactured as forging in our country, has been registered that its production quality is in European Standards with **"Approval of Material Manufacturer"** Certificate given by Germanischer Lloyd.

Swivel (Axial Rotation) Lifting Lug

M	L	S	A	B	C	D
M8	12	6	38	45	90	78
M10	15	6	38	45	90	78
M12	18	8	38	45	90	78
M16	27	8	38	45	90	78
M20	30	8	38	45	90	78
M24	36	14	58	70	134	115
M30	45	14	58	70	134	115
M36	54	14	88	94	190	166
M42	63	14	88	94	190	166
M48	68	19	88	94	190	166

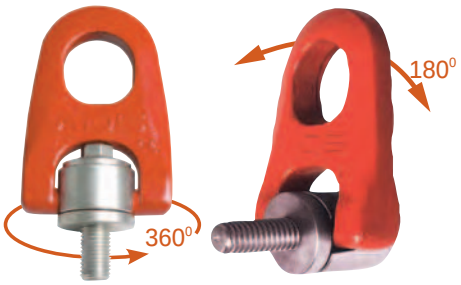
Maximum Lifting Lug (Safety Coefficient ≥ 5:1) P=Tone

M	p	p	p	p	p 45°	p 60°	p 45°	p 60°
M8	0.3	0.6	0.3	0.6	0.4	0.3	0.6	0.3
M10	0.6	1.2	0.6	1.2	0.8	0.6	1.3	0.6
M12	1.0	2.0	1.0	2.0	1.4	1.0	2.1	1.0
M16	1.6	3.2	1.6	3.2	2.2	1.6	3.4	1.6
M20	2.5	5.0	2.5	5.0	3.5	2.5	5.3	2.5
M24	4.0	8.0	4.0	8.0	5.6	4.0	8.4	4.0
M30	6.3	12.6	6.3	12.6	8.8	6.3	13.2	6.3
M36	10.0	20.0	10.0	20.0	14.0	10.0	21.0	10.0
M42	12.5	25.0	12.5	25.0	17.5	12.5	26.3	12.5
M48	15.0	30.0	15.0	30.0	21.0	15.0	31.5	15.0

Order : AK 450 x M

Material : Class > 8CE Safety Certificate

Usage : Axial Rotations in Tensile Direction

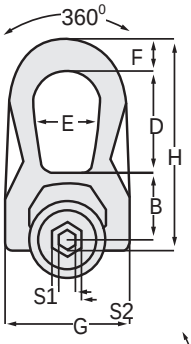


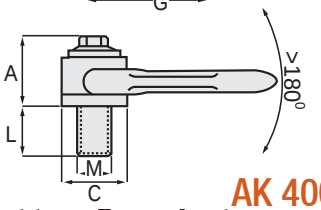
DOUBLE MOTION EYEBOLT LUG — AK 400

Swivel / Lug Chargable at Every Angle

Class > 8CE Safety Coefficient 5 : 1

Min. Breaking Load (MBL) = 5 x WLL Ton





AK 400

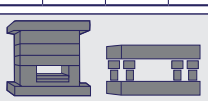
Swivel / Lug Attachable at Every Angle

M	L	S1	S2	A	B	C	D	E	F	G	H
M8	15	8	16	33	30	30	27	29	14	53	85
M10	20	8	16	33	30	30	27	29	14	53	85
M12	20	8	16	33	30	30	27	29	14	53	85
M14	35	8	20	45	42	45	36	38	17	76	120
M16	35	8	20	45	42	45	36	38	17	76	120
M18	35	8	20	45	42	45	36	38	17	76	120
M20	35	8	20	45	42	45	36	38	17	76	120
M24	40	14	24	62	55	60	55	60	25	117	165
M30	40	14	24	62	55	60	55	60	25	117	165

Maximum Lifting Lug (Safety Coefficient ≥ 5:1) P=Tone

M	p	p	p	p	p 45°	p 60°	p 45°	p 60°
M8	0.3	0.6	0.3	0.6	0.4	0.3	0.6	0.3
M10	0.6	1.2	0.6	1.2	0.8	0.6	1.3	0.6
M12	1.0	2.0	1.0	2.0	1.4	1.0	2.1	1.0
M14	1.3	2.6	1.3	2.6	1.8	1.3	2.7	1.3
M16	1.6	3.2	1.6	3.2	2.2	1.6	3.4	1.6
M18	2.0	4.0	2.0	4.0	2.8	2.0	4.2	2.0
M20	2.5	5.0	2.5	5.0	3.5	2.5	5.3	2.5
M24	4.0	8.0	4.0	8.0	5.6	4.0	8.4	4.0
M30	6.3	12.6	6.3	12.6	8.8	6.3	13.2	6.3

Order : AK 400 xM





EYEBOLT POLYESTER SLING
Çift Katlı Polyester Dokuma GPS



Eyebolt Polyester Slings GPS

Load Capacity	A mm	L Sling Length(Meter) 1	2	3	4	5	6	8	10
1 Ton	25								
2 Ton	50								
3 Ton	75								
4 Ton	100								
5 Ton	125								
6 Ton	150								
8 Ton	200								
10 Ton	250								

Safety Coefficient of Polyester Sling in accordance with **EN 1492 -1** is 6 times of each type of slings. It is produced from %100 Double Layer Polyester Woven. Reinforcement Lifting Eye - Colour / Low Coefficient of Elongation with Load Coded - EN 1492-1 : 2000.

Lifting Position / Capacity,Tone

Sling Colour Load	% 100	% 80	% 200	0^0-45^0 % 140	45^0-60^0 % 100
Purple	1 Tone	0.8	2 Tone	1.4	1 Tone
Green	2 Tone	1.6	4 Tone	2.8	2 Tone
Yellow	3 Tone	2.4	6 Tone	4.2	3 Tone
Grey	4 Tone	3.2	8 Tone	5.6	4 Tone
Red	5 Tone	4.0	10	7.0	5 Tone
Brown	6 Tone	4.8	12	8.4	6 Tone
Blue	8 Tone	6.4	16	11.2	8 Tone
Orange	10	8.0	20	14	10

Order :
GPS x Colour (Load) x Length

SPANZET / POLYESTER TURN BUCKLE



Order / Model :
NL -35 -8 (8 Meter)
NL -50 -10 (10 Meter)





SWIVEL HOOK FK..

Pls. specify code for other products(AK)

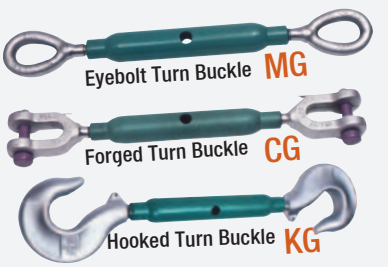
Order	Capacity
FK .01	1.0 Tones
FK .15	1.5 Tones
FK .02	2 Tones
FK .03	3 Tones
FK .45	4.5 Tones
FK .07	7 Tones
FK 110	11 Tones



ROPE ATTACHMENTS HE..

DIN 82 101 Straight Type Locked

Order	Capacity (Size)	
HE .01	1.0 Tones	(3/8')
HE .02	2 Tones	(1/2')
HE .32	3.25 Tones	(5/8')
HE .47	4.75 Tones	(3/4')
HE .65	6.5 Tones	(7/8')
HE .95	9.5 Tones	(1-1/8')
HE .12	12 Tones	(1-1/8')



CERTIFIED TURN BUCKLES

Forged Turn Buckle

Order CG	Tone
228. 20 x2.5	3.0
228. 27 x3	5.0
228. 33 x3.5	8.0
228. 36 x4	12
228. 42 x4.5	16
228. 48 x5	20
228. 50 x5	25

Eyebolt Turn Buckle

Order MG	Tone
238. 20 x2.5	3.0
238. 27 x3	5.0
238. 33 x3.5	8.0

Hooked Turn Buckle

Order KG	Tone
248. 20 x2.5	3.0
248. 27 x3	5.0
248. 33 x3.5	8.0



WORK SAFETY SUPPLIES

Work Shoes

Order	Size	
EA.39	No.39	Economic Price
EA.40	No.40	
EA.41	No.41	
EA.42	No.42	
EA.43	No.43	
EA.44	No.44	
EA.45	No.45	



Sip.	Product
IGZ	Trans.Glasses
TGB	Trans. Mask
SGZ	Black Glasses
SGK	Face Guard



WORK SAFETY SUPPLIES

Order	Capacity (Size)
NTE	Polyamide Nitrile Gloves
TDE	Reinforced Leather Gloves
ASPEST	High Heat Gloves
KDE	Welder Long Sleeved Gloves
MLE	Inspection / Nylon Gloves
KBE	Fabric / Bandsman Gloves
BLE	Beybi / Rubber Gloves
NTK	Nitrile / Full Coated Gloves



WORK SAFETY SUPPLIES

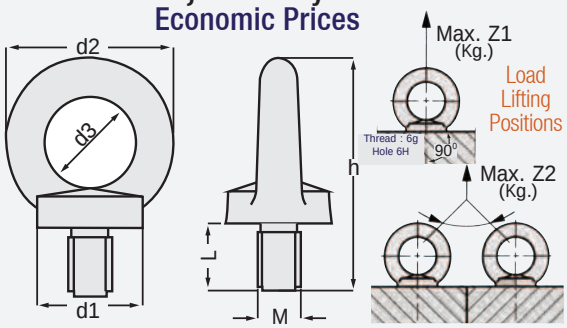
Order	Capacity (Size)
EBBR	Rear Adjusted Helmet
EBBH	Air Perforated Helmet
KB	Noise Absorber Headphone
KLK	Noise Absorber Ear Plug
STM	Yellow Dust Mask
VTM	Ventilated Dust Mask
45-40	Parcel Type (Economical Price)
45-100	Parcel Type (Economical Price)



FIXED LIFTING EYEBOLT G.141

Screwable Hanger Load Eyebolt DIN 1580

Economic Prices



Fixed Hanger Eyebolt: It is loaded only with forces making max. 45º angle with vertical or circular plane, not allowed to other loadings, however such liftings are oftenly unavoidable, plan selection of eyebolt suitable to safety bearing in advance (its safety is provided).

Screwable Hanger Cargo Eyebolt DIN 1580 G.141

M X Thread	d1	d2	d3	h	L	Product	Z1(Tone)	Z2(Tone)
M8 x 1.25	20	36	20	49	13	0.70 gr.	0.15	0.09
M10 x 1.50	25	45	25	63	17	100 gr.	0.23	0.15
M12 x 1.75	30	54	30	73.5	20.5	180 gr.	0.34	0.20
M14 x 2.0	30	54	30	73.5	20.5	200 gr.	0.46	0.30
M16 x 2.0	35	63	35	89	27	280 gr.	0.70	0.50
M18 x 2.50	35	63	35	89	27	330 gr.	0.90	0.60
M20 x 2.50	40	72	40	101	30	420 gr.	1.20	0.80
M24 x 3.0	50	90	50	126	36	830 gr.	1.80	1.25
M30 x 3.50	65	108	60	154	45	1.660 gr.	3.60	2.50
M36 x 4.0	75	126	70	182	54	2.650 gr.	5.10	3.60
M42 x 4.50	85	144	80	210	63	4.030 gr.	7.00	4.90
M48 x 5.0	100	166	90	236	68	8.800 gr.	8.60	5.90

EYEBOLT (Heavy Duty) AK -580 C: M27 /M30 /M36 /M42 /M45 /M48 /M56 /M60
EYENUT (Heavy Duty) AK -582 S: M27 /M30 /M36 /M42 /M45 /M48 /M56 /M60

Order : G.141 x M

Material : C15 Forging
EYEBOLT : Class > 8CE
EYENUT Security Certificated

Usage :
Standard G.141
Heavy Duty : **EYEBOLT**

EGM



High Quality / Grinded Thread

M X Thread	M X Thread
M8 x 1.25	**M20** x 2.50
M10 x 1.50	**M24** x 3.0
M12 x 1.75	**M30** x 3.50
M14 x 2.0	**M36** x 4.0
M16 x 2.0	**M42** x 4.50
M18 x 2.50	**M48** x 5.0

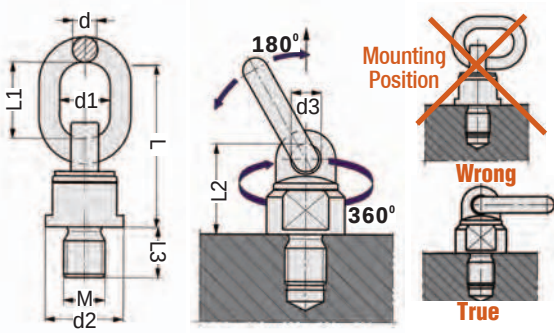
Class > 8CE
İmport Product Load Lifting Lugs are for your more higher quality selection. Our stocks with security certificate are also available.

Order : EGM x M
Class > 8CE



TWO SIDED ROTARY EYEBOLT G.140

Swivel / Lug Attachable at Every Angle



Cargo Eyebolt: By absorbing sudden and rigid motion during transport - bending and breaking of sling / rope /chain that can be occurred due to swinging of load, it will amortise costs above possible damages with safety lifting and carrying. Special Forged Steel (Class 8) Product, 4 times safety against fracture in rotation direction of full load, hinged rotary design that can be taken correct position and be turned axially by aligning movable ring 1800 in loaded position. Mounting/ lifting are important.

Swivel / Lug Attachable at Every Angle G.140

M X Thread	d	d1	d2	d3	L	L1	L2	L3	Product
M8 x 1.25	8	29	36	11	86	32	39	12	0.27 gr.
M10 x 1.50	8	29	36	11	86	32	39	19	0.35 gr.
M12 x 1.75	12	35	60	15	150	58	67	20	0.60 gr.
M16 x 2.0	12	35	60	15	150	58	67	32	0.80 gr.
M20 x 2.50	19	40	70	22	179	67	78	38	1.80 gr.
M24 x 3.0	19	40	70	22	179	67	78	38	2.21 gr.
M30 x 3.50	22	52	80	25	228	95	93	50	3.90 gr.
M36 x 4.0	22	52	80	25	228	95	93	50	5.50 gr.
M42 x 4.50	25	65	93	28	266	118	104	63	6.10 gr.
M56 x 4.0	32	70	105	35	310	120	135	95	11 kg.
M64 x 6.0	32	70	105	35	310	120	135	95	13 kg.

Maximum Lifting Load (Safety Coefficient ≥ 5:1) P=Tone

Product M	Per. 0^0	Lateral 90^0	Biangular 0^0-45^0	Biangular 45^0-60^0	Tetragonal 0^0-45^0	Tetragonal 45^0-60^0
M8 x 1.25	0.4	0.2	0.3	0.2	0.5	0.3
M10 x 1.50	0.5	0.3	0.4	0.3	0.6	0.4
M12 x 1.75	1.0	0.5	0.7	0.5	1.1	0.8
M16 x 2.0	1.9	1.0	1.4	1.0	2.1	1.5
M20 x 2.50	2.1	1.1	1.5	1.1	2.4	1.6
M24 x 3.0	3.2	1.6	2.3	1.6	3.5	2.3
M30 x 3.50	5.0	2.5	3.6	2.5	5.6	3.5
M36 x 4.0	8.0	4.0	5.5	4.0	10	6.0
M42 x 4.50	10	5.0	7.0	5.0	12	7.0
M56 x 4.0	14	7.2	10	7.3	18	10
M64 x 6.0	15	7.5	11	7.5	20	11

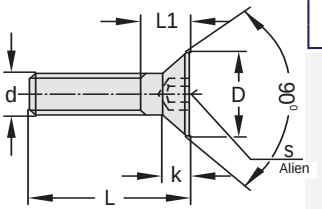
Order : G.140 x M



COUNTERSUNK HEAD SCREW HIC

Countersunk, Cylinder Head Cap Screw

Quality: 10.9 DIN 7991



d (M)	L mm	L1	D	k	s
M3 x 05	8	3.2	6	1.7	2
	10				
	15				
M4 x 07	10	4.4	8	2.3	2.5
	15				
	20				
	25				
	30				
M5 x 08	10	5.2	10	2.8	3
	15				
	20				
	25				
	30				
	35				
	40				
M6 x 1	10	6.3	12	3.3	4
	15				
	20				
	25				
	30				
	35				
	40				
M8 x 1.25	10	8.2	16	4.4	5
	15				
	20				
	25				
	30				
	35				
	40				
	50				
M10 x 1.50	15	10	20	5.5	6
	20				
	25				
	30				
	35				
	40				
	50				
	60				

Order : **HIC d x L**

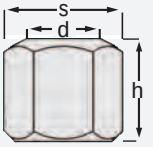
COUNTERSUNK HEAD SCREW HIC

d (M)	L mm	L1	D	k	s
M12 x 1.75	20	11.8	24	6.5	8
	25				
	30				
	35				
	40				
	50				
	60				
M16 x 2	25	15.4	30	8.5	10
	30				
	35				
	40				
	50				
	60				
	70				

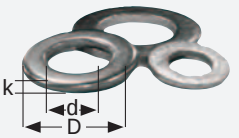


PLATED NUT KSM

Hexagon Steel CL.8 DIN 934



Order	Ø d	s	h
KSM 3	**M3**	5.5	2
KSM 4	**M4**	7	3
KSM 5	**M5**	8	4
KSM 6	**M6**	10	5
KSM 8	**M8**	13	6
KSM10	**M10**	17	8
KSM12	**M12**	19	10
KSM14	**M14**	22	11
KSM16	**M16**	24	13
KSM18	**M18**	27	14
KSM20	**M20**	30	15
KSM24	**M24**	36	20



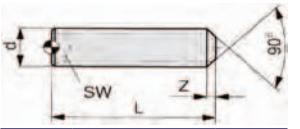
PLATED NUT KPM

Order	Ø d	D	k
KPM 3	**M3**	6	1
KPM 4	**M4**	9	1.2
KPM 5	**M5**	10	1.2
KPM 6	**M6**	12	1.3
KPM 8	**M8**	16	1.3
KPM10	**M10**	20	2.0
KPM12	**M12**	24	2.5
KPM14	**M14**	28	2.8
KPM16	**M16**	30	3.0
KPM18	**M18**	34	3.0
KPM20	**M20**	37	3.0
KPM24	**M24**	45	3.5



LOCKING SCREWS SEC

Allen Countersunk Head Bolt



d	L mm	Z	SW
M3 x 05	8	0.5	1.5
	10		
	15		
M4 x 07	8	0.7	2
	10		
	15		
	20		
M5 x 08	10	0.75	2.5
	15		
	20		
	25		
	30		
M6 x 1	10	1.0	3.0
	15		
	20		
	25		
	30		
	35		
	40		
M8 x 1.25	10	1.2	4.0
	15		
	20		
	25		
	30		
	35		
	40		
	45		
	50		
M10 x 1.50	10	1.5	5.0
	15		
	20		
	25		
	30		
	35		
	40		
	45		
	50		
M12 x 1.75	10	2.0	6.0
	15		
	20		
	25		
	30		
	35		
	40		
	45		
	50		
	55		
	60		

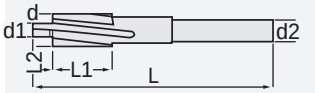
LOCKING SCREWS SEC

d	L mm	Z	SW
M14 x 2	20	2	0.7
	25		
	30		
	35		
	40		
	50		
	60		
M16 x 2	20	2	0.8
	25		
	30		
	35		
	40		
	50		
	60		

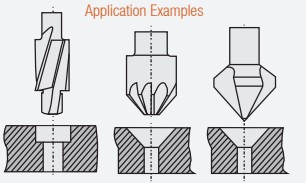
Order : **SEC d x L**



PILOT COUNTERSUNK HEAD SCREW Countersinking ICF



Application Examples



Head Screw Countersinking Burr | Head Screw Countersinking | Large Countersinks

M	d	d1	d2	L	L1	L2
M3	6	3.2	5	71	14	4
M4	8	4.3				
M5	10	5.3	8	80	18	6
M6	11	6.4				
M8	15	8.4	12.5	100	22	8
M10	18	10.5				10
M12	20	13				12
M14	24	15				14
M16	26	17				16
M18	30	19				18
M20	33	20				20

Helicel slotted Countersinking Pilot End Ø d1 has adapted to the relative intended purpose, cylindrical hole according to the precision DIN ISO 273 for open hole 3 / 4

Edged Burr - HSS - DIN 373

Order : **ICF M x d**



Cylinder Head Cap Screw 12.9

d (M)	L mm	b	D	k	s
M18 x 2.50	40	34	27	18	14
	50	43			
	60	53			
	70	52			
	80	52			
	100	52			
	120	52			
	140	52			
	160	52			
	180	52			
	200	52			
	220	52			
	240	52			
	260	52			
	300	52			
M20 x 2.50	40	34	30	20	17
	50	43			
	60	53			
	70	52			
	80	52			
	90	52			
	100	52			
	120	52			
	140	52			
	160	52			
	180	52			
	200	52			
	220	52			
	240	52			
	260	52			
	300	52			
M24 x 3	50	52	36	24	19
	60	52			
	70	61			
	80	71			
	90	60			
	100	60			
	120	60			
	140	60			
	150	60			
	160	60			
	180	60			
	200	60			
	220	60			
	240	60			
	260	60			
	300	60			

12.9 Cylinder Head Cap Screws
They are our import products
with high stock and economic price.
Also, as per request;
Ø M2 / 2.5 length up to 20 mm
M22 length up to 300 mm
M27 length up to 300 mm
M30 length up to 300 mm
M36 length up to 300 mm
Stainles INOX Cylinder Head Cap
Screws are available. The production
in desired material and dimensions
can be done.

Smashing Prices at rush of orders

Order : IMB d x L

Material : SEC 435
Hardness : 39-44 HRC
1220 N / mm²

Cylinder Head Cap Screw 12.9

d (M)	L mm	b	D	k	s
M12 x 1.75	20	15	18	12	10
	25	20			
	30	25			
	35	30			
	40	35			
	45	40			
	50	45			
	55	36			
	60	36			
	70	36			
	80	36			
	90	36			
	100	36			
	110	36			
	120	36			
	130	36			
	150	36			
	160	36			
	180	36			
	200	36			
	260	36			
	300	36			
M14 x 2	30	24	21	14	12
	35	29			
	40	34			
	45	39			
	50	44			
	60	44			
	70	44			
	80	44			
	90	44			
	100	44			
	110	44			
	120	44			
	130	44			
	150	44			
	160	44			
	180	44			
	200	44			
	240	44			
	260	44			
	300	44			
M16 x 2	30	24	24	16	14
	35	29			
	40	34			
	45	39			
	50	44			
	55	49			
	60	54			
	70	44			
	80	44			
	90	44			
	100	44			
	110	44			
	120	44			
	130	44			
	140	44			
	150	44			
	160	44			
	180	44			
	200	44			
	220	44			
	240	44			
	260	44			
	300	44			

Cylinder Head Cap Screw 12.9

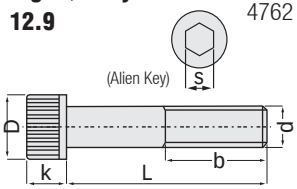
d (M)	L mm	b	D	k	s
M6 x 1	10	7	10	6	5
	15	13			
	20	17			
	25	22			
	30	27			
	35	24			
	40	24			
	45	24			
	50	24			
	55	24			
	60	24			
	70	24			
	80	24			
	90	24			
	100	24			
	120	24			
	130	24			
	150	24			
	160	24			
M8 x 1.25	10	8	13	8	6
	15	13			
	20	17			
	25	22			
	30	27			
	35	32			
	40	28			
	45	28			
	50	28			
	55	28			
	60	28			
	70	28			
	80	28			
	90	28			
	100	28			
	120	28			
	130	28			
	140	28			
	150	28			
	160	28			
	180	28			
	200	28			
M10 x 1.50	20	16	16	10	8
	25	21			
	30	26			
	35	31			
	40	36			
	45	32			
	50	32			
	55	32			
	60	32			
	70	32			
	80	32			
	90	32			
	100	32			
	110	32			
	120	32			
	130	32			
	150	32			
	160	32			
	180	32			
	200	32			
	260	32			
	300	32			



Cylinder Head Cap Screw IMB

High Quality
12.9

DIN ISO 4762



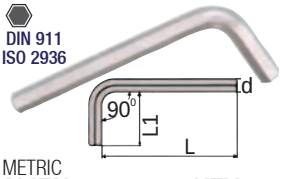
High Quality Cylinder Head Cap Screw 129
Unbroken /Unextended /Unwarped /Rigid Material

Cylinder Head Cap Screw IMB

d (M)	L mm	b	D	k	s
M3 x 05	10	8.5	5.5	2	2.5
	15	15			
	20	18			
	25	23			
	30	20			
M4 x 07	10	8	7	4	3
	15	14			
	20	18			
	25	23			
	30	20			
	35	20			
	40	20			
	45	20			
	50	20			
	60	20			
	70	20			
	80	20			
	90	20			
	100	20			
M5 x 08	10	8	8.6	5	4
	15	14			
	20	18			
	25	23			
	30	22			
	35	22			
	40	22			
	45	22			
	50	22			
	60	22			
	70	22			
	80	22			
	90	22			
	100	22			
	110	22			
	120	22			
	130	22			
	150	22			



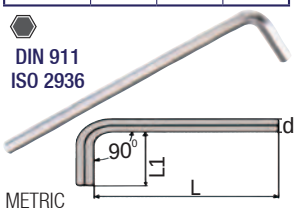
DIN 911
ISO 2936



METRIC
ALIEN (HEXAGONAL) KEY

Order	d	L	L1
AA.15	1.5	45	15
AA.20	2	50	17
AA.25	2.5	57	20
AA.30	3	64	22
AA.35	3.5	68	25
AA.40	4	72	28
AA.45	4.5	78	30
AA.50	5	83	32
AA.60	6	94	37
AA.70	7	99	40
AA.80	8	105	43
AA.90	9	111	46
AA.100	10	119	49
AA.120	12	134	56
AA.140	14	140	56
AA.160	16	165	75
AA.170	17	160	63
AA.190	19	180	70
AA.220	22	200	80
AA.240	24	224	90
AA.270	27	250	100

DIN 911
ISO 2936



METRIC
LONG ALIEN KEY

Order	d	L	L1
AU.20	2	100	16
AU.25	2.5	112	18
AU.30	3	126	20
AU.35	3.5	135	21
AU.40	4	140	25
AU.45	4.5	150	25
AU.50	5	160	28
AU.60	6	180	32
AU.70	7	190	34
AU.80	8	200	36
AU.90	9	212	38
AU.100	10	224	40
AU.110	11	240	42
AU.120	12	250	45
AU.130	13	266	50
AU.140	14	280	56
AU.170	17	320	63



1/2" Pneumatic Nutrunner
Capacity:16 mm
Torque: 38.4 Kgm
Length: 180
Air Inlet:1/4"
Air Presssure:
90 Psi (6.3 Kgm)

MOULD MOUNTING KIT



1/2" Die Allen End

Order :
Mould Mounting Kit
(Pneumatic Nutrunner + Die Allen Kit)

Order	d	L	Qty
111306	6	60 mm	One Serial Per Set
111308	8		
111310	10		
111312	12		
111314	14		





ROUND HEAD ALIEN

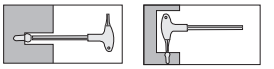
Order	d	L	L1
BA.20	2	50	16
BA.25	2.5	60	18
BA.30	3	63	20
BA.40	4	70	25
BA.50	5	80	28
BA.60	6	90	32
BA.80	8	100	36
BA.100	10	112	38



TORX ALIEN KEY

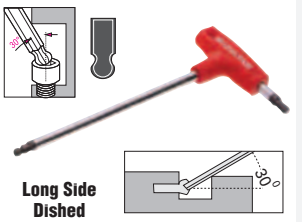
Order	d	L	L1
TX.T6	T6	42	16
TX.T7	T7	48	16
TX.T8	T8	48	16
TX.T9	T9	48	16
TX.T10	T10	51	17
TX.T15	T15	54	18
TX.T20	T20	57	19
TX.T25	T25	60	20





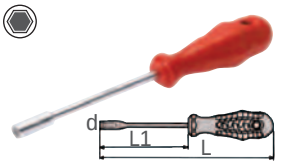
'T' ALIEN KEY PP.

Order	d	L	L1
TA.20	2	139	52
TA.25	2.5	153	52
TA.30	3	153	55
TA.35	3.5	153	55
TA.40	4	179	70
TA.45	4.5	200	84
TA.50	5	200	84
TA.60	6	221	103
TA.70	7	236	106
TA.80	8	255	117
TA.100	10	285	132



ROUN HEAD 'T' ALIEN

Order	d	L	L1
BT.25	2.5	153	55
BT.30	3	153	55
BT.40	4	179	70
BT.50	5	200	84
BT.60	6	221	103
BT.80	8	255	117



METRIC
DIE ALIEN SCREWDRIVER

Order	d	L	L1
LA.4	4	210	125
LA.6	6	210	125
LA.7	7	220	125
LA.8	8	220	125
LA.10	10	220	125
LA.12	12	230	125
LA.14	14	230	125

ALIEN WRENCH SET

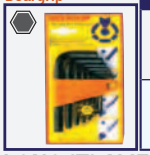
Beta -İzeltaş -Ceta



Order	Dia.
AAS 10's	2-2.5-3-4 5-6-7-8 9-10
AAS 12's	2-2.5-3-4 5-6-7-8-9 10-12

ALIEN WRENCH SET

Beargrip



Order	Dia.
BAA 10's	2-2.5-3-4 5-6-7-8 9-10
BAA 12's	2-2.5-3-4 5-6-7-8-9 10-12

LONG 'T' ALIEN SET



Order	Dia.
BETA 8's	2-2.5-3 4-5-6 8-10
İzeltaş 10's	2-2.5-3-4 5-6-7-8 9-10

ALIEN WRENCH SET



Order	Dia.
KAA 8's	2-2.5-3 4-5-6 8-10
KAA 10's	2-2.5-3-4 5-6-7-8 9-10

LONG ALIEN WRENCH S.



Order	Dia.
KUA 8's	2-2.5-3 4-5-6 8-10
KUA 10's	2-2.5-3-4 5-6-7-8 9-10

ROUND HEAD ALIEN S.



Order	Çap
KTB 8's	2-2.5-3 4-5-6 8-10
KTB 10's	2-2.5-3-4 5-6-7-8 9-10

INCH ALLEN WRENCH S.



Order	Dia.
KIA 8's	3/32-1/8 5/32-3/16 7/32-1/4- 5/16-3/8
KIA 10's	7/64-9/64

TORK ALIEN WRENCH S.



Order	Dia.
KTA 8's	T10-T15 T20-T25 T27-T30 T40-T50
KTA 10's	T7-T9

R. HEAD POCKETKNIFE ALIEN



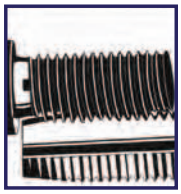
Order	Dia.
KCB 8's	2-2.5-3 4-5-6 8-10
KCB 10's	2-2.5-3-4 5-6-7-8 9-10

BROKEN THREAD SPACE,REPAIR KIT

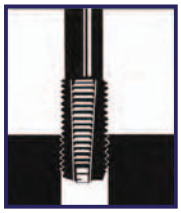
Pls. renew broken / damaged thread slots with V-Coil Kits ..!



Drilling; Clean broken thread slot with standard drill bit, there is no need to clean for small holes. The sets up to M12 (1/2'') are included suitable drill bits. For fluteless quides, larger holes are required.



Control; Pls. control whether thread and steps of guides to be used at thread slots that will be recreated are paired or not and also place. These sets are also available at our company.



Thread Slot Opening Process; For opening thread to the cleaned hole after drilling process, special V-COIL Thread Space creating guides are used. Suitable thread cutting oil related to usage should be used.



Thread Slot Repair Spring Placement Process; After drilling and guiding process at thread slot, pls. insert thread spring to the new thread space to be created into spring installation tool and then insert adjustable ring until spring end is centered at slot end; curl the spring up to half turn downwards with slight pressure. Due that bit can be broken, hence the thread should not be turned to counter thread direction.



Removing the handle; After mounting of new thread place spring, installation kit is removed. To remove remaining tail at thread slot spring, use spring breaker tool.



Application Areas; It is the most effective method for reparing the damaged threads, thread created that is depended on narrow and full tolerances, is normally more stronger position than original, also it is provided inch /metric changement. The Springs resistant to corrosion and abrasion have long life time, thread slot armour plating during repairing of threads, V-Coil Tools are used securily for more flexible materials having low shear resistance, For example: Machine Productions of Aluminium Alloys or Magnesium Alloys, Electric- Medical - Space etc. Industries.

Recyling the rejected materials is ensured.



Springs 1.5 D

Each Thread Spac...
Application Set

THREAD SLOT REPAIR KITS

With Usage per each Thread - 1 Complete Set

M Guide	HSS Drill Bit	Spring Installation	Spring Breaker	Springs 1.5 D Stainless Thread Slot Spring
M2 x0.4	2.10 mm	No:2	No:2	20 Piece
M3 x0.5	3.20 mm	No:4	No:4	
M4 x0.7	4.20 mm	No:6	No:6	
M5 x0.8	5.20 mm	No:8	No:8	
M6 x1	6.30 mm	No:9	No:9	
M7 x1	7.30 mm	No:11	No:11	
M8 x1.25	8.30 mm			
M8 x1	8.30 mm			
M9 x1.25	9.30 mm	No:12	No:12	15 Piece
M10 x1.5	10.4 mm	No:13	No:13	
M10 x1.25	10.3 mm			
M10 x1	10.3 mm			
M11 x1.5	11.4 mm	No:14	No:14	10 Piece
M12 x1.75	12.4 mm	No:15	No:15	
M12 x1.5	12.4 mm			
M12 x1.25	12.3 mm			
M12 x1	12.3 mm			
M14 x2	-	No:16	-	
M14 x1.5	-		-	
M14 x1.25	-	No:17	-	
M14 x1	-		-	
M16 x2	-	No:18	-	
M16 x1.5	-		-	
M18 x2.5	-	No:20	-	5 Piece
M18 x2	-		-	
M18 x1.5	-		-	
M20 x2.5	-	No:21	-	
M20 x2	-		-	
M20 x1.5	-		-	
M22 x2.5	-	No:22	-	
M22 x2	-		-	
M22 x1.5	-		-	
M24 x3	-	No:23	-	

Usage Area of Spring Removal Device: It is used to remove incorrect inserted, deformed, damaged springs that were preinstalled.

Present a Kit Per Each Thread Slot

As per request, except set: You can supply each products (devices) externally from our company.

Order : M.(Thread) Repair Kit

Usage : Reparing and Renewing of Damaged Thread Slots



THREAD SLOT REPAIR KITS

Sets as Group (Economic Presentation)

M Klavuz	HSS Drill Bit	Spring Installation	Spring Breaker	Springs 1.5 D Stainless Thread Slot Spring	
SET grouped from **M5** up to **M 12**					
M5 x0.8	5.20 mm	No : 8	No : 8	25 Piece	
M6 x1	6.30 mm	No : 9	No : 9	25 Piece	
M8 x1.25	8.30 mm	No : 11	No : 11	25 Piece	
M10 x1.5	10.40	No : 13	No : 13	25 Piece	
M12x1.75	12.40	No : 15	No : 15	10 Piece	
SET grouped from **M6** up to **M 10**					
M6 x1	6.30 mm	No : 9	No : 9	25 Piece	
M8 x1.25	8.30 mm	No : 11	No : 11	25 Piece	
M10 x1.5	10.40	No : 13	No : 13	25 Piece	
M12x1.75	12.40	No : 15	No : 15	10 Piece	
M14x1.25	-	No : 17	-	10 Piece	
PT Ignition Plug Guided From **M6** up to **M14**					
M6 x1	6.30 mm	No : 9	No : 9	25 Piece	
M8 x1.25	8.30 mm	No : 11	No : 11	25 Piece	
M10 x1.5	10.40	No : 13	No : 13	25 Piece	
M12x1.75	12.40	No : 15	No : 15	10 Piece	
M14x1.25	-	No : 17	-	10 Piece	
SET grouped from **M6** up to **M 10**					
M6 x1	6.30 mm	No : 9	No : 9	25 Piece	
M8 x1.25	8.30 mm	No : 11	No : 11	25 Piece	
M10 x1.5	10.40	No : 13	No : 13	25 Piece	

NOTE: Except metric thread specified in tables, all thread (UNF / UNC) types are available at our company as per request.



CHUCKS GROUP

THREADED & LUG



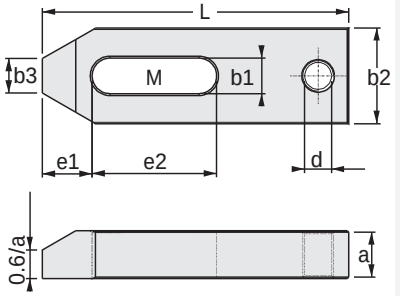
Order : 1330

MOULD FASTENERS

PLAIN LUG



Order : 1350



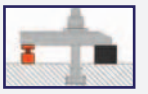
The products should be specified as 1330 or 1350 separately during giving order.

Order : ..MxL

d	M	L	b1	a	b2	b3	e1	e2	Kg.
M8	M6	50	6.6	10	20	8	10	20	0.06
	M8	60	9	12	25	10	13	22	0.110
M10	M10	80	11	15	30	12	15	30	0.200
M12	M12	100	14.5	20	40	14	21	40	0.550
	M14	125						50	0.600
M16	M16	125	18.5	25	50	18	26	45	1.100
	M18	160						65	1.330
M20	M20	160	22.5	30	60	22	30	60	2.000
		200						80	2.200
	M22	250		35	70	30		100	2.500
M24	M24	160	26	30	70	26	35	60	1.900
		200		35				80	2.500
		250				30		100	3.750
		315		40	80	35		130	4.200
M24	M30	250	33	40	80	34	45	100	4.800
		315		50				130	7.600
M24	M36 M42	400	43	60	100	43	100	150	18 Kg.

DIFFERENT LUG SETS



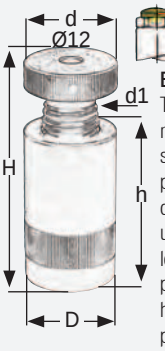


PLAIN LUG



WORK PIECE SUPPORT ELEMENT

Rear Thrust for Plain Lugs



For Different method clamp-pings, straightening heads can be used.

Elevator Support Elemen

Trapezoid thread structure, makes product powerful in support riser position and is provided efficiency with different options in support usages, Ø 12mm hole locating on movable riser part provides other straightening heads according to different position. It is in connection of straight seating surface for large - Small work pie-ces, stacked and different device design suitability.

Support Elevator **Order : 1510.No**

No	D	h - H	d1	d	Kg.
01	34	23 -30	M16	32	0.14
02		40 -60	M16		0.25
03	50	42 -52	Trapeze 30 x 4	50	0.55
04		50 -70			0.62
05		70 -100			0.90
06		100 -140			1.60
07	54	140 -220		54	2.40
08	58	210 -330	Trapeze 30 x 6	58	3.90
09	68	260 -430		68	6.70

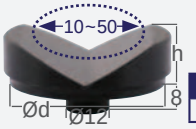
WORK PIECE BALANCING / PLACEMENT

Straightening Heads- 'V' Bearings



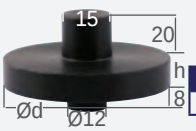
Straightening Heads Radius Screwed Foots
For Angular Surfaces

Order	d	h
1555	37	10



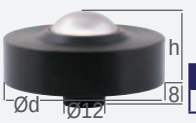
Straightening Heads 'V' Bearing Head
At Cylindrical Work Pieces

Order	d	h
1565	45	15



Straightening Heads Pinned Support Stopper
Between figured parts

Order	d	h
1570	50	12



Straightening Heads Ball Support
On rough surfaces

Order	d	h
1560	45	25



Straightening Heads Inter Centering Average
Lapped Usage

Order	d	h
1575	45	8

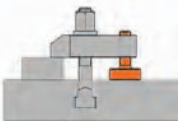
SCREWED LUG SET



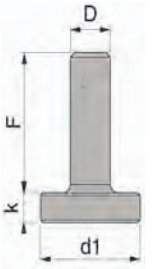


SCREW LUG ELEVATOR

Support Elevator, Adjusting Bolt



In lug elevator process, the lengths of support bolt are used as not to exceed lug length proportionally. Trapezoid Thread Structure carries load safely.



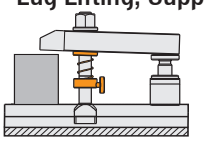
Support Elevator **Order : 1490.DxF**

D	F	d1	k	Kg.
M10	42	30	8	0.06
M12	50	36	10	0.10
	95			0.15
M16	62	45	13	0.20
	97			0.25
	117			0.30
M20	62	50	13	0.34
	97			0.40
	117			0.43
M24	81	50	14	0.60
	116			0.85

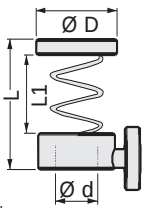


T' LEGGED STUD BOLT, SPRING WASHER

Lug Lifting, Support Element

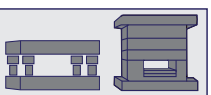


It is compact product that holds lug balancedly and has not any part having protrusion in connection and dismantle process.



Lug Support Spring **Order : 1970.M**

M	Ø D	Ø d	L	L1
M12	28	13	40	33
M14	28	15	40	30
M16	37	17	45	30
M18	37	19	45	40
M20	37	21	45	42
M24	45	25	50	45



'T' LEGGED STUD BOLT 1610

d M	L	b mm	a mm	e Ø	k mm	Proc. Kg.
M30 x 3,5 d.36	125	80	35.6	54	22	1.86
	160	110				1.95
	200	135				2.25
	250	150				2.55
	315	200				2.95
	500	300				3.95
M36 x 4 d.42	160	100	41.6	65	26	3.22
	250	175				3.84
	400	250				4.95
	600	340				6.50
M42 x 4.5 d.48 İsteğe Göre Üretim	160	100	47.6	75	30	6.00
	250	175				6.90
	400	250				8.10
	600	340				10.20



'T' CHANNEL CLEANING / EQUIPMENT



Processing machines are practical and useful product suitable to use in order to clean bench plates, chips and similar wastes occurring between channel spacings.

a 'T' Channel Dimensions	Product Gr.
12 x 14 'T'Kanal İçin	40
16 x 18 'T'Kanal İçin	50
20 x 22 'T'Kanal İçin	55
24 x 28 'T'Kanal İçin	80

Order : 1950 'T' Channel

Usage: Processing machine at plate channel cleaning.

'T' LEGGED STUD BOLT 1610

d M	L	b mm	a mm	e Ø	k mm	Proc. Kg.
M14 x 2 d.16	63	45	15.7	25	9	0.20
	80	55				0.22
	100	65				0.23
	125	75				0.28
	160	100				0.31
	200	120				0.35
	250	150				0.40
M16 x 2 d.16	63	45	15.7	25	9	0.25
	80	55				0.28
	100	65				0.29
	125	85				0.30
	160	100				0.42
	200	120				0.44
	250	150				0.53
M16 x 2 d.18	63	45	17.7	28	10	0.26
	80	55				0.31
	100	65				0.32
	125	85				0.36
	160	100				0.39
	200	120				0.45
	250	150				0.56
M18 x 2.5 d.20	80	55	19.7	32	12	0.42
	100	65				0.46
	125	85				0.49
	160	110				0.58
	200	125				0.61
	250	150				0.70
	315	190				0.93
M20 x 2.5 d.22	80	55	21.7	35	14	0.52
	100	65				0.56
	125	85				0.57
	160	110				0.68
	200	125				0.71
	250	160				0.80
	315	190				1.03
M24 x 3 d.24	100	70	23.7	40	16	0.91
	125	85				0.97
	160	110				1.04
	200	125				1.27
	250	150				1.41
	315	190				1.64
	400	240				1.80
M24 x 3 d.28	100	70	27.7	44	18	0.98
	125	85				1.01
	160	110				1.15
	200	125				1.24
	250	150				1.50
	315	190				1.73
	400	240				1.86
	500	290				2.31

DIN 787





'T' LEGGED STUD BOLT 1610

Set: Stud Washer CHUCKS

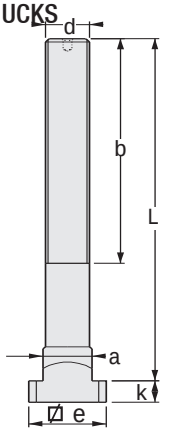
It is used at installation of lug sets.

Quality : 10.9

Security Certificated Product The products up to 180ºC are supplied separately.

Material : 42 CrMo4 DIN Black Plated Cap Forged Heat Threated

Thread: Hardened (Scrub-bed) between two drum.



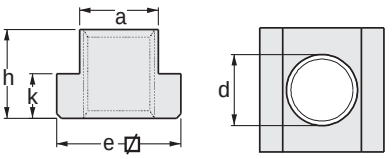
Order : 1610 d x L

a d M	L	b mm	a mm	e Ø	k mm	Proc. Kg.
M10 x 1.5 d.10	40	30	9.7	15	6	0.07
	63	45				0.08
	80	50				0.09
	100	60				0.11
M10 x 1.5 d.12	50	35	11.7	18	7	0.1
	63	40				0.12
	80	55				0.13
	100	60				0.15
	125	75				0.18
	160	90				0.23
	200	120				0.27
M12 x 1.75 d.12	50	35	11.7	18	7	0.12
	63	40				0.13
	80	55				0.14
	100	65				0.15
	125	75				0.17
	160	100				0.20
	200	120				0.22
M12 x 1.75 d.14	50	35	13.7	22	8	0.13
	63	40				0.15
	80	55				0.16
	100	65				0.17
	125	75				0.18
	160	100				0.21
	200	120				0.24



'T' MOULD INNER / NUT 1750

Mould Connecting, Straight Stud Bolt Set



O. Edged Stud Bolt **Order : 1750.axd**

d	a mm	e ⍁	h mm	k mm	Product Kg.
M 6 x 8	7.7	13	10	6	0.009
M 8 x 10	9.7	15	12	6	0.012
M 8 x 12	11.7	18	14	7	0.022
M 10 x 12					0.020
M 8 x 14	13.7	22	16	8	0.040
M 10 x 14					0.037
M 12 x 14					0.035
M 8 x 16	15.7	25	18	9	0.060
M 10 x 16					0.050
M 12 x 16					0.050
M 14 x 16					0.045
M 8 x 18	17.7	28	20	10	0.090
M 10 x 18					0.087
M 12 x 18					0.080
M 14 x 18					0.075
M 16 x 18					0.065
M 16 x 20	19.7	32	24	12	0.110
M 18 x 20					0.105
M 16 x 22	21.7	35	28	14	0.175
M 18 x 22					0.160
M 20 x 22					0.155
M 16 x 24	23.7	40	32	16	0.260
M 20 x 24					0.230
M 22 x 24					0.220
M 16 x 28	27.7	44	36	18	0.380
M 20 x 28					0.350
M 22 x 28					0.340
M 24 x 28					0.320
M 24 x 36	35.6	54	44	22	0.700
M 30 x 36					0.600

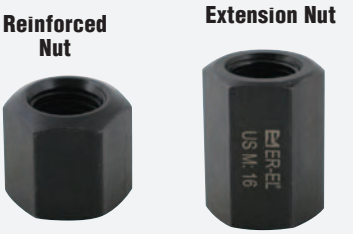
Dia. Products written as bold: They are specified our standard stocks. For endurance of 'T' Lug, stud bolt should be screwed to the all threaded portion.

Order : **1750 a.d**

Material : CK 45 DIN
Hardness: 30-32 HRC

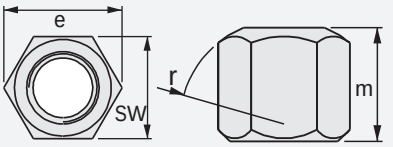


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REINFORCED NUT 1790

Mould Connecting, Straight Stud Bolt Set



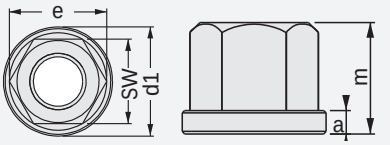
Reinforced Nut **Order : 1790.Thread**

Thread	SW	e mm	m mm	r mm	Product Kg.
M6	10	11.5	9	9	0.005
M8	13	15.0	12	12	0.009
M10	17	19.6	15	15	0.014
M12	19	21.9	18	17	0.020
M14	22	25.4	21	20	0.045
M16	24	27.7	24	22	0.060
M18	27	31.2	27	24	0.085
M20	30	34.6	30	27	0.110
M22	32	36.9	33	30	0.130
M24	36	41.5	36	32	0.200
M30	46	53.1	45	41	0.400
M36	55	63.5	54	50	0.720



NUT WITH WASHER 1810

Mould Connecting, Straight Stud Bolt Set



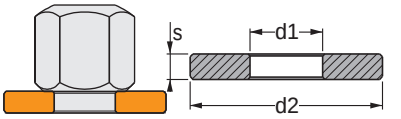
Nut with Washer **Order : 1810.Thread**

Thread	SW	e mm	m mm	a mm	d1 Ø	Product Gr.
M8	13	15.0	12	3.5	18	12
M10	17	19.7	15	4.0	22	25
M12	19	21.9	18	4.0	25	35
M14	22	25.4	21	4.5	28	50
M16	24	27.7	24	5.0	31	70
M18	27	31.2	27	5.0	34	95
M20	30	34.6	30	6.0	37	130
M22	32	36.9	33	6.0	40	160
M24	36	41.5	36	6.0	45	230
M30	46	53.1	45	8.0	58	470
M36	55	63.0	54	10	68	800



THICK, WASHER ASSEMBLY 1870

Mould Connecting, Straight Stud Bolt Set



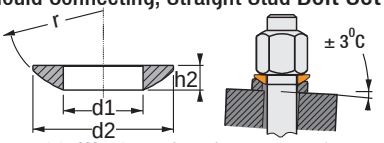
Reinforced Nut **Order : 1790.Dia.**

Stud Bolt	d1 mm	d2 mm	s mm	Product Kg.
M6	6.4	17	3	0.006
M8	8.4	23	4	0.010
M10	10.5	28	4	0.016
M12	13	35	5	0.035
M14	15	40	5	0.040
M16	17	45	6	0.060
M18	19	45	6	0.065
M20	21	50	6	0.075
M22	23	50	8	0.095
M24	25	60	8	0.170
M30	31	68	10	0.230
M36	38	80	12	0.350



SPHERICAL, WASHER ASSEMBLY 1890

Mould Connecting, Straight Stud Bolt Set



Assembly Washers: In using as a set (with two different products), 3º deviations are balanced, thus inclined position of seating surface is prevented.

Spherical Washer **Order : 1890.Dia**

Stud Bolt	d1 mm	d2 mm	h2 mm	r mm	Product Kg.
M6	6.4	12	2.3	9	0.002
M8	8.4	17	3.2	12	0.003
M10	10.5	21	4.0	15	0.005
M12	13	24	4.6	17	0.007
M14	15	28	5.0	22	0.010
M16	17	30	5.3	22	0.015
M20	21	36	6.3	27	0.025
M24	25	44	8.2	32	0.045
M30	31	56	11.2	41	0.085





QUALITY DIN 6379 : 12.9



Plain Stud Bolt 1690

Dismantled Set of Connecting Kit

Plain stud bolt are used modular as dismantled set. It is used with lugs and connecting elements individually.

Quality: 10.9

Security Certificated Product

The products up to 180ºC are supplied separately.

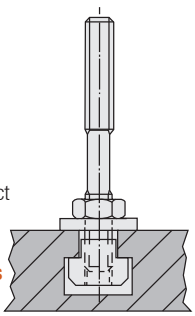
Our special production is available as per reqest.

Material: 42 CrMo4 DIN Black Plated

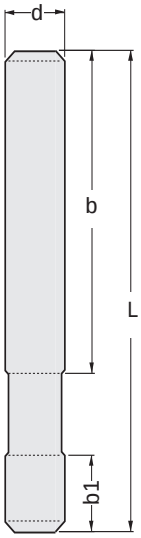
Cap Forged Heat Threated

Thread: Hardened (Scrubbed) between two drums.

Two screw two stud bolt together, extension nut is used with plain stud bolt.







Modular Plain Stud Bolt **Order : 1690.d x L**

d M	L mm	b1 mm	b mm	Kg.
M8 x 1.25	40	11	20	0.010
	63		40	0.020
	80		50	0.025
	100		63	0.030
	125		75	0.035
	160		100	0.045
M10 x 1.5	50	13	25	0.025
	63		32	0.035
	80		50	0.040
	100		63	0.050
	125		75	0.060
	160		100	0.080
	200		125	0.100
M12 x 1.75	50	15	25	0.035
	63		32	0.045
	80		50	0.055
	100		63	0.070
	125		75	0.090
	160		100	0.115
	200		125	0.140
M14 x 2	63	17	32	0.095
	80		50	0.100
	100		63	0.110
	125		75	0.120
	160		100	0.150
	200		125	0.195
	250		160	0.240
M16 x 2	63	19	32	0.085
	80		50	0.105
	100		63	0.130
	125		75	0.160
	160		100	0.220
	200		125	0.280
	250		160	0.325
	315		180	0.425
	500		315	0.650
M18 x 2.5	80	23	50	0.130
	100		60	0.160
	125		75	0.200
	160		100	0.260
	200		125	0.320
	250		150	0.400
	315		180	0.500
M20 x 2.5	80	27	32	0.190
	100		60	0.220
	125		70	0.260
	160		100	0.330
	200		125	0.410
	250		160	0.510
	315		200	0.640
	400		250	0.815
	500		315	1.020
M22 x 2.5	160	31	100	0.430
	200		125	0.500
	250		160	0.670

Modular Plain Stud Bolt **Order : 1690.d x L**

d M	L mm	b1 mm	b mm	Kg.
M24 x 3	100	35	45	0.290
	125		70	0.380
	160		100	0.470
	200		125	0.580
	250		160	0.730
	315		200	0.920
	400		250	1.160
	500		315	1.450
	630		315	1.650
M30 x 3.5	125	43 Production As Per Request	56	0.600
	200		125	0.950
	250		160	1.230
	315		200	1.500
	500		315	2.360
	700		400	3.300
M36 x 4	160	51	80	1.100
	200		125	1.340
	250		160	1.710
	315		200	2.150
	400		250	2.700
	500		315	3.450
	700		400	4.750
M42 x 4.5	315	59 Production As Per Request	200	2.950
	400		250	3.750
	500		315	4.690

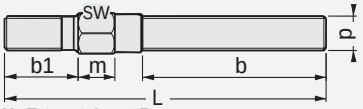
Including NUT and WASHER





WRENCH EDGED STUD BOLT

Usage Suitable to theThreaded Plate



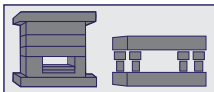
W. Edged Stud Bolt **Order : 1670.dxL**

d	L	b	b1	m	SW	Kg.
M12 x 1.75	130	65	24	14	14	0.16
	160	90				0.19
M14 x 2	130	65	28	15	15	0.22
	160	90				0.25
M16 x 2	140	70	32	16	17	0.30
	160	95				0.34
M18 x 2.5	150	70	35	19	19	0.40
	180	95				0.45
M20 x 2.5	150	70	40	22	22	0.50
	180	95				0.57
M22 x 2.5	150	70	40	22	24	0.65
	180	95				0.90
M24 x 3	170	75	47	22	27	0.85
	205	105				1.03
	250	140				1.20

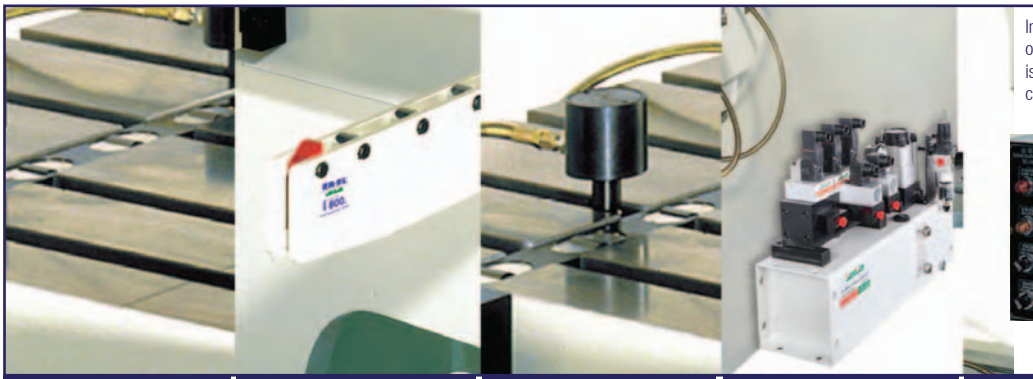
PLAIN STUD BOLT Order : 1690 .d x L

GTH

WRENCH EDGED STUD BOLT Order : 1670 .d x L



New Technology / Heavy Duty FAST MOULD CHANGEOVER SYSTEMS



In order to avoid any operation error, safety is designed with control device.



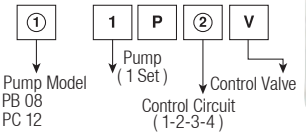
MOULD LIFTING UNIT	MOULD SLIDING ARM	'T' CHANNEL, HYDRAULIC LUG	AIR DRIVE HYDRAULIC PUMP	OPERATION CONTROL PANEL
★ Hydraulic Type ★ 'T' or 'U' Channel Installation	★ 4 Different Usage Options ★ RC - RD - RE - RF - RS	★ CA (Cylinder Type) ★ CB (Block Type)	PB-1P1V Model Pump PB 08 PB-1PP3V Model Pump PC 12	It is equipped Interlock Control Switch related to Electronic Machine.

With fast development parallel with traditional press moulds, in our country where various light/ medium and heavy duty mould increase production efficiency with new technologies, new technology products are applying with high technology in all around the world and are used during mould process especially in automative - white appliances etc. industries, production; manufacturing stage based on moulds are changing quickly, in cases that types and total production are less, by decreasing mould changeover period and especially with work safety. It is high time to pass fast mould changeover system. Application Areas: Press and Hydraulic Press Machines.



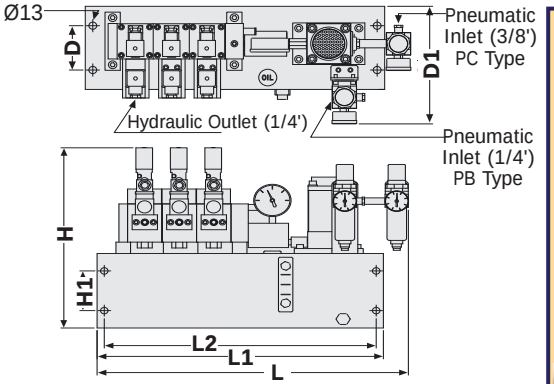
HYDRAULIC AIR DRIVE PUMP UNIT

Hydraulic Pump Model Selection

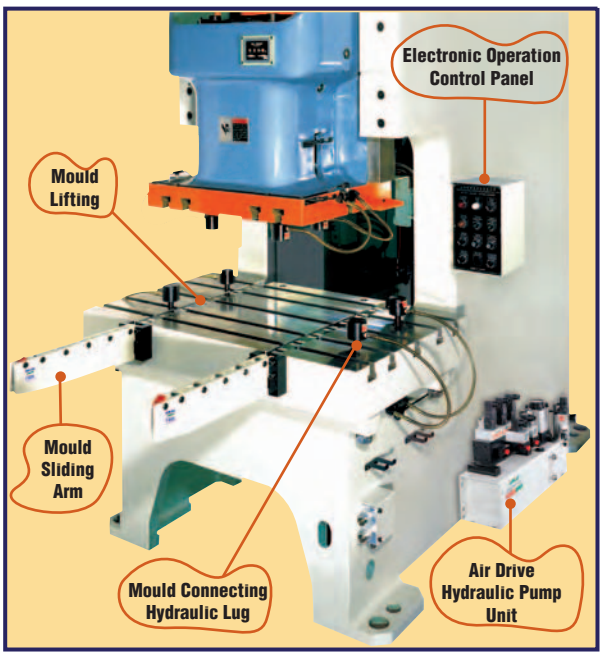




Air Drive, Hydraulic Pump Unit; Hydraulic pump is air driven, when hydraulic pressure reaches the adjusted level, it cuts pumping for saving. On the other hand, if working pressure is decreased, pressure continues automatically to ensure the pump continuity.
Circuit Control System is designed with possible leakage inspection and prevention function. Even when the pneumatic pressure is disabled, hydraulic pressure remains. Characteristics of pressure inspection and connecting to the other machines are available. When application is done with CA or CB -16 or 25 fishplates, to use PC12 Model pump is recommended. In system installation and model selections, our engineers will continue their supports.



Order - Model	L	L1	L2	H	H1	D1	D
1040 - PB0801P1V	-	378	353	367	80	235	80
1040 - PB0801P2V	-	438	413	367	80	235	80
1040 - PB0801P3V	-	498	473	367	80	235	80
1040 - PB0801P4V	-	588	563	367	80	235	80
1040 - PC1201P3V	560	-	473	367	80	-	80



Before ordering: Computer Aided Practical / Running (%90), Preliminary Preparation, pls. call our company for examples.

Hydraulic Lugs

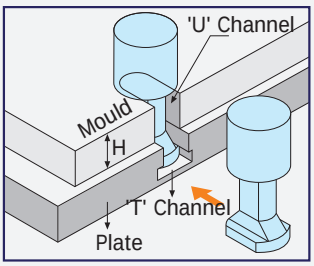


Rotatory Connecting



Model : CA (At Large plates)

HYDRAULIC LUG 1010 CA ..



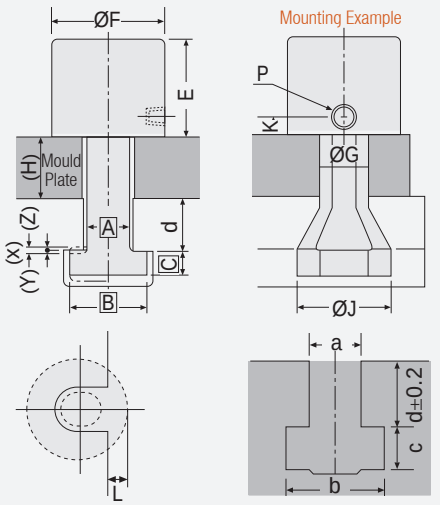
Hydraulic Lug Model CA / CB: In cases that mould connecting plates are large, it can be preferred at points that bench plate are equal to the lug location. Cylindrical hydraulic part of product makes tightening / compression downwards with pressure.

Hydraulic Lug Model: CA (Large Plates)

Hydraulic Pressure: 250 Kgf / cm² (For single unit)

Order - Model	CA 1	CA 2	CA 4	CA 6	CA 10	CA 16	CA 25
Connecting Capacity TON	1	2	4	6	10	16	25
Total Stroke (X) Downward Motion mm	6	8	8	8	8	8	8
Lug Stroke (Y) mm	3	4	4	4	4	4	4
Preserved Stroke (Z)	3	4	4	4	4	4	4
Cylinder Total Volume cc	3	7	13	21	32	54	76
Mould Connecting Plate Thickness Tolerance (H) mm	± 1.5	± 2.0 mm					

Before requesting product, 'pls inform T' channel (A-B-CD) size and mould connecting plate thickness (H) by specifying.



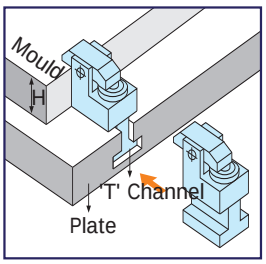
Model : CA (Large Plates) 1010 CA ..

Product Dimensions	ØF	E	ØG	ØJ	H+d Max	L max	a min	K	P
1010-CA01	44	48	12	30	60	12	8	9.5	PT1/8
1010-CA02	53	52	16	48	80	17	12	12	PT1/8
1010-CA04	65	58	23	58	90	20	16	15	PT1/4
1010-CA06	82	65	30	64	100	25	18	15	PT1/4
1010-CA10	99	71	38	78	110	30	22	15	PT1/4
1010-CA16	126	82	45	88	120	38	28	17	PT1/4
1010-CA25	150	100	55	98	140	45	36	23	PT1/4

Lug dimensions (A),(B) and (C) are specified depending on T-Channel. If lug dimension (H+d) is higher than aforementioned max. values, it is accepted as special production.

Model : CB (At Large plates)

HYDRAULIC LUG 1015 CB ..



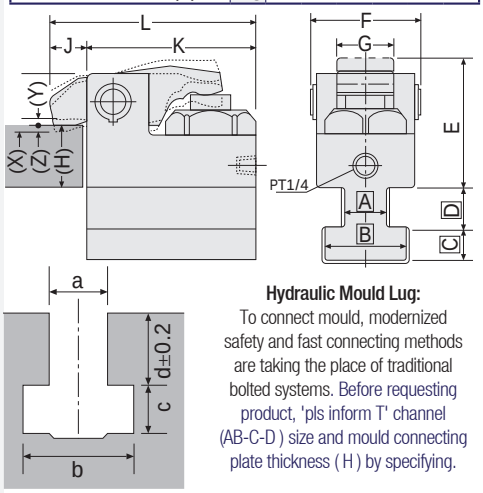


Hydraulic Lug Model CA / CB: It is made hydraulic pressing in conformity with traditional pressings. By heightening read piston, it tightens/ pressures lug.

Hydraulic Lug Model: CB (Large Plates)

Hydraulic Pressure: 250 Kgf / cm² (For single unit)

Order - Model	CB 1	CB 2	CB 4	CB 6	CB 10	CB 16	CB 25
Connecting Capacity TON	1	2	4	6	10	16	25
Total Stroke (X) Downward Motion mm	6	8	8	8	8	8	8
Lug Stroke (Y) mm	2.5	3	3	3	3	3	3
Preserved Stroke (Z)	3.5	5	5	5	5	5	5
Cylinder Total Volume cc	3	7.5	13	21	38	55	98
Mould Connecting Plate Thickness Tolerance (H) mm	± 1.5	± 2.0 mm					



Hydraulic Mould Lug:
To connect mould, modernized safety and fast connecting methods are taking the place of traditional bolted systems. Before requesting product, 'pls inform T' channel (AB-C-D) size and mould connecting plate thickness (H) by specifying.

Model : CB (Large Plates) 1015 CB ..

Ürün Ölçüleri	L	K	J	H	E	F	G	a	C	P
1015-CB01	74.5	60	14.5	25	42	44	20	10	6.5	1/8
1015-CB02	110	90	20	25	73	68	32	14	10	PT 1/4
1015-CB04	134	110	24	25	77	79	40	18	12	
1015-CB06	159	130	29	30	92	96	46	22	14	
1015-CB10	189	159	30	40	114	117	54	24	16	
1015-CB16	230	200	30	40	126	129	58	28	20	
1015-CB25	265	235	30	45	148	156	70	36	23	

Lug dimension (A),(B),(C) ve (D) are specified depending on T-Channel.

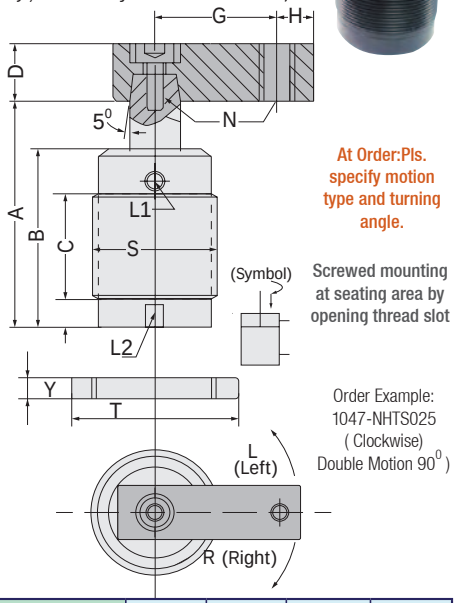
BOTH Produces Sells Affordable Prices GTH

Section Press Mould
Page 99

NHTS HYDRAULIC ROTATORY COUPLING 1047

Threaded Adaption (Screwed Type) Single Arm (Perforated Lug) One Way Overhead Clamp





At Order:Pls. specify motion type and turning angle.

Screwed mounting at seating area by opening thread slot

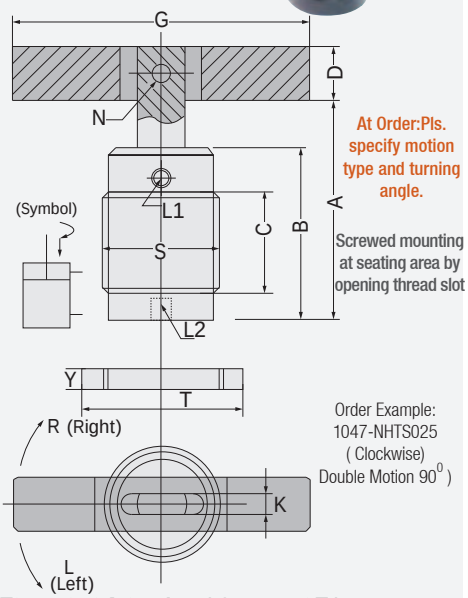
Order Example: 1047-NHTS025 (Clockwise) Double Motion 90^0)

Order No Application	1047-NHTS 25	1047-NHTS 32	1047-NHTS 40	1047-NHTS 50
Connection Type	Threaded Casing (Screwed Type)			
Clamp /Arm	Single Arm Moveable			
Max. Pressure	70 Kg. / cm^2			
Normal Pressure	20 - 45 Kg. / cm^2			
Motion Type	Double Motion (Clockwise)			
Turning Angle	90^0 (0^0- 45^0 - 60^0 - 180^0) ± 2^0			
Turning Stroke	12	14	14	14
Connection Stroke	14	15	15	14
Hole Diameter	25	32	40	50
Piston Rod	18	20	20	20
Connecting Power (25Kg/cm^2)	59	125	200	600
Dismantle/**A**(mm)	100	111	113.6	120
B (mm)	70	76	80	87
C (mm)	35	45	45	50
D (mm) ☐	25.4	25.4	25.4	25.4
G (mm)	50	55	55	55
H (mm)	10	10	10	10
I (mm)	9	9	9	9
L1 / L2	Connecting /Dismantling 1.8 P/F			
N (Bolt)	M10x1.5	M10x1.5	M10x1.5	M10x1.5
S (Thread)	**M45 x1.5**	**M50x1.5**	**M55 x1.5**	**M65 x1.5**
T Lock Nut 2 Pcs.	Ø 65	Ø 70	Ø 75	Ø 85
Y (mm)	10	11	11	12
Weight	0.8	1.1	1.25	1.7

NHTSD 1050 HYDRAULIC ROTATORY COUPLING

Threaded Adaption (Screwed Double-Sided Clamping Arm





At Order:Pls. specify motion type and turning angle.

Screwed mounting at seating area by opening thread slot

Order Example: 1047-NHTS025 (Clockwise) Double Motion 90^0)

Threaded Adaption (Screwed T.) Double-Sided Arm Tightening Arm 1050

Order No Uygulama	1050-NHTSD 025	1050-NHTSD 032	1050-NHTSD 040	1050-NHTSD 050
Connection Type	Threaded Casing (Screwed Type)			
Clamp /Arm	Single Arm Moveable			
Max. Pressure	70 Kg. / cm^2			
Normal Pressure	20 - 45 Kg. / cm^2			
Motion Type	Double Motion (Clockwise)			
Turning Angle	90^0 (0^0- 45^0 - 60^0 - 180^0) ± 2^0			
Turning Stroke	12	14	14	14
Connection Stroke	14	15	15	14
Hole Diameter	25	32	40	50
Piston Rod	18	20	20	20
Connecting Power (25Kg/cm^2)	59	125	200	400
Dismantle/**A**(mm)	100	111	113.6	120
B (mm)	70	76	80	87
C (mm)	35	45	45	50
D (mm)	19	22	22	22
G (mm)	100	120	120	120
H (mm)	9	9	9	13
I (mm)	9	10	10	10
L1 / L2	Connecting /Dismantling 1.8 P/F			
N (Piston)	Ø8	Ø8	Ø8	Ø8
S (Thread)	**M45x1.5**	**M50x1.5**	**M55x1.5**	**M65x1.5**
T Lock Nut 2 Pcs.	Ø 65	Ø 70	Ø 75	Ø 85
Y (mm)	10	11	11	12
Weight	0.9	1.2	1.4	1.85

NHS -NHSD -NHTS NHTSD Hydraulic Rotatory Coupling

Application: While processing work piece with set, if putting and taking of work piece by operator are disabled and higher connecting power is required, Hydraulic Connecting Scylinders will be the best selection.

Function: This Cylinder has tensile property. Total stroke of it is equal to turning and tensile strokes.

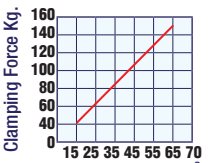
Type: These cylinders are pressed downwards, double motion types in clockwise and anticlockwise are available. It is 90ºC and has 0º- 45º and 60º angles functionally. Single arm or double arm are included to the connection type. For threaded type and O-ring manifold type, bottom flange is included to connection type.

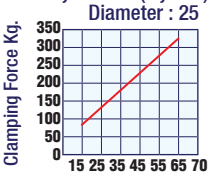
Material: Material of main casing is Aluminium Alloy.

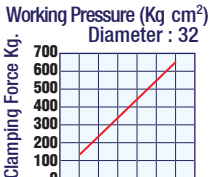
Order Example: NHS (Base No)

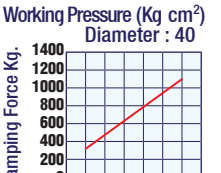
T -(Type) Flange - 'T' Threaded
D -(Arm Type) 'D' Double
Motion Empty: Single Motion
L -(Direction of rotation)
'L' Left / 'R' Right
40 -(Piston Ø) 25 -32 -40 -50 -63
X 90⁰ - (Angle) 0^0 -45^0-60^0-90^0-180^0

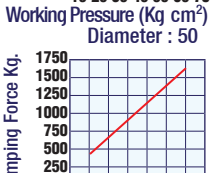
Theoretical Connection power Under Pressure

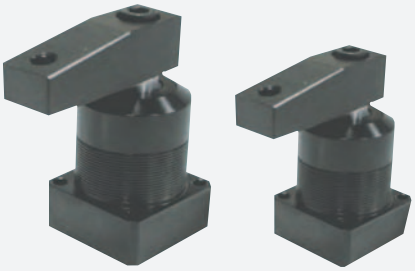






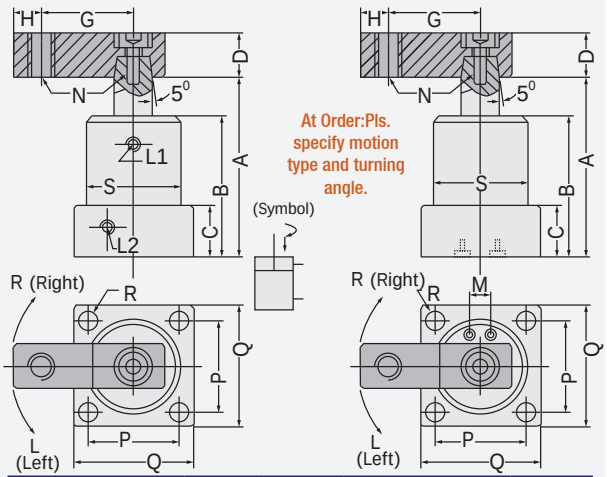




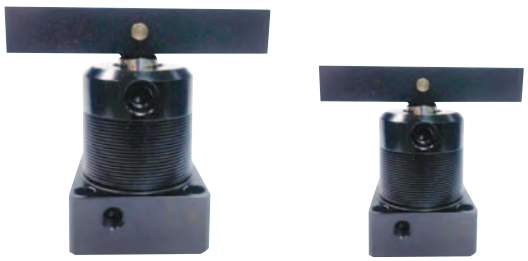


NHS HYDRAULIC ROTATORY COUPLING 1043

Flanged Adaptation, Single Arm / One Way Overhead Tighthening

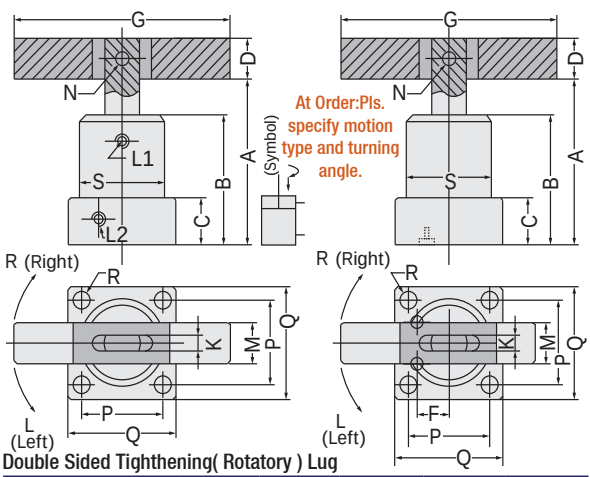


Order No / Application	1043-NHS 025	1043-NHS 032	1043-NHS 040	1043-NHS 050	1043-NHS 063
Connection Type	Perforated Block /Flanged				
Clamp /Arm	Single Arm Overhead Tightening				
Max. Pressure	70 Kg. / cm^2				
Normal Pressure	25 - 45 Kg. / cm^2				
Motion Type	Double Motion (Clockwise)				
Turning Angle	90^0 (0^0- 45^0 - 60^0 - 180^0) ± 2^0				
Turning Stroke	12	14	14	14	14
Connection Stroke	14	15	15	15	15
Hole Diameter	25	32	40	50	63
Piston Rod	18	20	20	20	25
Connecting Power (25Kg/cm^2)	59	125	200	400	600
Dismantle/**A**(mm)	100	111	113.6	114.5	118
B (mm)	70	76	80	80	85
C (mm)	23	25	27	27	32
D (mm) □	25.4	25.4	25.4	25.4	32
G (mm)	50	55	55	55	75
H (mm)	10	10	10	10	11
L1 /L2	Connecting /Dismantling			1.8 PF	
N (mm)	M10 x 1.5				M12
P (mm)	40	44	48	57	70
Q (mm)	50	55	62	74	88
R (mm) ø	6.5	6.5	8.5	8.5	10.5
S (mm) ø	45	50	54	65	80
O - rings	S 4				
M (mm)	18	24	26	30	40
F (mm)	15	17	20	25	30
Weight	0.8	1.0	1.1	1.4	2.3
Order Example	1043 -NHS 0 25 (Clockwise Double Motion 90^0)				



NHS HYDRAULIC ROTATORY COUPLING 1045

Flanged Adaptation, Double Arm / Center Two Way Tighthening



Double Sided Tighthening(Rotatory) Lug

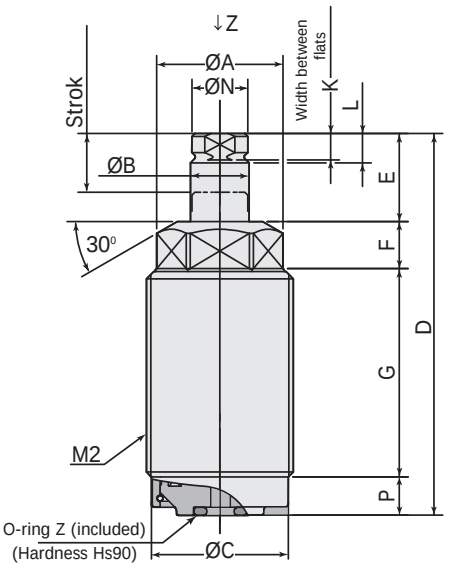
Order No / Application	1045-NHSD 25	1045-NHSD 32	1045-NHSD 40	1045-NHSD 50	1045-NHSD 63
Connection Type	Perforated Block /Flanged				
Clamp /Arm	Single Arm Overhead Tightening				
Max. Pressure	70 Kg. / cm^2				
Normal Pressure	25 - 45 Kg. / cm^2				
Motion Type	Double Motion (Clockwise)				
Turning Angle	90^0 (0^0- 45^0 - 60^0 - 180^0) ± 2^0				
Turning Stroke	12	14	14	14	14
Connection Stroke	14	15	15	15	15
Hole Diameter	25	32	40	50	63
Piston Rod	18	20	20	20	25
Connecting Power (25Kg/cm^2)	59	125	200	400	600
Dismantle/**A**(mm)	100	111	113.6	114.5	118
B (mm)	70	76	80	80	85
C (mm)	23	25	27	27	32
D (mm) □	19	22	22	22	25.4
G (mm)	100	120	120	120	140
H (mm)	9	10	10	10	12
N (mm) ø	8	8	8	8	10
P (mm)	40	44	48	57	70
Q (mm)	50	55	62	74	88
R (mm) ø	6.5	6.5	8.5	8.5	10
S (mm) ø	45	50	54	65	80
O - rings	S 4	S 4	S 4	S 4	S 4
M (mm)	18	24	26	30	40
F (mm)	15	17	20	25	30
Weight	0.9	1.1	1.2	1.5	2.5
Order Example	1045 -NHSD 25 (Clockwise Double Motion 90^0)				
L1 /L2 Connecting / Dismantling	1.8 PF				



1055

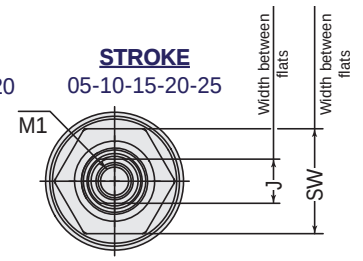
HYDRAULIC TENSILE THREADED CYLINDERS

Threaded Adaptation (Screwed Type) Kit with Connection Hole



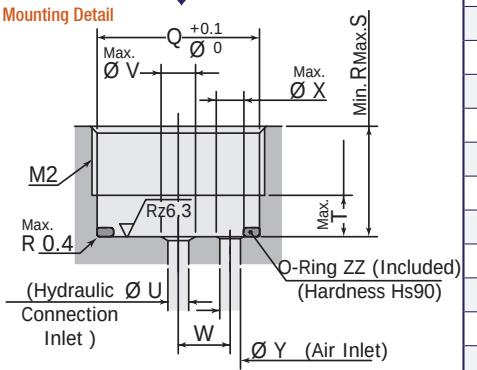
CMD 02-04-10-20

STROKE 05-10-15-20-25



Z Arrow Wide

Mounting Detail



HYDRAULIC TENSILE THREADED CYLINDERS 1055

Order Cylinder Information		1055 CMD 02		1055 CMD 04		1055 CMD 06		1055 CMD 10		1055 CMD 20	
Stroke / Pulse (mm)		5	10	5	10	10	20	10	20	10	20
Cylinder Power(kN)	Hydr. Pressure 3.5 MPa	0.3		0.4		0.7		1.2		2	
	Hydr. Pressure 7.0 MPa	0.5		0.9		1.5		2.5		4.3	
	Hydr. Pressure 25 MPa	2.1		3.4		5.6		9.3		15.8	
	Hydr. Pressure 35 MPa	2.9		4.8		7.9		13		22.2	
Cylinder Dia. (Inner) mm		16		18		22		28		36	
Cylinder Arm Dia.(mm)		10		10		12		16		20	
Cylinder Influence Area (cm^2)		0.84		1.37		2.29		3.76		6.40	
Max. Oil Flow Area		0.25		0.41		0.69		1.13		1.92	
Cylinder Capacity (cm^3)		0.5	0.9	0.7	1.4	2.3	4.6	3.8	7.5	6.4	12.8
Spring Back Draft Power (N)		30 ~ 56		43 ~ 77		65 ~ 120		100 ~ 193		170 ~ 267	
Cylinder Weight (Kg.)		0.1	0.12	0.12	0.15	0.23	0.3	0.35	0.46	0.69	0.89

Order Example **NR1055** Order No. | **CMD** Product Code | **02** Serial A Extractor Threaded Cylinder | **16** Piston Ø 16 18 22 28 36 | **Strok** Pulse 5 10

Threaded Adaptation (Screwed Type) Kit with Connection

Technical Drawing Details	1055 CMD 02		1055 CMD 04		1055 CMD 06		1055 CMD 10		1055 CMD 20	
Stroke / Pulse (mm)	5	10	5	10	10	20	10	20	10	20
Ø A (mm)	19		21.5		27		33		45	
B (mm)	10		10		12		16		20	
Ø C (mm)	20.3		23.3		28.3		34.3		46.3	
D (mm)	51	65	51	65	69	96	73	101	80	109
E (mm)	10	15	10	15	16	26	17	27	19	29
F (mm)	7.5		8		9.5		11.5		13.5	
G (mm)	27	36	26.5	35.5	35.5	52.5	35.5	53.5	35.5	54.5
SW (Wrench)	17		19		24		30		41	
J (Wrench)	8		8		10		14		17	
K (mm)	4.5		4.5		5.5		6.5		8.5	
L (mm)	5		5		6		7		9	
M1 (threaded end part)	M6x1-11		M6x1-11		M8x1.25		M10x1.5		M12x1.75	
M2 (Threaded Casing)	**M22** x1.5		**M25** x1.5		**M30** x1.5		**M36** x1.5		**M48** x1.5	
N (Wrench)	9.5		9.5		11.5		15.5		19.5	
P (mm)	6.5		6.5		8		9		12	
Ø Q (mm)	20.5		23.5		28.5		34.5		46.5	
R (mm)	13		14		15		17		20	
S (mm)	32.5	41.5	32	41	42.5	59.5	43.5	61.5	46.5	65.5
T (mm)	5.5		5.5		7		8		11	
U (Hydraulic Inlet)	3		3		3		4		6	
V (mm)	5		5		5		5		7	
W (mm)	7		7.5		9.5		12		15	
Ø X (mm)	4		4		4		4		4	
Ø Y (mm)	3		3		3		3		3	
O - Ring **Z**	P 6		P 6		P 6		P 6		P 8	
O - Ring **ZZ** AS 568	017		019		022		026		031	
Compressed Torque	8 N-m		9 N-m		10 N-m		14 N-m		30 N-m	



TC HYDRAULIC PUSH THREADED Cylinder

Order Example

TC	**12**	**A**
Order No.	Piston Ø 12 16 20 25	Serial A: Without Female Thread B: With Female Thread

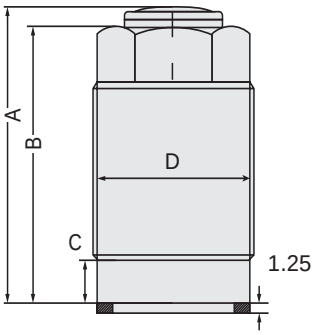
This threaded / casing connecting cylinder works in certain stroke range for conditional push and connecting work pieces safely.

Type: A Serial Pushing out without Piston Gear
B Serial Ejector cylinders related with piston gear (equipment etc)

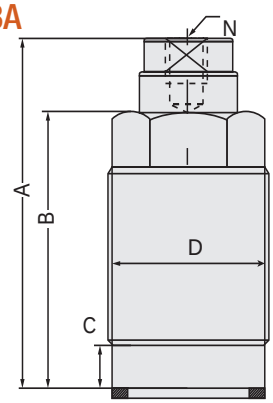


HYDRAULIC EJECTOR CYLINDER 1053A

Screwed Type, Out Pusher Single Plunger



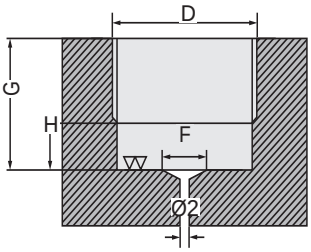
A Serial Single Plunger



B Serial Distributed Piston

HYDRAULIC EJECTOR CYLINDER 1053B

Screwed Type, Out Pusher Equipment Connected



Connecting Diagram

Ejector Cyclinders; While fast connecting the mould or positioning fast work piece or at areas that higher connecting power is required, and also for creating equipment for your tools, hydraulic cyclinders will be the best selection. TC Hydraulic Ejector Cylinders work with the work piece on it upwards at ejector position in certain stroke ranges.

A Serial: It is placed with screwed casing by opening thread to the desired area. Ejector piston face is with radius, and works as point contact.

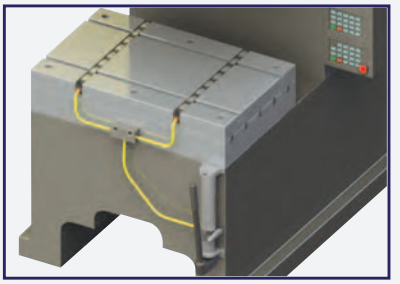
B Serial: It is placed with screwed casing by opening thread to the desired area. Thread structure existing on ejector piston is in fast connection position and works as ejector with certain ejector by preparing various threaded equipment as per request (Straightening Caps - 'V' Bearing / Pinned Support / Ball support or centering average etc.).

TC HYDRAULIC EJECTOR CYLINDERS 1053A / A Serial Cylinder 1053B / B Serial Cylinder

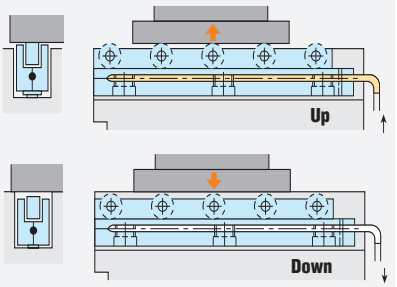
Order Technical Details	**1053 TC12A**	**1053 TC16A**	**1053 TC20A**	**1053 TC25A**	**1053 TC12B**	**1053 TC16B**	**1053 TC20B**	**1053 TC25B**
Working Oil Pressure	20 - 350 Kg / cm^2							
Motion Type	Single Motion							
Stroke **S** (mm)	10	12	15	16	10	12	15	16
Piston Rod **Ø** (mm)	12	16	20	25	12	16	20	25
Connecting Power (200 Kg/cm^2)	200 (Kg.)	400 (Kg.)	620 (kg.)	980 (Kg.)	200 (Kg.)	400 (Kg.)	620 (kg.)	980 (Kg.)
A (mm)	38	46.5	56	57	45	52	64.5	67
B (mm)	36	44.5	54	55	36	44.5	54	55
C (mm)	7	8	8	11	7	8	8	11
D (mm)	M22 x 1.5	M26 x 1.5	M30 x 1.5	M38 x 1.5	M22 x 1.5	M26 x 1.5	M30 x 1.5	M38 x1.5
F (mm)	12	16	20	25	12	16	20	25
G(mm)	16	20	24	28	16	20	24	28
H(mm)	6	7	7	1	06	7	7	1
N(mm)	-	-	-	-	M6 x 1	M6 x 1	M8 x 1.25	M8 x 1.25
Weight (Kg.)	0.07	0.14	0.22	0.37	0.08	0.15	0.24	0.4

0

For examples working with computer aided application with our company and your application designs of hydraulic cyclinders and during installation of systems and also model selection, our engineers continue their supports.



HYDRAULIC MOULD LIFTING



D ① ② ③ **Model Selection**

Model		Mould Lifting Width		Mould Lifting Length
L	Cylinder Type	28	28 mm	200 -1900
B	Ball Type	50	50 mm	200 - 2500
		80	80 mm	500 -2500

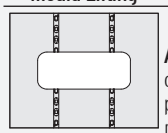
Model	Each Cylinder Capacity	Draft Stroke	Capacity Per Ball /Roll(Kgf)	
			SS41	S45C
D□28	0.44 Ton	3 mm	80	140
D□50	1.1 Ton	3 mm	200	350
DL 80	2.8 Ton	4 mm	460	800

Mould Lifting Model Type



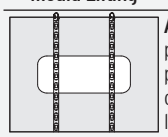
Standard Mould Lifting

Application : It can be connected to the normal plate or mould lifting plate.



Two Stepped Mould Lifting

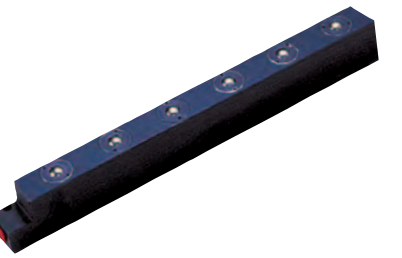
Application: It can be connected to the center perforated plate or mould lifting plate.



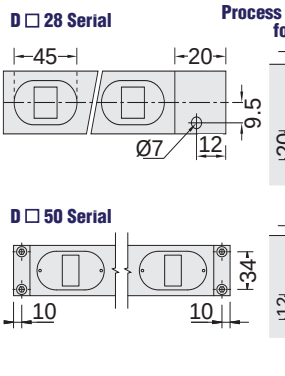
Demountable Mould Lifting

Application: Normal plates and center perforated plates can be dismantled with mould lifting, fast connecting connector.

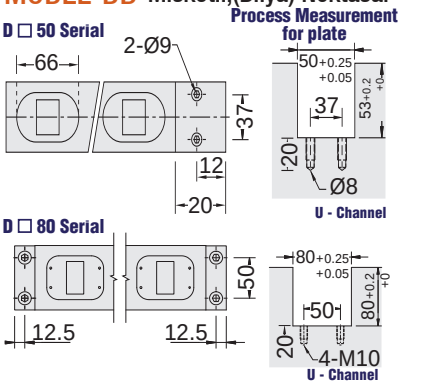




MODEL-DL Needle Bearing, Roller



MODEL-DB Misketli,(Bilya) Noktasal



HYDRAULIC MOULD LIFTING Roller - Ball

MODEL-DL / MODEL-DB

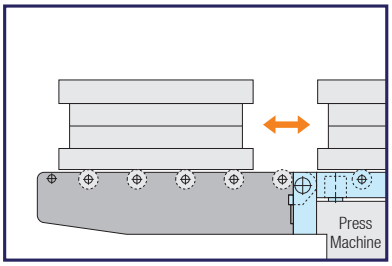
Order Example : 1020 - 0200 - DL 28 (DB 28)

Order No : 1020

Order No. Reference	Mould Lifting Length	D□28			D□50			DL 80	
		Roller (DL)	Ball (DB)	Hyd. Cylinder	Roller (DL)	Ball (DB)	Hyd. Cylinder	Roller (DL)	Hyd. Cylinder
1020 - 0200	200	3	5	2	2	4	2	-	-
1020 - 0300	300	5	7	2	3	6	2	-	-
1020 - 0400	400	6	10	2	4	9	2	-	-
1020 - 0500	500	8	12	3	5	11	3	5	2
1020 - 0600	600	9	15	3	6	13	3	6	2
1020 - 0700	700	11	17	3	7	16	3	7	3
1020 - 0800	800	12	20	4	8	18	3	8	3
1020 - 0900	900	14	22	4	9	20	4	9	3
1020 - 1000	1000	15	25	5	10	23	4	10	4
1020 - 1100	1100	16	27	5	11	25	4	11	4
1020 - 1200	1200	17	30	5	12	27	5	12	4
1020 - 1300	1300	18	32	6	13	29	5	13	4
1020 - 1400	1400	19	35	6	14	31	5	14	5
1020 - 1500	1500	20	37	6	15	33	5	15	5
1020 - 1600	1600	22	40	7	16	35	6	16	5
1020 - 1700	1700	24	42	7	17	38	6	17	6
1020 - 1800	1800	25	45	8	18	40	6	18	6
1020 - 1900	1900	27	47	8	19	42	6	19	6
1020 - 2000	2000	-	-	-	20	44	7	20	6
1020 - 2100	2100	-	-	-	21	46	7	21	7
1020 - 2200	2200	-	-	-	22	48	7	22	7
1020 - 2300	2300	-	-	-	23	50	7	23	7
1020 - 2400	2400	-	-	-	24	52	8	24	7
1020 - 2500	2500	-	-	-	25	54	8	25	8



Section Press Mould



MOULD LIFTING ARM

Model : RC - RD - RE - RF - RS

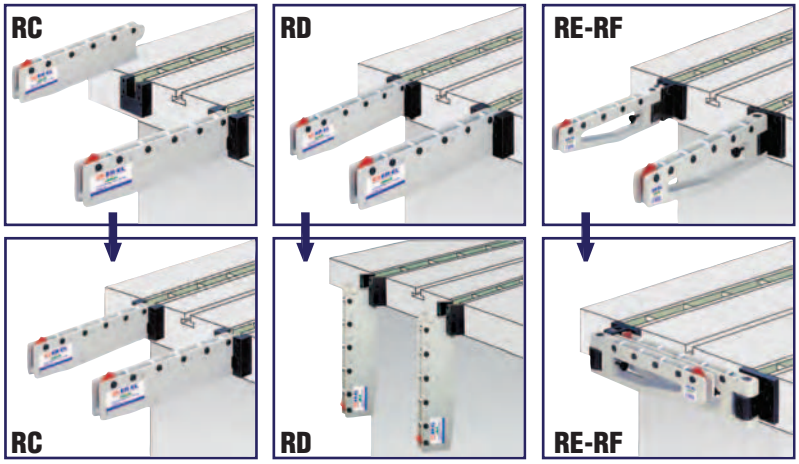
Support is used with 2 stepped mould lifting by changing with longitudinal (S) model.

Example: RC-16 > RC16 S // RC - 16 H > RC - 16 HS

Model Selection

R ① — ②

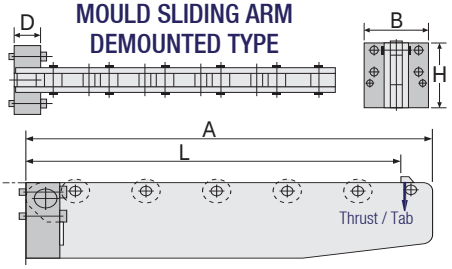
Model	Using Method	Definition
C	Dismantled	580 mm
D	Mounted	760 mm
E	Folding (Short)	880 mm
F	Folding (Short)	990 mm



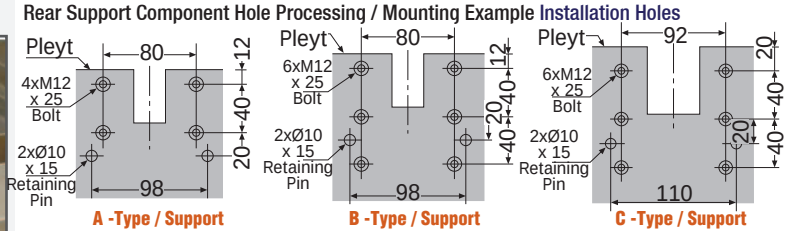
Model : RC



MOULD SLIDING ARM
DEMOUNTED TYPE



Rear Support Component Hole Processing / Mounting Example Installation Holes



Order No : 1025
Order No : 1027

Mould Sliding Arm (Demounted)

Order No. 1025 Reference	Support Model	Required Mould Length (L)	Max. Capacity (Kgf)	Total Length (A)	Rear Support Measures			Support Installation Holes	Roller Cylinder Qty
					D	B	H		
RC 580	RC-12	500	800	550	48	115	118	A -Type	5
RC 760	RC-12	700	600	750	48	115	118	A -Type	7
RC 880	RC-16	800	800	850	48	115	158	B -Type	8
RC 990	RC-20	900	900	950	48	115	188	B -Type	9
Order No : 1027									
RC 5125	RC-14H	500	1250	550	55	130	138	C -Type	7
RC 5160	RC-16H	500	1600	550	55	130	158	C -Type	7
RC 5200	RC-18H	500	2000	550	55	130	178	C -Type	7
RC 7125	RC-14H	700	1250	750	55	130	138	C -Type	9
RC 7160	RC-16H	700	1600	750	55	130	158	C -Type	9
RC 7200	RC-18H	700	2000	750	55	130	178	C -Type	9
RC 8125	RC-16H	800	1250	850	55	130	158	C -Type	10
RC 8160	RC-18H	800	1600	850	55	130	178	C -Type	10
RC 8200	RC-20H	800	2000	850	55	130	188	C -Type	10
RC 9160	RC-22H	900	1600	950	55	130	218	C -Type	11

In RC Model, carrier arm or rear support can be ordered separately as per request. It can be used differently in accordance with the purpose.

Contd. 106

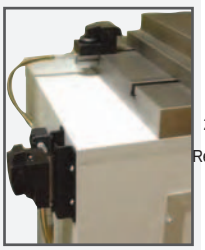
SPARE ACCESSORIES



CA Model **Lug Hanger** Refer to Page 99.



CB Model **Lug Hanger** Refer to Page 99.



During installation of hydraulic lugs, it is an accessory unit to keep hydraulic lugs by mounting any place of press.



STA Model Distributor Connector

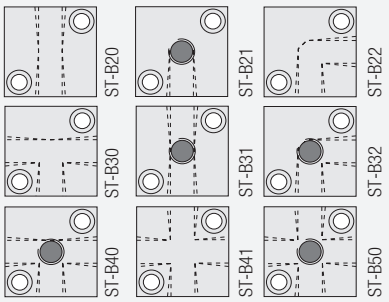


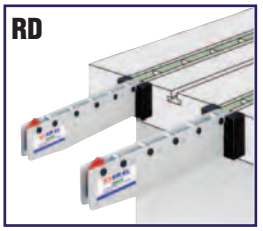
STA Model Distributor Connector



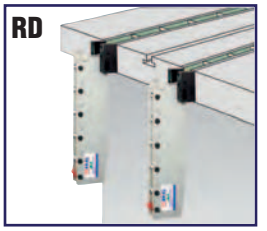
Spare accessory tube connector providing distribution of hydraulic pump (in 2 directions) to the different directions in hydraulic system installation.

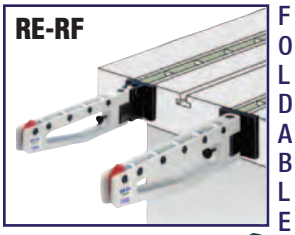
Tube Connector Direction Distributor Modeling



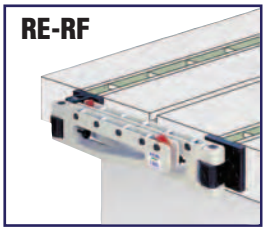


FOLDABLE MODEL

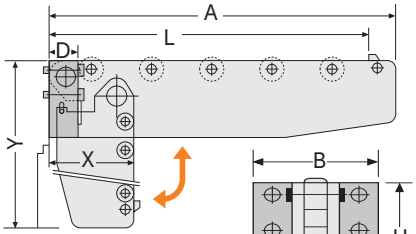




FOLDABLE MODEL

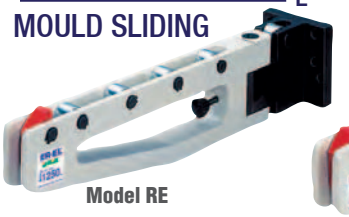


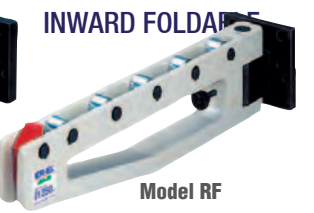
MOULD SLIDING FOLDABLE ARM
Model: RD (Hanging Down Model)

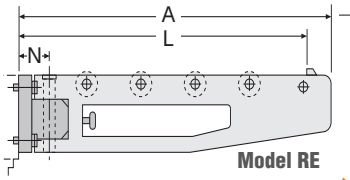


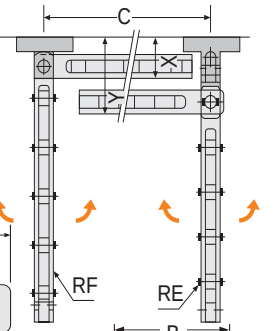


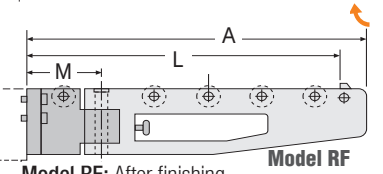
MOULD SLIDING INWARD FOLDABLE











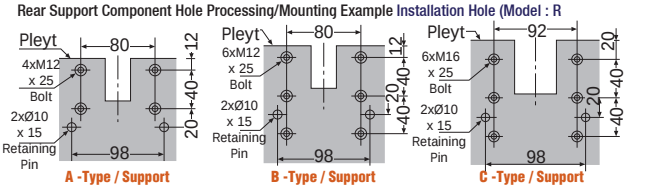
Model RE: After finishing mould placement process, unit is in foldable position to the right, left and inwards.

HANGING DOWN FOLDABLE ARM Order : 1030

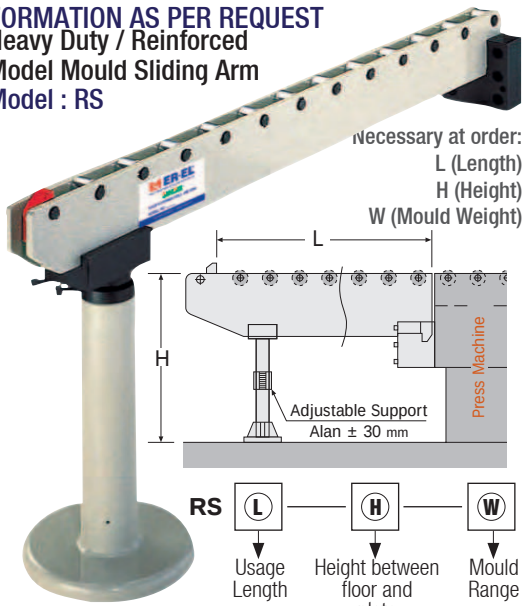
Height difference of mould sliding RD model between (Y) floor and V plate at hanging length should be lower during mounting.

Order No 1030	Your Mould Length Capa.	Max. Capa city	Arm Full Leng.	Hanging Measures		Support Measurements			Support Mounting	Roller Quantity
				X	Y	D	B	H		
RD 580	500 mm	800 Kgf	550 mm	140 mm	620 mm	52 mm	115 mm	118 mm	A -Type	5
RD 760	700 mm	600 Kgf	750 mm	140 mm	820 mm	52 mm	115 mm	118 mm	A -Type	7
RD 880	800 mm	800 Kgf	850 mm	180 mm	960 mm	52 mm	115 mm	158 mm	B -Type	8
RD 990	900 mm	900 Kgf	950 mm	220 mm	1100 mm	52 mm	115 mm	188 mm	B -Type	9

Rear Support Component Hole Processing/Mounting Example Installation Hole (Model : R



FORMATION AS PER REQUEST
Heavy Duty / Reinforced
Model Mould Sliding Arm
Model : RS



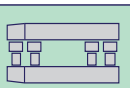
MOULD SLIDING ARM (Inward Foldable)

Order No : 1033
Order No : 1035

Order No. 1033 Reference	Your Mould Length Capa.	Max. Capa (Kgf)	Total Len. (A)	Min. Distance Required For Mounting	Measures When Folded		Support Measures		Cylinder Quantity	M	N	Hole Shape For Mount-ing
					X	Y	B	H				
RE 580	500	800	550	525	90	150	115	118	5	57	120	A -Type
RE 760	700	800	750	725	90	150	115	118	7	57	120	A -Type
RE 880	800	800	850	825	90	150	115	158	8	57	120	B -Type
RE 990	900	900	950	925	90	150	115	188	9	57	120	B -Type

Order No : 1035

RF 5160	500	1600	550	525	105	170	130	158	7	74	140	C -Type
RF 5200	500	2000	550	525	105	170	130	178	7	74	140	C -Type
RF 7160	700	1600	750	725	105	170	130	158	9	74	140	C -Type
RF 7200	700	2000	750	725	105	170	130	178	9	74	140	C -Type
RF 8160	800	1600	850	825	105	170	130	178	10	74	140	C -Type
RF 8200	800	2000	850	825	105	170	130	188	10	74	140	C -Type
RF 9160	900	1600	950	925	105	170	130	218	11	74	140	C -Type
RF 9200	900	2000	950	925	105	170	130	248	11	74	140	C -Type



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GTH

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CYLINDER, DIE GAS SPRINGS

Experienced and Reliable GTH Mould Components are the first Die Gas spring producer in our country and present Die Gas springs in your branded products selection, quaranteed products preferred with approval of mould producers and state-of-the-art technology with our sales support and we protect our national capital with **your supports.** Excluding **our standard series**, the products can be produced as per requests;

SN: ISO 9001 Serial Die Gas Springs

(For Practical Usage Information, Refer to Page 113).

Y: Similar with 'SN' Serial, But Higher Series As Force / Kg.

YO: Suitable to Turkey Mould Standard (Less Stroke - High Power)

G: Its power / pressure are the highest - however working life is lower.

KN: It is thin, long and has less power- it is used as extractor at male holders.

AD: They are limited in stocks and are compatible with 'EU (German)' Mould Standards.

KV: Bottom Mounted Threaded, Limited Stocks at 'EU (German)' Mould Standards

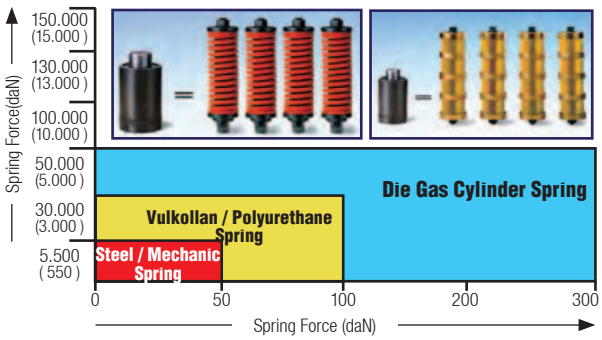
VD: Threaded Casing / Threaded Slot Placement at 'EU (German)' Mould Standards

NM: Threaded Slot diameters at different 'EU (German)' Mould Standards

YN: 5 mm longer than 'YO' series at 'Japan / China' Mould Standards

FN: Similar to G' Series Forces at 'Spain' Mould Standards.

Die Gas Spring Usage Advantages (Refer to Page 113)



We present the Die Gas springs to our customers with materials selected carefully during production, careful quality control at every stage of production, appropriate affordable prices and high quality by applying innovations oriented to research.

Die Gas Springs respond to higher requirements than traditional springs (vul-column / steel spring / dish KPA spring), for moulds requiringhigh force with minimum floor requirement or when long stroke lenght is desired, the solution is prodived with just one complex product. Gas used in Die Gas springs, is environ-ment-friendly Nitrogen (N2) gas found in market, cylinders have the max. 150 Bar (180) Bar filling pressure. This pressure is from 2 daN up to 20.000 daN depending on spring length and type. Provides power, due to that the Die Gas spring Cylinder is filled with nitrogen gase, it can be worked by itself. For safety usage, absolutely should be selected by persons who have Die Gas spring expe-rience in suitable measures and capacities / diversificaiton selection and should be used in accordance with mounting instructions. Different systems cause t hazards and accidents. Instructions are on the back page.

Standard Die Gas Spring Production Series (Stocks)

Order Serial	Course Stroke (mm)	Full Leng. (L)	Cylinder Length (L1)	Cylind. Casing (Ø)	daN	Page No.
SN 150	10 ~ 125	70 ~ 300	60 ~ 175	Ø 32	150	110
SN 250	10 ~ 125	70 ~ 300	60 ~ 175	Ø 38	250	110
SN 500	13 ~ 160	110.4~405	97.7 ~ 245	Ø 45	500	111
SN 750	13 ~ 300	120.4~695	107.7~395	Ø 50	750	111
SN 1500	25 ~ 300	160 ~ 710	135 ~ 410	Ø 75	1500	111
SN 3000	25 ~ 300	170 ~ 720	145 ~ 420	Ø 95	3000	112
SN 5000	25 ~ 300	190 ~ 740	165 ~ 440	Ø 120	5000	112
SN 7500	25 ~ 300	205 ~ 755	180 ~ 455	Ø 150	7500	113
SN 10000	25 ~ 300	210 ~ 760	185 ~ 460	Ø 195	10000	113
Y 300	10 ~ 125	70 ~ 300	60 ~ 175	Ø 32	250	114
Y 500	10 ~ 125	70 ~ 300	60 ~ 175	Ø 38	250	114
Y 700	13 ~ 160	110.4~405	97.7 ~ 245	Ø 45	700	115
Y 1000	13 ~ 300	120.4~695	107.7~395	Ø 50	1000	115
Y 2400	25 ~ 300	160 ~ 710	135 ~ 410	Ø 75	2400	115
Y 4200	25 ~ 300	170 ~ 720	145 ~ 420	Ø 95	4200	116
Y 6600	25 ~ 300	190 ~ 740	165 ~ 440	Ø 120	6600	116
YO 200	5 ~ 32	40 ~ 94	35 ~ 62	Ø 25	200	117
YO 300	5 ~ 125	40 ~ 280	35 ~ 155	Ø 32	300	117
YO 500	5 ~ 125	40 ~ 280	35 ~ 155	Ø 38	500	118
YO 700	10 ~ 125	52 ~ 282	40 ~ 157	Ø 45	700	118
YO 1000	10 ~ 125	58 ~ 288	48 ~ 163	Ø 50	1000	118
YO 1500	10 ~ 125	64 ~ 294	54 ~ 169	Ø 63	1500	119
YO 2400	10 ~ 125	65 ~ 295	55 ~ 170	Ø 75	1500	119
YO 4200	16 ~ 125	97 ~ 315	81 ~ 190	Ø 95	4200	120
YO 6600	16 ~ 125	107 ~ 325	91 ~ 200	Ø 120	6600	120
YO 11800	19 ~ 125	116 ~ 328	97 ~ 203	Ø 150	6600	120
G 40	10 ~ 50	75 ~ 195	65 ~ 140	Ø 25	400	121
G 75	10 ~ 50	75 ~ 195	65 ~ 140	Ø 32	400	121
G 100	6 ~ 50	61 ~ 230	51 ~ 180	Ø 38	1000	121
G 180	6 ~ 50	66 ~ 220	60 ~ 170	Ø 50	1800	122
G 470	10 ~ 50	80 ~ 240	70 ~ 190	Ø 75	4700	122
G 750	10 ~ 50	90 ~ 255	80 ~ 205	Ø 95	7500	123
G 1200	10 ~ 50	100 ~ 260	90 ~ 210	Ø 120	1200	123
KN 19	10 ~ 80	65 ~ 205	55 ~ 125	Ø 19	120	109
KN 25	10 ~ 125	65 ~ 295	55 ~ 170	Ø 25	150	109
HRM	Serial Connection, Junction (Hose /Coupling/Teflon)					124
KPA	Serial Connection, Application / Control Panel					125
DB	Serial Connection Distribution Blocks					126
HRM/EP	Die Gas Spring Clutch Pad / Crush Plates					127
G.144	Crush Plate Shock Absorber / Additional Information					128

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Die Gas Spring Production Series (As Per Request)

Order Serial	Course Stroke (mm)	Full Leng. (L)	Cylinder Length (L1)	Cylind. Casing (Ø)	Piston Dia.	daN
AD 500	6 ~ 125	62 ~ 300	56 ~ 175	Ø 45	Ø 20	500
AD 750	6 ~ 125	62 ~ 300	56 ~ 175	Ø 50	Ø 25	750
AD 1500	25 ~ 100	110 ~ 260	85 ~ 160	Ø 70	Ø 36	1500
AD 3000	25 ~ 100	120 ~ 270	95 ~ 170	Ø 95	Ø 50	1500
KV 250	13 ~ 100	75.4 ~ 250	62.7 ~ 150	Ø38 Diş M12	Ø 15	250
KV 1000	10 ~ 100	58 ~ 238	48 ~ 138	Ø50 Diş M16	Ø 28	750
VD 250	13 ~ 80	57 ~ 191	44 ~ 111	M 36	Ø 15	250
VD 500	13 ~ 100	56 ~ 230	43 ~ 130	M 45	Ø 20	500
VD 750	13 ~ 100	63.4 ~ 238	50.4 ~ 138	M 50	Ø 25	750
NM 120	10 ~ 125	62 ~ 295	52 ~ 170	M 24	Ø 10	120
NM 150	10 ~ 125	62 ~ 295	52 ~ 170	M 28	Ø 12	150
YN 200	7 ~ 100	46 ~ 232	39 ~ 132	Ø 25	Ø 12	200
YN 300	7 ~ 100	53 ~ 239	46 ~ 139	Ø 32	Ø 16	300
YN 570	7 ~ 125	51 ~ 287	44 ~ 162	Ø 120	Ø 22	500
YN 750	12 ~ 100	74 ~ 250	62 ~ 150	Ø 45	Ø 25	700
YN 1000	12 ~ 100	74 ~ 250	62 ~ 150	Ø 50	Ø 30	1000
YN 1500	12 ~ 100	84 ~ 260	72 ~ 160	Ø 63	Ø 36	1500
YN 2500	12 ~ 100	84 ~ 260	72 ~ 160	Ø 75	Ø 45	2500
YN 4000	25 ~ 100	120 ~ 270	95 ~ 170	Ø 95	Ø 60	4000
FN 300	10 ~ 80	75 ~ 220	65 ~ 140	Ø 25	Ø 15	300
FN 500	10 ~ 80	75 ~ 225	65 ~ 145	Ø 32	Ø 18	500
FN 1000	10 ~ 80	75 ~ 240	65 ~ 160	Ø 38	Ø 25	1000
FN 1800	15 ~ 80	95 ~ 145	80 ~ 165	Ø 50	Ø 35	1800
FN 4700	15 ~ 80	100 ~ 250	85 ~ 170	Ø 75	Ø 56	4700
FN 7500	15 ~ 80	115 ~ 260	100 ~ 180	Ø 95	Ø 55	7500
FN 12000	15 ~ 80	115 ~ 265	100 ~ 185	Ø 120	Ø 70	4700

Note: Technical data of the series in the table are not available in our catalogue. When required, pls request from our company. The products are stocked partially.

Die Gas SPRING CYLINDERS: 2 YEAR Maintenance Guaranty (From the date of sale) for the products. Intervention out of Warranty Coverage (Misusages / Heavy Applications, Intervantion to the Piston System / Damages on Cylinder Casing, Applications except Usage Instructions are not covered by the guarantee. Our company will not take any responsibility for these applications, if pressure loss occurs in long term use, this situation shows that the sealing gaskets are worn or damaged. In this case, pls. communicate with our company. All Die Gas cylinders are designed with stroke reserves between 1 and 3 mm.

All Standard Ready Cyclinders are delivered as filled with gas. Empty, refillable gas cylinders are used at serial connection designed systems, also catalogue data are available. While filling, follow the recommended values. Absolutely be sure that piston arm is removed (With 5 Bar Pressure). During unloading, keep the cylinder in the opposite direction. Before disposal of Die Gas spring, be sure that all pressure is discharged. Maintenance and Filling absolutely shoud be done by qualified personnel.

Usage Information: To calculate the first initial force of each cylinder, pls multiply max. pressure application value **(P)** with gasket, rod or piston area of sealing gasket **(S).**

To avoid course risk, it is recommended not to exceed 90% of stroke length.

Example: F(Force daN)= P (Bar / Psi) . S (cm^2)

To obtain different force than nominal **F** value and to specify required pressure level, pls. divide required force **(FN)** to rod or piston area of the sealing gasket **(S).**

In the spring selection, absolutely a spring above criteria should be selected.

Example: P (Bar / Psi) = **F** (daN) ÷ **S** (cm^2)

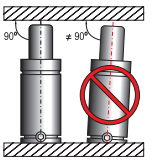
Usage Instruction (Things to avoid)

B1



Don't use cylinder except in specified max. values!

B2



Bring Cylinder into vertical position!

B3



Don't make any mechanical process on casing or shaft!

B4



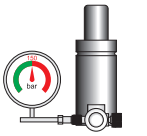
Don't let to contaminte Cylinder surface with liquid or solid substance, in imperative piston, cyliner can be used as reverse

B5



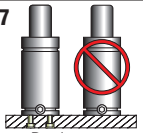
Don't charge cylinder with any gas except Nitrogen N_2

B6



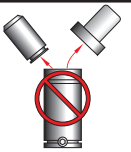
Don't charge cylinder with More Than 150 Bar Pressure !

B7



Don't mount Cylinder without securing!

B8



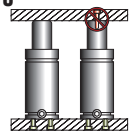
Never remove the cylinder!

B9



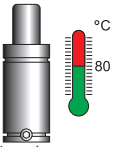
Don't let someone else to make maintenance except the incumbent

B10



While securing Cylinder, don't use hole over piston!

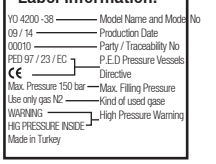
B11

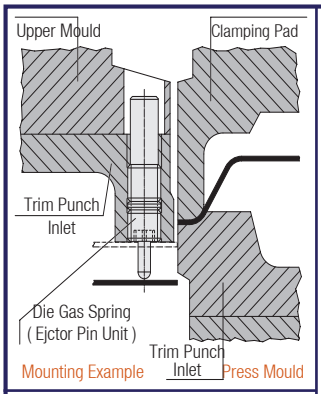


While using gas Cylinder, don't let mould temperature to exceed 80^0

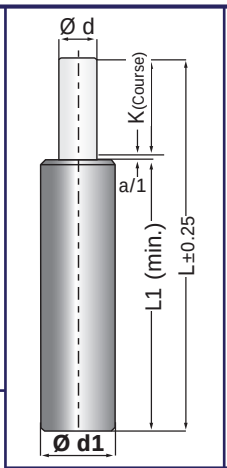


Label Information:

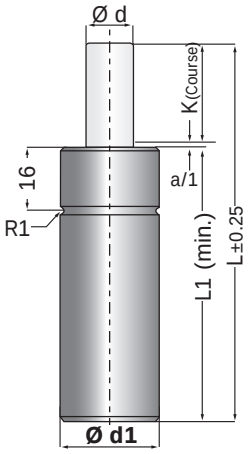




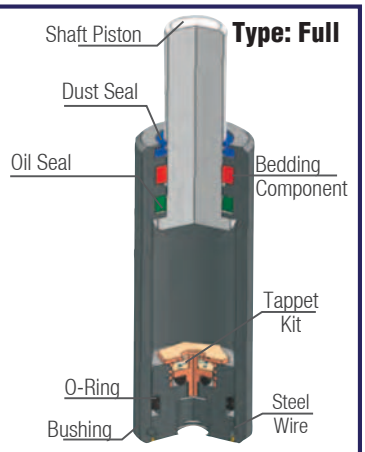
Spring ejectors are used as ejector, damper (pedal) stabilizer and retaining pin, Die Gas spring, press mould burnisher remover in many industries such as mould, fixture production.



KN 19 Die Gas Spring Remover



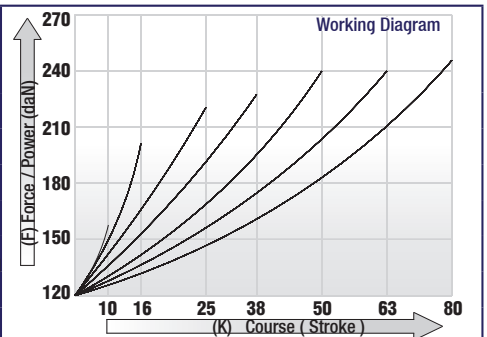
KN 25 Die Gas Spring Remover



Standard: Die Gas Spring Cylinder

KN Serial Die Gas Springs Thin/ Long - With less force (Press Mould, Male Holder Remover)

Order Code KN 19..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
KN 19 -10	d: 10 mm **d1: 19** a: 1 mm	10	65	55		0.09	Pressure Gase N_2 **Max. Pressure (P)** 150 Bar **Min. Pressure** 25 Bar **Working Temp.** 0^0C ve + 80^0C **Max. Working Speed** 0.8 m / s **Piston Area (S)** 0.5 cm^2
KN 19 -16		16	77	61		0.10	
KN 19 -25		25	95	70	**(F)**	0.11	
KN 19 -38	Bottom Connection Hole M6 X3	38	121	83	120 daN	0.14	
KN 19 -50		50	145	95		0.15	
KN 19 -63		63	171	108		0.18	
KN 19 -80		80	205	125		0.20	

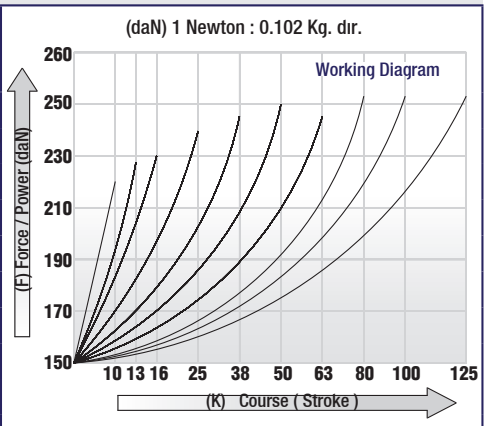


Cylinder Coupling Fastening			
	At slot, volume Ø +1.0 +0.5	 Bottom Screwed Coupling M6	 Supported Volume Ø +1.0 +0.5

Note: According to the 20º C value calculated nominally, any variation at temperature can cause a change at gas pressure (P). During spring selection, absolutely above spring criterias should be selected, by assuming that the quality continuity of processed sheet material can be changed, usage criterias should be adjusted.

Serial :KN 19

Order Kod KN 25..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
KN 25 -10	d: 12 mm **d1: 25** a: 1 mm	10	65	55		0.15	Pressure Gase N_2 Nitrogen **Max. Pressure (P)** 150 Bar **Min. Pressure** 25 Bar **Working Temp.** 0^0C ve + 80^0C **Max. Working Speed** 0.8 m / s **Piston Area (S)** 1.13 cm^2
KN 25 -13		13	71	59		0.16	
KN 25 -16		16	77	61		0.17	
KN 25 -25	Bottom Connection Hole M6 X4	25	85	70	**(F)**	0.19	
KN 25 -38		38	121	83		0.22	
KN 25 -50		50	145	95	150 daN	0.25	
KN 25 -63		63	171	108		0.29	
KN 25 -80		80	205	125		0.33	
KN 25 -100		100	245	145		0.38	
KN 25 -125		125	295	170		0.45	

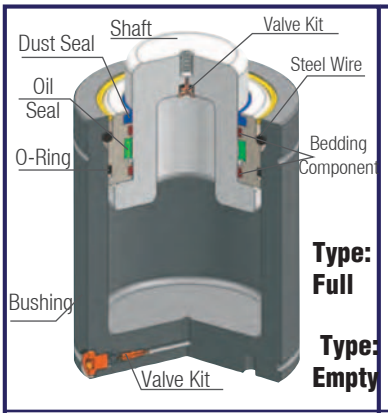


Cylinder Coupling Fastening			
	At slot, volume Ø +1.0 +0.5	 Bottom Screwed Coupling M6	 Supported Volume Ø +1.0 +0.5

Generally for other connection position of Die Gas springs that are completed their mounting by exhausting with bolt from base in compliance with your mould, select connection type specified at drawing (with code) and request information (technical drawing) for details from our company.

Serial :KN 25

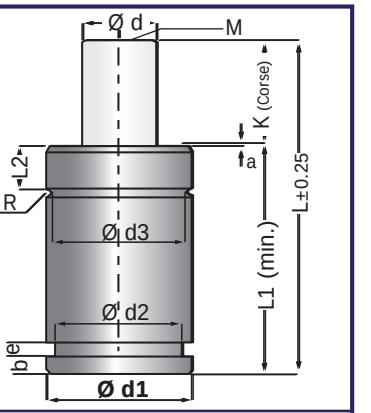
Usage Advantages of Die Gas Spring Cylinder: * Significiant decrease at the required surface area, height, occupied volume and quantity of fixer unit that should be preloaded, directed and fitted. * Mould unit (occupied less space) providing significiant decrease at height for same working range and power * None preload, easier and quick assembly * Always same force at each contact point. Forces can be placed at required place precisely, system pressure is monitored continously (Fixed production are provided) etc.



Serial Connection: Gasless (With Valve)



Standard: Die Gas Spring (Ready /Full)

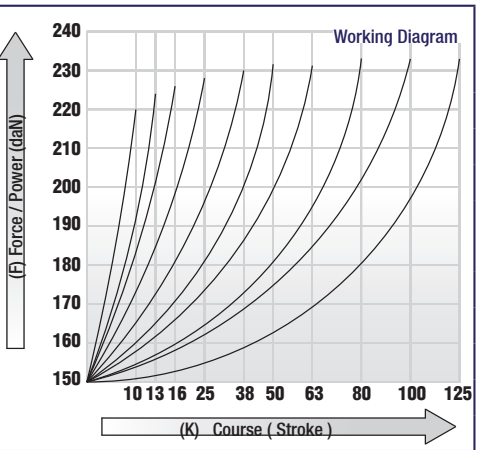


SN Serial Die Gas Spring Technical Drawing Detail

S N Serial Die Gas Springs Compatible with ISO 11901 / Serial Connection / Wide Options

Order Code KN 150	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.
SN 150 - 10	d: 12 mm **d1: 32** d2: 27 mm d3: 30 mm a: 2 mm b: 4 mm e: 3.5 mm L2: 10.5 R: 1 M: 6	10	70	60	(F) 150 daN	0.28
SN 150 - 13		13	75.4	62.7		0.29
SN 150 - 16		16	82	66		0.30
SN 150 - 25		25	100	75		0.33
SN 150 - 38		38	126	88		0.36
SN 150 - 50		50	150	100		0.40
SN 150 - 63		63	177	113.5		0.44
SN 150 - 80	Base Hole M8 x7	80	210	130		0.49
SN 150 - 100		100	250	150		0.55
SN 150 - 125		125	300	175		0.64

Technical Specifications
Pressure Gase N_2
Max. Pressure (P) 150 Bar
Min. Pressure 25 Bar
Working Temp. 0^0C ve + 80^0C
Max. Working Speed 1.8 m / s
Piston Area (S) 1.13 cm^2
PED 97/23/EC ISO 11901-1



Silindir Bağlantı Sabitleme



At slot, volumeØ +1.0 +0.5



Bottom Screwed Coupling M8

BT 32



BY 32

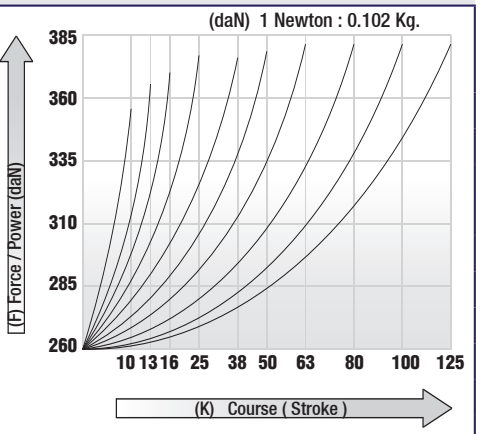


Generally for other connection position of Die Gas springs that are completed their mounting with exhausting with bolt from base in compliance with your mould, select connection type specified at drawing (with code) and request information (technical drawing) for details from our company.

Serial: SN 150

Order Code SN 250..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.
SN 250 - 10	d: 15 mm **d1: 38** d2: 33 mm d3: 36 mm a: 2 mm b: 4 mm e: 3.5 mm L2: 10.5 R: 1 M: 6	10	70	60	(F) 250 daN	0.40
SN 250 - 13		13	75.4	62.7		0.41
SN 250 - 16		16	82	66		0.43
SN 250 - 25		25	100	75		0.48
SN 250 - 38		38	126	88		0.54
SN 250 - 50		50	150	100		0.60
SN 250 - 63		63	177	113.5		0.66
SN 250 - 80	Base Hole M8 x7	80	210	130		0.74
SN 250 - 100		100	250	150		0.81
SN 250 - 125		125	300	175		0.98

Technical Specifications
Pressure Gase N_2
Max. Pressure (P) 150 Bar
Min. Pressure 25 Bar
Working Temp. 0^0C ve + 80^0C
Max. Working Speed 1.8 m / s
Piston Area (S) 1.77 cm^2
PED 97/23/EC ISO 11901-1



Cylinder Coupling Fastening Components



At slot, volume Ø +1.0 +0.5



Bottom Screwed Coupling M8

BT 38

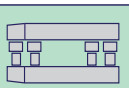


BY 38



Serial: SN 250

Contd. 110-113



Section Press Mould

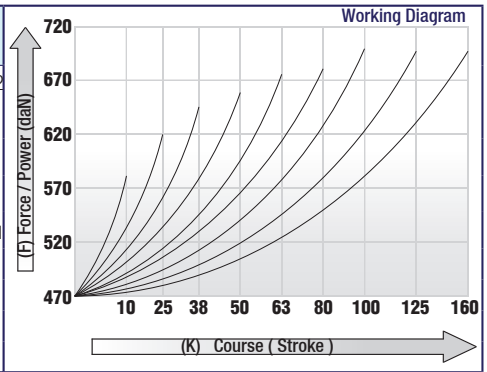
SN Series Die Gas Springs (For technical drawing details, pls. refer next page upper section)

Order SN 500..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.
SN 500 -13	d: 20 mm	13	110.4	97.7		0.90
SN 500 -25	**d1: 45**	14	135	110		1.00
SN 500 -38	d2: 40 mm	38	161	123		1.10
SN 500 -50	d3: 43 mm	50	185	135	(F)	1.20
SN 500 -63	a: 2 mm	63	212	148.5		1.30
SN 500 -80	b: 4 mm	80	245	165	500 daN	1.40
SN 500 -100	e: 3.5 mm	100	285	185		1.60
SN 500 -125	L2: 14.5	125	335	210		1.80
SN 500 -160	R: 1 / M: 8	160	405	245		2.10

2 Hole M8 x13 Ø 20

Technical Specifications

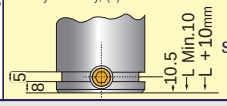
Pressure Gase N_2
Max. Pressure (P) 150 Bar
Min. Pressure 25 Bar
Working Temp. 0^0C ve + 80^0C
Max. Working Speed 1.8 m / s
Piston Area (S) 4.91 cm^2
PED 97/23/EC ISO 11901-1



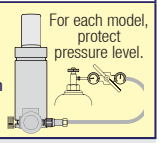
Cylinder Coupling Fastening



Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.



Example: Serial Connection SN 500 S



For each model, protect pressure level.

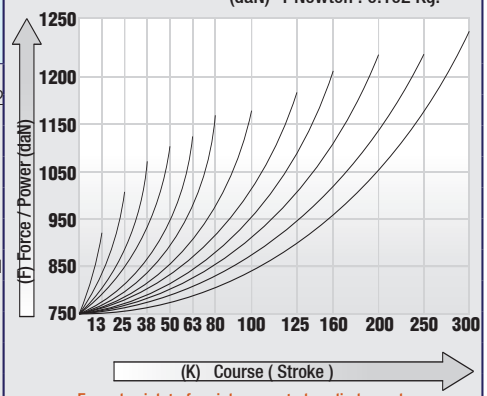
Order Code SN 750..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.
SN 750 -13	d: 25 mm	13	120.4	107.7		1.25
SN 750 -25	**d1: 50**	25	145	120		1.38
SN 750 -38	d2: 43 mm	38	171	133		1.53
SN 750 -50	d3: 46 mm	50	195	145		1.65
SN 750 -63	a: 3 mm	63	222	158.5	(F)	1.80
SN 750 -80	b: 8 mm	80	255	175		1.96
SN 750 -100	e: 5 mm	100	295	195	750 daN	2.09
SN 750 -125	L2: 14.5	125	345	220		2.33
SN 750 -160	R: 1	160	415	255		2.68
SN 750 -200	M:8	200	495	295		3.10
SN 750 -250		250	595	345		3.60
SN 750 -300		300	695	395		4.10

2 Hole M8 x13 Ø 20

Technical Specifications

Pressure Gase N_2
Max. Pressure (P) 150 Bar
Min. Pressure 25 Bar
Working Temp. 0^0C ve + 80^0C
Max. Working Speed 1.8 m / s
Piston Area (S) 3.14 cm^2
PED 97/23/EC ISO 11901-1

(daN) 1 Newton : 0.102 Kg.



For valve inlet of serial connected cyclinders, pls. specify options as 1's or 2's valves !



Maintenance : If pressure loss occurs after long period usage or especially some heavy applications, this situation is shows that sealing gaskets are worn or damaged. In this case, the maintenance of your gas Cylinder is done by our maintenance service that you will call. Maintenance service is only for Ø > 50 mm and over cyclinders.

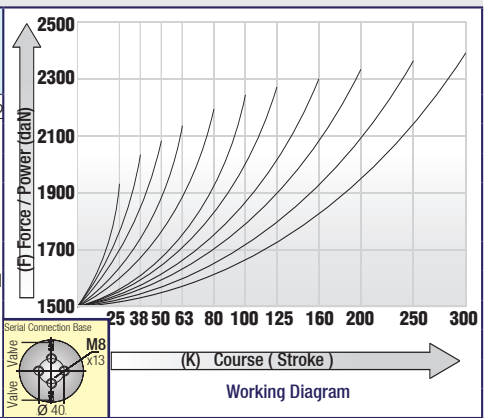
Serial Connection: +10mm will be added to L Length. During ordering, (S) should be added while coding.

Order Code SN 1500..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.
SN 1500 -25	d: 36 mm	25	160	135		3.64
SN 1500 -38	**d1: 75**	38	186	148		3.91
SN 1500 -50	d2: 67 mm	50	210	160		4.15
SN 1500 -63	d3: 70 mm	63	237	173.5		4.47
SN 1500 -80	a: 3 mm	80	270	190	(F)	4.81
SN 1500 -100	b: 8 mm	100	310	210		5.22
SN 1500 -125	e: 5 mm	125	360	235	1500 daN	5.75
SN 1500 -160	L2: 18	160	430	270		6.33
SN 1500 -200	R:2.5	200	510	310		7.34
SN 1500 -250	M:8	250	610	360		8.50
SN 1500 -300		300	710	410		9.60

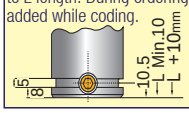
4 Hole M8 x13 Ø 40

Technical Specifications

Pressure Gase N_2
Max. Pressure (P) 150 Bar
Min. Pressure 25 Bar
Working Temp. 0^0C ve + 80^0C
Max. Working Speed 1.8 m / s
Piston Area (S) 10.18 cm^2
PED 97/23/EC ISO 11901-1



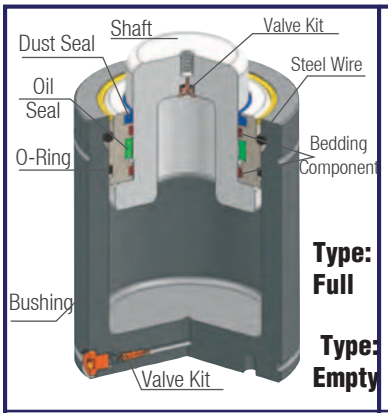
Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.



Example Serial Connection SN 1500 S



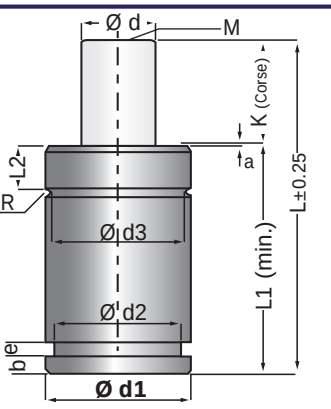
Cylinder Coupling Fastening



Serial Connection: Gasless (With Valve)



Standard: Die Gas Spring (Ready /Full)

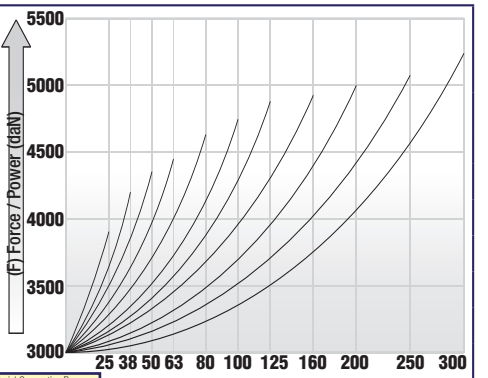


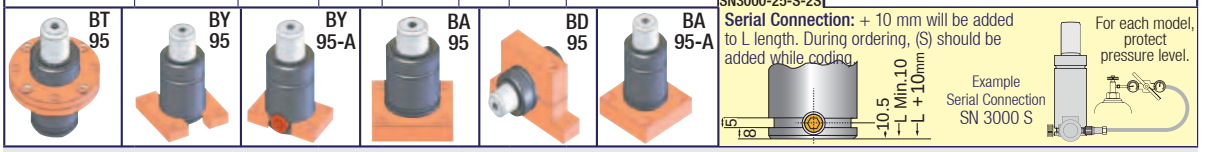
SN Serial Die Gas Spring Technical Drawing Detail

SN Serie Die Gas Springs Compatible with ISO 11901 / Serial Connection / Wide Options

Order Code SN 3000..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
SN 3000 -25	d: 50 mm	25	170	145		6.36	Pressure Gase N_2
SN 3000 -38	**d1: 95**	38	196	158		6.75	Max. Pressure (P)
SN 3000 -50	d2: 87 mm	50	220	170		7.35	150 Bar
SN 3000 -63	d3: 90 mm	63	247	183.5		7.87	Min. Pressure
SN 3000 -80	a: 3 mm	80	280	200	(F)	8.44	25 Bar
SN 3000 -100	b: 8 mm	100	320	220		9.03	Working Temp.
SN 3000 -125	e: 5 mm	125	370	245	3000 daN	10.1	0^0C ve + 80^0C
SN 3000 -160	L2: 21	160	440	280		11.3	Max. Working Speed
SN 3000 -200	R:2.5	200	520	320		12.8	1.8 m / s
SN 3000 -250	M:8	250	620	370		14.5	Piston Area (S)
SN 3000 -300	4 Hole M8 x13 Ø 60	300	720	420		16.2	19.63 cm^2

PED 97/23/EC ISO 11901-1

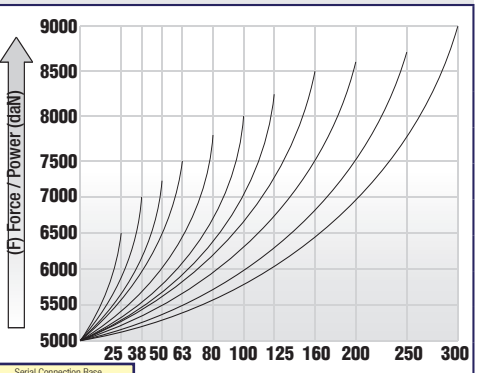




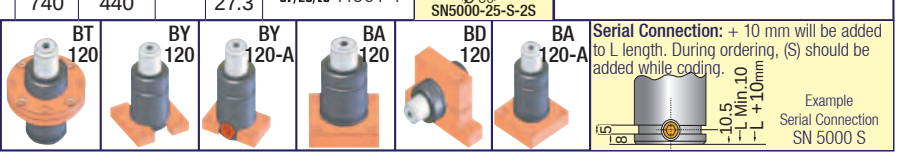
Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.

Order Code SN 5000..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
SN 5000 -25	d: 65 mm	25	190	165		12.2	Pressure Gase N_2
SN 5000 -38	**d1:120**	38	216	178		12.9	Max. Pressure (P)
SN 5000 -50	d2:112 mm	50	240	190		13.7	150 Bar
SN 5000 -63	d3:115 mm	63	267	203.5		14.5	Min. Pressure
SN 5000 -80	a: 3 mm	80	300	220	(F)	15.4	25 Bar
SN 5000 -100	b: 8 mm	100	340	240		16.7	Working Temp.
SN 5000 -125	e: 5 mm	125	390	265	5000 daN	18.3	0^0C ve + 80^0C
SN 5000 -160	L2: 22.5	160	460	300		20.1	Max. Working Speed
SN 5000 -200	R:2.5	200	540	340		22.3	1.8 m / s
SN 5000 -250	M:8	250	640	390		24.8	Piston Area (S)
SN 5000 -300	4 Hole M10 x13 Ø 80	300	740	440		27.3	33.18 cm^2

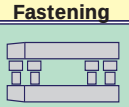
PED 97/23/EC ISO 11901-1



Cylinder Coupling Fastening



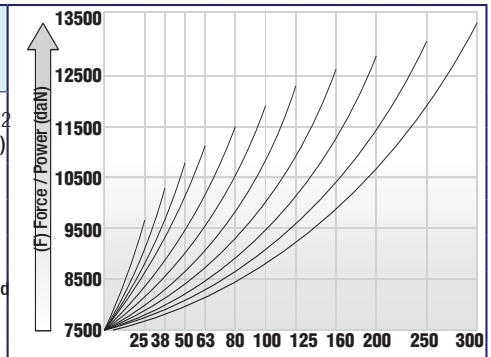
Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.



Section Press Mould

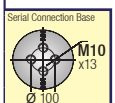
SN Serie Die Gas Springs (For technical drawing details, pls. refer next page upper section)

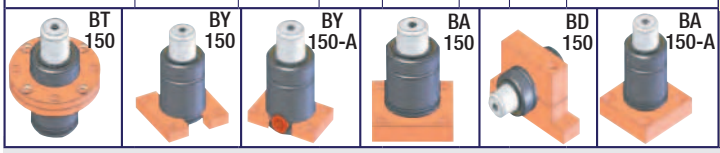
Order Code SN 7500..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
SN 7500 -25	d: 80 mm	25	205	180		19.8	Pressure Gase N_2
SN 7500 -38	**d1:150**	38	231	193		21.0	Max. Pressure (P) 150 Bar
SN 7500 -50	d2:142 mm	50	255	205		21.8	Min. Pressure 25 Bar
SN 7500 -63	d3:145 mm	63	282	218.5		22.6	Working Temp. 0^0C ve + 80^0C
SN 7500 -80	a: 3 mm	80	315	235	(F)	24.4	Max. Working Speed 1.8 m / s
SN 7500 -100	b: 8 mm	100	355	255	7500 daN	26.1	Piston Area (S) 50.27 cm^2
SN 7500 -125	e: 5 mm	125	405	280		28.0	
SN 7500 -160	L2: 24.5	160	475	315		31.4	
SN 7500 -200	R:2.5	200	555	355		35.0	
SN 7500 -250	M:8	250	655	405		38.5	PED 97/23/EC ISO 11901-1
SN 7500 -300	4 Hole M10 x13 Ø 100	300	755	455		42.4	



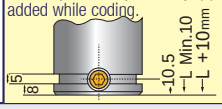
(daN) 1 Newton : 0.102 Kg.

For valve inlet of serial connected cyclinders, pls. specify options as 1's or 2's valves !

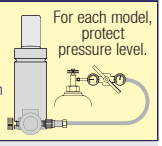




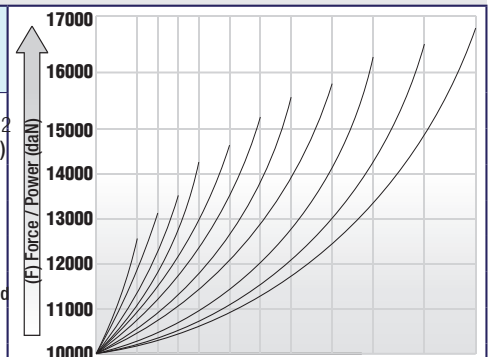
Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.



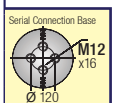
For each model, protect pressure level.



Order Code SN 10000..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
SN10000-25	d: 95 mm	25	185	34.8		19.8	Pressure Gase N_2
SN10000-38	**d1:195**	38	198	36.7		21.0	Max. Pressure (P) 150 Bar
SN10000-50	d2:187 mm	50	210	38.5		21.8	Min. Pressure 25 Bar
SN10000-63	d3:190 mm	63	223.5	40.5		22.6	Working Temp. 0^0C ve + 80^0C
SN10000-80	a: 3 mm	80	240	43.0	(F)	24.4	Max. Working Speed 1.8 m / s
SN10000-100	b: 8 mm	100	260	46.0	10000 daN	26.1	Piston Area (S) 70.88 cm^2
SN10000-125	e: 8 mm	125	285	49.8		28.0	
SN10000-160	L2: 30	160	320	55.0		31.4	
SN10000-200	R:2.5	200	360	61.0		35.0	
SN10000-250	M:8	250	410	68.5		38.5	PED 97/23/EC ISO 11901-1
SN10000-300	4 Hole M12 x16 Ø 120	300	460	76.0		42.4	

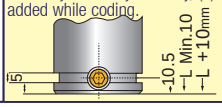


For valve inlet of serial connected cyclinders, pls. specify options as 1's or 2's valves !

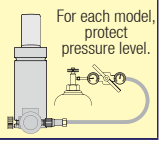




Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.



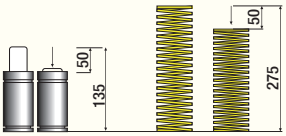
For each model, protect pressure level.



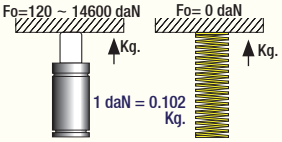
PRACTICAL INFORMATION OF USING Die Gas SPRING & USAGE ADVANTAGES OF Die Gas SPRING



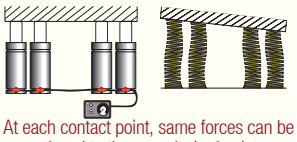
By using thew Die Gas spring, required application area, height, occupied volume, retaining springs for preloading are decreased significantly.



Together with same study course and force increment, significant length decrease, length saving, spring structure advantage are provided.

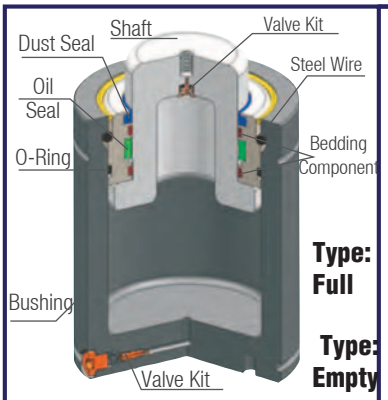


Higher performance, easier and fast mounting is provided with small preloading (0.5 - 1 mm).



At each contact point, same forces can be placed to the pure desired point continously, system can be monitored in terms of pressure.

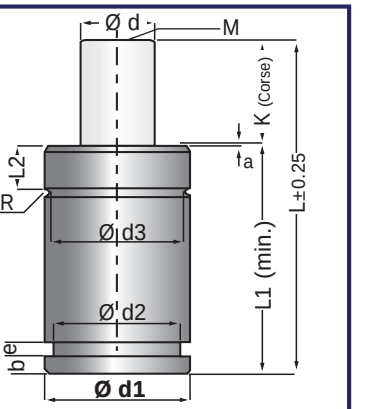
Practical Information Using Die Gas Spring; At Die Gas spring press sheet mould, more larger - volume high forces can be preferred. In your Die Gas spring selection, piston spring - course - load capacity information are important selection criterias, your designs can be created with working diagrams diameter of our page. Using of Die Gas spring at press sheet moulds in our country, is selected in similar system with practical methods and force balance of mechanical springs. According to this: **Example:** for selection of Die Gas spring can be done 20 % stretching with 6000 Kg. load coefficient and be given 20 mm's course value, it is completetdh with that 10 Pieces Mechanic Steeel Yellow Spring ~ (6000 Kg.). In case of that Die Gas Spring is selecteed instead of this, by using **YO 700 - 25** Serial (Ø 45 mm / Length: 82 mm) **Course:** 25mm - **Diagram:** 1330 Kg. x 4 Pieces is sufficient. 5850 Kg. (10 Pieces Mechanic Yellow Spring) ÷ 1330 Kg. = 4 Pieces Die Gas Springs are sufficient for this position. Thus, (6 Pieces) Steel Saving are provided. By increasing **examples**, at greater diameters; spring quantities will be decreased / forces are increased. First and foremost, spring area will be decreased at your mould, technologic and economic gains will be supplied.



Serial Connection: Gasless (With Valve)



Standard: Die Gas Spring (Ready /Full)

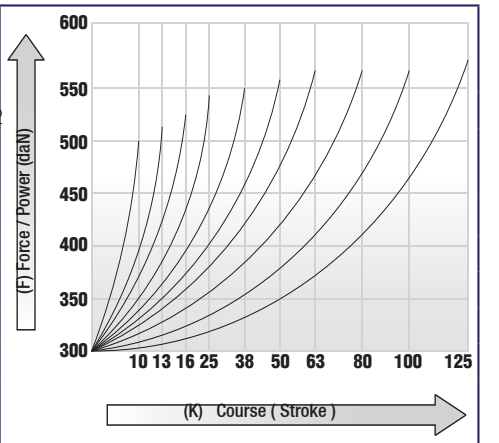


Y Serial Die Gas Spring Technical Drawing Detail

Y Serie Die Gas Springs Model Designed For Area Saving From SN / ISO Serial

Order Code Y 300..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
Y 300 - 10	d: 16 mm	10	70	60		0.29	Pressure Gase N_2
Y 300 - 13	**d1: 32**	13	74.4	62.7		0.30	Max. Pressure (P) 150 Bar
Y 300 - 16	d2: 27 mm	16	82	66		0.31	Min. Pressure 25 Bar
Y 300 - 25	d3: 30 mm	25	100	75		0.34	Working Temp. 0^0C ve + 80^0C
Y 300 - 38	a: 2 mm	38	126	88	(F)	0.38	Max. Working Speed 1.8 m / s
Y 300 - 50	b: 4 mm	50	150	100	300 daN	0.43	Piston Area (S) 2.01 cm^2
Y 300 - 63	e: 3.5 mm	63	177	113.5		0.48	
Y 300 - 80	L2: 10.5	80	210	130		0.54	PED 97/23/EC
Y 300 - 100	R: 1	100	250	150		0.61	
Y 300 - 125	M: 6	125	300	175		0.69	

Base Hole M8 x6



Cylinder Coupling Fastening



At slot, volumeØ +1.0 +0.5



Bottom Screwed Coupling M8

BT 32



BY 32



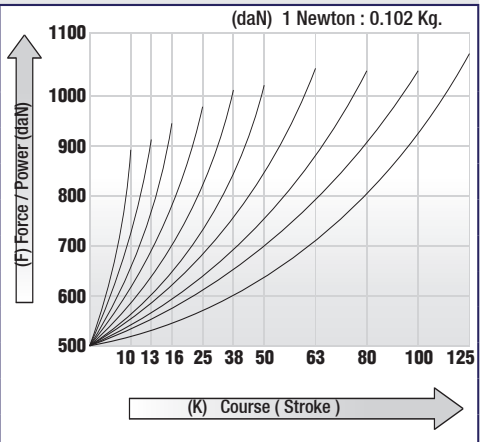
Generally for other connection position of Die Gas springs that are completed their mounting by exhausting with bolt from base in compliance with your mould, select connection type specified at drawing (with code) and request information (technical drawing) for details from our company.

Serial: Y 300

Order Code Y 500..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
Y 500 - 10	d: 20 mm	10	70	60		0.29	Pressure Gase N_2
Y 500 - 13	**d1: 38**	13	75.4	62.7		0.30	Max. Pressure (P) 150 Bar
Y 500 - 16	d2: 33 mm	16	82	66		0.31	Min. Pressure 25 Bar
Y 500 - 25	d3: 36 mm	25	100	75		0.34	Working Temp. 0^0C ve + 80^0C
Y 500 - 38	a: 2 mm	38	126	88	(F)	0.38	Max. Working Speed 1.8 m / s
Y 500 - 50	b: 4 mm	50	150	100	500 daN	0.43	Piston Area (S) 3.14 cm^2
Y 500 - 63	e: 3.5 mm	63	177	113.5		0.48	
Y 500 - 80	L2: 10.5	80	210	130		0.54	PED 97/23/EC
Y 500 - 100	R: 1	100	250	150		0.61	
Y 500 - 125	M: 6	125	300	175		0.69	

Base Hole M8 x6

(daN) 1 Newton : 0.102 Kg.



Cylinder Coupling Fastening



At slot, volume Ø +1.0 +0.5



Bottom Screwed Coupling M8

BT 38

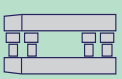


BY 38



Serial: Y 500

Contd 114-116

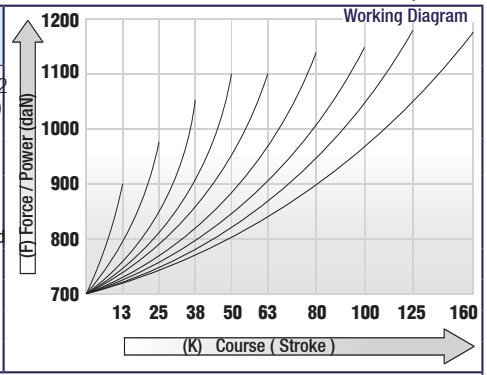


Section Press Mould

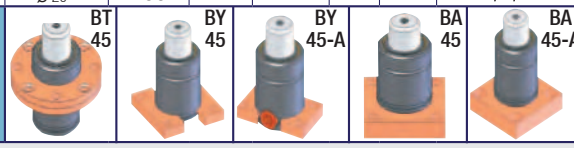
Y Serie Die Gas Springs (For technical drawing details, pls. refer next page upper section)

Order Y 700..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)	(F)	Kg.
Y 700 -13	d: 24 mm **d1: 45** d2: 40 mm d3: 43 mm a: 2 mm b: 4 mm e: 3.5 mm L2: 14.5 R: 1 / M: 8	13	110.4	97.7	700 daN	0.98
Y 700 -25		25	135	110		1.07
Y 700 -38		38	161	123		1.16
Y 700 -50		50	185	135		1.25
Y 700 -63		63	212	148.5		1.35
Y 700 -80	2 Hole M8 x13 Ø 20	80	245	165		1.47
Y 700 -100		100	285	185		1.72
Y 700 -125		125	335	210		1.80
Y 700 -160		160	405	245		2.05

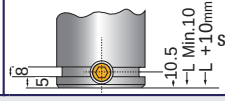
Technical Specifications
Pressure Gase N_2
Max. Pressure (P) 150 Bar
Min. Pressure 25 Bar
Working Temp. 0^0C ve + 80^0C
Max. Working Speed 1.8 m / s
Piston Area (S) 4.52 cm^2
PED 97/23/EC



Cylinder Coupling Fastening



Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



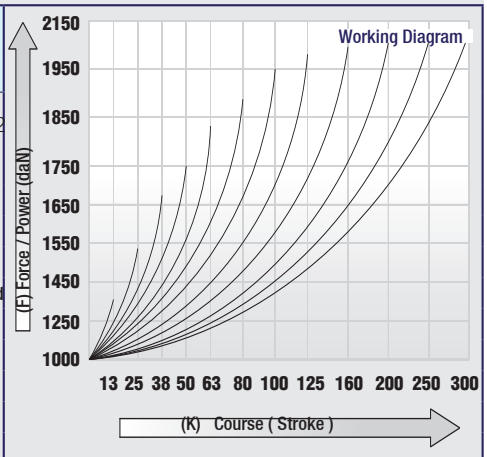
Example: Serial Connection Y 700 S



For each model, protect pressure level.

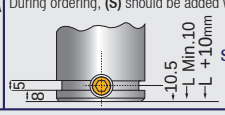
Order Code Y 1000..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)	(F)	Kg.
Y 1000 -13	d: 30 mm **d1: 50** d2: 43 mm d3: 46 mm a: 3 mm b: 8 mm e: 5 mm L2: 14.5 R: 1 M:8	13	120.4	107.7	1000 daN	1.35
Y 1000 -25		25	145	120		1.44
Y 1000 -38		38	171	133		1.59
Y 1000 -50		50	195	145		1.68
Y 1000 -63		63	222	158.5		1.83
Y 1000 -80		80	255	175		1.99
Y 1000 -100		100	295	195		2.19
Y 1000 -125		125	345	220		2.43
Y 1000 -160	2 Hole M8 x13 Ø 20	160	415	255		2.77
Y 1000 -200		200	495	295		3.16
Y 1000 -250		250	595	345		3.64
Y 1000 -300		300	695	395		4.13

Technical Specifications
Pressure Gase N_2
Max. Pressure (P) 150 Bar
Min. Pressure 25 Bar
Working Temp. 0^0C ve + 80^0C
Max. Working Speed 1.8 m / s
Piston Area (S) 7.07 cm^2
PED 97/23/EC

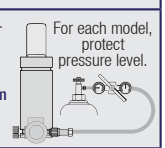




Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



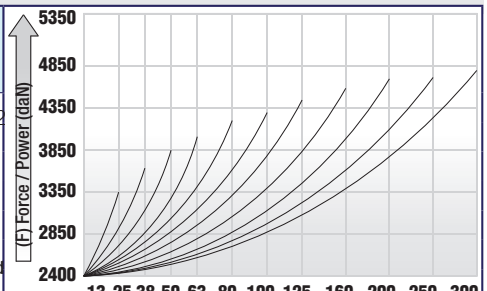
Example: Serial Connection Y 1000 S



For each model, protect pressure level.

Order Code Y 2400..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)	(F)	Kg.
Y 2400 -25	d: 45 mm **d1: 75** d2: 67 mm d3: 70 mm a: 3 mm b: 8 mm e: 5 mm L2: 18 R:2.5 M:8	25	160	135	2400 daN	3.70
Y 2400 -38		38	186	148		3.96
Y 2400 -50		50	210	160		4.21
Y 2400 -63		63	237	173.5		4.50
Y 2400 -80		80	270	190		4.81
Y 2400 -100		100	310	210		5.23
Y 2400 -125		125	360	235		5.67
Y 2400 -160	4 Hole M8 x13 Ø 40	160	430	270		6.48
Y 2400 -200		200	510	310		7.49
Y 2400 -250		250	610	360		9.36
Y 2400 -300		300	710	410		11.23

Technical Specifications
Pressure Gase N_2
Max. Pressure (P) 150 Bar
Min. Pressure 25 Bar
Working Temp. 0^0C ve + 80^0C
Max. Working Speed 1.8 m / s
Piston Area (S) 15.09 cm^2
PED 97/23/EC



Serial Connection Base

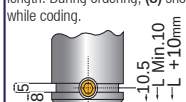


Y 2400 -25-S-2S

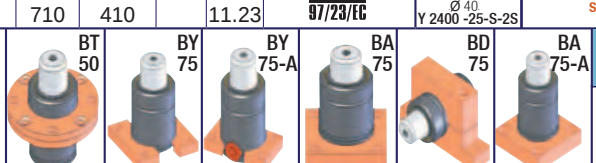
(daN) 1 Newton : 0.102 Kg.

For valve inlet of serial connected cyclinders, pls. specify options as 1's or 2's valves !

Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



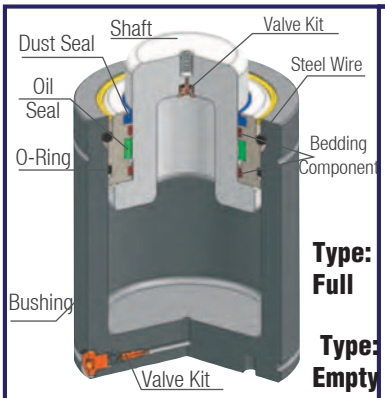
Example: Serial Connection Y 2400 S



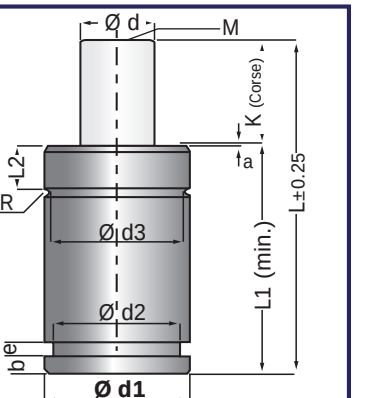
Cylinder Coupling Fastening

Section Press Mould





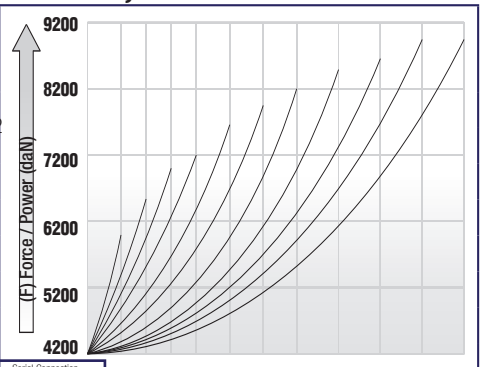




Serial Connection: Gasless (With Valve) | Standard: Die Gas Spring (Ready /Full) | Y Serial Die Gas Spring Technical Drawing Detail

Y Serie Die Gas Springs Model Designed For Area Saving From SN / ISO Serial Model

Order Kod Y 4200..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
Y 4200 -25	d: 60 mm	25	170	145		6.54	Pressure Gase N_2
Y 4200 -38	**d1: 95**	38	196	158		7.00	Max. Pressure (P) 150 Bar
Y 4200 -50	d2: 87 mm	50	220	170		7.37	Min. Pressure 25 Bar
Y 4200 -63	d3: 90 mm	63	247	183.5		7.84	Working Temp. 0^0C ve + 80^0C
Y 4200 -80	a: 3 mm	80	280	200	(F)	8.35	Max. Working Speed 1.8 m / s
Y 4200 -100	b: 8 mm	100	320	220	4200 daN	9.30	Piston Area (S) 28.27 cm^2
Y 4200 -125	e: 5 mm	125	370	245		9.80	
Y 4200 -160	L2: 21	160	440	280		10.5	PED 97/23/EC ISO 11901-1
Y 4200 -200	R:2.5	200	520	320		11.3	
Y 4200 -250	M:8	250	620	370		12.3	
Y 4200 -300	4 Hole M8 x13 Ø 60	300	720	420		13.3	



Serial Connection: M8 x13 Ø 60 — Y 4200 -25-S-2S

For valve inlet of serial connected cyclinders, pls. specify options as 1's or 2's valves !





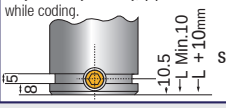




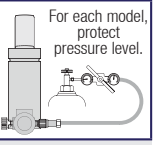




Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.

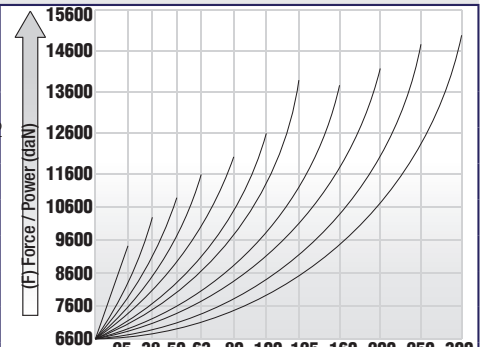


Example: Serial Connection Y 4200 S



For each model, protect pressure level.

Order Code Y 6600..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
Y 6600 -25	d: 75 mm	25	190	165		12.1	Pressure Gase N_2
Y 6600 -38	**d1:120**	38	216	178		13.7	Max. Pressure (P) 150 Bar
Y 6600 -50	d2:112 mm	50	240	190		15.1	Min. Pressure 25 Bar
Y 6600 -63	d3:115 mm	63	267	203.5		15.5	Working Temp. 0^0C ve + 80^0C
Y 6600 -80	a: 3 mm	80	300	220	(F)	16.1	Max. Working Speed 1.8 m / s
Y 6600 -100	b: 8 mm	100	340	240	6600 daN	17.5	Piston Area (S) 44.18 cm^2
Y 6600 -125	e: 5 mm	125	390	265		19.3	
Y 6600 -160	L2: 22.5	160	460	300		21.8	PED 97/23/EC ISO 11901-1
Y 6600 -200	R:2.5	200	540	340		24.7	
Y 6600 -250	M:8	250	640	390		28.3	
Y 6600 -300	4 Hole M10 x13 Ø 80	300	740	440		31.9	



Serial Connection Base: Valve M10 x13 Ø 80 Valve — Y 6600 -25-S-2S

(daN) 1 Newton : 0.102 Kg.

Cylinder Coupling Fastening





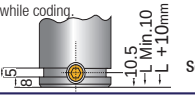








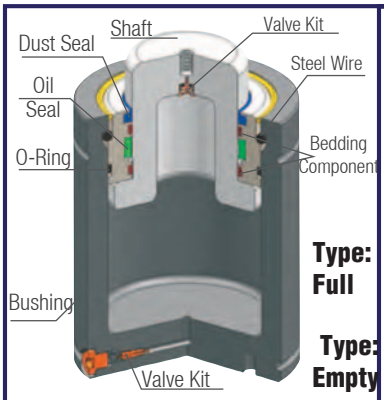
Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



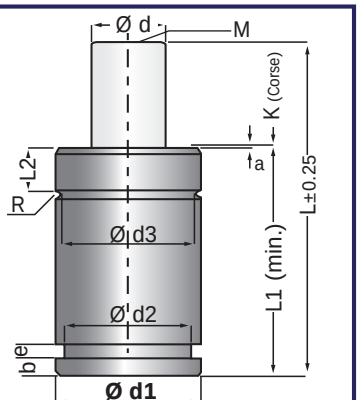
Example: Serial Connection Y 6600 S



Section Press Mould



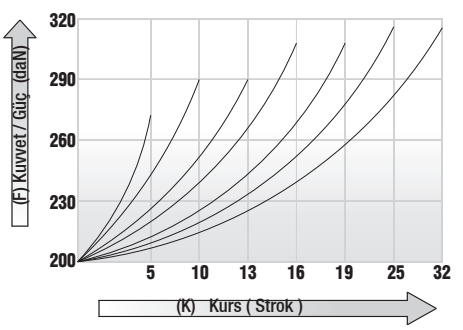




Serial Connection: Gasless (With Valve) | Standard: Die Gas Spring (Ready /Full) | YO Serial Die Gas Spring Technical Drawing Detail

YO Serie Die Gas Springs Area Saving - Short Length - High Forces

Order Code YO 200..	Cylinder Measures Flat Cylinder	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
YO 200 - 5	d: 12 mm **d1: 25** d2 : 23 a : 1 mm b-e-d3 : - L2 :8 R:1/M:6	5	40	35	(F) 200 daN	0.09	Pressure Gase N_2
YO 200 - 10		10	50	40		0.10	Max. Pressure (P) 150 Bar
YO 200 - 13		13	56	43		0.10	Min. Pressure 25 Bar
YO 200 - 16		16	62	46		0.11	Working Temp. 0^0C ve + 80^0C
YO 200 - 19	Base M6 X3	19	68	49		0.12	Max. Working Speed 1.8 m / s
YO 200 - 25		25	80	55		0.13	Piston Area (S) 1.13 cm^2
YO 200 - 32		32	94	62		0.16	



Cylinder Coupling Fastening



At slot, volume Ø +1.0 +0.5



Bottom Screwed Coupling M6

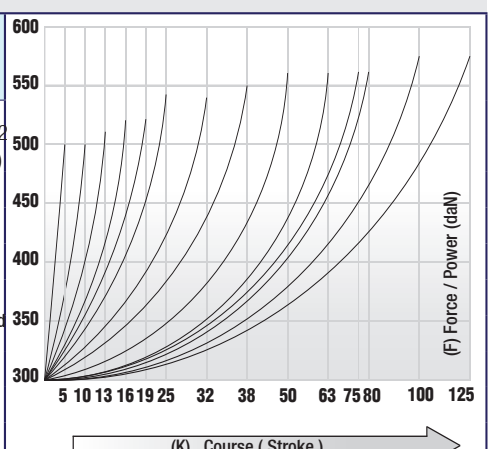
Generally for other connection position of Die Gas springs that are completed their mounting by exhausting with bolt from base in compliance with your mould, select connection type specified at drawing (with code) and request information (technical drawing) for details from our company.



Serial: YO 200

Order Code YO 300..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
YO 300 - 5	d: 16 mm **d1:32** d2:28 mm d3:30 mm a: 1 mm Corse 5~16 b - e : - b: 4 mm e: 3.5 mm L2: 10.5 R:1 M:6	5	40	35	(F) 300 daN	0.17	Pressure Gase N_2
YO 300 - 10		10	50	40		0.18	Max. Pressure (P) 150 Bar
YO 300 - 13		13	56	43		0.19	Min. Pressure 25 Bar
YO 300 - 16		16	62	46		0.20	Working Temp. 0^0C ve + 80^0C
YO 300 - 19		19	68	49		0.22	Max. Working Speed 1.8 m / s
YO 300 - 25		25	80	55		0.25	Piston Area (S) 2.01 cm^2
YO 300 - 32		32	94	62		0.27	
YO 300 - 38		38	106	68		0.29	
YO 300 - 50		50	130	80		0.34	
YO 300 - 63	Bottom Connection Base M8 X4	63	156	93		0.39	
YO 300 - 75		75	180	105		0.42	
YO 300 - 80		80	190	110		0.45	
YO 300 - 100		100	230	130		0.53	
YO 300 - 125		125	280	155		0.68	

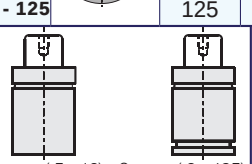
PED 97/23/EC



Contd 117-120

(daN) 1 Newton : 0.102 Kg.

Serial :YO 300

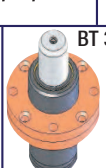




At slot, volume Ø +1.0 +0.5



Bottom Screwed Coupling M6



BT 32



BY 32

Cylinder Coupling Fastening

YO Serie Die Gas Springs (For technical drawing details, pls. refer next page upper section)

Order YO 500..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.
YO 500 - 5	d: 20 mm	5	40	35		0.25
YO 500 - 10	**d1:38**	10	50	40		0.27
YO 500 - 13	d2:34 mm	13	56	43		0.29
YO 500 - 16	d3:36 mm	16	62	46		0.31
YO 500 - 19	a: 1 mm	19	68	49		0.33
YO 500 - 25	Corse 5~16	25	80	55	(F)	0.36
YO 500 - 32	b - e : -	32	94	62		0.40
YO 500 - 38	b: 4 mm	38	106	68	500 daN	0.44
YO 500 - 50	e: 3.5 mm	50	130	80		0.50
YO 500 - 63	L2: 10.5	63	156	93		0.57
YO 500 - 75	R:1	75	180	105		0.61
YO 500 - 80	M:6	80	190	110		0.66
YO 500 - 100	Bottom Connection Base	100	230	130		0.77
YO 500 - 125	M8 x4	125	280	155		0.90

Technical Specifications

Pressure Gase N_2

Max. Pressure (P)
150 Bar

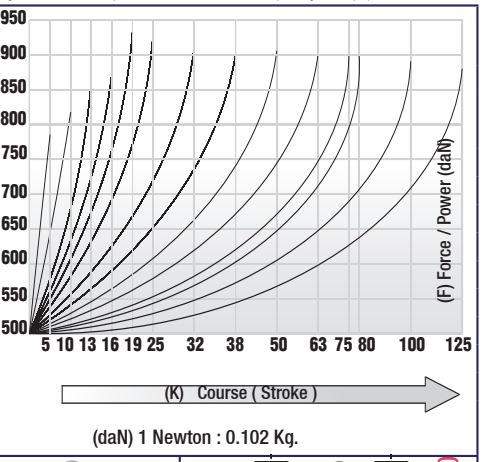
Min. Pressure
25 Bar

Working Temp.
0^0C ve + 80^0C

Max. Working Speed
1.8 m / s

Piston Area (S)
3.14 cm^2

PED 97/23/EC

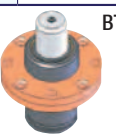


(daN) 1 Newton : 0.102 Kg.

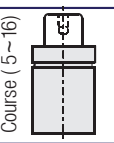
Cylinder Coupling Fastening











Serial :YO 500

Order YO 700..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.
YO 700 - 10	d: 24 mm	10	52	42		0.39
YO 700 - 13	**d1: 45**	13	58	45		0.42
YO 700 - 16	d2: 40 mm	16	64	48		0.45
YO 700 - 19	d3: 46 mm	19	70	51		0.48
YO 700 - 25	a: 1 mm	25	82	57		0.53
YO 700 - 32	b: 4 mm	32	96	64	(F)	0.58
YO 700 - 38	e: 3.5 mm	38	108	70		0.62
YO 700 - 50	L2: 14.5	50	132	82	700 daN	0.71
YO 700 - 63	R:1	63	158	95		0.81
YO 700 - 75	M:8	75	182	107		0.85
YO 700 - 80	2 Hole M8 x4	80	192	112		0.93
YO 700 - 100	Ø 20	100	232	132		1.04
YO 700 - 125		125	282	157		1.28

Technical Specifications

Pressure Gase N_2

Max. Pressure (P)
150 Bar

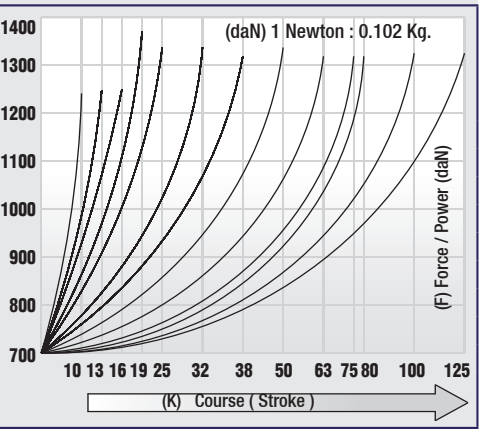
Min. Pressure
25 Bar

Working Temp.
0^0C ve + 80^0C

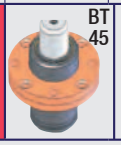
Max. Working Speed
1.8 m / s

Piston Area (S)
4.52 cm^2

PED 97/23/EC

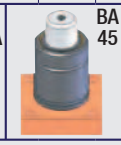


Cylinder Coupling Fastening



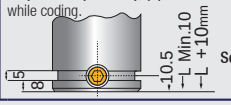




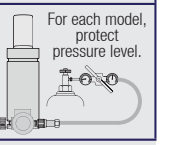




Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



Example:
Serial Connection
YO 700 S



For each model, protect pressure level.

Order SN 1000..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.
SN 1000 - 10	d: 30 mm	10	58	48		0.57
SN 1000 - 13	**d1: 50**	13	64	51		0.59
SN 1000 - 16	d2: 46 mm	16	70	54		0.62
SN 1000 - 19	d3: 46 mm	19	76	57		0.65
SN 1000 - 25	a: 1 mm	25	88	63		0.70
SN 1000 - 32	b: 5 mm	32	102	70	(F)	0.77
SN 1000 - 38	e: 4.5 mm	38	114	76		0.83
SN 1000 - 50	L2: 14.5	50	138	88	1000 daN	0.94
SN 1000 - 63	R:2	63	164	101		1.07
SN 1000 - 75	M:8	75	188	113		1.16
SN 1000 - 80	2 Hole M8 x6	80	198	118		1.21
SN 1000-100	Ø 20	100	238	138		1.43
SN 1000-125		125	288	163		1.70

Technical Specifications

Pressure Gase N_2

Max. Pressure (P)
150 Bar

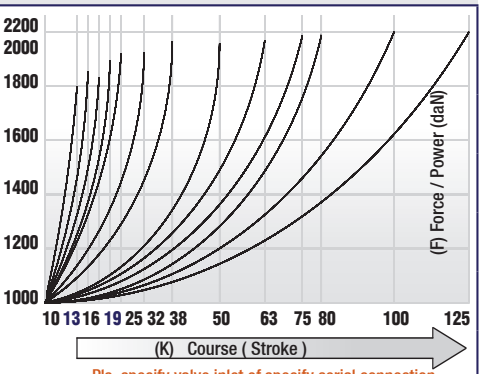
Min. Pressure
25 Bar

Working Temp.
0^0C ve + 80^0C

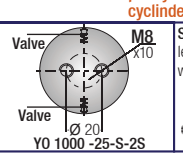
Max. Working Speed
1.8 m / s

Piston Area (S)
7.07 cm^2

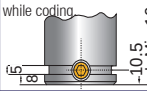
PED 97/23/EC



Pls. specify valve inlet of specify serial connection cyclinders as with 1 or 2 valve options !



Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



Example:
Serial Connection
YO 1000 S







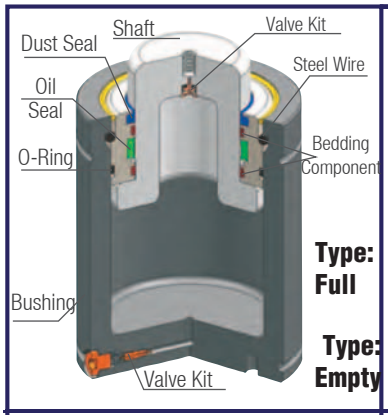








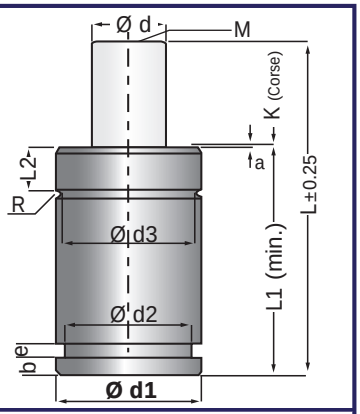
Section Press Mould



Serial Connection: Gasless (With Valve)



Standard: Die Gas Spring (Ready /Full)

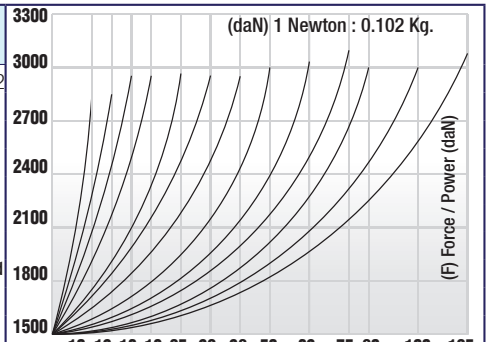


YO Serial Die Gas Spring Technical Drawing Detail

YO Serie Die Gas Springs

Area Saving - Short Length - High Forces

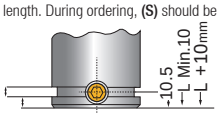
Order YO 1500..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
YO 1500 - 10	d: 36 mm	10	64	54		1.02	Pressure Gase N_2
YO 1500 - 13	**d1: 63**	13	70	57		1.05	Max. Pressure (P)
YO 1500 - 16	d2: 58 mm	16	76	60		1.10	150 Bar
YO 1500 - 19	d3: 59 mm	19	82	63		1.15	Min. Pressure
YO 1500 - 25	a: 1 mm	25	94	69		1.25	25 Bar
YO 1500 - 32	b: 8 mm	32	108	76	(F)	1.35	Working Temp.
YO 1500 - 38	e: 5 mm	38	120	82		1.44	0^0C ve + 80^0C
YO 1500 - 50	L2: 18	50	144	94	1500 daN	1.61	Max. Working Speed
YO 1500 - 63	R:2	63	170	107		1.81	1.8 m / s
YO 1500 - 75	M:8	75	194	119		1.90	Piston Area (S)
YO 1500 - 80	2 Hole M8 x6	80	204	124		2.06	10.18 cm^2
YO 1500-100	Ø 20	100	244	144		2.38	PED 97/23/EC
YO 1500-125		125	294	169		2.86	



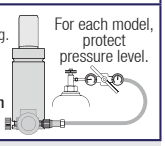
For valve inlet of serial connected cyclinders, pls. specify options as 1's or 2's valves !



Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.

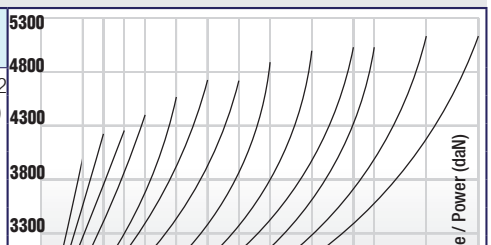


Example: Serial Connection Y 1500 S



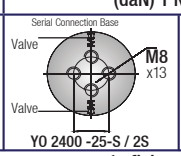
For each model, protect pressure level.

Order YO 2400..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
YO 2400 - 10	d: 45 mm	10	65	55		1.47	Pressure Gase N_2
YO 2400 - 13	**d1: 75**	13	71	58		1.52	Max. Pressure (P)
YO 2400 - 16	d2: 69 mm	16	77	61		1.58	150 Bar
YO 2400 - 19	d3: 70 mm	19	83	64		1.65	Min. Pressure
YO 2400 - 25	a: 1 mm	25	95	70		1.77	25 Bar
YO 2400 - 32	b: 8 mm	32	109	77	(F)	1.93	Working Temp.
YO 2400 - 38	e: 5 mm	38	121	83		2.05	0^0C ve + 80^0C
YO 2400 - 50	L2: 18	50	145	95	2400 daN	2.30	Max. Working Speed
YO 2400 - 63	R:2	63	171	108		2.55	1.8 m / s
YO 2400 - 75	M:8	75	195	120		2.75	Piston Area (S)
YO 2400 - 80	4 Hole M8 x6	80	205	125		2.85	15.90 cm^2
YO 2400-100	Ø 40	100	245	145		3.28	PED 97/23/EC
YO 2400-125		125	295	170		3.93	

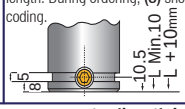


(daN) 1 Newton : 0.102 Kg. dır.





Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



Example: Serial Connection Y 2400 S

Pls. always mount Die Gas springs via threaded holes on base or example fixing components directly!



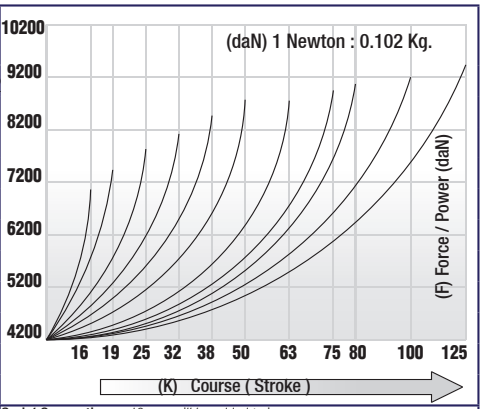
YO Serie Die Gas Springs (For technical drawing details, pls. refer next page upper section)

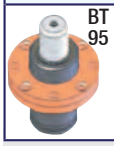
Order YO 4200..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.
YO 4200 - 16	d: 60 mm	16	97	81		3.40
YO 4200 - 19	**d1: 95**	19	103	84		3.45
YO 4200 - 25	d2: 88 mm	25	115	90		3.65
YO 4200 - 32	d3: 90 mm	32	129	97	(F)	3.82
YO 4200 - 38	a: 1 mm	38	141	103		4.00
YO 4200 - 50	b: 8 mm	50	165	115	4200	4.44
YO 4200 - 63	e: 5 mm	63	191	128		4.95
YO 4200 - 75	L2: 21	75	215	140	daN	5.20
YO 4200 - 80	R:2	80	225	145		5.41
YO 4200 -100	M:8	100	265	165		6.00
YO 4200 -125	4 Hole M8 x7 Ø 60	125	315	190		6.70

Technical Specifications

- Pressure Gase N_2
- Max. Pressure (P) 150 Bar
- Min. Pressure 25 Bar
- Working Temp. 0^0C ve + 80^0C
- Max. Working Speed 1.8 m / s
- Piston Area (S) 28.27 cm^2

PED 97/23/EC







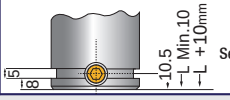




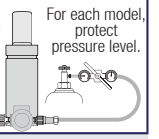




Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



Example: Serial Connection Y 4200 S



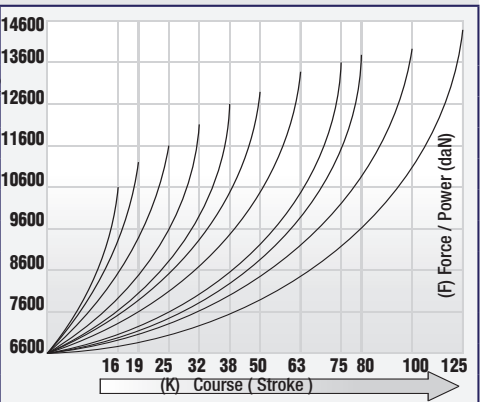
For each model, protect pressure level.

Order YO 6600..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.
YO 6600 - 16	d: 75 mm	16	107	91		6.60
YO 6600 - 19	**d1: 120**	19	113	94		6.65
YO 6600 - 25	d2: 112mm	25	125	100		6.82
YO 6600 - 32	d3: 115mm	32	139	107		7.18
YO 6600 - 38	a: 1 mm	38	151	113	(F)	7.57
YO 6600 - 50	b: 8 mm	50	175	125		8.18
YO 6600 - 63	e: 5 mm	63	201	138	6600	8.81
YO 6600 - 75	L2: 22.5	75	225	150		8.95
YO 6600 - 80	R:2.5	80	235	155	daN	9.10
YO 6600 -100	M:8	100	275	175		10.7
YO 6600 -125	4 Hole M10 x13 Ø 80	125	325	200		12.5

Technical Specifications

- Pressure Gase N_2
- Max. Pressure (P) 150 Bar
- Min. Pressure 25 Bar
- Working Temp. 0^0C ve + 80^0C
- Max. Working Speed 1.8 m / s
- Piston Area (S) 44.18 cm^2

PED 97/23/EC





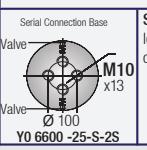




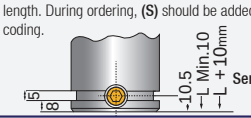








Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



Example: Serial Connection Y 6600 S

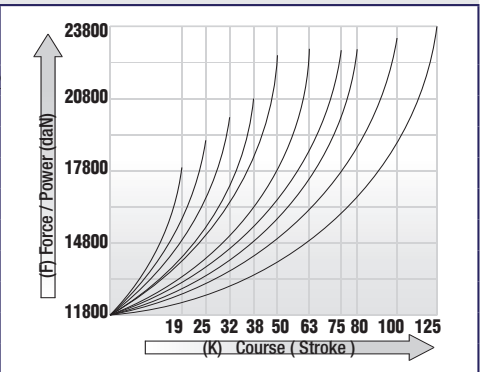
Order YO 11800.	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.
YO 11800 -19	d: 100 mm	19	116	97		9.57
YO 11800 -25	**d1: 150**	25	128	103		9.96
YO 11800 -32	d2: 142mm	32	142	110		10.41
YO 11800 -38	d3: 145mm	38	154	116	(F)	10.81
YO 11800 -50	a: 1 mm	50	178	128		11.59
YO 11800 -63	b: 8 mm	63	204	141	11800	11.88
YO 11800 -75	e: 5 mm	75	228	153		12.21
YO 11800 -80	L2: 24.5	80	238	158	daN	12.43
YO11800-100	R:2.5	100	278	178		13.51
YO11800-125	M:8	125	328	203		15.14

4 Hole M10 x13 Ø 100

Technical Specifications

- Pressure Gase N_2
- Max. Pressure (P) 150 Bar
- Min. Pressure 25 Bar
- Working Temp. 0^0C ve + 80^0C
- Max. Working Speed 1.8 m / s
- Piston Area (S) 78.54 cm^2

PED 97/23/EC





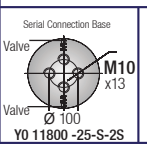




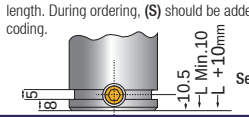




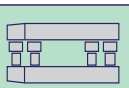




Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



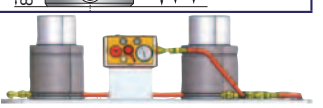
Example: Serial Connection Y 11800 S

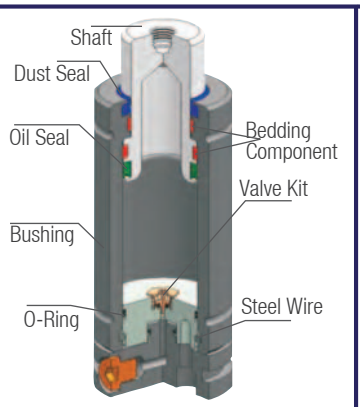


Section Press Mould



Pls. specify valve inlet of specify serial connection cyclinders as with 1 or 2 valve options !

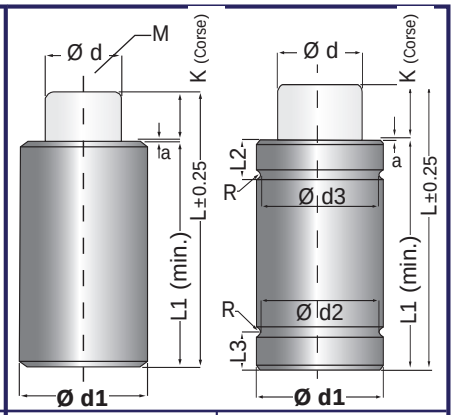




Serial Connection: Gasless (With Valve)



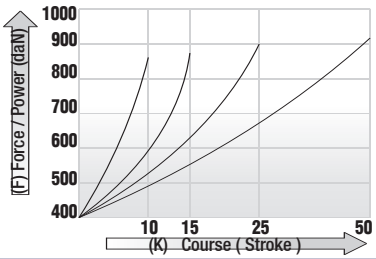
Standard: Die Gas Spring (Ready /Full)



Serial : G 40 - G 75 | Serial : G 100

G Serie Die Gas Springs High Pressure - The Strongest Spring - Less Working Life

Order G 40..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 40 - 10	d: 14 mm **d1: 25** a: 1 mm M:8	10	75	65	(F) 400 daN	0.18	Pressure Gase N_2 Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0°C ve + 80°C Max. Working Speed 1.8 m / s Piston Area (S) 2.84 cm²
G 40 - 15		15	90	75		0.20	
G 40 - 25		25	120	95		0.24	
G 40 - 50		50	195	145		0.35	



Cylinder Coupling Fastening

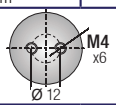


At Slot, Volume Ø +1.0 +0.5



Supported Volume Ø +1.0 +0.5

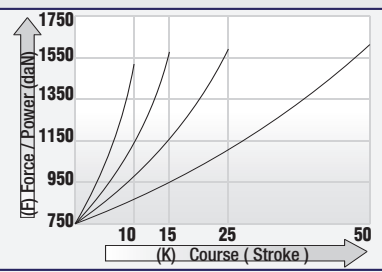
2 Hole



Generally for other connection position of Die Gas springs that have completed their mounting by exhausting with bolt from base in compliance with your mould, select connection type specified at drawing (with code) and request information (technical drawing) for details from our company.

Seri : G 40

Order G 75..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 75 - 10	d: 19 mm **d1: 32** a: 1 mm M:8	10	75	65	(F) 400 daN	0.18	Pressure Gase N_2 Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0°C ve + 80°C Max. Working Speed 1.8 m / s Piston Area (S) 4.91 cm²
G 75 - 15		15	90	75		0.20	
G 75 - 25		25	120	95		0.24	
G 75 - 50		50	195	145		0.35	



Cylinder Coupling Fastening

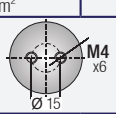


At Slot, Volume Ø +1.0 +0.5



Supported Volume Ø +1.0 +0.5

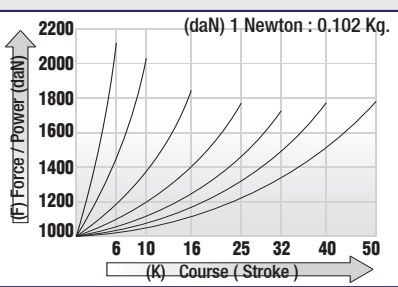
2 Hole



Note: During spring selection, absolutely a spring above criterias should be selected, by assuming that the quality continuity of processed sheet material can be changed, usage criteriar should be adjusted.

Seri : G 75

Order G 100..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 100 - 6	d: 20 mm **d1: 38** d2: 36mm d3: 36mm a: 1 mm L2: 9.5 L3: 10.5 R:1 M:8	6	61	55	(F) 1000 daN	0.36	Pressure Gase N_2 Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0°C ve + 80°C Max. Working Speed 1.8 m / s Piston Area (S) 7.07 cm²
G 100 - 10		10	75	65		0.41	
G 100 - 16		16	100	84		0.48	
G 100 - 25		25	135	110		0.58	
G 100 - 32		32	167	135		0.62	
G 100 - 40		40	195	155		0.68	
G 100 - 50		50	230	180		0.74	



Cylinder Coupling Fastening

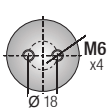


At Slot, Volume Ø +1.0 +0.5



Supported Volume Ø +1.0 +0.5

2 Hole



BT 38

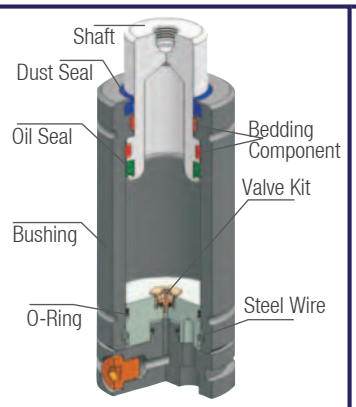


Contd 121-123

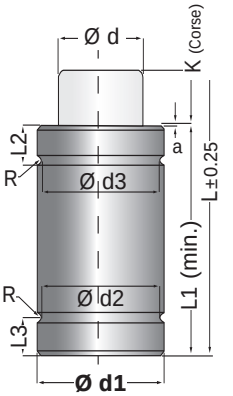
Pls. always mount Die Gas springs via threaded holes on base or example fixing components directly!

Seri : G100





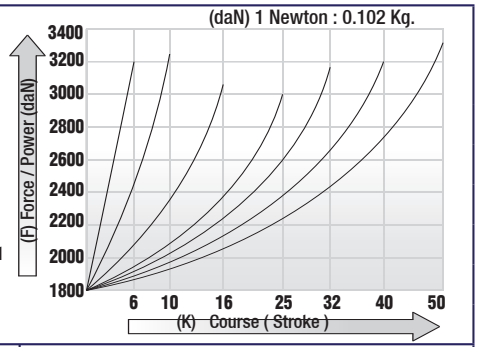




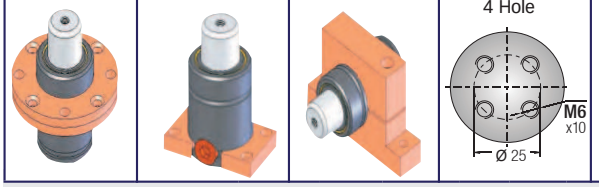
Serial Connection: Gasless (With Valve) | Standard: Die Gas Spring (Ready /Full)

G Serie Die Gas Springs High Pressure - The Strongest Spring - Less Working Life

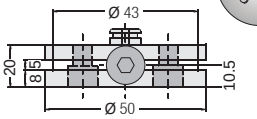
Order G 180..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 180 - 6	d: 30 mm	6	66	60		0.71	Pressure Gase N_2
G 180 - 10	**d1: 50**	10	80	70		0.78	Max. Pressure (P) 150 Bar
G 180 - 16	d2: 46mm d3: 46mm	16	106	90	(F)	0.91	Min. Pressure 25 Bar
G 180 - 25	a: 1 mm	25	135	110	1800 daN	1.04	Working Temp. 0°C ve + 80°C
G 180 - 32	L2: 13.5 L3: 14.5	32	162	130		1.12	Max. Working Speed 1.8 m / s
G 180 - 40	R:2 M:8	40	190	150		1.21	Piston Area (S) 12.57 cm^2
G 180 - 50		50	220	170		1.33	

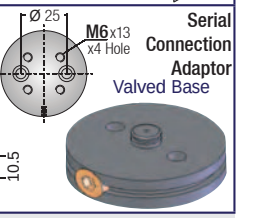


BT 50 | BY 50-A | BD 50 | Solid Base 4 Hole

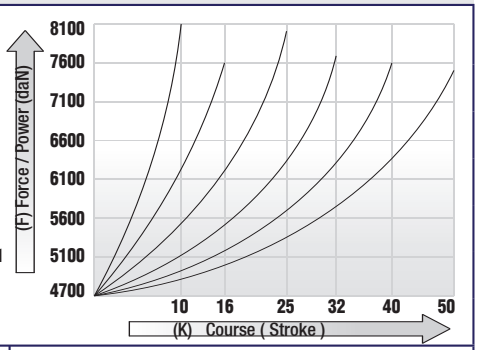


+ 20 mm will be added to L and L min. length. During ordering, (S) should be added while coding.

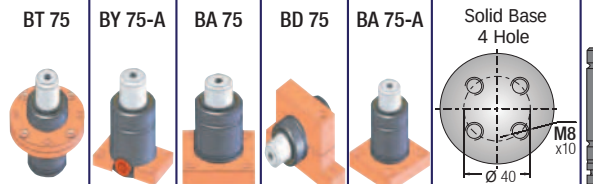




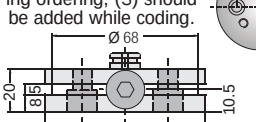
Order G 470..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 470 - 10	d: 50 mm	10	80	70		1.85	Pressure Gase N_2
G 470 - 16	**d1: 75**	16	106	90		2.11	Max. Pressure (P) 150 Bar
G 470 - 25	d2: 70mm d3: 70mm	25	135	110	(F)	2.34	Min. Pressure 25 Bar
G 470 - 32	a: 1 mm L2: 17	32	167	135	4700 daN	2.54	Working Temp. 0°C ve + 80°C
G 470 - 40	L3: 18 R:2.5	40	200	160		2.77	Max. Working Speed 1.8 m / s
G 470 - 50	M:8	50	240	190		3.06	Piston Area (S) 31.17 cm^2

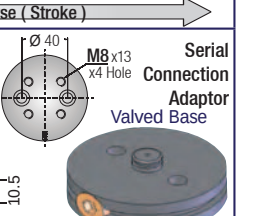


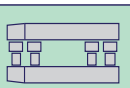
BT 75 | BY 75-A | BA 75 | BD 75 | BA 75-A | Solid Base 4 Hole



+ 20 mm will be added to L and L min. length. During ordering, (S) should be added while coding.



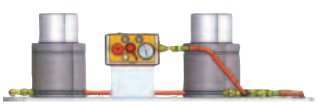


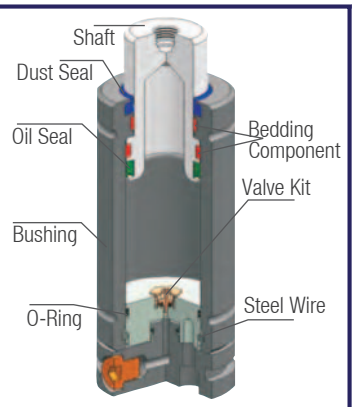


Section Press Mould



Pls. specify valve inlet of specify serial connection cyclinders as with 1 or 2 valve options !

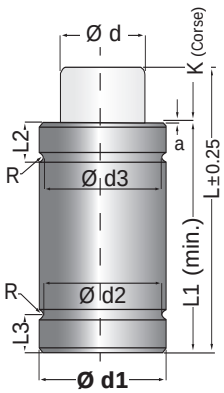




Serial Connection: Gasless (With Valve)

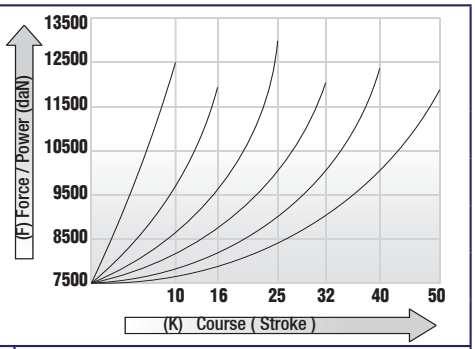


Standard: Die Gas Spring (Ready /Full)

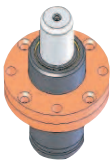


G Serie Die Gas Springs High Pressure - The Strongest Spring - Less Working Life

Order G 750..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 750 - 10	d: 55 mm	10	90	80	(F) 7500 daN	2.94	Pressure Gase N_2
G 750 - 16	**d1: 95**	16	116	100		3.32	Max. Pressure (P) 150 Bar
G 750 - 25	d2: 90mm	25	145	120		3.73	Min. Pressure 25 Bar
G 750 - 32	d3: 90mm a: 1 mm	32	182	150		4.32	Working Temp. 0^0C ve + 80^0C
G 750 - 40	L2: 20 L3: 21 R:2.5	40	210	170		4.72	Max. Working Speed 1.8 m / s
G 750 - 50	M:8	50	255	205		5.38	Piston Area (S) 50.27 cm^2



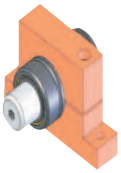
BT 50



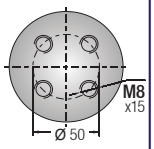
BY 50-A

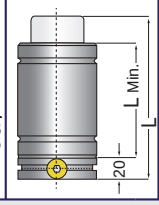


BD 50

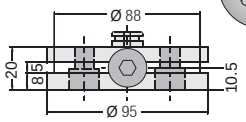


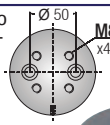
Solid Base 4 Hole





+ 20 mm will be added to L and L min. length. During ordering, (S) should be added while coding.





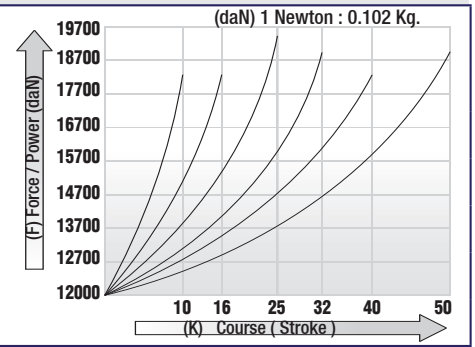
Serial Connection Adaptor

Valved Base

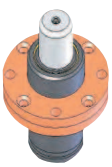


Order G 1200..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 1200- 10	d: 70 mm	10	100	90	(F) 1200 daN	5.47	Pressure Gase N_2
G 1200- 16	**d1: 120**	16	126	110		6.07	Max. Pressure (P) 150 Bar
G 1200- 25	d2:115mm	25	155	130		6.80	Min. Pressure 25 Bar
G 1200- 32	d3:115mm a: 1 mm	32	187	155		7.60	Working Temp. 0^0C ve + 80^0C
G 1200- 40	L2: 21.5 L3: 22.5 R:2.5	40	220	180		8.38	Max. Working Speed 1.8 m / s
G 1200- 50	M:8	50	260	210		9.39	Piston Area (S) 78.54 cm^2

(daN) 1 Newton : 0.102 Kg.



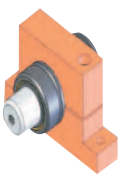
BT 120



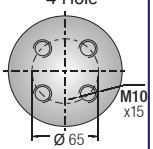
BY 120 - A

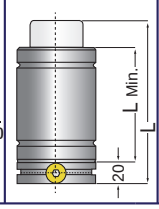


BD 120

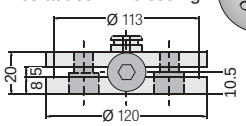


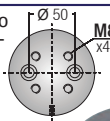
Solid Base 4 Hole





+ 20 mm will be added to L and L min. length. During ordering, (S) should be added while coding.





Serial Connection Adaptor

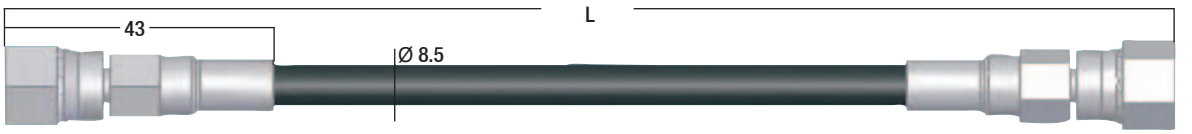
Valved Base





Pls. specify valve inlet of specify serial connection cyclinders as with 1 or 2 valve options !





SERIAL CONNECTION; HOSE (JUNCTION) SYSTEMS

GHS

Order Code	L (Length) mm
GHS 180	180
GHS 200	200
GHS 300	300
GHS 400	400
GHS 500	500
GHS 630	630
GHS 800	800
GHS 1000	1000
GHS 1250	1250
GHS 1500	1500
GHS 2000	2000

Order : HRM.. x L (Length)

Hose Systems:

From Serial SN 500 to SN 1000

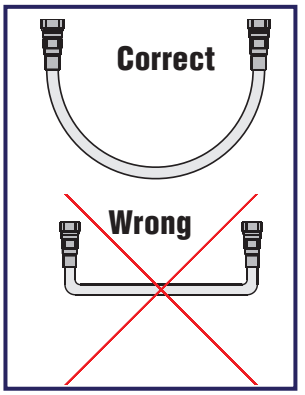
From Serial Y 700 to Y 6600

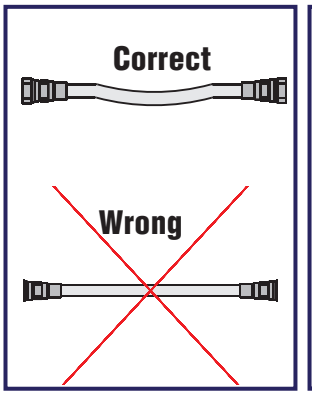
From Serial YO 700 to YO 11800

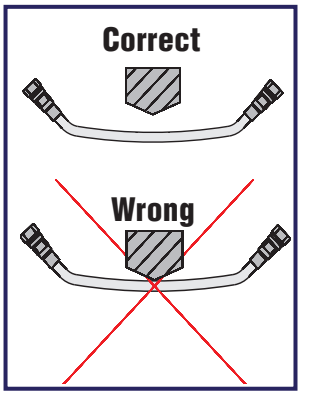
From Serial G 180 to G

1200 Includes Die Gas cyclinders.

Criterias in order to insert hoses in a correct way



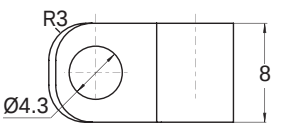


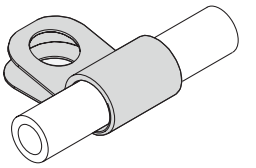


Before beginning this process, ensure that all pressure is discharged and piston is withdrawn completely. In cases that any mounting / inserted part is removed, ensure that control pressure is discharged completely over control panel. Hoses should be stable in flat position in the system.
(Bending diamater is 13 mm)
Working Temp. : 40 ÷ + 100^{0}C'dir.

HOSE CLIPS

HK





It is used as hose clips in fastening systems.
It can be added to 2 Piece HK 'L' length in your hose order.

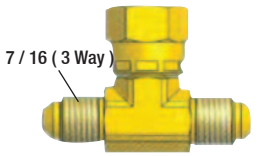
SERIAL CONNECTION: JUNCTION ADAPTORS

Yellow Material for Die Gas Spring / Pressure Systems



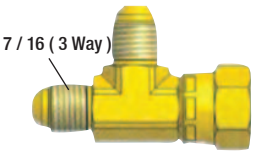
Nut 45º Elbow

Order : SD 45 7/16''UNF



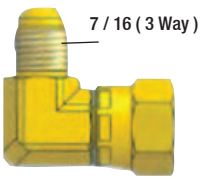
Nut 'T' Coupling

Order : SBT 7/16''UNF



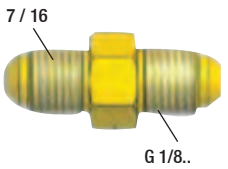
Nut Side 'T' Coupling

Order : SBYT 7/16''UNF



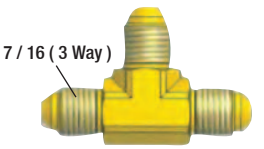
Nut 90º Elbow

Order : SD 90 7/16''UNF



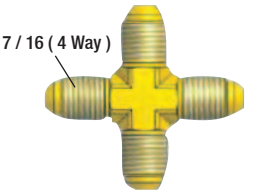
Threaded Reduction

Order : DR 7/16''UNF - G1/8''



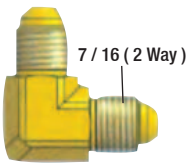
Threaded 'T'

Order : DT 7/16''UNF



Threaded Quartet Coupling

Order : DDB 7/16''UNF



Threaded Elbow

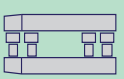
Order : DD 7/16''UNF

PIPE COUPLERS / SEALING - TEFLON BAND WINKELL



Pipe coupler with/without couplers are sealed threaded bolts against water, oil, gas and chemicals safely.
* It is the newest product used instead of hemp, teflon etc.
* High Quality Filling * 150 - 200oC Heat Protective

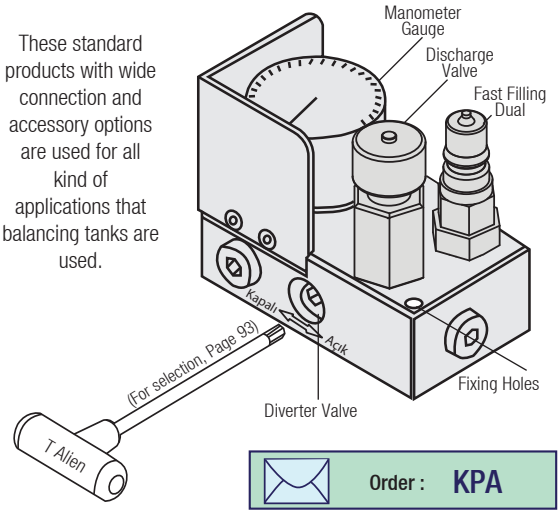
Order	Packing
678.511.5	50 ml.
678.511.25	250 ml.



Section Press Mould

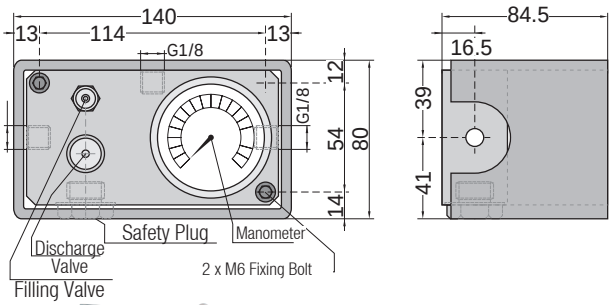


These standard products with wide connection and accessory options are used for all kind of applications that balancing tanks are used.



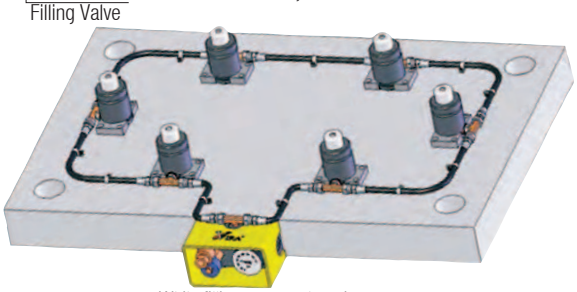
SERIAL CONNECTION: CONTROL PANEL KPA

Serial Connection Systems, Router Unit



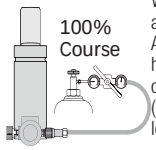
Order : **KPA**

Standard Control Panel to change pressure, to adjust and to control fastening system.
It is consisted from manometer connected, steel plate, filling and discharge valves, 3 Pieces Outlet and steel casing that safety disc can be connected when desired.

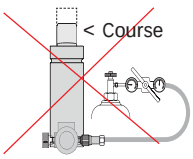


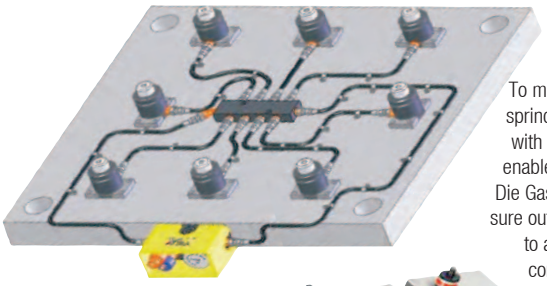
SERIAL CONNECTION, PRACTICAL EXAMPLES

While controlling Die Gas springs, remove Die Gas spring valve absolutely!



While filling, ensure that piston arm is **100 %** removed.
At cyclinders not having threaded hole on rod, to remove arm completely, first fill up to **Bar 5** (**75 psi**), then fill up to required level.

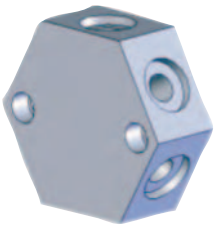




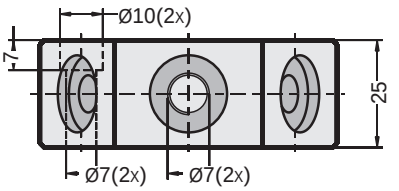
To make Die Gas spring connection with a system, it enables to monitor Die Gas spring pressure out of mould and to adjust and correct it by reincrease gas.

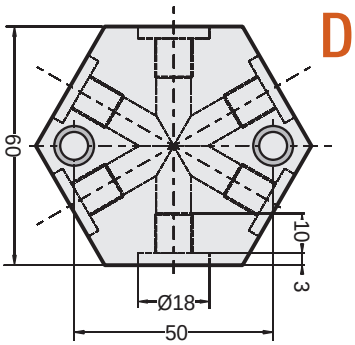


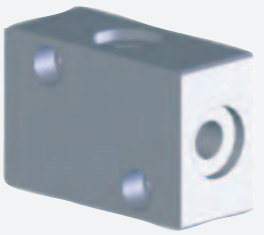
Controlled Ganifold Systems assy Spring Designed by the User



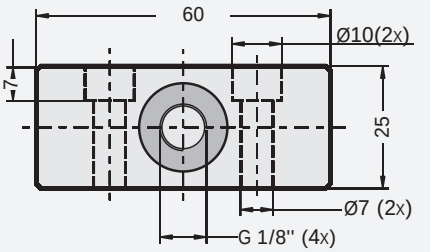
Order :
DBC 6

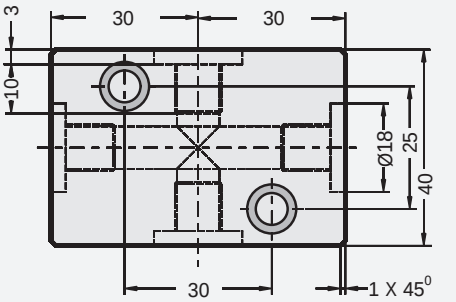


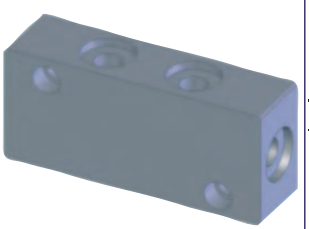




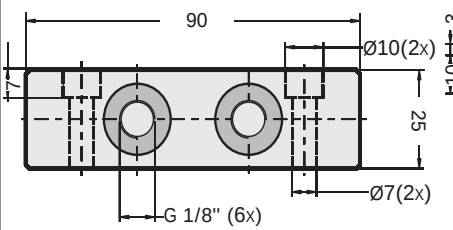
Order :
DB 4

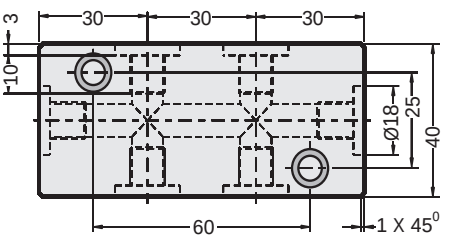


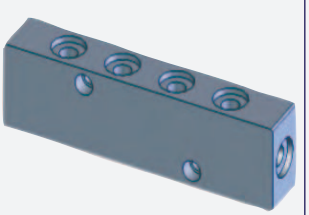




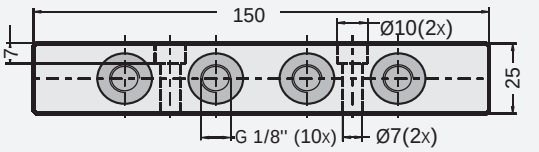
Order :
DB 6

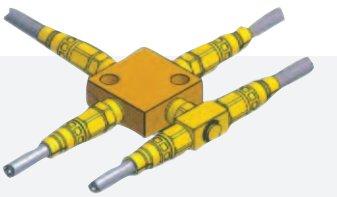


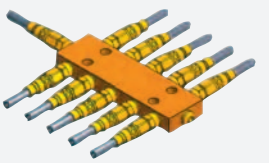


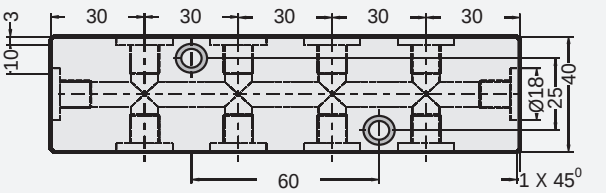


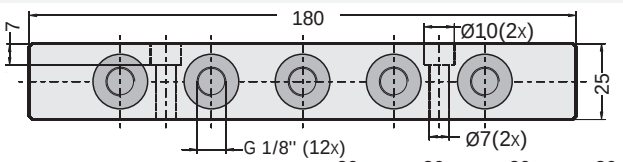
Order :
DB 10

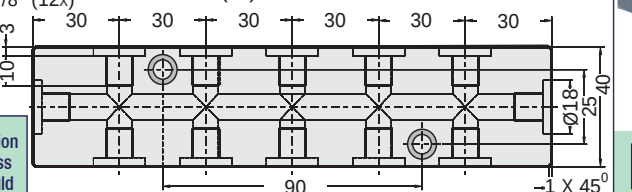


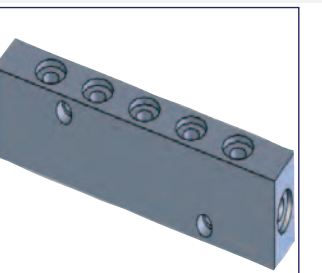




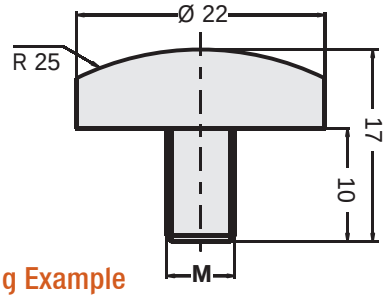




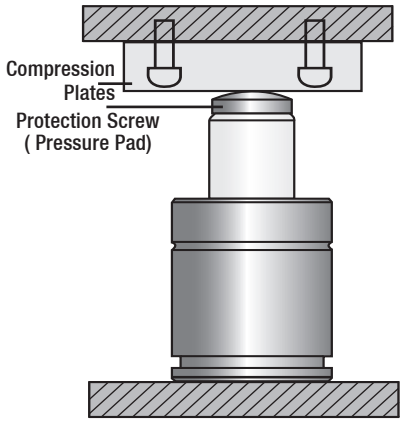


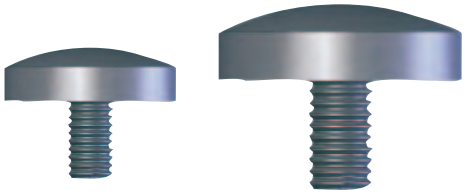


Order :
DB 12



Mounting Example





Die Gas Spring CLUTCH PADS HRM

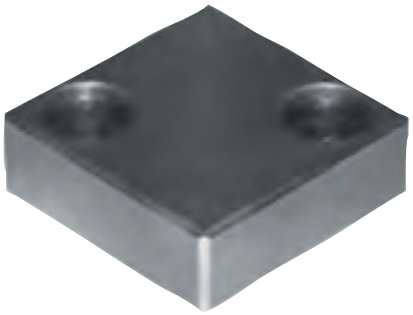
Piston Protection (Balancing / Straightening) Head

Order Codeu	M
HRM 6	M6 x 10
HRM 8	M8 x 10

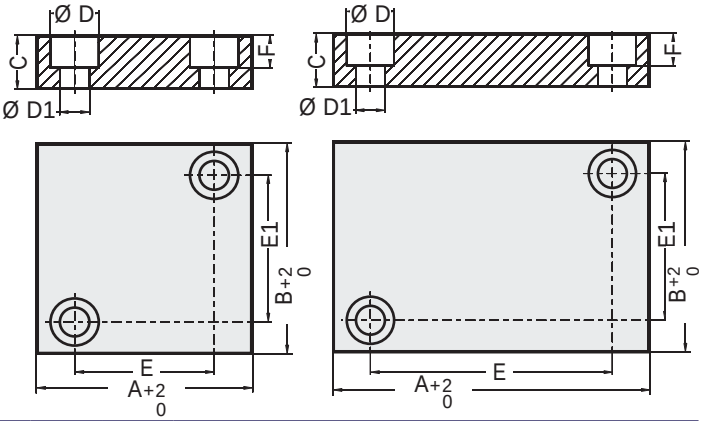
Order : **HRM X M**

Material : 1.1731
Superficially hardened

For M6 and M8 Threaded Piston Shaft, Die Gas Springs:
It is a useful product that protects piston head and absorbs clamping occurred on mould. Our company also recommends to use Die Gas Springs. In cases that stamp comes inclined or if there are parts that are displaced laterally, hardened compression pad decreases lateral pressure. Using pressure plate with compression pads, lateral load resistance of Die Gas Springs is increased. This is made by decreasing friction, even in cases that compression pad is not used, using the compression plate will be very useful for your system.



COMPRESSION PLATES FOR Die Gas Springs CRUSH PLATES EP

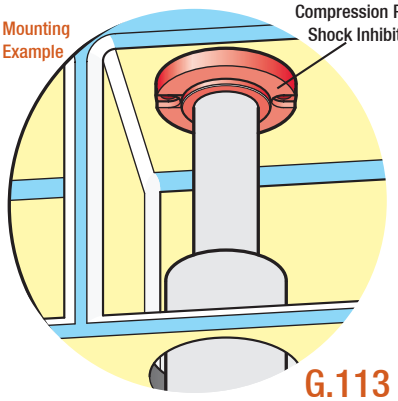


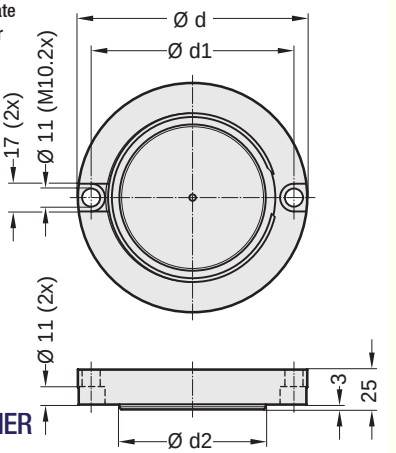
Order	A mm	B mm	C mm	Ø D	Ø D1	E	E1	F	Die Gas Spring Model
EP 40	40	40	15	15	9	21	21	10	SN:150-250-500 / Y:300-500 / YO:300-500 / G:40-75-100
EP 56	56	56	20	18	11	32	32	13	SN:750-1500 / Y:700-1000 / YO:700-1000-1500 / G:180
EP 71	71	71	20	18	11	48	48	13	SN:3000-5000 / Y:2400 / YO:2400-4200 / G:470-750
EP 50	50	25	12	11	7	32	8	8	SN:250 / Y:300 / YO:300
EP 55	55	30	12	11	7	40	14	8	SN:500 / Y:500 / YO:500 / G:40-75-100
EP 70	70	35	15	15	9	48	14	10	SN:750 / Y:700 / YO:700
EP 75	75	50	15	15	9	56	30	10	SN:1500 / Y:1000 / YO:1000-1500 / G:180
EP 85	85	60	15	15	9	66	40	10	SN:3000 / Y:2400 / YO:2400 / G:470
EP 100	100	80	20	18	11	72	56	12	SN:5000 / Y:4200 / YO:4200 / G:750
EP 110	110	100	20	18	11	85	45	12	SN:7500-10000 / Y:6600 / YO:6600-11800 / G:1200

Note: Especially at Die Gas Springs having wide stroke capacity, we recommend to use pad and compression plate combination... !

Order : **EP .A x B**

Material : 1.2842
Hardened





G.113

COMPRESSION PLATE SHOCK DAMPENER

Shock Dampener / Noise Preventer

(daN) 1 Newton : 0.102 Kg.

Order	Die Gas Spring Force F: (daN)	d	d1	d2
G.113.58	750 - 1500	108	91	58
G.113.92	> 1500 - 6600	143	126	92
G.113.122	> 6600 - 10000	167	150	112

Shock dampener clutch plates are designed to minimize main problems of press mould in sheet processings. Specially designed shock inhibitor unit has been developed to reduce following the issues.

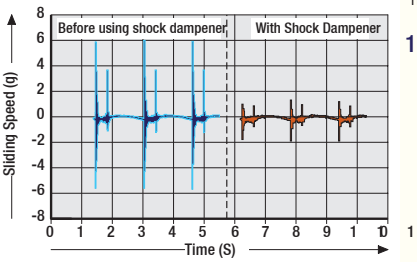
- Excessive Impact Amount
- In terms of press and high costs developed correspondingly
- High Volume Levels
- Low Quality Production Risk

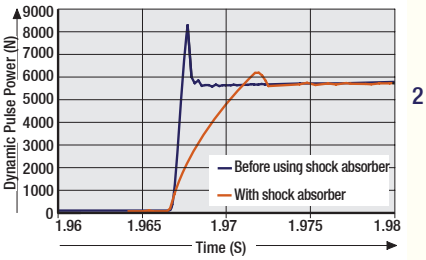
In case of using shock inhibitor clutch plate Die Gas Springs:

* After maximum 3 mm's shock dampener course, Die Gas Spring shock dampener compression plate reaches its previous spring Power.
* Shock inhibitor compression plate should be mounted between mould plate and Die Gas Spring piston shaft.

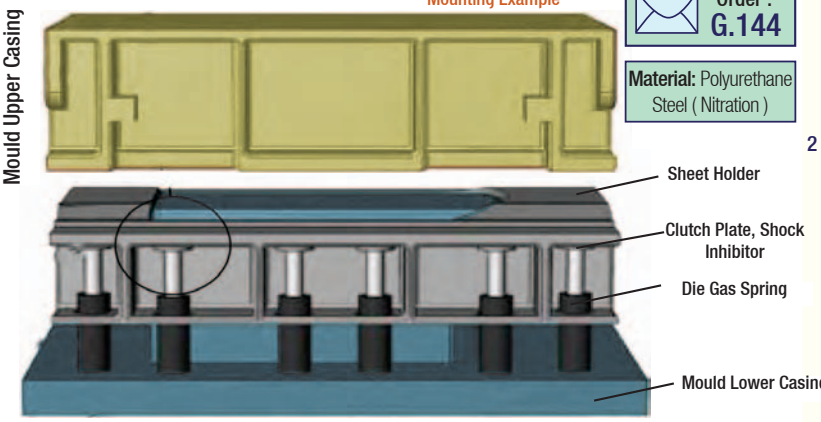
Working Temperature : Between 0°C and 80°C
Recommended Stroke / Min : 20
Max. Stroke Speed : 1.6 m / s
Max. Shock Inhibitor Course : 3 mm

Shock Dampener, Working Diagram (Function)





Mounting Example



Order : G.144

Material: Polyurethane Steel (Nitration)

APPLICATION OF

Die Gas Springs faciliate storing and preparation of moulds for production .

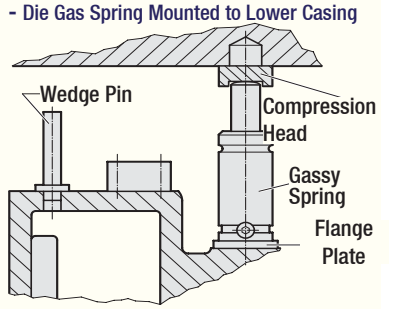
Using Die Gas Springs at great sheet mould is becoming increasingly popular. This system faciliates to storage moulds and shortens the time between storage and production. Die Gas Springs are mounted to both upper and lower casings. The processes over Die Gas Springs should be done after removing the mould from the press.

At application example 1 and 2, special compression head is shown, when these products are in mould press, before compressing, Die Gas Spring is placed to the place that piston will be pressed. During removing from press or storage, upper mould casing stays on Die Gas Springs. Wedge pins are for security after Die Gas Spring. When moulds are stacked, increased weight can cause crushing of springs, in this case, they are fitted on upper mould wedge pins. When upper moulds are removed, Die Gas Springs lift the upper casing again.

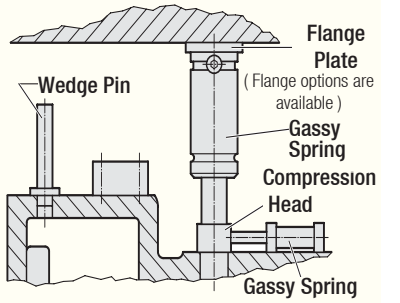
While preparing for production, springs enable reach various parts of moulds. When mould is connected to mould press, before stamping, wedge pins and head should be removed.

In significant Status: Warning signs should be placed on the mould. Die Gas Springs on mould may not be visible from the outside.

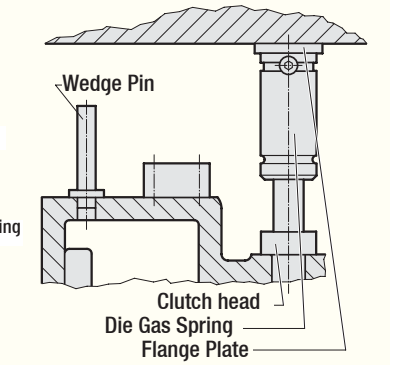
1 - Die Gas Spring Mounted to Lower Casing



2 - Die Gas Spring Mounted to Lower Casing



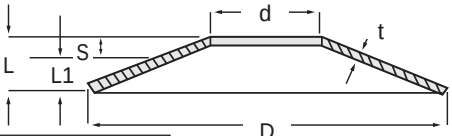
2 - Die Gas Spring Mounted to Upper Casing





DISC / DISH SPRINGS DCY

Short Springs Fixed With DIN 2093 Shaft



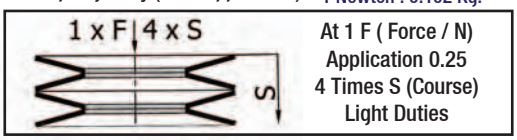
d: Spring Inner Hole Dia
D: Outer Spring Dia.
t: Spring Thickness
L: Free length
L1: Loading Length
F max: Flex Force
S: Flex Length Course / Motion

Disc Springs: At very short working courses, it provides resistance to higher forces. The advantage of springs with very short spring is that when the pressure is applied, it produces high power with less motion. Disc springs sometimes can be used alone and also as stacked Array Sets.

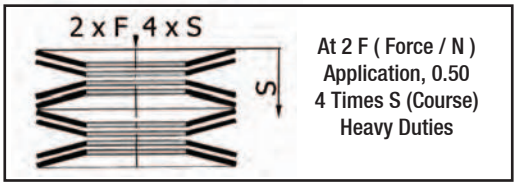
50 CrV (-15 / +1500 Resistance) Heat Resistance N (-25 / + 200) Voltage

Dish Spring Working Courses: Applied Forces (F/ N) should be designed according to the working courses. Specifying the working courses should be according to the hole thickness (t) internal wall. L: 0.25 (1/4) or 0.50 (1/2) of free length. In addition, with motion up to 0.75 (3/4), different forces (F/N) per each course value may be applied . F =N / S = mm / course

Dish Spring Array (Load Application) 1 Newton : 0.102 Kg.



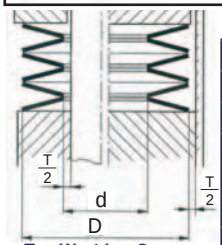
At 1 F (Force / N)
Application 0.25
4 Times S (Course)
Light Duties



At 2 F (Force / N)
Application, 0.50
4 Times S (Course)
Heavy Duties



At 3 F (Force / N)
Application 0.75
1 Time S (Course)
Very Heavy Duty



T = Working Space

Fixing with Dish Spring Shaft

D	T
> 8 - 16	0.2
> 16 - 20	0.3
> 20 - 26	0.4
> 26 - 34	0.5
> 34 - 50	0.6
> 50 - 100	0.8

DISC / DISH SPRINGS (Plate Springs) DCY

d Ø	D Ø	t mm	L mm	L1 mm	F Nw	Order
3.2	8	0.30	0.55	0.36	104	100 Piece
		0.50	0.70	0.55	357	
4.2	8	0.40	0.60	0.45	209	
3.2	10	0.30	0.65	0.39	98	100 Pieces Package
		0.40	0.70	0.48	179	
4.2	10	0.50	0.75	0.56	294	
		0.60	0.85	0.66	502	
5.2	10	0.40	0.70	0.48	209	
		0.50	0.75	0.56	325	
4.2	12	0.40	0.80	0.50	178	100 Pieces Package
		0.50	0.85	0.59	284	
5.2	12	0.50	0.90	0.60	349	
		0.60	0.95	0.69	506	
6.2	12	0.50	0.85	0.59	326	
		0.60	0.95	0.69	551	
6.2	12.5	0.50	0.85	0.59	293	
		0.70	1.00	0.78	659	
7.2	14	0.50	0.90	0.60	279	50 Pieces Package
		0.80	1.10	0.87	796	
5.2	15	0.40	0.95	0.54	175	
		0.60	1.05	0.71	407	
6.2	15	0.50	1.00	0.63	289	
		0.70	1.10	0.80	577	
8.2	15	0.70	1.10	0.80	665	
		0.80	1.20	0.90	982	
8.2	16	0.40	0.90	0.53	154	50 Pieces Package
		0.60	1.05	0.71	410	
		0.90	1.25	0.99	1012	
6.2	18	0.50	1.10	0.65	245	
		0.70	1.25	0.84	552	
8.2	18	0.80	1.30	0.92	582	
		1.00	1.40	1.10	1181	
9.2	18	0.70	1.20	0.83	566	
		1.00	1.40	1.10	1253	
8.2	20	0.60	1.30	0.77	412	50 Pieces Package
		0.80	1.40	0.95	751	
		1.00	1.55	1.14	1294	
10.2	20	0.80	1.35	1.94	748	
		1.00	1.55	1.14	1414	

d Ø	D Ø	t mm	L mm	L1 mm	F Nw	Order
8.2	23	0.80	1.55	0.99	718	50 Pieces Package
		0.90	1.60	1.07	918	
10.2	23	1.00	1.70	1.17	1315	
12.2	25	0.70	1.60	0.92	599	
		0.90	1.60	1.07	862	
10.2	28	0.80	1.75	1.04	661	
		1.00	1.90	1.23	1129	
14.2	28	0.80	1.80	1.05	801	
		1.00	1.80	1.20	1107	
16.3	31.5	1.25	2.15	1.48	1912	
		1.50	2.40	1.73	3228	
12.3	34	1.25	2.35	1.53	1814	25 Pieces Package
		1.50	2.50	1.75	2719	
14.3	34	1.25	2.40	1.54	1988	
		1.50	2.55	1.76	2982	
16.3	34	1.50	2.55	1.76	3153	
		2.00	2.85	2.21	5779	
14.3	40	1.50	2.75	1.81	2544	
		2.00	3.05	2.26	4766	
16.3	40	1.50	2.80	1.83	2748	
		2.00	3.10	2.28	5166	
20.4	40	2.00	3.10	2.28	5698	
		2.50	3.45	2.74	9384	
22.4	45	1.75	3.05	2.08	3644	
		2.50	3.50	2.75	7712	
20.4	50	2.00	3.50	2.38	4685	
		2.50	3.85	2.84	7915	
25.4	50	2.00	3.40	2.35	4760	
		2.50	3.90	2.85	9058	
		3.00	4.10	3.28	11970	
20.5	60	2.50	4.03	2.95	7293	
		3.00	4.70	3.42	11563	
30.5	60	3.00	4.70	3.42	13219	
		3.50	5.00	3.88	18143	
40.5	70	4.00	5.06	4.04	23338	10 Pieces Package
		5.00	6.20	5.30	33653	
31	80	4.00	6.10	4.50	19384	
41	80	3.00	5.30	3.58	10512	
		5.00	6.70	5.42	33541	
41	100	5.00	7.75	5.69	32344	
51		6.00	8.20	6.55	47995	

Order : DCY. d x D x t

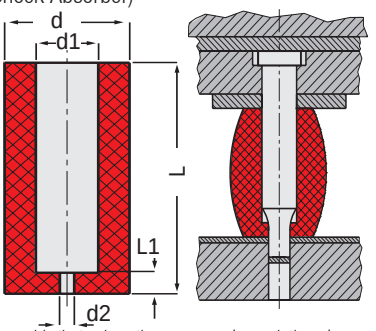


PYB

POLYURETHANE PUNCH STRIPPER

HSS Overspreads on HSS Punch

(Shock Absorber)



At moulds that polyurethane scraper is used, there is no need to dismantle scraper plate to make repair whetting and modificaiton on mould components, there is not any effect on presicion parts, it is excellent for all painted / anodized, plastic plated and polished parts. It is compatible to use with oil and grease. Overspreads on poliurethane scraper punch. Placement is done according to the scraper hardness. There is no need for extra holder. Stepped-Punch hole will be opened at first stroke of press and scraper edge. Especially, at large moulds requiring very wide scraper plate, this product is very compatible.

Poliurethane Springy, Scraper/ Ejector-Bushes

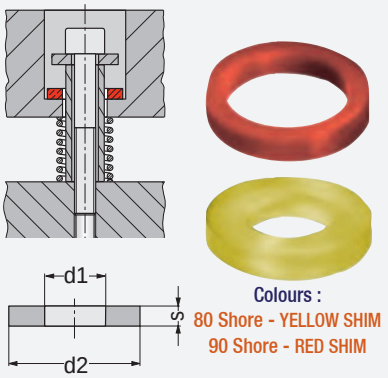
Order	d1 Ø	d Ø	d2 Ø	L1 mm	L mm	Punch Length
PYB.445	4.0	17	1.6	5.0	45	56 / 63
PYB.655	6.0	19			55	63 71 80 90
PYB.855	8.0	21	3.0 Punch Hole			
PYB.1055	10	23				
PYB.1355	13	26				
PYB.1655	16	30				
PYB.2071	20	38				100
PYB.2550	25	50				

d2: (1.6 - 3.0 mm) (d1) While opening hole diameter / drilling, polyurethane (punch) bush should be applied and drilled in pressed (S max) position. Spring load is obtained while extending outwards.

At S.max flexion, load coefficient data daN / Kg.

Da mm		17	19	21	23	26	30	38	50
Smax	60	65	65	70	90	110	140	310	370
	110	12	120	130	160	190	210	380	650
	-	180	180	210	240	300	370	550	1020

S max: Load coefficient daN = Kg. / (10 Newton), while poliurethane bush Smax in pressed, load data is advisory.



Colours :
80 Shore - YELLOW SHIM
90 Shore - RED SHIM

POLYURETHANE SHIM (Washers)

Shock / Noise / Vibration Inhibitor Shims

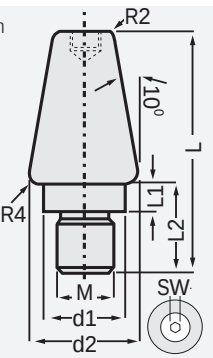
Shock dampener washers are designed to minimize main problems at press mould during sheet processing.

Including Yellow / Red

d2	d1	s
Ø 16	6.5	3 mm
	11	4 mm
Ø 20	8.5	3 mm
	11	4 mm
	13	5 mm
Ø 25	10.5	3 mm
	12	4 mm
	14	5 mm
Ø 32	13.5	3 mm
	18	4 mm
	21	5 mm
	23.5	6 mm
	25	7 mm

d2	d1	s
Ø 40	13.5	5 mm
	17	6 mm
	21	7 mm
	32	8 mm
Ø 50	17	6 mm
	26	7 mm
	32	8 mm
	37	10 mm
Ø 63	17	6 mm
	32	10 mm
Ø 80	21	8 mm
	42	10 mm
Ø 100	21	10 mm

Order :
PRP (Hardness/Colour) x d1 x d2 x s

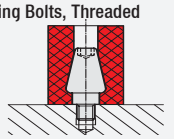




POLYURETHANE DOWELS

Polyurethane Springs, Centering Bolts, Threaded

Cylindrical polyurethane springs cut in the desired dimensions is fixed and centered with centering bolts. **Threaded model**

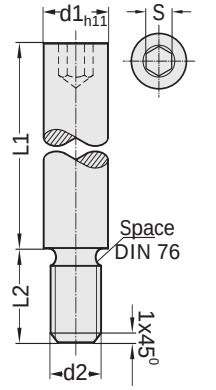


POLIURETHANE DOWELS PSP

P. SPRING	M	L	d1	d2	L1	L2	SW
Ø 63	M12	56	19	28	8	26	6
		64	18	28	10	24	6
Ø 80 Ø 100	M16	68	22	32	10	28	6
		74	22	32	10	34	8
Ø 125 Ø 140	M20	72	28	38	10	32	10
		100	28	38	15	45	10

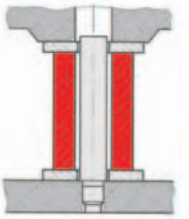
Order :
PSP. M x L

Material : 1.0503 (CK 45)



POLYURETHANE GUIDE PINS PYP





During guiding of polyurethane springs, countersunk allen head metric thread connected guide columns can be used as single spring as well as cluster by dividing springs.

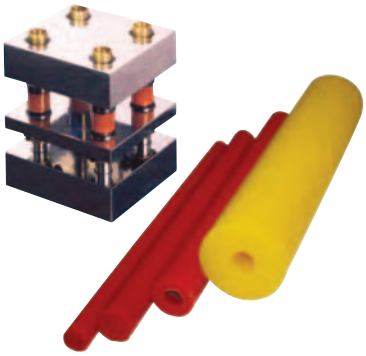
P.SPRING	d1	L1	d2	L2	S
Ø 16 x 6.5	Ø 6 mm	20	M4	6 mm	3 Alien
		25			
		32			
Ø 20 x 8.5	Ø 8 mm	25	M6	9 mm	4 Alien
		32			
		40			
		50			
Ø 25 x 10.5	Ø 10 mm	25	M8	15 mm	5 Alien
		32			
		40			
		50			
		63			
Ø 32 /40 x 13.5	Ø 13 mm	32	M10	15 mm	6 Alien
		40			
		50			
		63			
		80			
		95			
Ø 50 /63 x 17	Ø 16 mm	32	M12	18 mm	8 Alien
		40			
		50			
		63			
		80			
		95			
		118			
		140			
Ø 80 /100 x 21	Ø 20 mm	40	M16	25 mm	10 Alien
		50			
		63			
		80			
		95			
See page 132 for support in mounting, shim selections		118			
		140			
		180			

Order :
PYP. d1x L1

Material : 1.7131
Hardness 58 - 62 HRC



Continous Stock Product GTH



POLYURETHANE SPRINGS PY...

Circular Section, Solid and Perforated Type

Colours According to Hardness Values :

80 SHORE Hardness (Flexion %35) - YELLOW SPRING
90 SHORE Hardness (Flexion %25) - RED SPRING

80 SHORE

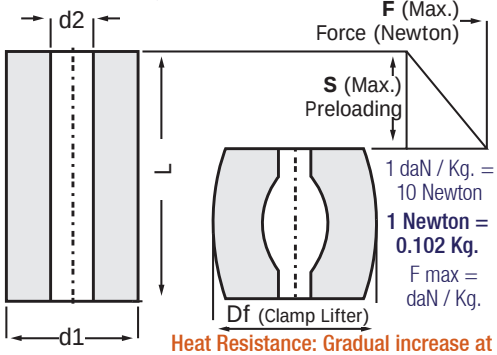
d1 Ø	d2 Ø	L mm
16	Loaded 6.5	310
20	Loaded 8.5	310
25	Loaded 10.5	310
32	Loaded 13.5	310
40	Loaded 13.5	310
50	Loaded 17	310
63	Loaded 17	310
80	Loaded 21	310
100	Loaded 21	310
125	Loaded 37	310

90 SHORE

d1 Ø	d2 Ø	L mm
16	Loaded 6.5	310
20	Loaded 8.5	310
25	Loaded 10.5	310
32	Loaded 13.5	310
40	Loaded 13.5	310
50	Loaded 17	310
63	Loaded 17	310
80	Loaded 21	310
100	Loaded 21	310
125	Loaded 37	310

Polyurethane / Elastomer Springs:
In cases that parts will be produced in small amounts, making expensive mould designs are not recommended. For such situations, we present the **GTH** affordable alternatives in our catalogue. Polyurethane springs such as cushion Guide Screw, scrapers, extractors, forming pads and spring components.

POLYURETHANE, MOULD COMPRESSION SPRINGS





PM...

Heat Resistance: Gradual increase at hardness under70°C / 18°C

Polyurethane Springs: They do not create any problem at water / oil emulsions (resistance to thermal shock). There do not have any abrasion effecs that can be distinguished with fixed and high load under normal temperature and environmental conditions at serial motion moulds. Especially, they are efficient in ambients that do not require magnetization. Forming elastomers can be processed with ordinary machine tools as well as can be process with traditional cutting tools (with sharp cutting edge). Polyurethane compression spring is incompressible material, spring load is obtained by extending outwards. Most of the expansion is reflected outwards, **when desired higher flexion, selected spring is cut into two pieces from center, then metal thick shim is inserted, thus flexion is increased two times. Pin Diameter** of polyurethane compression springs should be less than the inner diameter of spring.

According to the flexion rate, selection of perforated polyurethane spring (Yellow / Red)

d1 Ø	L mm	d2 Ø	Smax=Lx%25 Smax	Fmax	Df	Smax=Lx%35 Smax	Fmax	Df
16	12	6.5	3.5	172	20	5.0	46	22
	16		4.8	178		6.5	45	
	20		6.0	180		8.0	44	
	25		7.5	185		10	43	
20	16	8.5	4.8	250	25	6.5	67	27
	20		6.0	258		8.0	65	
	25		7.5	260		10	62	
	32		9.6	260		12.8	60	
25	20	10.5	6.0	525	32	8.0	100	34
	25		7.5			10	95	
	32		9.6			12.8	92	
	40		12			16	95	
32	32	13.5	9.6	630	40	12.8	250	44
	40		12	650		16	260	
	50		15			20	260	
	63		19			25.2	250	
40	32	13.5	9.6	1100	50	12.8	470	54
	40		12	1150		16	440	
	50		15			20	430	
	63		19	1200		25.2	430	
	80		24			32	420	
50	32	17	9.6	1820	63	12.8	810	68
	40		12	1860		16	780	
	50		15	1840		20	750	
	63		19	1800		25.2	720	
	80		24	1470		32	700	
	100		30	1620		40	720	
63	32	17	9.6	2800	80	12.8	1400	85

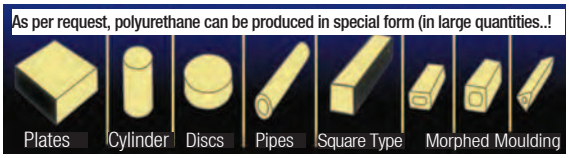
d1 Ø	L mm	d2 Ø	Smax=Lx%25 Smax	Fmax	Df	Smax=Lx%35 Smax	Fmax	Df
63	40	17	12	2950	80	16	1380	85
	50		15	3000		20	1360	
	63		19	3100		25.2	1300	
	80		24	3100		32	1300	
	100		30	3100		17	1280	
	125		37.5	3000		50	1280	
80	32	21.0	9.6	5000	100	12.8	2100	108
	40		12.0	5100		16.0	2080	
	50		15.0	5200		20.0	2000	
	63		19.0	5200		25.2	1980	
	80		24.0	5200		32.0	1960	
	100		30.0	5100		40.0	1960	
	125		37.5	5000		50.0	2000	
100	32	21.0	9.6	9800	125	12.8	3900	135
	40		12.0	10000		16.0	3750	
	50		15.0	10500		20.0	3600	
	63		19.0	11000		25.2	3400	
	80		24.0	11000		32.0	3300	
	100		30.0	9700		40.0	3250	
	125		37.5	9000		50.0	3250	
125	32	27.0	9.6	15000	158	12.8	6600	170
	40		12.0	15200		16.0	6300	
	50		9.6	15300		20.0	6200	
	63		12.0	15300		25.2	6000	
	80		9.6	15800		32.0	5900	
	100		12.0	15300		40.0	5750	
	125		9.6	15000		50.0	5600	
	160		12.0	14200		64.0	5500	

New Design: Polyurethane springs can be ordered as 310 mm in our sales system. **In addition, it** can be ordered as cut/short length from our stocks as per request (By following the table).

Order PY...: B (Empty)**-D** (Full)
Colour: **S** (Yellow)**-K** (Red)

Example : **PYSB . Ø** (Perforated yellow) **d1 / d2**
PYSB.16 (Yellow colour perforated / Empty Type)
PYKD.16 (Red colour Full Type)

As per request, polyurethane can be produced in special form (in large quantities..!



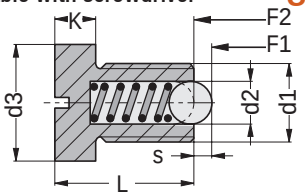
Order : Short Length
PM.. Colour (S /K) **d1 x L**

Section Press Mould



SPRING EJECTOR

Fixable with screwdriver **SBS**



It is for locking, compressing upwards and downwards. It can be dismantled with screwdriver.
Heat Resistance Maximum : 250^{0}C.

d1	L	s	d2	d3	F1	F2	K
M6	14	1	3.5	10	11	18	5
M8	16.5	1.5	4.5	13	18	31	5
M10	20	2	6	16	24	45	6
M12	22	2.5	8	18	26	49	7

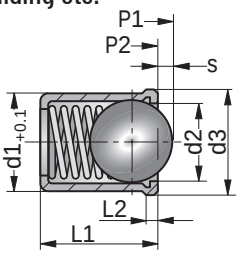
Order : **SBS** x d1 | **Material** : Steel Quality 5.8



SPRING STOPS

For systems such as elevator and sliding etc.

KBS



Hole Mounting with Reamer

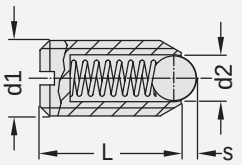
d1	L1	d2	d3	L2	s	P1(N)	P2(N)
4	5	3.0	4.6	1	0.90	2	5
5	6	4.0	5.6		1.00	4	7
6	7	5.0	6.5		1.50	6	12
8	9	6.5	8.5		1.80	6	12

Order : **KBS** x d1 | **Material** : Steel Quality 5.8



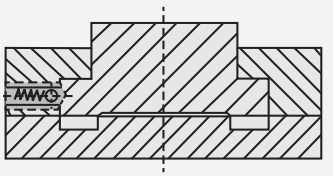
SPRING STOPS

Fixable with screwdriver **BSM**

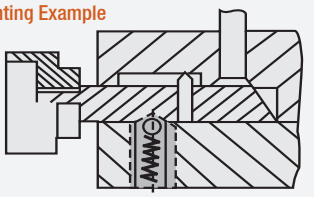


Usage Area:
- Fixation
- Pulling, pushing
- Extractor
- Compressing

It is used as core lock etc. in injection mould, as stamp extractor in press mould and also can be used for bedding of female shafts, limiting the torque tools and positioning of level adjuster.
Processable Steel Busking - Hardened Bearing Steel Ball - Winding steel spring
Maximum Heat Resistance 250º



Mounting Example



SPRING STOPS BSM

d1 Thread	L mm	S mm	d2 mm	Initial Force	Final Force
M4	9	08	2.5	6 Nw	12 Nw
M5	12	09	3.0	7 Nw	13 Nw
M6	14	1.0	3.5	9 Nw	15 Nw
M8	16	1.5	5.0	20 Nw	35 Nw
M10	19	2.0	6.0	25 Nw	45 Nw
M12	22	2.5	8.0	35 Nw	60 Nw
M16	24	3.5	10	65 Nw	110 Nw

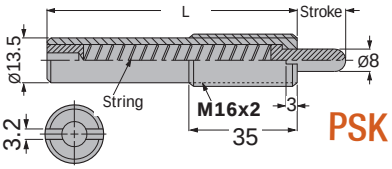
1 Newton 0.102 Kg. 1daN / Kg = 10 Newton
*** Don't exceed the force values.**

Order : **BSM** x d1 | **Material** :5.8 Steel Polished Hard Ball



SPRINGY, BUSHING EJECTOR, SCREW

Fixable with Springy Ejector Mounting Kit



PSK

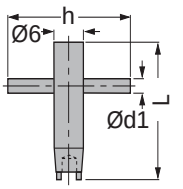
Protective plating that prevents oxidation on the part surface is available. The ball is from steel material and is hardened and polished. **Don't exceed force values specified in the table.**

SPRINGY, BUSHING EJECTOR, SCREW PSK

Stroke	L mm	Initial Force	Final Force
20	80	24 Nw	186 Nw
40	150	59 Nw	177 Nw
60	150	11 Nw	45 Nw
80	200	2 Nw	38 Nw

Order : **PSK** x Strok | **Material** : Pin 1.625 Hardness : 40 HRC





SPRINGY EJECTOR MOUNTING KIT PMT

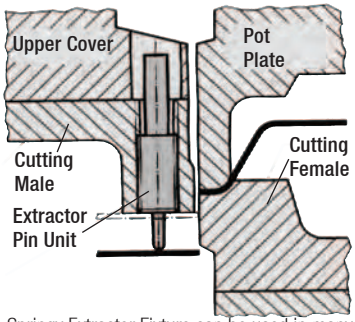
Springy Ejector, Mounting Kit PMT

Springy Ejector (M)	h mm	d Ø	d1 Ø	L mm
M5 - M6	40	6	3	40
M8	45	8	4	45
M10	45	10	4	45
M12	80	12	5	50
M16	70	16	8	52
M24	80	24	12	62
M30	100	30	15	73

Order : **PMT** d x L | **Material** :5.8 Steel Hardness : 36-40 HRC







Springy Extractor Fixture can be used in many designs such as mould and equipment production. Especially, it is operated as extractor - dampener - stabilizer and retaining pin.



SPRING EJECTORS

It is secured with Alien and is locked with podger.

It is for locking, compressing upwards and downwards, the lock prevents the reaching of liquids and oils to the pin. **PS1**

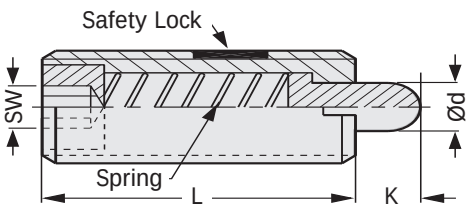
Working Temperature: From -30ºC to +80ºC

Pin: Polished Steel

Don't exceed force values specified in the table.



Podger
(Page 132)



SPRING EJECTORS

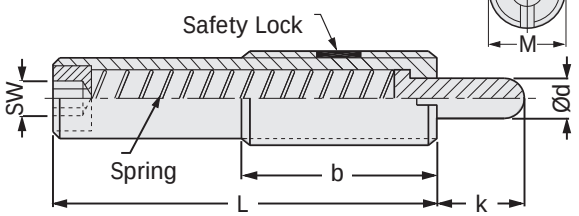
It is secured with Alien and is locked with podger.

It is for locking, compressing upwards and downwards, the lock prevents the reaching of liquids and oils to the pin. **PS2**

Working Temperature: From -30ºC to +80ºC

Pin: Polished Steel

Don't exceed force values specified in the table.



SPRING EJECTORS PS1

Serial	M Thread	k mm	L mm	d Ø	SW	Initial Force N (Kgf)	Final Force N (Kgf)
1	**M3**X0.5	1.5	10	1.0	0.8	0.4 (0.05)	2.9 (0.3)
2	**M4**X0.7	2.0	12	1.6	0.8	1.9 (0.2)	9.8 (1.0)
3	**M5**X0.8	3.0	20	2.0	1.5	3.9 (0.4)	19.6 (2.0)
4	**M5**X0.8	3.0	13	2.0	1.5	1.9 (0.2)	7.8 (0.8)
5	**M5**X0.8	3.0	20	2.0	1.5	1.9 (0.2)	9.8 (1.0)
6	**M6**X1.0	3.0	25	2.5	2.0	2.9 (0.3)	9.8 (1.0)
7	**M6**X1.0	3.0	25	2.5	2.0	7.8 (0.8)	29.4 (3.0)
8	**M8**X1.25	3.0	25	3.1	2.5	2.9 (0.3)	9.8 (1.0)
9	**M8**X1.25	3.0	25	3.1	2.5	7.8 (0.8)	29.4 (3.0)
10	**M10**X1.5	5.0	30	3.8	3.0	2.9 (0.3)	14.7 (1.5)
11	**M10**X1.5	5.0	30	3.8	3.0	9.8 (1.0)	49.0 (5.0)
12	**M12**X1.75	5.0	30	5.5	4.0	1.9 (0.2)	9.8 (1.0)
13	**M12**X1.75	5.0	30	5.5	4.0	9.8 (1.0)	49.0 (5.0)

Order : **PS1.** Serial -M

Material : Bushing 1.7220
Pin : 1.1273 / HRC 36-40

SPRING EJECTORS PS2

Serial	M Thread	k mm	L mm	b mm	d Ø	SW	Initial Force N (Kgf)	Final Force N (Kgf)
14	**M12**X1.75	10	43	35	5.5	4	3.9 (0.4)	19.6 (2)
15	**M12**X1.75	10	43	35	5.5	4	6.8 (0.7)	39.2 (4)
16	**M16**X2.0	10	50	35	8	5	9.8 (1)	49.0 (5)
17	**M16**X2.0	10	50	35	8	5	19.6 (2)	98.0 (10)
18	**M16**X2.0	10	60	35	8	5	12.7 (1.3)	39.2 (4)
19	**M16**X2.0	10	60	35	8	5	26.4 (2.7)	78.4 (8)
20	**M16**X2.0	15	60	35	8	5	9.8 (1)	39.2 (4)
21	**M16**X2.0	15	60	35	8	5	14.7 (1.5)	78.4 (8)
22	**M16**X2.0	20	60	35	8	5	12.7 (1.3)	39.2 (4)
23	**M16**X2.0	20	85	35	8	5	16.6 (1.7)	78.4 (8)
24	**M16**X2.0	30	125	35	8	5	17.6 (1.8)	39.2 (4)
25	**M16**X2.0	30	125	35	8	5	19.6 (2)	78.4 (8)
26	**M16**X2.0	50	155	35	8	8	19.6 (2)	49.0 (5)
27	**M16**X2.0	50	155	35	8	5	29.4 (3)	98.0 (10)
28	**M24**X3.0	15	60	45	10	8	19.6 (2)	98.0 (10)
29	**M24**X3.0	15	60	45	10	8	39.2 (4)	196.1 (20)
30	**M30**X3.5	20	70	45	15	12	29.4 (3)	147.0 (15)
31	**M30**X3.5	20	70	45	15	12	49.0 (5)	294.1 (30)

Order : **PS2.** Serial -M



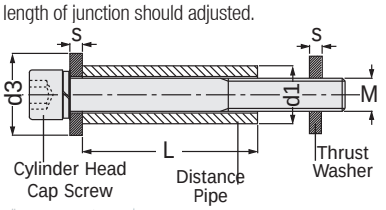
G.71

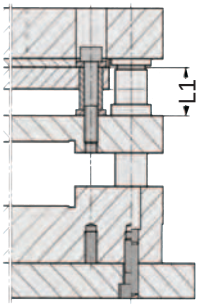
INTERMEDIATE DISTANCE SAFETY BOLT

Installation of press mould springs and inter support

Assembly of spring and gap unit :

Guide Screw Plugs are grinded equally after mounted to punch holder. When punch are grinded, for loosing distance pipe as 1 mm, the length of junction should adjusted.





Mounting Example press progressive mould intermediate safety bolt

Note :
This product is with O Ring and O-Ring should be removed before mounting.

G.71

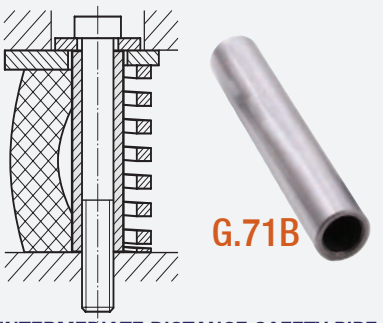
INTERMEDIATE DISTANCE SAFETY BOLT

d1	L1	d3	L	s	M
13	33	18	29	4	M8 x50
	43		39		M8 x60
	53		49		M8 x70
	63		59		M8 x80
	73		69		M8 x90
15	33	20	29	4	M10 x60
	43		39		M10 x70
	53		49		M10 x80
	63		59		M10 x90
	73		69		M10 x100

Complete Product: Mounting can be adjusted with installation at general press and injection moulds.

Order : G.71 d1 x L1

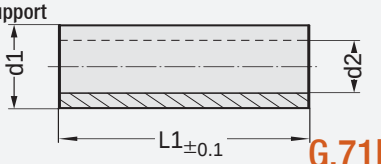
Material Pipe :1.7131
Hardness : 58±2 HRC



G.71B

INTERMEDIATE DISTANCE SAFETY PIPE

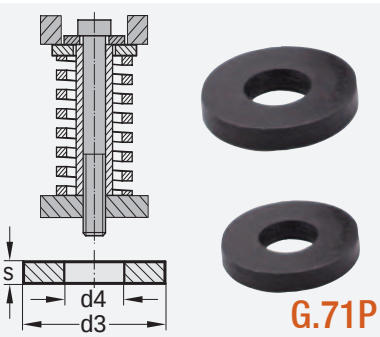
Installation of press mould springs and inter support



G.71B

INTERMEDIATE DISTANCE SAFETY BOLT

Order	d1	L1	d2
G.71B.1329	13	29	8.2
G.71B.1339		39	8.2
G.71B.1349		49	8.2
G.71B.1359		59	8.2
G.71B.1369		69	8.2
G.71B.1529	15	29	10.2
G.71B.1539		39	10.2
G.71B.1549		49	10.2
G.71B.1559		59	10.2
G.71B.1569		69	10.2

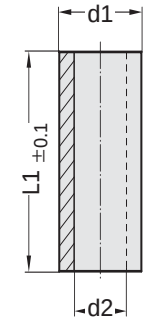


G.71P

INTERMEDIATE DISTANCE SAFETY BOLT

Installation of press mould springs and inter support

Order	d3	d4	s
G.71P.18	18	8.4	4
G.71P.20	20	10.5	4

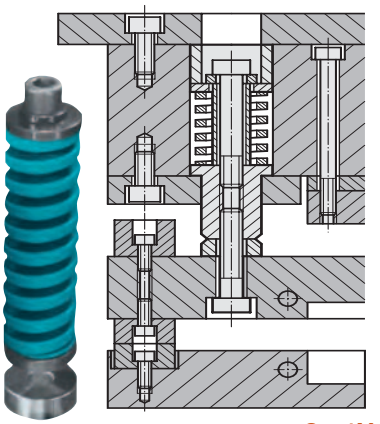




G.71Y

SPRING AND GAP DISTANCE PIPE

Assembly of spring and gap unit



SPRING AND GAP DISTANCE PIPE G.71Y

d1	L1	d2
10 Ø 20 Spring	20	6.5
	25	
	30	
	32	
	40	
	50	
	63	
	80	
	100	
12 Ø 25 Spring	20	8.5
	25	
	30	
	40	
	50	
	63	
	80	
	100	
	125	
	140	
16 Ø 32 Spring	30	11
	40	
	50	
	63	
	80	
	100	
	125	
	140	
	160	

d1	L1	d2
20 Ø 40 Spring	30	13
	40	
	50	
	63	
	80	
	100	
	125	
	140	
	160	
	200	
25 Ø 50 Spring	40	17
	50	
	63	
	80	
	100	
	125	
	140	
	160	
	200	
	250	
38 Ø 63 Spring	63	25
	80	
	100	
	125	
	140	
	160	
	200	
	250	

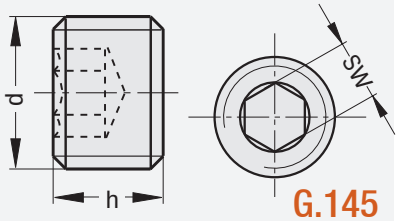
Order : G.71Y d1 x L1

Material :1.7131
Hardness : 58±2 HRC



SPRING COMPRESSOR SET SCREW

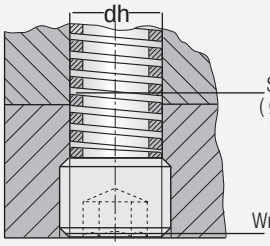
Adjustable Spring GUIDE SCREW (Ø10~40 mm)



G.145

These set screws can be used as adjustable spring stoppers.

From Ø 10 mm up to 40 mm. They are available at our stock for all standard steel springs. Spring tension can be adjusted from bottom plug (set screw) with allen without doing any dismantle process. Steel springs can be changed from bottom plug (set screw) slot without dismantling mould. To place spring, open hole should be created instead of blind hole.



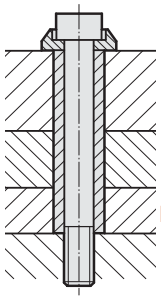
G.145

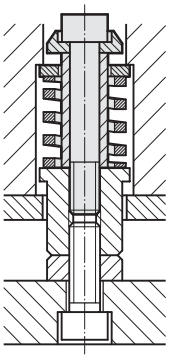
SPRING CLAMPING SCREW

d Thread	Spring Dia.	dh Slot	h Len.	SW Alien
M.12 x 1.5	**10**	10.5	10	6
M.14 x 1.5	**12.5**	12.5	10	6
M.18 x 1.5	**16**	16.5	10	8
M.22 x 1.5	**20**	20.5	10	8
M.28 x 1.5	**25**	26.5	12	10
M.35 x 1.5	**32**	33.5	12	10
M.42 x 1.5	**40**	40.5	12	10

Order : **G.145** x d

Material : 1.0503 (C 45)

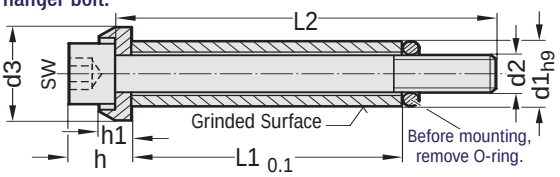




This product is an alternative of the hanger bolt.



SPRING FIXING /GUIDE SCREW G.146



Spring Fixing and Guide Screw Equipment: Due to that it has been grinded, it provides very precision length setting that can be adjusted. Different usage types can be created (Mounting Examples) Interval Tube (Pipe) Tensile Force: 1200 -1300 N / mm^2 Externa diameter is grinded at h9 tolerance. It is with Cylinder Head Cap Screw. Guide Screw equipment is supplied with O-ring, O-ring should be removed before mounting.

REFERENCE : PSA E 24.55 410.G

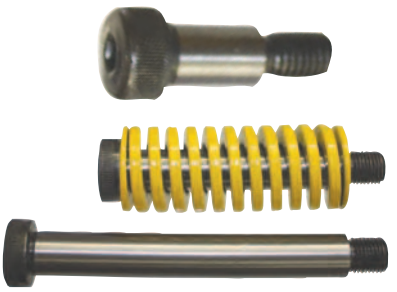
d1 Ø	d2 M	L1 mm	L2 mm	d3 Ø	h mm	h1 mm
15	**M.10**	70	90	23	15	7.5
		80	100			
		90	110			
		100	120			
		120	140			
17.5	**M.12**	40	60	27	18	9 SW 10 Alien
		45	65			
		50	70			
		55	80			
		60	90			
		70	100			
		80	110			
		90	120			
		100	130			
		110	140			
		120	150			
		140	180			
23	**M.16**	50	80	34	24	11 SW 14 Alien
		60	90			
		70	100			
		80	110			
		90	120			
		100	130			
		110	140			
		120	150			
		140	180			
		150	180			
		160	200			

Order : **G.146** .d2 x d1 x L1

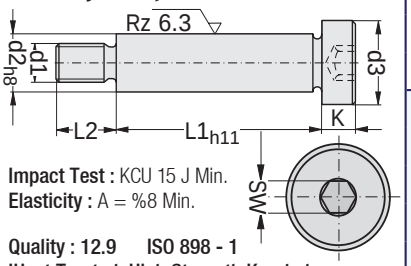
Material : Cylinder Head Cap Screw
Pipe : 1.7131 (58 HRC)

SPRING FIXING /GUIDE SCREW G.146

d1 Ø	d2 M	L1 mm	L2 mm	d3 Ø	h mm	h1 mm
10	**M.6**	20	35	15	10	5.5 SW 5 Alien
		25	40			
		30	45			
		35	50			
		40	55			
		45	60			
		50	65			
		55	70			
		60	80			
		70	90			
		80	100			
		90	110			
12.5	**M.8**	30	45	19	13	6.5 SW 6 Alien
		35	50			
		40	55			
		45	60			
		50	65			
		55	70			
		60	80			
		70	90			
		80	100			
		90	110			
		100	120			
15	**M.10**	30	50	23	15	7.5 SW 8 Alien
		35	55			
		40	60			
		45	65			
		50	70			
		55	75			
		60	80			



GUIDE SCREWS G.39
Locking Component



Impact Test : KCU 15 J Min.
Elasticity : A = %8 Min.

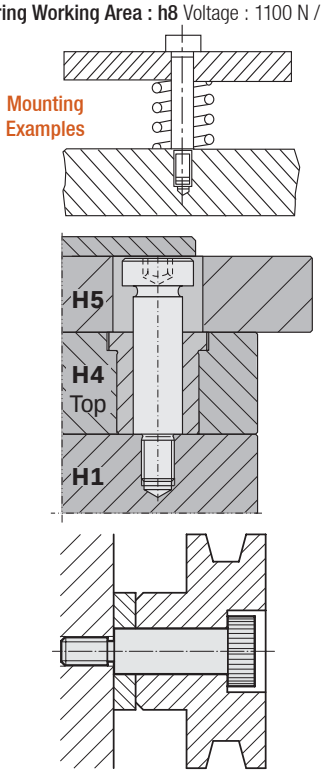
Quality : 12.9 **ISO 898 - 1**
IHeat Treated, High Strength Knurled Steel Head (Anti Slip)

IN SPRING USE (STEEL / POLIURETHANE SPRING)
For precise and secure placement, also suitable to setting position.

GUIDE SCREWS SHOULD BE USED.
Our production is available in desired dimensions / materials and lengths.

Spring Working Area : h8 Voltage : 1100 N / mm^2

Mounting Examples



LOCKING COMPONENT G.39

d2 Ø	L1 mm	d1 M	d3 Head	L2 mm	K Head	SW Alien
6	10	M5	10	9.5	4.5	3 Alien
	12					
	16					
	20					
	25					
	30					
	35					
	40					
	45					
	50					Tightening Torque **Nm** : 7
8	10	M6	13	11	5.5	4 Alien
	12					
	16					
	20					
	25					
	30					
	35					
	40					
	45					
	50					
	55					
	60					
	65					
	70					
	80					
	90					Tightening Torque **Nm** : 13
10	16	M8	16	13	7	5 Alien
	20					
	25					
	30					
	35					
	40					
	45					
	50					
	55					
	60					
	65					
	70					
	80					
	90					
	100					Tightening Torque **Nm** : 32

Order : G.39 d1 x d2 x L1

Material:1.7131 Steel
Hardness : 39 - 44 HRC

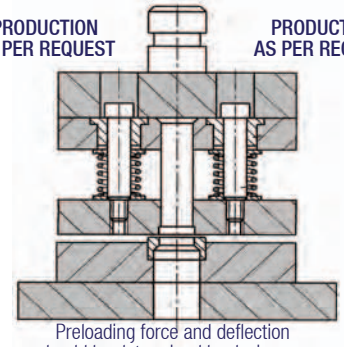
GUIDE SCREWS G.39

d2 Ø	L1 mm	d1 M	d3 Head	L2 mm	K Head	SW Alien
12	16	M10	18	16	8	6 Alien
	20					
	25					
	30					
	35					
	40					
	45					
	50					
	55					
	60					
	65					
	70					
	80					
	90					
	100					
	120					Tightening Torque **Nm** : 65
16	30	M12	24	18	11.0	8 Alien
	35					
	40					
	45					
	50					
	55					
	60					
	65					
	70					
	80					
	90					
	100					
	120					Tightening Torque **Nm** : 120
20	40	M16	30	22	14.0	10 Alien
	45					
	50					
	55					
	60					
	65					
	70					
	80					
	90					
	100					
	120					Tightening Torque **Nm** : 290
24	50	M20	36	27	16.0	12 Alien
	55					
	60					
	65					
	70					
	80					
	90					
	100					
	120					Tightening Torque **Nm** : 500





PRODUCTION AS PER REQUEST



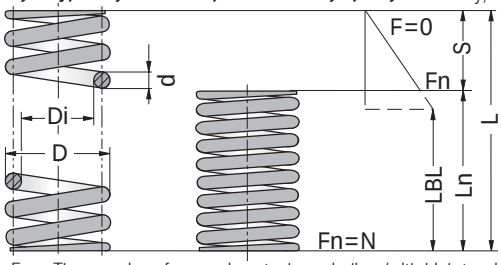
PRODUCTION AS PER REQUEST



YYH
ROUND WIRE STEEL SPRINGS

Light Type High Course Special Winding Springs

Preloading force and deflection should be determined by designers. Initially, 5 mm preloading should be applied.

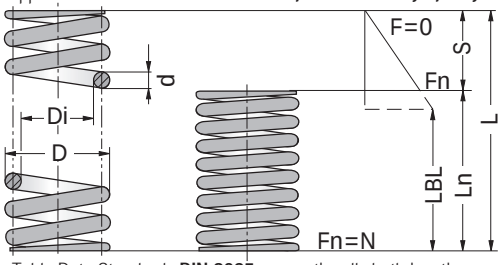


1 Newton = 0.102 Kg

D : Mean External Dia.
Di : Slot Dia.
d : Spring Wire Dia.
S : Total Compression
L : Free Length
Ln : Length at Load
LBL : Closed Spring
F : Force / Newton
Fn : Thrust Force

YYS
ROUND WIRE STEEL SPRINGS

Standard Performance Special Winding Springs



ForceThese springs from spring steel as winding /with high tension heat treated are used in Table Data Standards **DIN 2095m** or optionally both inactive and oscillatory loads. Optionally; they can be used in cases that are posed due to severe, hard impacts and vibrant load or when there are high expectations from spring life. Both types have flattened, forged coils and their surface are homogenized with shot blasting process.All springs are supplied as lubricated. Max. WorkingTemperature:200ºC. **All these springs can be produced in the desired lengths and diameters.**

Light Type High Course Special Winding Springs — YYH..

D	L	Di	d	S	Fn	Ln	LBL
10	**40**	7.0	1.5	18.9	148	21.1	18.0
12	**55**	9.0	1.5	30.0	103	25.0	22.0
14	**40**	10.0	2.0	19.1	243	20.9	18.0
14	**50**	10.0	2.0	24.0	228	26.0	23.0
15	**40**	11.0	2.0	19.5	221	20.5	16.0
15	**100**	11.0	2.0	58.5	245	41.5	39.0
17	**858**	12.5	2.25	41.0	265	44.0	32.0
17.5	**45**	11.5	3.0	13.0	422	32.0	30.0
17.5	**50**	11.5	3.0	15.0	434	35.0	33.0
18	**83**	10.0	4.0	18.0	1198	65.0	62.0
19	**35**	11.0	4.0	5.0	697	30.0	28.0
19	**90**	10.0	4.5	17.0	1669	73.0	70.0
19.5	**35**	14.5	2.5	14.0	186	21.0	19.0
19.5	**40**	13.5	3.0	14.0	398	36.0	24.0
20.5	**95**	15.5	2.5	54.0	262	41.0	39.0
21	**40**	13.0	4.0	11.0	1148	29.0	27.0
21.5	**45**	15.5	3.0	20.0	436	25.0	23.0
21.5	**50**	13.5	4.0	15.0	1099	35.0	32.0
22	**45**	16.0	3.0	21.7	387	23.3	19.5
22	**70**	16.0	3.0	29.4	387	40.6	28.5
22	**100**	16.0	3.0	38.7	387	61.3	40.5
23	**130**	16.0	3.5	43.4	579	86.6	59.5
23	**160**	16.0	3.5	54.6	579	105.4	73.3
23	**190**	16.0	3.5	64.8	579	125.2	86.0
24	**220**	16.0	4.0	62.4	765	157.6	112.0
24	**250**	16.0	4.0	71.6	765	178.4	128.0
25	**24**	17.0	4.0	7.0	790	17.0	16.0
27.8	**70**	13.8	7.0	8.0	3014	62.0	62.0
30	**70**	22.0	4.0	32.5	739	37.5	32.0
30	**150**	17.0	6.5	34.0	3142	116.0	107.0

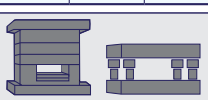
Production As Per Unit
Order : **YYH** .D x L
Delivery As per Order

Material: Spring Steel Hardened

Standard Performance Special Winding Springs — YYS..

D	L	Di	d	S	Fn	Ln	LBL
13	**55**	8.5	1.5	25.2	112	25.3	12
15	**50**	9.5	2.0	21.2	250	25	9.5
16	**40**	10.5	2.0	17	220	20	7.0
18	**85**	12	2.3	37.4	260	41	14
19	**50**	11	3.0	13.6	480	34	8.5
20.5	**90**	9	4.5	15	1714	72.4	4.0
21	**40**	12	3.0	11.9	450	26	5.5
22	**95**	14.5	2.5	41.5	200	46.2	17
23	**50**	12.5	4.0	13.3	1160	34.4	6.5
26.5	**24**	16	4.0	6.1	960	16.8	2.0
30	**70**	13	7.0	9.3	3750	59	8.0
32	**70**	21	4.0	28.9	822	36	6.0
34	**125**	19	6.0	27.2	2150	93	11.5
44	**130**	25	8.0	30.6	3895	94	10
48	**67**	25	10	7.6	5760	58	3.5
49	**50**	29	8.5	9.3	3707	39	2.5
58	**50**	39	8.0	11.9	2117	36	2.5
63	**180**	38	11	36.6	5203	137	10

Production As Per Unit
Order : **YYS** .D x L
Delivery As per Order





HIGH PERFORMANCE STEEL SPRINGS

Rectangular, ISO 10243 Mechanical Import Mould Springs

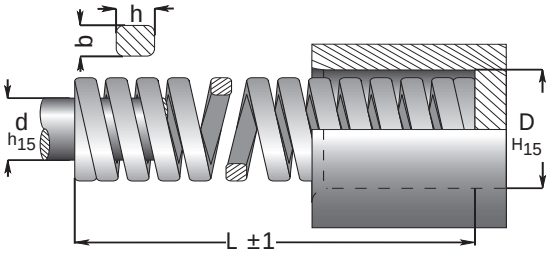
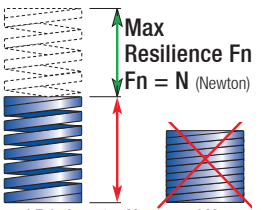


Table Values/Explanations of the Spring Pages

Spring Dimensions		Length	Load	Spring Capacity / Recommended Resilience - Criteria			
D	d	L	LOAD COEFFICIENT R (±10 %) Required load for 1.0 mm resilience	%..A Long Spring Life 3.000.000	%..B Maximum Resilience 1.500.000	%..C Minimum Resilience	%..D Full Resilience
b x h							
mm	mm	mm	N / mm	mm x N	mm x N	mm x N	mm x N



Code	Colour Series	Wire Section	Colour	Load	Max. Resilience	No
AY	Special Springs 		Light Green	Extra Light	50 % Length	Page: 139
Y	ISO 10243 		Green	Light	40 % Length	Page: 140
M	ISO 10243 		Blue	Me-dium	37.5 % Length	Page: 141
K	ISO 10243 		Red	Heavy	30 % Length	Page: 142
S	ISO 10243 		Yellow	Extra Heavy	25 % Length	Page: 143
G	Special Springs 		Silver	Ultra Heavy	15 % Length	Page: 144

TECHNICAL SPECIFICATIONS AND PRODUCTION CHARACTERISTICS

Research and development ongoing in parallel of Quality Assurance Procedures in compliance with ISO 9001, ensure high sensitivity, durability and reliability Criterias.

Continous improvement in special spring performance is monitored directly in the factory through comparative and destructive tests. The excellence of these products are verified with the increasing number of the customers selecting special springs in their moulds.

The following main characteristics show the superiority of special springs.

* Spring steel produced only in accordance with the special spring decriptions,
* Special profile /section usage to increase steel characteristics,
* Usage of special spring winding machine,
* Usage of special heat treatment developed by the special springs,
* Maximum care showing grinding and closing of spring ends in order to guaranty optimum vertical and parallel acceleration,
* All springs are coil shaped in order to guaranty significiant decrease of load losses in working conditions,
* Special remoulding stroke methods in order to increase resistance against metal abrasion.
* Special pretreatment and powder coating applications of special springs in order to ensure the best protection, preservation and completion,
* Intensive control performed during production and final stage in order to quaranty dimensional compliance and sensitivity,

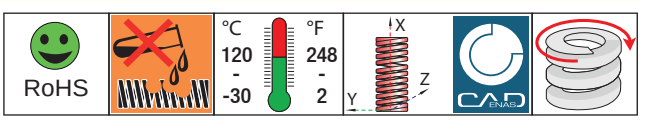
Spring Load Coefficient Tolerances - Nominal Rate at All Springs + 10%.

Force = Resilience (A.B.C.D) x Load Coefficient (R): Load x Newton / Kg.
1 Newton = 0.102 Kg.

Minimum Working Life Showed with Spring Usage:

* Select springs carefully during the design stage,
* Guide springs having free length and exceeding 3,5 diameter rate with guide pin,
* Ensure support and perpendicularity of springs to the printing area,
* If possible, use long springs at lower loadings (Preloading should be increased properly),
* Apply minimum preloading of 5% of the free length.
* Never apply thrust to the springs over maximum course,
* In case that mould components are reprocessed, check the installed length and working length of springs. Normally, after resprocessing, spring thrust rate will be increased after reprocessing.
* Protects springs from abrasive activities.
* Don't exceed 250º C working temperature, while increasing to 120º C, significiant loading decrease is not seen, at each 40º C over this temperature, 1% loss should be considered.
* Don't change a spring at a time, instead of this, use programmed maintenance procedure that all springs can be changed at the same time.
* Don't change physical characteristics of springs. (Cutting- Internal or external bending) If the above conditions are not followed , minimum life time will be decreased in the shortest time. When used properly, as stated by all the users of special springs, performance levels over minimum lifetime value specified in graphics are reached.

External diameter of spring, is smalller than slot diameter. Slot diameter should be greater. Internal diameter of spring is greater than pin diamater, pin diameter should be smaller. **In usage of precision mechanical spring; GUIDE SCREWS should be used.**



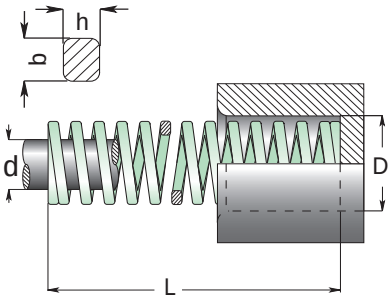






PERFORMANCE STEEL SPRING

Rectangular, Import Mould Springs



LIGHT GREEN SPRING - AY

Extra Light Load

Especially suitable to Injection Mould Systems Extra Light Load Serial Rectangular Mechanic Springs 10243

Long Life usage of Steel Springs: It depends on the quality of spring material, working conditions and design conditions that are used.
Don't forget! The cheapest spring is the one selected properly.
In all applications using springs, preloading and compression rates specified for long life usage should be adhered. Appropriate tension values can be found at the loading value table and tension/ spring life table.

By multiplying spring coefficient (R) with compression amount (mm) simply, spring force value is reached. (N) Example: R x (A.B.C.D) x

1 Newton = 0.102 Kg.

For long life usage, shear stress on the basis of oscillation should be maximum 800 N /mm^2. 400 N /mm^2 of this value will be used by the stress variation on the basis of spring oscillation.

Order :
AYY (Light Green Spring) **.D x L**

Usage: It is compatible with extra light load spring and especially injection mould systems and equipment designs.

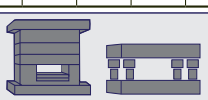
Rectangular Springs Extra Light Load

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 30	B Min. Clamping % 40	C Max. Clamping % 50	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
20	10	25	29.4	7.5	10	12.5	13.9
		32	22.6	9.6	12.8	16	18.2
		38	18.6	11.4	15.2	19	22
		44	15.7	13.2	17.6	22	25.8
		51	13.7	15.3	20.4	25.5	30.3
		64	11.3	19.2	25.6	32	38.9
		76	9.8	22.8	30.4	38	47
		89	8.3	26.7	35.6	44.5	55.7
		102	7.4	30.6	40.8	51	64.2
		115	6.4	34.5	46	57.5	72.9
		127	5.9	38.1	50.8	63.5	80.7
		139	5.4	41.7	55.6	69.5	88.4
		152	4.9	45.6	60.8	76	96.7
4.3x1.7		305	2.5	91.5	122	153	196.3
25	12.5	25	53.9	7.5	10	12.5	12.9
		32	42.2	9.6	12.8	16	17.2
		38	35.8	11.4	15.2	19	20.7
		44	31.4	13.2	17.6	22	24.4
		51	27.0	15.3	20.4	25.5	28.5
		64	21.6	19.2	25.6	32	36.5
		76	18.1	22.8	30.4	38	43.9
		89	15.2	26.7	35.6	44.5	51.4
		102	13.2	30.6	40.8	51	59.3
		115	11.8	34.5	46	57.5	67.2
		127	10.6	38.1	50.8	63.5	74.4
		139	9.6	41.7	55.6	69.5	81.6
		152	8.8	45.6	60.8	76	89.5
		178	7.6	53.4	71.2	89	105.4
		203	6.7	60.9	81.2	101.5	120.7
5.4x2.2		305	4.4	91.5	122.0	152.5	182.4

LIGHT GREEN SPRING - AY

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 30	B Min. Clamping % 40	C Max. Clamping % 50	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
32	16	38	43.1	11.4	15.2	19	19.9
		44	37.3	13.2	17.6	22	23.5
		51	32.4	15.3	20.4	25.5	27.6
		64	25.5	19.2	25.6	32	35.2
		76	21.6	22.8	30.4	38	42.4
		89	18.1	26.7	35.6	44.5	50.0
		102	15.7	30.6	40.8	51.0	57.6
		115	14.2	34.5	46.0	57.5	65.5
		127	12.7	38.1	50.8	63.5	72.5
		139	11.6	41.7	55.6	69.5	79.4
		152	10.6	45.6	60.8	76	87.3
		178	9.0	53.4	71.2	89	102.9
		203	7.8	60.9	81.2	101.5	117.7
		254	6.4	76.2	101.6	127.0	148.1
6.5x2.6		305	5.3	91.5	122.0	152.5	178.3
40	20	51	48.1	15.3	20.4	25.5	28.0
		64	39.2	19.2	25.6	32	36.2
		76	33.3	22.8	30.4	38	43.7
		89	28.4	26.7	35.6	44.5	51.7
		102	24.5	30.6	40.8	51.0	59.8
		115	22.1	34.5	46.0	57.5	67.9
		127	19.6	38.1	50.8	63.5	75.2
		139	17.7	41.7	55.6	69.5	82.4
		152	16.2	45.6	60.8	76	90.6
		178	13.7	53.4	71.2	89	106.5
		203	12.3	60.9	81.2	101.5	122.2
		254	9.8	76.2	101.6	127	153.6
8.0x3.4		305	8.3	91.5	122.0	152.5	185.4
50	25	64	86.3	19.2	25.6	32	35.1
		76	70.6	22.8	30.4	38	42.2
		89	59.8	26.7	35.6	44.5	50.3
		102	52	30.6	40.8	51	58.4
		115	46.1	34.5	46	57.5	66.1
		127	42.2	38.1	50.8	63.5	73.8
		139	38.2	41.7	55.6	69.5	80.9
		152	34.3	45.6	60.8	76	89
		178	29.4	53.4	71.2	89	105
		203	25.5	60.9	81.2	101.5	121
		254	20.6	76.2	101.6	127	152
10.5x4.1		305	17.2	91.5	122.0	152.5	184

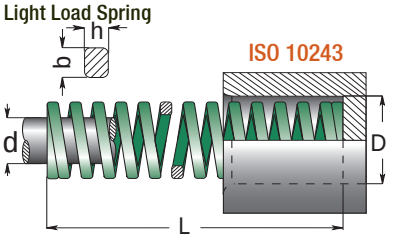
Technical Information! Page 138





PERFORMANCE STEEL SPRING
GREEN SPRING-Y

Light Load Spring



ISO 10243

By multiplying spring coefficient (R) with compression amount (mm) simply the spring force value is reached. (N) Example: R x (A.B.C.D) x

1 Newton = 0.102 Kg.

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 25	B Min. Clamping % 30	C Max. Clamping % 40	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
10	5	25	10	6.3	7.5	10	13.5
		32	8.5	8.0	9.6	12.8	17.5
		38	6.8	9.5	11.4	15.2	20.8
		44	6.0	11	13.2	17.6	23.9
		51	5.0	12.8	15.3	20.4	28.9
		64	4.3	16	19.2	25.6	36.1
		76	3.2	19	22.8	30.4	43.2
1.7x1.1		305	1.1	76.3	91.5	122	178
13	6.3	25	17.9	6.3	7.5	10	13.2
		32	16.4	8.0	9.6	12.8	18
		38	13.6	9.5	11.4	15.2	21
		44	12.1	11	13.2	17.6	24
		51	11.4	12.8	15.3	20.4	28.7
		64	9.3	16	19.2	25.6	35.8
		76	7.1	19	22.8	30.4	42.7
		89	5.4	22	26.7	35.6	50.4
		102	4.1	25	30.6	40.8	58.4
2.4x1.4		305	1.4	76.3	91.5	122	172

Order :
YY(Green Spring) **.D x L**

Usage: It is compatible with light load spring and especially injection mould systems and equipment designs.



Technical Information! Page 138

Rectangular, Import Mould Spring, Light Load Spring GREEN SPRING-Y

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 25	B Min. Clamping % 30	C Max. Clamping % 40	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
16	8	25	23.4	6.3	7.5	10	12.6
		32	22.9	8.0	9.6	12.8	16.4
		38	19.3	9.5	11.4	15.2	19.7
		44	17.1	11	13.2	17.6	22.5
		51	15.7	12.8	15.3	20.4	26.3
		64	10.7	16	19.2	25.6	33.3
		76	10	19	22.8	30.4	40.2
		89	8.6	22.3	26.7	35.6	47.6
		102	7.8	25.5	30.6	40.8	55.4
		115	6.6	28.8	34.5	46	60.8
3.2x1.5		305	2.5	76.3	91.5	122	165
20	10	25	55.8	6.3	7.5	10	12.1
		32	45	8.0	9.6	12.8	15.3
		38	33.3	9.5	11.4	15.2	18.9
		44	30	11	13.2	17.6	21.5
		51	24.5	12.8	15.3	20.4	25
		64	20	16	19.2	25.6	31.1
		76	16	19	22.8	30.4	37.3
		89	14	22.3	26.7	35.6	44.5
		102	12	25.5	30.6	40.8	51.1
		115	10.9	28.8	34.5	46	58.2
		127	9.5	31.8	38.1	50.8	64.9
		139	8.4	35	42	56	71.5
		152	7.5	38	45.6	60.8	78.8
4 x 2.1		305	4.0	76.3	91.5	122	157
25	12.5	25	100	6.3	7.5	10	11.9
		32	80.3	8.0	9.6	12.8	16
		38	62	9.5	11.4	15.2	18.3
		44	52.9	11	13.2	17.6	21.4
		51	44	12.8	15.3	20.4	24.9
		64	35.2	16	19.2	25.6	31.4
		76	28	19	22.8	30.4	37.5
		89	24	22.3	26.7	35.6	43.5
		102	21.1	25.5	30.6	40.8	51.1
		115	18.7	28.8	34.5	46	58.1
		127	16.7	31.8	38.1	50.8	64.1
		139	15.3	35	42	56	70.4
		152	14	38	45.6	60.8	77.1
		178	12.5	44.5	53.4	71.2	93.1
		203	10.4	50.8	60.9	81.2	130
5.4x2.7		305	7.0	76.3	91.5	122	156
32	16	38	94	9.5	11.4	15.2	18.3
		44	79.5	11	13.2	17.6	21.5
		51	67	12.8	15.3	20.4	25.5
		64	53	16	19.2	25.6	31.9

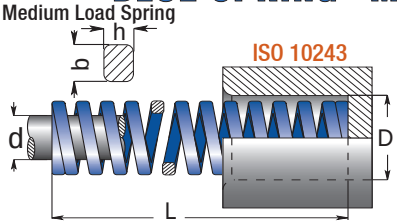
D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 25	B Min. Clamping % 30	C Max. Clamping % 40	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
32	16	76	44	19	22.8	30.4	38.6
		89	37.2	22.3	26.7	35.6	46.5
		102	32	25.5	30.6	40.8	53.2
		115	29	28.8	34.5	46	60
		127	25	31.8	38.1	50	66.7
		139	23	35	42	56	71.8
		152	21.5	38	45.6	60.8	78.5
		178	18.2	44.5	53.4	71.2	94.4
		203	15.8	50.8	60.9	81.2	107
		254	12.5	63.5	76.2	102	136
6.8x3.3		305	10.3	76.3	91.5	122	162
40	20	51	92	12.8	15.3	20.4	25.5
		64	73	16	19.2	25.6	31.4
		76	63	19	22.8	30.4	37.8
		89	51	22.3	26.7	35.6	44.3
		102	43	25.5	30.6	40.8	50.7
		115	39.6	28.8	34.5	46	58.1
		127	37	31.8	38.1	50.8	64.6
		139	32	35	42	56	70.1
		152	28	38	45.6	60.8	76.6
		178	25.2	44.5	53.4	71.2	90.4
		203	22.7	50.8	60.9	81.2	102
		254	17	63.5	76.2	102	128
8.1x4		305	14.8	76.3	91.5	122	156
50	25	64	156	16	19.2	25.6	31
		76	125	19	22.8	30.4	37.2
		89	109	22.3	26.7	35.6	43.6
		102	94	25.5	30.6	40.8	50.3
		115	81	28.8	34.5	46	58.1
		127	71	31.8	38.1	50.8	63.7
		139	66.5	35	42	56	69.5
		152	60	38	45.6	60.8	76.5
		178	52	44.5	53.4	71.2	91.9
		203	44	50.8	60.9	81.2	104
		254	35	63.5	76.2	102	130
11x5.3		305	28.5	76.3	91.5	122	155
63	38	76	189	19	22.8	30.4	35.6
		89	158	22.3	26.7	35.6	43.4
		102	131	25.5	30.6	40.8	49.7
		115	116	28.8	34.5	46	55.6
		127	103	31.8	38.1	50.8	62.7
		152	84.3	38	45.6	60	77.1
		178	71.5	44.5	53.4	71.2	92.2
		203	61.7	50.8	60.9	81.2	103
		254	47	63.5	76.2	102	130
11x7.8		305	38.2	76.3	91.5	122	157



SPECIAL SPRINGS

PERFORMANCE STEEL SPRINGS
BLUE SPRING--M

Medium Load Spring



By multiplying spring coefficient (R) with compression amount (mm) simply the spring force value is reached. **(N)** Example: R x (A.B.C.D) x

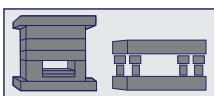
1 Newton = 0.102 Kg.

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 25	B Min. Clamping % 30	C Max. Clamping % 38	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
10	5	25	16	6.3	7.5	9.4	10.2
		32	13	8.0	9.6	12	14.2
		38	11.9	9.5	11.4	14.3	16.8
		44	10.3	11	13.2	16.5	19.4
		51	8.9	12.8	15.3	19.1	23.4
		64	7.5	16	19.2	24	28.2
		76	5.3	19	22.8	28.5	34.2
1.9X1.3		305	1.6	76.3	91.5	114.4	134
13	6.3	25	30	6.3	7.5	9.4	11.9
		32	24.8	8.0	9.6	12	16.2
		38	21.4	9.5	11.4	14.3	18.7
		44	18.5	11	13.2	16.5	21.3
		51	15.5	12.8	15.3	19.1	25.6
		64	12.1	16	19.2	24	32.4
		76	10.2	19	22.8	28.5	39
		89	8.4	22.3	26.7	33.4	45.9
		102	6.3	25.5	30.6	38.3	52.3
2.5X1.5		305	2.1	76.3	91.5	114.4	152.5
16	8	25	49.4	6.3	7.5	9.4	10.5
		32	37.1	8.0	9.6	12	13.2
		38	33.9	9.5	11.4	14.3	17.2
		44	30	11	13.2	16.5	19.4
		51	26.4	12.8	15.3	19.1	24.2
		64	20.5	16	19.2	24	29.2
3.2x2.0		76	17.8	19	22.8	28.5	36.3
16	8	89	15.2	22.3	26.7	33.4	41.7
		102	13.5	25.5	30.6	38.3	48.9
		115	11.8	28.8	34.5	43.1	53.1
3.2x2.0		305	4.8	76.3	91.5	114.4	141.6
20	10	25	98	6.3	7.5	9.4	10.5
		32	72.6	8.0	9.6	12	13.9
		38	56	9.5	11.4	14.3	16.6
		44	47.5	11	13.2	16.5	18.8
		51	41.7	12.8	15.3	19.1	23.1
		64	32.3	16	19.2	24	27.5
		76	25.1	19	22.8	28.5	33.8
		89	22	22.3	26.7	33.4	39.7
		102	19.8	25.5	30.6	38.3	47.3
		115	18.1	28.8	34.5	43.1	52.5
		127	16.6	31.8	38.1	47.6	56.9
		139	15.1	35	42	52.5	62.1
		152	13.2	38	45.6	57	67.6
4.1X2.4		305	6.1	76.3	91.5	114.4	143.4
25	12.5	25	147	6.3	7.5	9.4	10.2
		32	118	8.0	9.6	12	13.7
		38	93	9.5	11.4	14.3	15.7
		44	80.8	11	13.2	16.5	18.2
		51	68.6	12.8	15.3	19.1	21.7
		64	53	16	19.2	24	26
		76	43.2	19	22.8	28.5	32.3
		89	38.2	22.3	26.7	33.4	38
		102	33	25.5	30.6	38.3	43
		115	28	28.8	34.5	43.1	48.6
		127	25.9	31.8	38.1	47.6	53.7
		139	23.2	35	42	52.5	59.4
		152	20.8	38	45.6	57	63.8
		178	17.8	44.5	53.4	66.8	76.6
		203	15.8	50.8	60.9	76.1	88.4
5.4x3.3		305	10.2	76.3	91.5	114.4	135.1
32	16	38	185	9.5	11.4	14.3	16.3
		44	158	11	13.2	16.5	18.9
		51	134	12.8	15.3	19.1	23.1
		64	99	16	19.2	24	28.5
		76	80.5	19	22.8	28.5	34.2
		89	69.1	22.3	26.7	33.4	40.4
		102	58.8	25.5	30.6	38.3	48
		115	51.5	28.8	34.5	43.1	54.3
6.8x4.0		127	44.8	31.8	38.1	47.6	59.2
32	16	139	42.3	35	42	52.5	65.3
		152	37.8	38	45.6	57	73
		178	32.5	44.5	53.4	66.8	84.5
		203	28.9	50.8	60.9	76.1	96.9
		254	21.4	63.5	76.2	95.3	120.9
6.8x4.0		305	18.3	76.3	91.5	114.4	146.9
40	20	51	181.6	12.8	15.3	19.1	21.4
		64	140	16	19.2	24	26.8
		76	108	19	22.8	28.5	32.7
		89	90.7	22.3	26.7	33.4	39
		102	81	25.5	30.6	38.3	44.1
		115	71.8	28.8	34.5	43.1	50.6
		127	62.7	31.8	38.1	47.6	55.9
		139	57.5	35	42	52.5	61.8
		152	51.6	38	45.6	57	67.5
		178	44.1	44.5	53.4	66.8	77.2
		203	36.7	50.8	60.9	76.1	91.8
		254	30.1	63.5	76.2	95.3	112.7
8.2X4.7		305	24.6	76.3	91.5	114.4	138.1
50	25	64	209	16	19.2	24	28.2
		76	168	19	22.8	28.5	34.9
		89	140	22.3	26.7	33.4	39.2
		102	119	25.5	30.6	38.3	47.3
		115	106	28.8	34.5	43.1	52.6
		127	97	31.8	38.1	47.6	59.8
		139	87	35.0	42	52.5	65.1
		152	80	38.0	45.6	57	70.8
		178	69.5	44.5	53.4	66.8	84.2
		203	59.8	50.8	60.9	76.1	96.5
		229	50.9	57.3	68.7	85.9	108
		254	43.9	63.5	76.2	95.3	121
11x5.8		305	38.6	76.3	91.5	114.4	146
63	38	76	312	19	22.8	28.5	30.7
		89	260	22.3	26.7	33.4	36.5
		102	221	25.5	30.6	38.3	43.6
		115	187	28.8	34.5	43.1	48.9
		127	168	31.8	38.1	47.6	54.2
		152	136	38	45.6	57	65.7
		178	114	44.5	53.4	66.8	76.5
		203	100	50.8	60.9	76.1	88
		229	89.2	57.3	68.7	85.9	104
		254	78.4	63.5	76.2	95.3	112
11.5x9.1		305	64.7	76.3	91.5	114	134

Order : **MY** (Blue Spring) .D x L

Usage: It is compatible with medium heavy load spring and especially injection mould systems and equipment designs.

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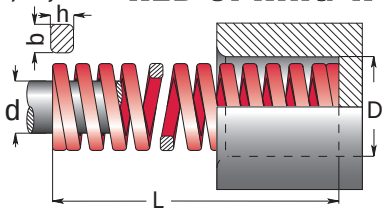




PERFORMANCE STEEL SPRINGS

Heavy Load Spring

RED SPRING-K



By multiplying spring coefficient (R) with compression amount simply, (mm) the spring force value is reached. (N) Example: R x (A.B.C.D) x

1 Newton = 0.102 Kg.

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 20	B Min. Clamping % 25	C Max. Clamping % 30	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
10	5	25	22.1	5.0	6.3	7.5	9.2
		32	17.5	6.4	8.0	9.6	12.1
		38	17.1	7.6	9.5	11.4	13.2
		44	15	8.8	11	13.2	15.1
		51	12.8	10.2	12.8	15.3	19.5
		64	10.7	12.8	16	19.2	21.8
		76	7.5	15.2	19	22.8	27.9
1.9x1.5		305	2.1	61	76.3	91.5	127
13	6.3	25	42.1	5.0	6.3	7.5	9.8
		32	33.2	6.4	8.0	9.6	13.6
		38	29.3	7.6	9.5	11.4	14.6
		44	24.6	8.8	11	13.2	18.1
		51	19.6	10.2	12.8	15.3	22.3
		64	15	12.8	16	19.2	27.3
		76	13.2	15.2	19	22.8	33.1
		89	11.4	17.8	22.3	26.7	38.9
		102	8.4	20.4	25.5	30.6	43.8
2.4x1.9		305	2.8	61	76.3	91.5	139

Order :

KY (Red Spring) .D x L

Usage: It is compatible with heavy load spring and especially with injection mould systems and equipment designs of machine production



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Rectangular, Import Mould Spring Heavy Load Spring RED SPRING-K

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 20	B Min. Clamping % 25	C Max. Clamping % 30	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
16	8	25	75.7	5.0	6.3	7.5	8.4
		32	52.8	6.4	8.0	9.6	10.5
		38	48.5	7.6	9.5	11.4	13.6
		44	42.8	8.8	11	13.2	15.9
		51	37.1	10.2	12.8	15.3	18.9
		64	30.3	12.8	16	19.2	24.9
		76	25.7	15.2	19	22.8	29.2
		89	21.7	17.8	22.3	26.7	34.5
		102	19.3	20.4	25.5	30.6	39.1
		115	15.7	23	28.8	34.5	44
3.1x2.5		305	7.1	61	76.3	91.5	103
20	10	25	216	5.0	6.3	7.5	8.3
		32	168	6.4	8.0	9.6	10.9
		38	129	7.6	9.5	11.4	12.5
		44	112	8.8	11	13.2	15
		51	94	10.2	12.8	15.3	17.6
		64	72.1	12.8	16	19.2	22.6
		76	59.7	15.2	19	22.8	27.6
		89	50.5	17.8	22.3	26.7	31.7
		102	44.2	20.4	25.5	30.6	37.5
		115	38.4	23	28.8	34.5	42.6
		127	34.1	25.4	31.8	38.1	45.5
		139	31	28	35	42	50.1
		152	28.2	30.4	38	45.6	55.8
4 x 3.3		305	15	61	76.3	91.5	114
25	12.5	25	375	5.0	6.3	7.5	8.5
		32	297	6.4	8.0	9.6	11
		38	291	7.6	9.5	11.4	12.6
		44	187	8.8	11	13.2	14.8
		51	156	10.2	12.8	15.3	17.9
		64	123	12.8	16	19.2	23.1
		76	99	15.2	19	22.8	26.3
		89	84	17.8	22.3	26.7	30.5
		102	73	20.4	25.5	30.6	37.3
		115	65	23	28.8	34.5	41.9
		127	57.7	25.4	31.8	38.1	46.2
		139	52.7	28	35	42	49.3
		152	47.8	30.4	38	45.6	55.7
		178	41	35.6	44.5	53.4	65.1
		203	35.8	40.6	50.8	60.9	74.5
5.5x4.2		305	22.9	61	76.3	91.5	110
32	16	38	388	7.6	9.5	11.4	12.5
		44	324	8.8	11	13.2	14.9
		51	272	10.2	12.8	15.3	17.8
7.1x5.4		64	212	12.8	16	19.2	22.4

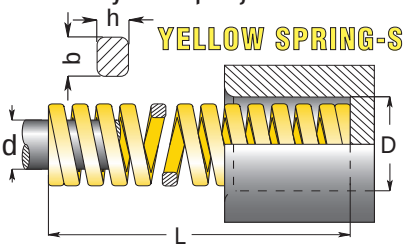
D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 20	B Min. Clamping % 25	C Max. Clamping % 30	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
32	16	76	172	15.2	19	22.8	26.1
		89	141	17.8	22.3	26.7	30.8
		102	122	20.4	25.5	30.6	36.8
		115	107	23	28.8	34.5	41.4
		127	93	25.4	31.8	38.1	44.4
		139	86	28	35	42	48.5
		152	78	30.4	38	45.6	54.8
		178	67.2	35.6	44.5	53.4	63.6
		203	59.1	40.6	50.8	60.9	72.5
		254	46.4	50.8	63.5	76.2	92.8
7.1x5.4		305	38	61	76.3	91.5	112
40	20	51	350	10.2	12.8	15.3	17
		64	269	12.8	16	19.2	21.9
		76	291	15.2	19	22.8	26.7
		89	190	17.8	22.3	26.7	31.3
		102	163	20.4	25.5	30.6	37.1
		115	142	23	28.8	34.5	41
		127	128	25.4	31.8	38.1	46.5
		139	115	28	35	42	53.1
		152	105	30.4	38	45.6	56.1
		178	89	35.6	44.5	53.4	67.4
		203	77	40.6	50.8	60.9	76.2
		254	61	50.8	63.5	76.2	96.2
8.4x6.2		305	51	61	76.3	91.5	115
50	25	64	413	12.8	16	19.2	22.4
		76	339	15.2	19	22.8	26.5
		89	288	17.8	22.3	26.7	31.5
		102	245	20.4	25.5	30.6	37.6
		115	215	23	28.8	34.5	42.7
		127	192	25.4	31.8	38.1	47.5
		139	168	28	35	42	51.8
		152	154	30.4	38	45.6	57.8
		178	134	35.6	44.5	53.4	68.5
		203	117	40.6	50.8	60.9	77.6
		254	89	50.8	63.5	76.2	97.9
11x7.6		305	73	61	76.3	91.5	121
63	38	76	618	15.2	19	22.8	24.7
		89	515	17.8	22.3	26.7	30
		102	438	20.4	25.5	30.6	35.1
		115	370	23	28.8	34.5	37.5
		127	333	25.4	31.8	38.1	45.9
		152	269	30.4	38	45.6	56.5
		178	226	35.6	44.5	53.4	66.8
		203	198	40.6	50.8	60.9	78.8
		254	155	50.8	63.5	76.2	102
11.6x12.3		305	128	61	76.3	91.5	122



SPECIAL SPRINGS

PERFORMANCE STEEL SPRINGS

Extra Heavy Load Spring



By multiplying spring coefficient (R) with compression amount simply (mm) spring force value is reached.(N) Example: R x (A.B.C.D) x 1 Newton = 0.102 Kg.

Rectangular, Import Mould Spring Extra Heavy Load Spring YELLOW SPRING-S

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 17	B Min. Clamping % 20	C Max. Clamping % 25	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
10	5	25	36.8	4.3	5.0	6.3	7.7
		32	27.9	5.4	6.4	8.0	10.6
		38	23.7	6.5	7.6	9.5	12.6
		44	19.2	7.5	8.8	11	13.8
		51	16.5	8.7	10.2	12.8	16.2
		64	13.2	10.9	12.8	16	20.4
		76	10.9	12.9	15.2	19	25.2
1.9X1.6		305	2.6	51.9	61	76.3	110.8
13	6.3	25	58.5	4.3	5.0	6.3	8.1
		32	43.9	5.4	6.4	8.0	9.9
		38	36	6.5	7.6	9.5	12.9
		44	30.3	7.5	8.8	11	14.1
		51	26.2	8.7	10.2	12.8	17.4
		64	21.2	10.9	12.8	16	21
		76	17.1	12.9	15.2	19	26.4
		89	14.5	15.1	17.8	22.3	31.5
		102	12.7	17.3	20.4	25.5	36
2.6X2.0		305	4.3	51.9	61.0	76.3	111.3
16	8	25	1148	4.3	5.0	6.3	8.5
		32	89	5.4	5.4	8.0	11
		38	72.1	6.5	7.6	9.5	13.2
		44	60.9	7.5	8.8	11	14.7
		51	52.3	8.7	10.2	12.8	17.7
		64	41.2	10.9	12.8	16	21.9
3.2X2.9		76	34.1	12.9	15.2	19	27.8
16	8	89	29.5	15.1	17.8	22.3	31.2
		102	25.6	17.3	20.4	25.5	37.9
		115	22.4	19.6	23	28.8	44.5
3.2X2.9		305	8.4	51.9	61	76.3	113.5
20	10	25	293	4.3	5.0	6.3	6.9
		32	224	5.4	6.4	8.0	9.4
		38	177	6.5	7.6	9.5	12
		44	149	7.5	8.8	11	13.5
		51	128	8.7	10.2	12.8	16.2
		64	99	10.9	12.8	16	21.2
		76	81.7	12.9	15.2	19	24.7
		89	69.5	15.1	17.8	22.3	28.8
		102	60.6	17.3	20.4	25.5	34.8
		115	53.0	19.6	23	28.8	39
		127	47.5	21.6	25.4	31.8	43
		139	43.0	23.8	28	35	45.3
4.1X3.8		152	39.0	25.8	30.4	38	50.4
		305	21.2	51.9	61	76.3	103.5
25	12.5	25	459	4.3	5.0	6.3	6.3
		32	374.4	5.4	6.4	8.0	8.0
		38	346	6.5	7.6	9.5	9.5
		44	244	7.5	8.8	11	11
		51	207.5	8.7	10.2	12.8	12.8
		64	161	10.9	12.8	16	16
		76	130.8	12.9	15.2	19	19
		89	110.5	15.1	17.8	22.3	22.3
		102	96.3	17.3	20.4	25.5	25.5
		115	85.7	19.6	23	28.8	28.8
		127	76.3	21.6	25.4	31.8	31.8
		139	68.9	23.8	28	35	35
		152	63.5	25.8	30.4	38	368
		178	53.9	30.3	35.6	44.5	44.5
		203	47	34.5	40.6	50.8	50.8
5.4X4.6		305	30.9	51.9	61	76.3	76.3
32	16	38	528.2	6.5	7.6	9.5	9.5
		44	424.4	7.5	8.8	11	11
		51	353	8.7	10.2	12.8	12.8
		64	269.2	10.9	12.8	16	16
		76	218.5	12.9	15.2	19	19
		89	180.3	15.1	17.8	22.3	22.3
		102	155	17.3	20.4	25.5	25.5
		115	140	19.6	23	28.8	28.8
7.3X5.9		127	124	21.6	25.4	31.8	31.8
32	16	139	112.3	23.8	28	35	35
		152	102	25.8	30.4	38	38
		178	88.2	30.3	35.6	44.5	44.5
		203	76	34.5	40.6	50.8	50.8
		254	60.8	43.2	50.8	63.5	63.5
7.3X5.9		305	49	51.9	61	76.3	76.3
40	20	51	628	8.7	10.2	12.8	12.8
		64	487	10.9	12.8	16	16
		76	379	12.9	15.2	19	19
		89	321	15.1	17.8	22.3	22.3
		102	281	17.3	20.4	25.5	25.5
		115	245	19.6	23	28.8	28.8
		127	221	21.6	25.4	31.8	31.8
		139	190	23.8	28	35	35
		152	168	25.8	30.4	38	38
		178	146	30.3	35.6	44.5	44.5
		203	132	34.5	40.6	50.8	50.8
		254	107	43.2	50.8	63.5	63.5
8.4X7.5		305	87.8	51.9	61	76.3	76.3
50	25	64	709	10.9	12.8	16	16
		76	572	12.9	15.2	19	19
		86	475	15.1	17.8	22.3	22.3
		102	405	17.3	20.4	25.5	25.5
		115	352	19.6	23	28.8	28.8
		127	316	21.6	25.4	31.8	31.8
		139	274	23.8	28	35	35
		152	239	25.8	30.4	38	38
		178	215	30.3	35.6	44.5	44.5
		203	187	34.5	40.6	50.8	50.8
		254	153	43.2	50.8	63.5	63.5
11X9.0		305	127	51.9	61.0	76.3	76.3
63	38	76	952	12.9	15.2	-	-
		89	819	15.1	17.8	-	-
		102	700	17.3	20.4	25.5	25.5
		115	620	19.6	23	28.8	28.8
		127	565	21.6	25.4	31.8	31.8
		152	458	25.8	30.4	38.0	38
		178	384	30.3	35.6	44.5	44.5
		203	337	34.5	40.6	50.8	50.8
		254	263	43.2	50.8	63.5	63.5
11.6x14.9		305	218	51.9	61.0	76.3	76.3

Order : SY (Yellow Spring) .D x L

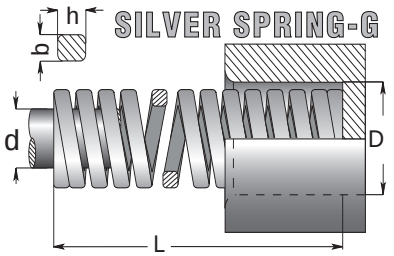
Usage: It is compatible with extra heavy load spring and especially injection mould systems and equipment designs of machine production.

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PERFORMANCE STEEL SPRINGS

Ultra Heavy Load Spring



Short Stroke, High Power, Heavy Loadings

By multiplying spring coefficient (R) with compression amount simply (mm) spring force value is reached. (N) Example: R x (A.B.C.D) x

1 Newton = 0.102 Kg.

Application Information For Long Lived Usage of Springs;

High tension levels only should be used when limited life is expected or in case of static loading. Under dynamic loading conditions, at the same time, exposing column spring to extraordinary temperatures, tensile loadings, lateral loadings, sudden loadings and high frequency usage limits the life time of springs. In all these cases, decreasing of tension values assists in terms of better spring life.

Limited Stocks; Delivery Period As Per Order

Order :
GY (Silver Spring) **.D x L**

Usage: It is compatible with ultra heavy load spring and especially injection mould systems and equipment designs of machine production.

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Section Press Mould

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Square, Import Mould Spring Ultra Heavy Load Spring — SILVER SPRING-G

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 17	B Min. Clamping % 20	C Max. Clamping % 25	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	m64
25	12.5	64	644	6.4	7.7	9.6	13
		76	556	7.6	9.1	11.4	16
		89	462	8.9	10.7	13.4	20
		102	390	10.2	12.2	15.3	23
		115	360	11.5	13.8	17.3	26
		127	326	12.7	15.2	19.1	28
		152	255	15.2	18.2	22.8	34
		178	230	17.8	21.4	26.7	39
		203	202	20.3	24.4	30.5	45
5.6x7.5		305	136	30.5	36.6	45.8	63

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 17	B Min. Clamping % 20	C Max. Clamping % 25	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
40	20	89	880	8.9	10.7	13.4	20
		102	762	10.2	12.2	15.3	23
		115	679	11.5	13.8	17.3	26
		127	622	12.7	15.2	19.1	28
		152	509	22.8	18.2	22.8	36
		178	429	17.8	21.4	26.7	43
		203	374	20.3	24.4	30.5	49
		254	296	25.4	30.5	38.1	62
8.5x11		305	246	30.5	36.6	45.8	75

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 17	B Min. Clamping % 20	C Max. Clamping % 25	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
32	16	64	1077	6.4	7.7	9.6	13
		76	874	7.6	9.1	11.4	16
		89	721	8.9	11	13.35	20
		102	620	10	12	15.3	23
		115	560	12	14	17.25	26
		127	496	13	15	19.05	28
		152	408	15	18	22.8	34
		178	353	18	21	26.7	39
		203	304	20	24	30.45	45
		254	243	25	30	38.1	62
7.5X9.2		305	196	31	37	45.75	75

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 17	B Min. Clamping % 20	C Max. Clamping % 25	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
50	25	89	1410	8.9	10.7	13.4	19
		102	1215	10.2	12.2	15.3	22
		115	1076	11.5	13.8	17.3	25
		127	968	12.7	15.2	19.1	28
		152	806	15.2	18.2	22.8	34
		178	698	17.8	21.4	26.7	40
		203	612	20.3	24.4	30.5	45
		254	472	25.4	30.5	38.1	58
11.8x13.5		305	388	30.5	36.6	45.8	70





Threading (Punch/Bushing) Kit For Perforated / Punched Holes

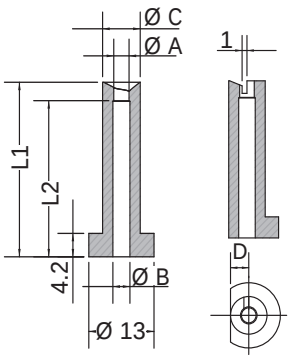
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SCREW SLOT FORMING UNIT

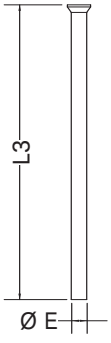
Screw Slot Forming Kit; It consists of three main parts. **1-** HSS Drilling Pin **2-** Pin / Emboss Punch - Bearing Bush **3-** Pin / Punch Emboss Bushing / Bush. **In terms of Working Systematics;** in all sheet cutting and forming moulds and press machines, it creates screw slots with the purpose of connecting two sheet plates with perforated front holes.

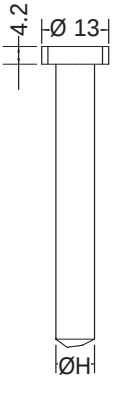
Usage: By placing HSS Drilling Pin into bearing bush, it is brought to stamp operation, while emboss conical angle in edge form of bush bends the sheet plate outwards direction, HSS Pin in it is shaped in hole form. Thus, the sheets to be connected with screw become ready for screwing. **Unit,** while screw forms hole in thread dimension tolerance, it prepares helix thread channels with emboss for screwing and clamping (Connecting).

Emboss Burnisher

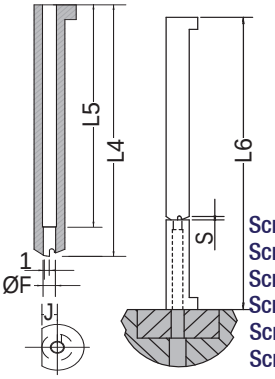


HSS Punch





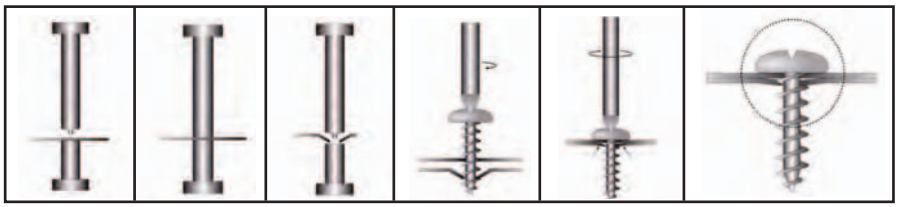
Emboss Punch



Screw Diameter
Thread Dimensions :
B 3.5
B 3.9
B 4.2
B 4.8
B 5.5
B 6.3

Sheet Thickness (S)
It is compatible with
Screw 3.5 mm : Max. 0.50 mm. Thickness
Screw 3.9 mm : Max. 0.63 mm. Thickness
Screw 4.2 mm : Max. 0.75 mm. Thickness
Screw 4.8 mm : Max. 0.88 mm. Thickness
Screw 5.5 mm : Max. 1.00 mm. Thickness
Screw 6.3 mm : Max. 1.20 mm. Thickness

Ø Screw	A H7	B Ø -mm	C h6	D K6	E Ø -h6	F Ø -h7	H Ø -h6	J K6	L1 mm	L2 mm	L3 mm	L4 mm	L5 mm	S Sheet	L6 Length
B3.5	2.75	3.2	7.5	3.75	2.7	2.7	7.5	3.75	31.3	28	74.5	71.5	60	0.5	101.72
B3.9	3.05	3.4	7.5	3.75	3.0	3.0	7.5	3.75	31.3	28	74.5	71.5	60	0.63	101.85
B4.2	3.15	3.5	8.5	4.25	3.1	3.1	8.0	4.0	31.3	28	74.5	71.5	60	0.75	101.97
B4.8	3.85	4.2	9.0	4.50	3.8	3.8	8.0	4.0	31.3	28	74.5	71.5	60	0.88	102.10
B5.5	4.35	4.8	9.0	4.50	4.3	4.3	8.0	4.0	31.3	28	74.5	71.5	60	1.00	102.22
B6.3	4.85	5.3	10.5	5.25	4.8	4.8	10.0	5.0	31.3	28	74.5	71.5	60	1.20	102.42



Order :
VYZ. Screw

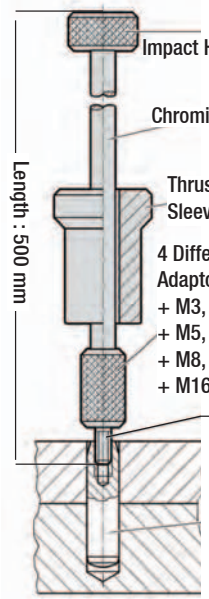
Section Press Mould



PIN PULLER

Complete Set Dowel Pin Puller

DIN EN ISO 8735 - ISO 8735 **CTPC**



This product is designed to dismantle threaded dowel pins quickly and safely, in addition it can be used on other threaded machine components.
This extractor tool is supplied in plastic bag with adaptors between M3-M16 to dismantle all kinds of 7979 dowel pins.



Order :
CTPC
(PIN PULLER)

PIN PULLER

Mounting Example



Adaptor is inserted with installation.



Screwing is done on retaining pin.



With a small impact application, pin is removed.



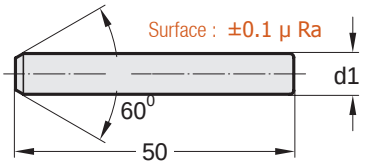
Extracted pin is removed from adaptor.



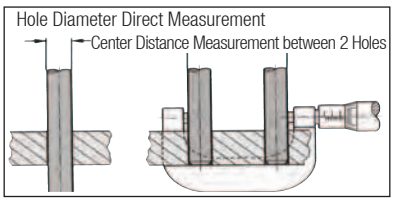
PRECISE MEASUREMENT PIN KIT

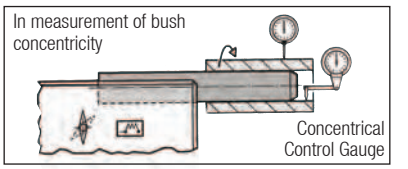
Pin Control Gauge Kit **PKMS**

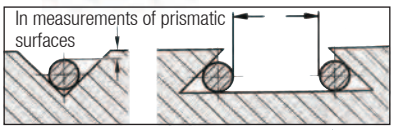
DIN 2269 - Dia. Tolerance : ± 0.001 / 2

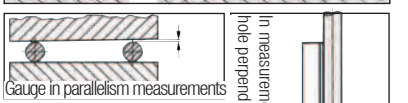


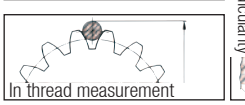
Small Set: 91 Pieces Measurement / Control Pin Between **Ø 1 -10 mm. In 0.1 mm** stepped complete wooden box.
Large Set: 273 Pieces Measurement / Control Pin. Between **Ø 1 -10 mm. In 0.1 mm** stepped complete wooden box. For each pin, over **0.01 mm** and under **0.01 mm** pins are available. In addition, pins are protected with plastic tube. The measures of all measurement pins over 3 mm are stamped on them.

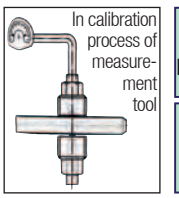












Material : HSS 1.3343
Hardness : 62 - 44 HRC

Order :
PKMS .1 Small Set
PKMS .2 Large Set

NOTE !

Threaded Dowel Pins
When used as thrust, their place should be determined in a way that their thread is as far as the waste distance from female cutting edge. In some cases, pin slot is opened away from cutting edge and pin is selected according to this.





(Dia.) Ø
Hollow Tolerance
h7

Continous Stocks

THREADED DOWEL PINS
Air Channel DIN 7979 / ISO 8735

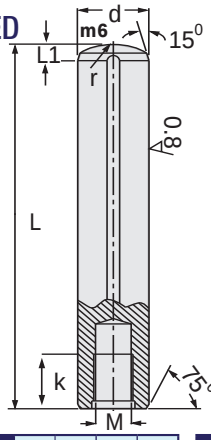
CTP.h7
Hollow Ejector

d	L	L1	k	M	r
Ø 6 mm h7 0 -12	20 25 30 35 40 45 50 55 60 70 80 90 100	2.1 mm	6 mm	M4	6
Ø 8 mm h7 0 -12	20 25 30 35 40 45 50 55 60 70 80 90 100 120	2.6 mm	8 mm	M5	8
Ø10 mm h7 0 -15	20 25 30 35 40 45 50 55 60 70 80 90 100 120	3 mm	10 mm	M6	10
Ø12 mm h7	20 25 30 35 40 45	3.8 mm	10 mm	M6	12
Ø12 mm h7 0 -18	50 55 60 70 80 90 100 120	3.8 mm	10 mm	M6	12
Ø14 mm h7 0 -18	30 35 40 45 50 60 70 80 90 100 120 140	4 mm	12 mm	M8	14
Ø16 mm h7 0 -18	30 35 40 45 50 60 70 80 90 100 120 140	4.7 mm	12 mm	M8	16
Ø20 mm h7 0 -21	30 35 40 50 60 70 80 90 100 120 150	6 mm	16 mm	M10	20

Order : **CTP.h7** .d x L

Material : 1.7131 (16MnCr 5)
Hardness : 60 -62 HRC **Depth:** 0.8

THREADED DOWEL PINS
CTP. m6
Shrink Fit
Air Channel
DIN 7979
ISO 8735





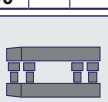
(Dia.) Ø
Shrink Fit Tolerance
m6

d	L	L1	k	M	r
Ø 5 mm m6 +12 +4	20 25 30 35 40 45 50 55 60 70 80	1.7 mm	6 mm	M3	5
Ø 6 mm m6 +15 +6	20 25 30 35 40 45 50 55 60 70 80 90 100	2.1 mm	6 mm	M4	6
Ø 8 mm m6 m6 +15 +6	20 25 30 35 40 45 50 55 60 70 80 90 100 120	2.6 mm	8 mm	M5	8
Ø10 mm m6 +15 +6	20 25 30 35 40 45 50 55 60 70 80 90 100 120	3 mm	10 mm	M6	10

Order : **CTP.m6**.d x L

d	L	L1	k	M	r
Ø12 mm m6 +18 +7	20 25 30 35 40 45 50 55 60 70 80 90 100 120	3.8 mm	10 mm	M6	12
Ø14 mm m6 +18 +7	30 35 40 45 50 60 70 80 90 100 120 140	4 mm	12 mm	M8	14
Ø16 mm m6 +18 +7	30 35 40 45 50 60 70 80 90 100 120 140	4.7 mm	12 mm	M8	16
Ø20 mm m6 +21 +8	30 35 40 50 60 70 80 90 100 120 150	6 mm	16 mm	M10	20





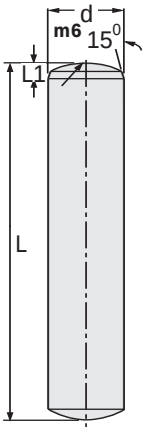
6325 DOWEL PINS

DTP.m6

Shrink Fit

DIN 6325

ISO 9734



(Dia.) Ø **Shrink Fit Tolerance**

m6



Continous Stocks

d	L	L1	r
Ø 3 mm m6 +8 +2	10, 16, 20, 25, 30, 35	0.8 mm	3
Ø 4 mm m6 +8 +2	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60	1.0 mm	4
Ø 5 mm m6 +8 +2	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80	1.2 mm	5
Ø 6 mm m6 +12 +4	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100	1.5 mm	6
Ø 8 mm m6 +15 +6	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120	2.0 mm	8
Ø10 mm m6 +15 +6	20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140	2.5 mm	10
Ø12 mm m6 +18 +7	20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140	3.0 mm	12
Ø14 mm m6 +18 +7	30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 120, 140	3.5 mm	14
Ø16 mm m6 +18 +7	30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 120, 140	4.0 mm	16
Ø20 mm m6 +21 +8	30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140, 160	5.0 mm	20

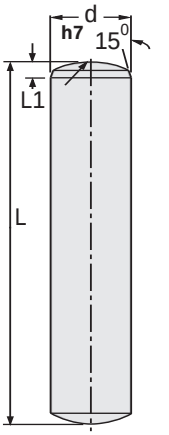


Order : **DTP.m6** .d x L

NOTE !

Dowel Pins 6325

When used as thrust, their place should be determined in a way that their thread is as far as waste distance from female cutting edge. In some cases, pin slot is opened away from cutting edge and pin is selected according to this.



(Dia.) Ø **Hollow Tolerance**

h7



Continous Stocks

6325 DOWEL PINS

DIN 6325 ISO 9734

DTP.h7

Hollow Ejector

d	L	L1	r
Ø 5 mm h7 0 -12	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80	1.2 mm	5
Ø 6 mm h7 0 -12	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100	1.5 mm	6
Ø 8 mm h7 0 -15	10, 16, 20, 25, 30, 35	2.0 mm	8
Ø 8 mm h7 0 -15	40, 45, 50, 55, 60, 70, 80, 90, 100, 120	2.0 mm	8
Ø10 mm h7 0 -15	20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140	2.5 mm	10
Ø12 mm h7 0 -18	20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140	3.0 mm	12
Ø14 mm h7 0 -18	30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 120, 140	3.5 mm	14
Ø16 mm h7 0 -18	30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 120, 140	4.0 mm	16
Ø20 mm h7 0 -21	30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140, 160	5.0 mm	20

Material : 1.7131 (16MnCr 5)
Hardness : 60 -62 HRC **Depth:** 0.8

Order : **DTP.h7** .d x L

MOULD SPARE PARTS

Precision Processing - Special Works

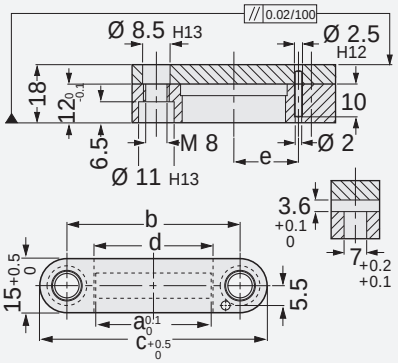


Press Mould Systems, Sheet Cutting / Spinning - Bending Form Moulds, Complicate Moulds and Progressive Unit Moulds. In addition, we produce your special parts belonging to other mould systems within technical drawing details, as precision heat treated and in desired materials with complete grinded operations. Centering Pins, Compression and Clutch Plates, Balancing Blocks, Base and Thrust Plates, Special Wedges, Matrix Holders, Special Guide Shaft Coupling Nut, Separator - Holder and Adjustor Parts, Conical Centering Components, Centering Components and Your Special Washers and Inserts etc.



PUNCH HOLDERS ZTP

Reference : PSA E24.64.100.G



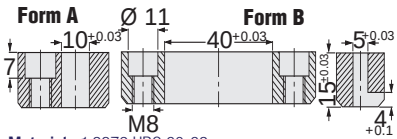
Piece	a	b	c	d	e
4	16	32	**47**	17	12
6	24	40	**55**	25	-
8	32	48	**63**	33	20
10	40	56	**71**	41	24

Order : **ZTP.** C. Pieces

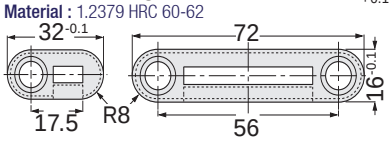


PUNCH HOLDERS ZTF

Reference : FORD WDX20 - 70



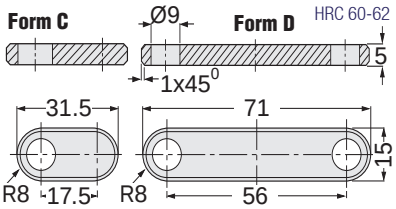
Material : 1.2379 HRC 60-62





PUNCH SUPPORT PLATE ZDF

Reference: FORD WDX20 - 70 Material : 1.0503 HRC 60-62

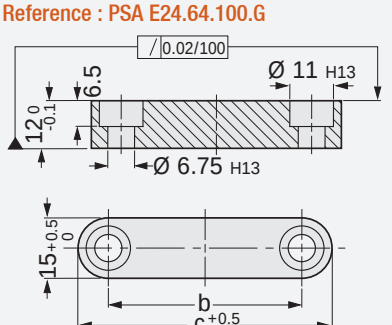






PUNCH SUPPORT PLATE ZDP

Reference : PSA E24.64.100.G

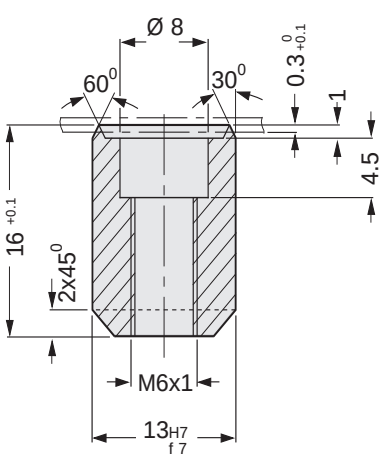


Piece	b	c
4	32	**47**
6	40	**56**
8	48	**63**
10	56	**70**

Order : **ZDP.** C. Piece

POSITION TRACE PUNCH KZF

Reference : FORD WDX20 - 70

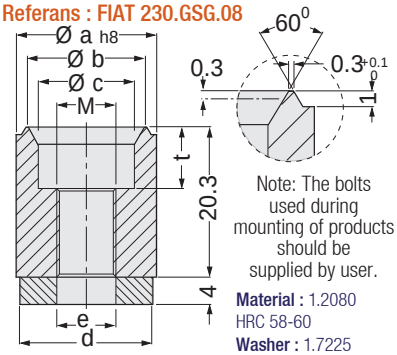


Material : 1.2080 HRC 60-64



POSITION TRACE PUNCH KZG

Referans : FIAT 230.GSG.08

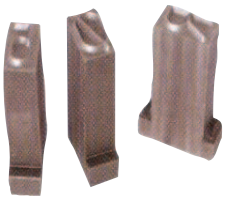


Note: The bolts used during mounting of products should be supplied by user.

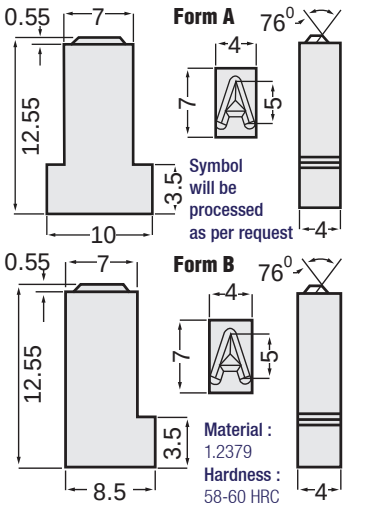
Material : 1.2080
HRC 58-60
Washer : 1.7225

a	b	c	M	t	d	e
25	18	16	M10	12	24	9
19	16	13	M8	8	18	8

Order : **KZG.** a



MARKING PUNCH MZG

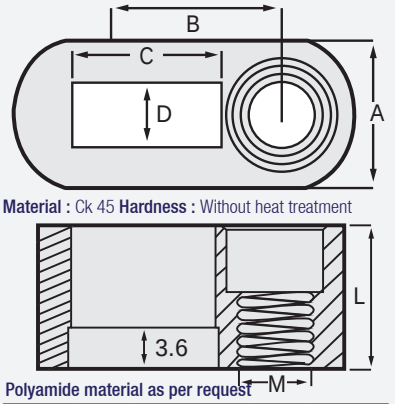


Material : 1.2379
Hardness : 58-60 HRC

Order : **MZG.** Form.Symbol
When ordering; symbol should be determined.



MARKING HOLDER MTG

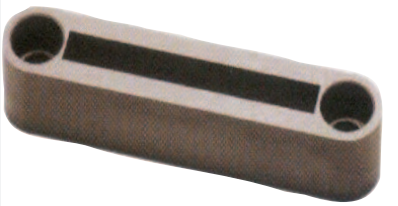


Material : Ck 45 **Hardness :** Without heat treatment

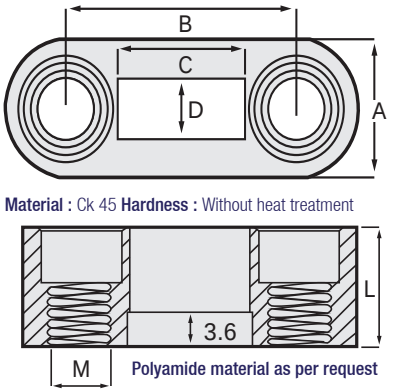
Polyamide material as per request

A	B	L	C	D	Ad.	M
14.90	**6.0**	12.0	4.10	7.10	1	M6
	10.0		8.10		2	
	14.0		12.10		3	
	18.0		16.10		4	
	22.0		20.10		5	

Order : **MTG.** AxB



MARKING HOLDER MTU



Material : Ck 45 **Hardness :** Without heat treatment

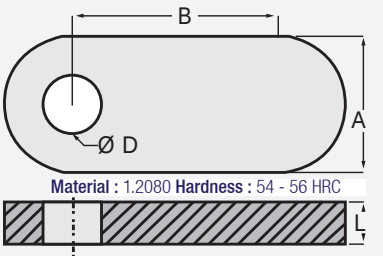
Polyamide material as per request

A	B	L	C	D	Ad.	M
14.90	**28**	12.0	16.10	7.10	4	M6
	32		20.10		5	
	34		24.10		6	
	44		32.10		8	
	52		40.10		10	

Order : **MTU.** AxB



CRUSH PLATE MEG



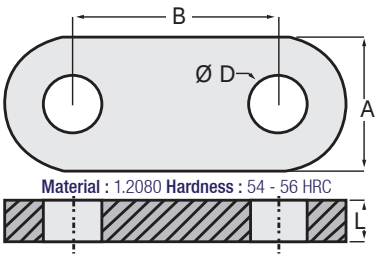
Material : 1.2080 **Hardness :** 54 - 56 HRC

A	B	L	D
15	**6.0**	5	6.7
	10.0		
	14.0		
	18.0		
	22.0		

Order : **MEG.** AxB



CRUSH PLATE MEU



Material : 1.2080 **Hardness :** 54 - 56 HRC

A	B	L	D
15	**28**	5	6.7
	32		
	36		
	44		
	52		

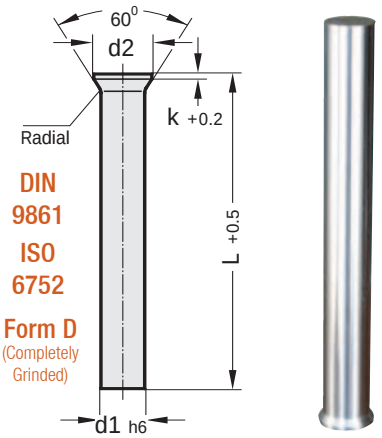
Order : **MEU.** AxB

HSS COUNTERSUNK PUNCH HBZ..

d1	L	d2	k
10	71	12	1.0
	80		
	100		
	125		
	160		
10.5	71	13.5	1.0
	80		
	100		
	125		
	160		
11	71	13.5	1.0
	80		
	100		
	125		
	160		
11.5	71	14	1.0
	80		
	100		
12	71	14	1.0
	80		
	100		
	125		
	160		
12.5	71	15	1.0
	80		
	100		
13	71	15	1.5
	80		
	100		
	125		
	160		
13.5	71	16	1.5
	80		
	100		
14	71	16	1.5
	80		
	100		
	125		
	160		
14.5	71	17	1.5
	80		
	100		
15	80	17	1.5
	100		
	125		
	160		
16	71	18	1.5
	80		
	100		
	125		
	160		
17	80	19	1.5
	100		
18	80	21	1.5
	100		
19	80	21	1.5
	100		
20	71	22	1.5
	80		
	100		
	125		
	160		

d1	L	d2	k
6.6	71	9.0	1.0
6.7	80		
	100		
6.8	71	9.0	1.0
6.9	80		
	100		
7.0	71	9.0	1.0
	80		
	100		
	125		
	160		
7.1	71	9.0	1.0
7.2	80		
	100		
7.3	71	9.0	1.0
7.4	80		
	100		
7.5	71	10	1.0
	80		
	100		
	125		
	160		
7.6	71	10	1.0
7.7	80		
	100		
7.8	71	10	1.0
7.9	80		
	100		
8.0	71	10	1.0
	80		
	100		
	125		
	160		
8.1	71	10	1.0
8.2	80		
	100		
8.3	71	10	1.0
8.4	80		
	100		
8.5	71	11	1.0
	80		
	100		
	125		
	160		
8.6	71	11	1.0
8.7	80		
	100		
8.8	71	11	1.0
8.9	80		
	100		
9.0	71	11	1.0
	80		
	100		
9.5	125	12	1.0
	160		

d1	L	d2	k
4.1	71	5.5	0.5
4.2	80		
	100		
4.3	71	5.5	0.5
4.4	80		
	100		
4.5	71	6.0	0.5
	80		
	100		
	125		
	160		
4.6	71	6.0	0.5
4.7	80		
	100		
4.8	71	6.0	0.5
4.9	80		
	100		
5.0	71	6.5	0.5
	80		
	100		
	125		
	160		
5.1	71	6.5	0.5
5.2	80		
	100		
5.3	71	6.5	0.5
5.4	80		
	100		
5.5	71	7.0	0.5
	80		
	100		
	125		
	160		
5.6	71	7.0	0.5
5.7	80		
	100		
5.8	71	7.0	0.5
5.9	80		
	100		
6.0	71	8.0	1.0
	80		
	100		
	125		
	160		
6.1	71	8.0	1.0
6.2	80		
	100		
6.3	71	8.0	1.0
6.4	80		
	100		
6.5	71	9.0	1.0
	80		
	100		
	125		
	160		



DIN 9861
ISO 6752
Form D
(Completely Grinded)

Punch as per request
TIN / TIC Plating
Complete Plating
ASP (Powder Metal)
Sintered Carbide

HSS COUNTERSUNK PUNCH HBZ..

With our wide range and dimensional products of GTH Press Mould Punch and Matrix Sets from our shelf stocks, we are in top location with our sectoral experience in quality / price formation, in addition we meet other special requests with the shortest delivery time. **Continous Stocks**

Countersunk Form D HSS Punch: Material - 1.3343 completely grinded, heat treated (62-64 HRC ± 2) Head Hardness: (52 ±3) Surface ≥ 950 HV 0.3. It is for durable parts in all kinds of drilling / cutting moulds. Also, TIN / TIC Plating completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin). For harder work pieces, **ASP** (Powder Metal) and for very hard and abrasive work pieces, sintered carbide punches are preferred.

d1	L	d2	k
3.0	71	4.5	0.5
	80		
	100		
	125		
	160		
3.1	71	4.5	0.5
3.2	80		
	100		
3.3	71	4.5	0.5
3.4	80		
	100		
3.5	71	5.0	0.5
	80		
	100		
	125		
	160		
3.6	71	5.0	0.5
3.7	80		
	100		
3.8	71	5.0	0.5
3.9	80		
	100		
4.0	71	5.5	0.5
	80		
	100		
	125		
	160		

d1	L	d2	k
1.8	71	2.8	0.5
1.9	80		
	100		
2.0	71	3.0	0.5
	80		
	100		
	125		
	160		
2.1	71	3.2	0.5
2.2	80		
	100		
2.3	71	3.5	0.5
2.4	80		
	100		
2.5	71	3.5	0.5
	80		
	100		
	125		
	160		
2.6	71	4.0	0.5
2.7	80		
	100		
2.8	71	4.0	0.5
2.9	80		
	100		

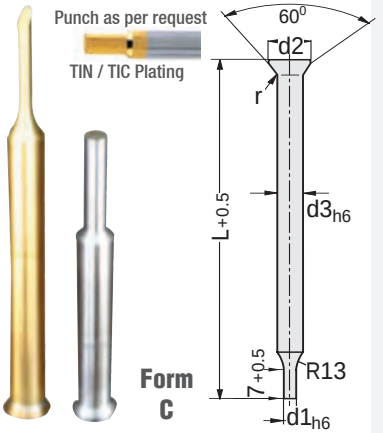
d1	L	d2	k
0.5	71	0.9	0.2
	80		
	100		
0.6	71	1.1	0.2
	80		
	100		
0.7	71	1.3	0.2
	80		
	100		
0.8	71	1.4	0.4
	80		
	100		
0.9	71	1.6	0.4
	80		
	100		
1.0	71	1.8	0.5
1.1	80		
	100		
1.2	71	2.0	0.5
1.3	80		
	100		
1.4	71	2.2	0.5
1.5	80		
	100		
1.6	71	2.5	0.5
1.7	80		
	100		

Order : **HBZ.** d1 x L

Section Press Mould



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HSS HB. STEPPED-PUNCHES

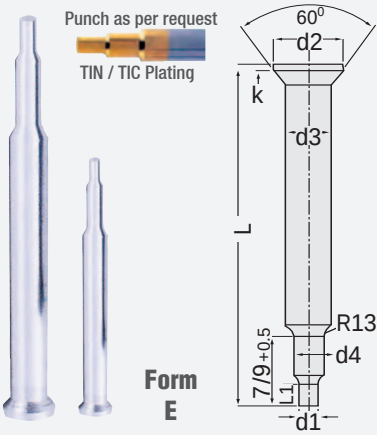
DIN 9861 Form C — HKZ..

According to DIN 9861 Norm, there is limitation for casing and cutting diameter. In this norm, while casing diameter for countersunk stepped punch is 3 mm, cutting diameter can be maximum 2.95 mm. They have robustness and long term cutting power in stepped punches of press moulds.

Countersunk Stepped-Punch

d1	L	d3	d2	r
0.8	71	2 mm	3 mm	0.4 +0.4
	80			
1.0	71			
	80			
1.2	71			
	80			
1.5	71	2.5 mm		
	80			
1.6	71			
	80			
1.8	71			
	80			
1.0	71	3 mm	4.5 mm	0.6 +0.4
	80			
1.5	71			
	80			
1.8	71			
	80			
2.2	71			
	80			
2.3	71			
	80			
2.6	71			
	80			
2.8	71			
	80			

Order : **HKZ.** d3 x d1 x L
Special Production As Per Request



HSS DOUBLE STEPPED-PUNCH

DIN 9861 Form E — H2K..

As per request, our HSS Punch Production is available in the desired material and dimensions and also in shapes.

It is prefferred for thin work pieces and light works.

Countersunk Double Stepped Punch

d1	d4	d3	d2	L	L1
1.0	1.4	Ø 3.0	4.5 mm	71	2 mm
1.2	1.6				
1.5	1.8			80	
1.7	2.1				
2.2	2.6			100	
2.5	2.8				
1.6	2.2	Ø 4.0	5.5 mm	71	2.5 mm
1.8	2.3				
2.3	2.8			80	
2.6	3.0				
3.0	3.5			100	
3.2	3.7				
2.4	3.0	Ø 5.0	6.5 mm	71	3 mm
2.8	3.5				
3.2	4.0			80	
3.6	4.2				
4.2	4.6			100	
4.5	4.8				
2.5	3.2	Ø 6.0	8 mm	71	3 mm
3.0	3.8				
3.5	4.2			80	
4.0	4.8				
4.5	5.3			100	
5.0	5.5				
5.5	5.8				

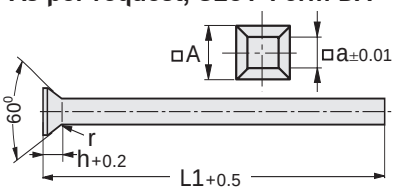
For your special requests, pls. specify technical drawing in table or your technical data details and also characteristics of punch to be used.

Order : **H2K.** Special Production As Per Request d1 x d4 x d3 x L x L1



HSS FORMED PUNCHES

As per request, SLOT-Form DA



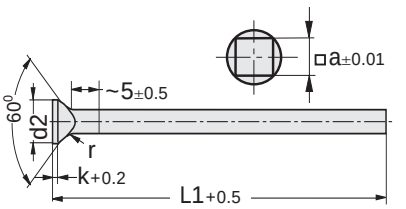
Forged head - Square Form HFK

a	L1	□A	h
1.0	71	1.8	1.2
2.0		3.0	1.4
3.0		4.5	1.8
4.0		5.5	1.8
5.0		6.5	1.8
6.0		8.0	2.2

a	L1	□A	h
7.0	71	9.0	2.8
8.0		10.0	
9.0		11.0	
10.0		12.0	
12.0		14.0	

Order : **HFK** a x L1

HSS FORMED PUNCHES



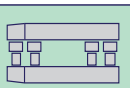
Square Type - Round Form HFY

a	L1	d2	k
1.0	71	1.8	0.5
2.0		3.0	
3.0		4.5	
4.0		6.0	
5.0		7.5	
6.0		9.0	

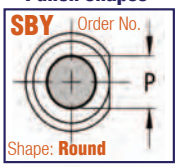
a	L1	d2	k
7.0	71	10.5	1.0
8.0		12.0	
9.0		13.5	
10.0		15.0	
12.0		18.0	

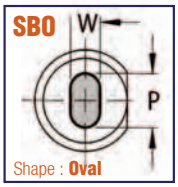
Excluding product types in tables, our production such as headless and different SLOT Types, also press mould punches as per request are available.

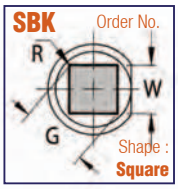
Order : **HFY** a x L1.

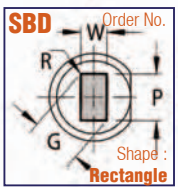


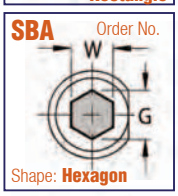
Formed Punch Shapes

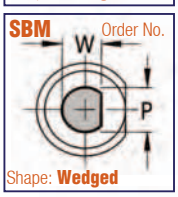


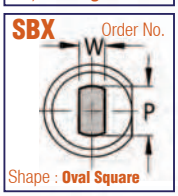


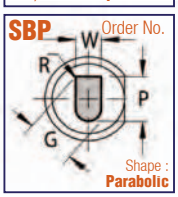


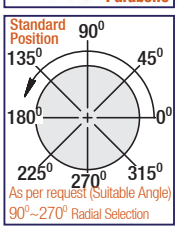


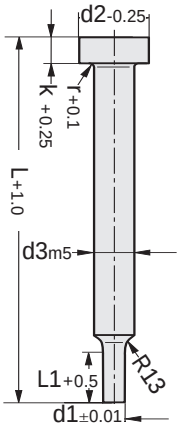


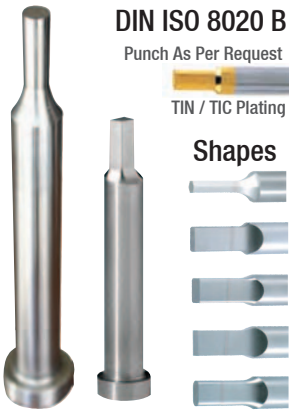










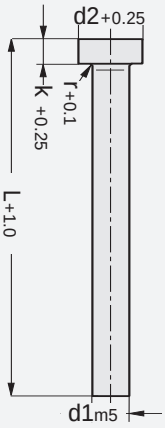


DIN ISO 8020 B

Punch As Per Request

TIN / TIC Plating

Shapes





DIN ISO 8020 A

Punch As Per Request



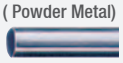
TIN / TIC Plating



Complete Plating



ASP (Powder Metal)



Sintered Carbide

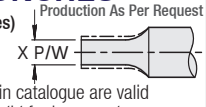
SBZ..

HSS SB. STEPPED-PUNCHES

XP **Punch Measuring Range (Alternatives)**

XW Dimensions belonging to **"P"** or **"W"** should be according to standards specified in catalogue. The values in catalogue are valid for cutting length and total length. They are valid for increased **"L1"** length and decreased total length **"L"**.

Production As Per Request



SBY - SBO - SBK - SBD - SBA - SBM - SBX - SBP

Order Ø d3	Head Ø d2	Ø d1 Shape SBY Round P	Ø d1 Shape Other Shapes W G/P	Standartd L1	Alternative L1 Min.	Alternative L1 Max.	L Len. mm
SB.04	6	1.6 ~ 3.99	1.6 - 4.0	8	10	-	50 60 71 80 90 100
SB.05	8	1.6 ~ 4.99	1.6 - 5.0	13	10	-	
SB.06	9	1.6 ~ 5.99	1.6 - 6.0	13	10	-	
SB.08	11	2.5 ~ 7.99	2.5 - 8.0	19	13	-	
SB.10	13	3.2 ~ 9.99	3.2 - 10	19	13	25	
SB.13	16	5.0 ~ 12.99	4.5 - 13	19	13	25	
SB.16	19	8.0 ~ 15.99	6.0 - 16	19	13	25	
SB.20	23	10 ~ 19.99	8.0 - 20	19	13	25	60 71 80 90 100
SB.25	28	12 ~ 24.99	9.0 - 25	19	13	25	
SB.32	35	16 ~ 31.99	10 - 32	25	19	30	
SB.40	43	30 ~ 39.99	14 - 40	25	19	30	

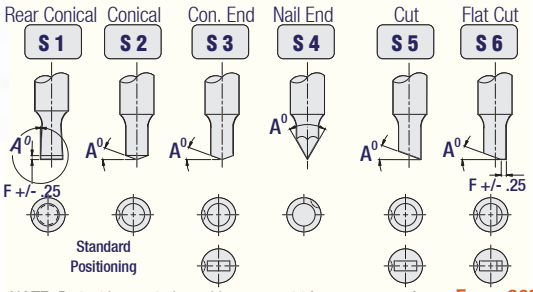
Standart Tolerances		
Round P+0.1	◎ 0.1	From P to 3
Shape P,W ± 0.1	◎ 0.2	From P to 3

Standard position of flat surface is 0°, as per request, it can be preferred as 270°.

Order: Punch shape selection, technical drawing details and also usage information are required. (Example: SBY x P)

Technical Information!

CUTTING ANGLES (Special Kits): While ordering, " A " angle and " F " dimension absolutely should be specified by user.



NOTE: By looking at their position at mould from upper surface of mould, parts are displayed. Positions of punches are determined by looking along casing. It is determined by monitoring from the upper surface.

From 90° to 270°

HSS CYLINDER HEAD PUNCHES

Mounting of cylinder capped type punch to the holder plate during usage is planned, guiding process is provided by the scraper plate, by mounting punches in this style, to eliminate axial errors that resulted from incorret mounting or press of Mould Base is more easier. By using this connection type, decomposition between transmission and bedding of drilling power has been provided.

Continous Stocks

DIN ISO 8020 A Cyclinder Head Punch, Material 1.3343

Completely Grinded Heat Treated (62-64 HRC ± 2). Head Hardness (52 ± 3) Surface ≥ 950 HV 0.3 It is for durable parts in all kinds of drilling / cutting moulds.

Also, **TIN / TIC** Plating completely or partially (by providing resistance against heat and friction on external layer, it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin). For harder work pieces, ASP (Powder Metal) and for very hard and abrasive work pieces, sintered carbide punches are preferred.

d1	L	d2	k	r
10	71	13	5	0.40
	80			
	100			
	125			
13	71	16	5	0.40
	80			
	100			
	125			
16	71	19	5	0.40
	80			
	100			
	125			
20	80	23	5	0.40
	100			
	125			
	160			
25	80	28	5	0.40
	100			
	125			
	160			
32	80	35	5	0.40
	100			
	125			
	160			

d1	L	d2	k	r
2.0	71	5.0	3	0.20
	80			
2.5	100			
3.0	71	5.0	3	0.20
	80			
3.5	100	6.0		
4.0	71	6.0	3	0.20
	80			
4.5	100	8.0	5	
5	71	8.0	5	0.25
	80			
	100			
6.0	71	9.0	5	0.25
	80			
	100			
	125			
8.0	71	11	5	0.25
	80			
	100			
	125			

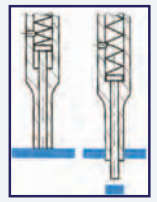
Order : **SBZ.** d1 x L

Section Press Mould

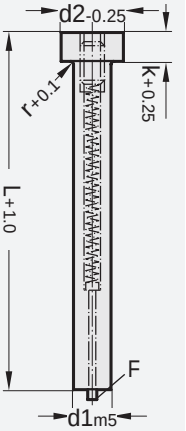


Punch As Per Request

TIN / TIC Plating







HSS EJECTOR PIN-AH TYPE PUNCHES SFZ

ISO 8020 (As Extractor) Springy, Ejector, Air Channel

HSS Cylinder Head Ejector / Pinned Launcher Punch: Material 1.3343

Completely Grinded Heat Threated (62-64 HRC ± 2)'. Head Hardness (52 ± 3) Surface ≥ 950 HV 0.3 It is for durable parts in all kinds of drilling / cutting moulds. Also, TIN / TIC Plating completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin). For harder work pieces, ASP (Powder Metal) and for very hard and abrasive work pieces, sintered arbide punches are preferred.

HSS EJECTOR PIN-AH TYPE (CYLINDRICAL HEAD) PUNCHES SFZ

d1	L	d2	F	k	r
5.0		8	2		
6.0	71	9	3		
8.0	80	11	4		0.3
10	100	13	5		
13	120	16	5	5 mm	
16		19	6		
20	Lenght Selection As Per Request	23	6		0.4
25		28	6		
32		35	6		

Order : **SFZ** d1 x L — Production As Per Request

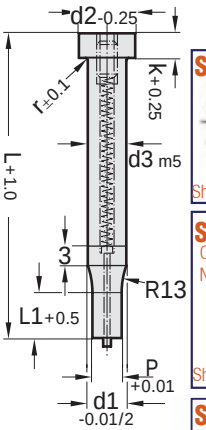
Punch As Per Request

TIN / TIC Plating

Shapes







STEPPED EJECTOR PINS PUNCHES

At your stepped-punch orders, you can order with punch code - dimensions specified in adjacent punch shape tables and tench ical drawing. (**Example**: SFY x P)

SFY - SFO - SFK - SFD - SFA - SFM - SFX - SFP

Stepped-Ejector Pins Punches According to Shapes

Order Ø d3	Head Ø d2	Ø d1 Shape SFY Round P	Ø d1 Shape Other Shapes W G/P	Standartd L1	Alternative L1 Min.	Alternative L1 Max.	L Len. mm
SF.05	8	1.6 ~ 4.99	1.6 - 5.0	13	10	-	71
SF.06	9	2.5 ~ 5.99	2.5 - 6.0	13	10	-	80
SF.08	11	3.2 ~ 7.99	3.2 - 8.0	19	13	19	90
SF.10	13	4.5 ~ 9.99	4.5 - 10	19	13	25	100
SF.13	16	6.0 ~ 12.99	6.0 - 13	19	13	25	120
SF.16	19	8.0 ~ 15.99	7.5 - 16	19	13	25	
SF.20	23	10 ~ 19.99	8.0 - 20	19	13	25	
SF.25	28	12 ~ 24.99	9.0 - 25	19	13	25	
SF.32	35	16 ~ 31.99	10 - 32	25	19	30	

Standard Tolerances		
Round P+0.1	◎ 0.1	From P to d3
Shape P,W ± 0.1	◎ 0.2	From P to d3

Standard position of flat surface is 0°, as per request can be preferred from 90° to 270°.

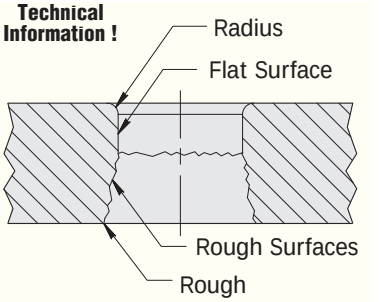
DEFINITION OF CAVITY BETWEEN PUNCH AND MOULD

Cavity between punch and mould depends on material type of stamped work pieces, material thickness, hole diameter and desired tool life.

It is expressed as total percentage of stamped material thickness. It should be remembered that hole diameter of punch specifies the dimension of part to be processed. Generally, ideal cavity provides serial, clear and smooth drilling process with minimum tool force. When left with unsufficient cavity, minimum radius and burrs are obtained. However, depending on high tool forces, it shortens tool life. As a result of excessive cavity, wide radius creates deformation, but tool life is increased. Some general values are presented for different materials in the following table (It is advisory). Expressed values are total mould cavity recommended for unused ejector punch holes. Increasing cavity to 2 times by using ejector punch, will be significiantly increased estimated tool life. Abrasion Occurring in most of the punches occur by scraper forces. Increasing cavity with using ejector punches will hold abrasion on tool surface in minimum.

Punches used in press mould should be mounted in perpendicular position as 90° completely. All of guide plates and female mould hole axials should be created completely grinded, with reamer and precision.

Technical Information !



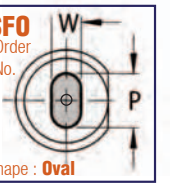
Material	Soft	Hard
Aluminium	% 10	% 12
Bronze /Copper	% 6	% 8
Low Carbon Steel	% 10	% 12
High Carbon Steel	% 18	% 20

Formed Punch Shapes

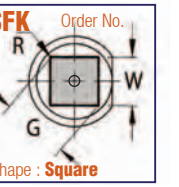
SFY Order No. — Shape: **Round**



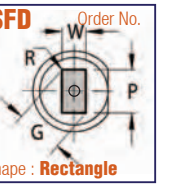
SFO Order No. — Shape : **Oval**



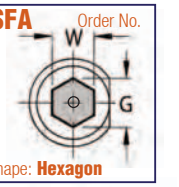
SFK Order No. — Shape : **Square**



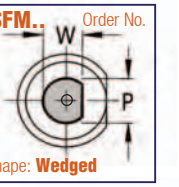
SFD Order No. — Shape : **Rectangle**



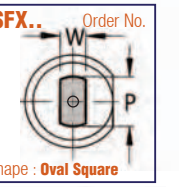
SFA Order No. — Shape: **Hexagon**



SFM.. Order No. — Shape: **Wedged**

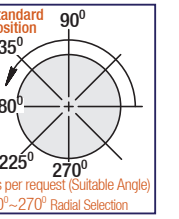


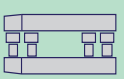
SFX.. Order No. — Shape : **Oval Square**



SFP.... Order No. — Shape : **Parabolic**



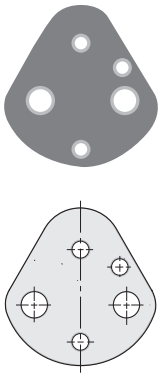




Section Press Mould

MRO-MRN BOLSTER PLATES FOR PUNCH HOLDERS

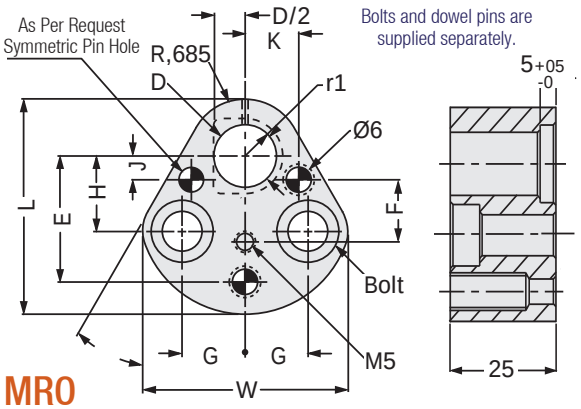




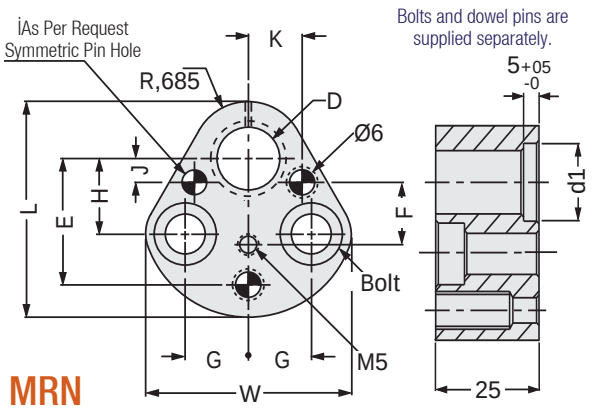
Order	Code	t
MRO / MRN.10	018	1.80
MRO / MRN.13	030	3.00
MRO / MRN.16	031	3.18
MRO / MRN.20	047	4.75
MRO / MRN.25	060	6.00
MRO / MRN.32	063	6.35
MRO / MRN.40	100	10
Example Order: Retainer Code (MRO - MRN) MAX.018	130	13



TRIANGLE HOLDER for CAP SHAPED PUNCHES



TRIANGLE HOLDER for CAP ROUND PUNCHES

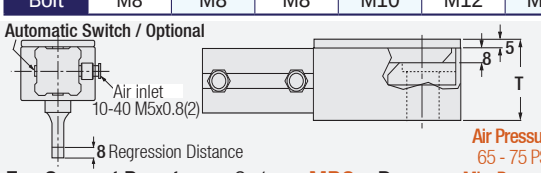


MRO

Holder for Cap Shaped Punches	Order No. MRO					
Dimension	MRO 10	MRO 13	MRO 16	MRO 20	MRO 25	MRO 32
Ø D	10	13	16	20	25	32
r1	7	8.5	10	12	14.5	18
Ø L	44.5	50.8	54	60.3	69.9	69.9
W	39.9	48.3	51.6	58.2	66.5	66.5
R	9.5	12.7	14.3	17.5	22.2	22.2
H	19.05	19.05	19.05	19.05	23.82	23.82
J ±0.1	7.5	6.5	6.0	5.0	7.0	7.0
K ±0.1	9.0	12	13.5	16.5	22	22
G	11.12	14.27	15.87	17.47	19.84	19.84
E ±0.1	26.924	29.972	31.750	33.528	40.640	40.640
F	16	16	16	23	30	30
Bolt	M8	M8	M8	M10	M12	M12

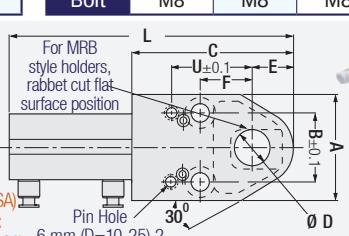
MRN

Holder for Cap Round Punches	Order No. MRN					
Dimension	MRN 10	MRN 13	MRN 16	MRN 20	MRN 25	MRN 32
Ø D	10	13	16	20	25	32
d1	14	17	20	24	29	36
Ø L	44.5	50.8	54	60.3	69.9	69.9
W	39.9	48.3	51.6	58.2	66.5	66.5
R	9.5	12.7	14.3	17.5	22.2	22.2
H	19.05	19.05	19.05	19.05	23.82	23.82
J ±0.1	7.5	6.5	6.0	5.0	7.0	7.0
K ±0.1	9.0	12	13.5	16.5	22	22
G	11.12	14.27	15.87	17.42	19.84	19.84
E ±0.1	26.124	29.972	31.750	33.528	40.640	40.640
F	16	16	16	23	30	30
Bolt	M8	M8	M8	M10	M12	M12



For Capped Punches Order : **MRC x D**
For Shaped Punhes Order : **MRB x D**

Ø D	L	A	B	C	E	F	T	U	Bolt
10	128	46	30	73	18	25	45	41	M8
13		49							M10
16									
20	155	58	38	90	23	29		45	
25									
32	208	80	56	125	33	38	55	60	M12



Air Pressure
65 - 75 PSİ
Min. Pressure :
3.2 Kgf cm^2 (45 PSA)
Max. Pressure :
10.2 Kgf cm^2 (145 PSA)

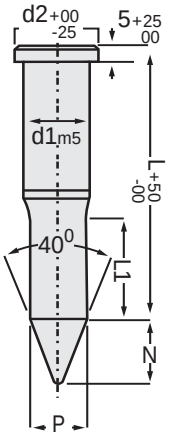
6 mm (D=10-25) 2
8 mm (D=32-40) 2

Two position pneumatic holders do not create additional tool cost. It provides adding holes or removing without interrupting the production. It is compatible with NAAMS Standards and other standards. Thanks to its powerful block structure, there is no need for extra security. **MRC** for round end punches - **MRB** for shaped punches (Specify locking place while giving punch order.)



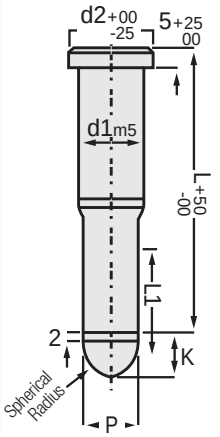
PNEUMATIC PUNCH HOLDER
For Capped Round Punches
For HSS SB. Punches MRC
For Shaped Punches MRB

Section Press Mould
Page 155



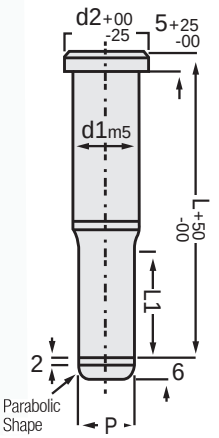


SPK





SPX





SPP

CONICAL END, PILOT PINS

Conical End, Cyclinder Head Guides

If **P** dimension is lower than reference P dimension specified in Table, **N= 1.2 P** is minimum.
In case that **P** is equal to **d1 , P=d1** casing tolerance is valid.

Standard Tolerances

Round	P^{+01}_{-00}	,01	From P to d1

SPHERICAL END, PILOT PINS

Spherical End, Cyclinder Head Guides

Spherical Radius **P**	Length **K**
Up to 1.50 ~ 9.50	4 mm
After 9.51	10 mm

In case that **P** is equal to **d1, P=d1** casing olerance is valid.

PARABOLIC END, PILOT PINS

Parabolic End, Cyclinder Head Guides

Standard Tolerances

Round	P^{+01}_{-00}	,01	From P to d1

If **P** is lower than Reference **P** specified in Table, **N= 1.2** is minimum.

Conical end, SB Pilot Pins — **SPK**

Ø d1	Ø d2	Conical Ø P	N mm	Ref. P	L1 mm	L
10	13	4.85 ~ 10	8	5.6	Standard 19 / Alternative 25	**71**
13	16	6.30 ~ 13	10	7.1		**80**
16	19	9.95 ~ 16	15	10.8		**100**
20	23	13.6 ~ 20	20	14.4		**125**
25	28	17.3 ~ 25	25	18		**140**
32	35	20.9 ~ 32	30	21.7	25 30	

Order : **SPK** As Per Request

Material : **HSS** 1.3343 **HRC** 60 -63

Parabolic and Spherical Shaped, Cyclinder Head Pilot Pins — **SPX / SPP**

Ø d1	Ø d2	Conical Ø P	Standart L1	Alternative L1 min.	Alternative L1 max	L
4	7	1.55 ~ 4	8	10	-	**50**
5	8	1.55 ~ 5	13	10	-	**60**
6	9	1.55 ~ 6	13	10	-	**71**
8	11	2.45 ~ 8	19	13	-	**80**
10	13	3.15 ~ 10	19	13	25	**100**
13	16	4.95 ~ 13	19	13	25	
16	19	7.95 ~ 16	19	13	25	
20	23	9.95 ~ 20	19	13	25	
25	28	11.95 ~ 25	19	13	25	
32	35	15.95 ~ 32	25	19	30	



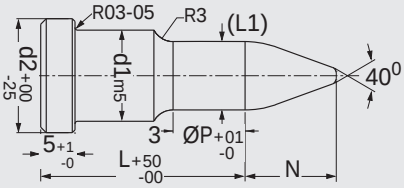
SMK
Pointed End



SMX
Spherical End

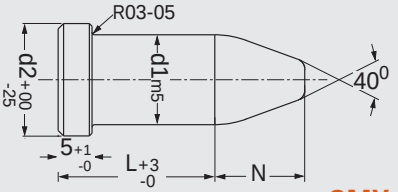
COMPACT PILOT PINS

Pointed End & Spherical End Compat, Capped Pilot Pins



Pointed End Compact Pilot Pin — **SMK**

d1	P	N	d2	L
4	1.95 ~ 3.99	4	7.0	20
5	2.65 ~ 4.99	5	8.0	
6	3.30 ~ 5.99	6	9.0	22
8	4.10 ~ 7.99	7	11.0	
10	4.80 ~ 9.99	8	13.0	25
13	6.25 ~ 12.99	10	16.0	
16	9.85 ~ 15.99	15	19.0	28
20	13.50 ~ 19.99	20	23.0	
25	17.20 ~ 24.99	25	28.0	35
32	20.80 ~ 31.99	30	35.0	



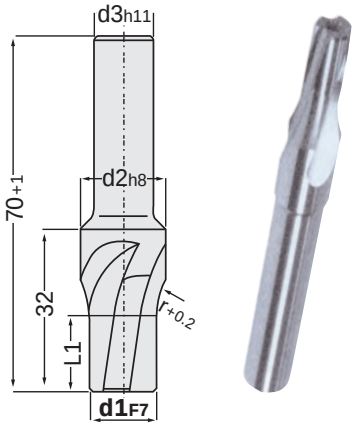
Spherical Compact Pilot Pin — **SMX**

d1	N	d2	L
3.01 ~ 4.0	4	7	20
4.01 ~ 5.0	5	8	
5.01 ~ 6.0	6	9	22
6.01 ~ 8.0	7	11	
8.01 ~ 10	8	13	25
10.01 ~ 13	10	16	
13.01 ~ 16	15	19	28
16.01 ~ 20	20	23	35



Section Press Mould

www.gthmetal.net GTH



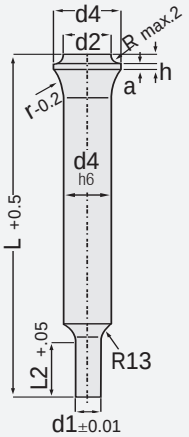
CONICAL HEAD BURR

Conical Head HSS Punch, "U" Shape Countersinking BURR **UFT**

d1	d2	d3	r	L1	x (d1)
2.0	3.3	3.3	3.5	5	01
2.1 ~2.2	3.5	3.5	5.0		
2.3 ~2.5	3.8	3.8			
2.6 ~2.9	4.3	4.3	6.0	7	
3.0 ~3.4	4.9	4.9			
3.5 ~3.9	5.4	5.4	8.0		
4.0 ~4.4	5.9	5.9		8	
4.5 ~4.9	6.4	6.4			
5.0 ~4.4	7.4	7.4	10	10	
5.5 ~5.9	8.5	8.5			
6.0	9.5	10	12	12	05
6.5 ~7.0	10.5				
7.5 ~8.0	11.5				
8.5 ~9.0	13.5		15		
9.5 ~10	14.5				
10.5 ~11	15.5			15	
11.5 ~12	16.5				
12.5 ~13	17.5				
13.5 ~14	18.5				
14.5 ~15	19.5				
15.5 ~16	20.5				
16.5 ~17	21.5	16			
17.5 ~18	22.5				
18.5 ~19	23.5				
19.5 ~20	25.5				

Order : **UFT** d1

Material : HSS 1.3343 DIN 9861 D



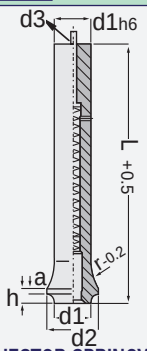
CONICAL HEAD STEPPED

HSS Perforator "U" Shape (Bottle Necked) Shape D **UKZ**

d1	L	d4	L2	d2	h
0.8 ~ 2.9	71	3	10	4.5	3
1.0 ~ 3.9	80	4		5.5	4
1.2 ~ 4.9		5		7.0	
1.6 ~ 5.9	71	6		9.0	
2.5 ~7.9	80	8	13	11	
4.0 ~9.9	100	10	17	14	
5.0 ~12.9		13		17	
8.0 ~15.9		16		20	
12 ~19.9		20		25	

Order : **UKZ** d1 xd4 xL

Material : HSS 1.3343 - HRC 64



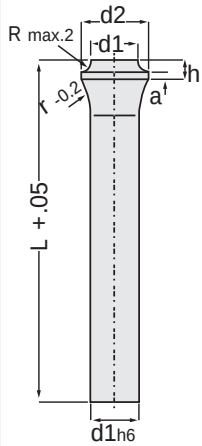


EJECTOR,SPRINGY CONICAL HEAD **UFZ**

d1	L	d2	d3	r	h	a
6.0	71	9.0	4	10	4	1.5
8.0		11	5	12		
10	80	14	5	15		
13		17	6			
16	100	20	6			
20		25	6			

Order : **UFZ** d1 x L

Material : HSS 1.3343 - HRC 64





CONICAL HEAD HSS PUNCH

HSS Perforator "U" Shape (Bottle Necked) Shape D **UBZ**

d1	L	d2	r	h	a
2.0	71 80 100 mm	3.0	3.5	3	1
2.1 ~2.2		3.2	5		
2.3 ~2.5		3.5			
2.6 ~2.9		4.0	6.5		
3.0 ~3.4		4.5			
3.5 ~3.9		5.0	8	4	1.5
4.0 ~4.4		5.5			
4.5 ~4.9		6.0			
5.0 ~5.4		7.0	10		
5.5 ~5.9		8.0			
6.0 ~6.4		9.0			
6.5 ~7.0		10	12		
7.5 ~8.0		11			
8.5 ~9.0		13	15		
9.5 ~10		14			
10.5 ~11		15			
11.5 ~12		16			
12.5 ~13		17			
13.5 ~14		18			
14.5 ~15		19			
15.5 ~16		20			
16.5 ~17		21			
17.5 ~18		22			
18.5 ~19		23			
19.5 ~20		25			

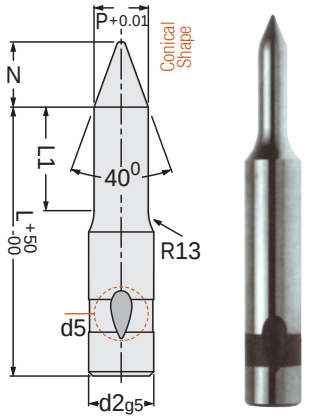
Order : **UBZ** d1 x L

Material : HSS 1.3343 - HRC 64

Production As Per Request

Section Press Mould

Page 157



Ball Lock - CONICAL, PILOT PIN

Light Duty, Ball-Lock, Conical End Guide Pins — BPK

If **P** dimension is lower than reference P dimension specified in Table, **N= 1.2 P** is minimum. In case that **P** is equal to **d1, P=d1** casing tolerance is valid.

Standard Tolerances

Round	P^{+01}_{-00}	,01	From P to d2

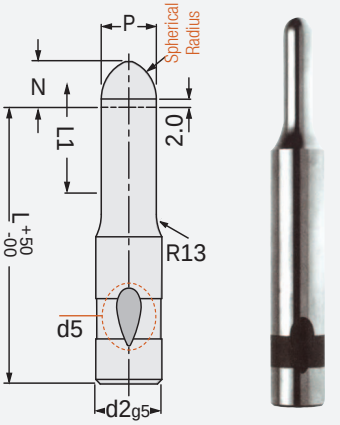
Ball Lock CONICAL, PILOT PINS — **BPK**

d2	d5	P	L1	N	L
10	8 mm	5.9 ~ 9.9	19	8	71
13		9.9 ~ 12.9	19	10	80
16		12.9 ~ 15.9	25	15	100
20		15.9 ~ 19.9	25	20	71
25		19.9 ~ 24.9	25	25	80
32		24.9 ~ 31.9	25	30	100
38		31.9 ~ 37.9	30	35	125
					140

Note : P / L As Per Request

Order : BPK d2 x P x L

Material : HSS 1.3343 HRC 60 -62 ±2



Ball Lock - SPHERICAL, PILOT PIN

Light Duty, Ball-Lock, Spherical End Guide Pins — BPX

It is length of L pilot pim except end.
2 mm 's length is guided to punch before punch contacting sheet.

	P	N
10.1 mm	≤ 10 mm	8 mm
	- 15 mm	12 mm
	> 15 mm	15 mm

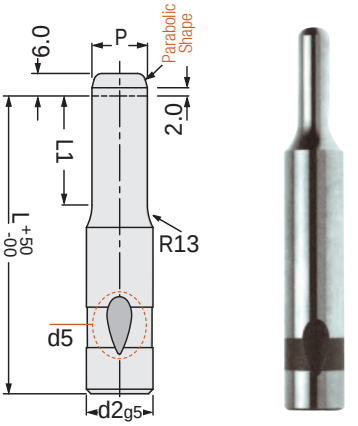
Ball Lock SPHERICAL, PILOT PINS — **BPX**

d2	d5	P	L1	N	L
6	6	2.9 ~ 5.9	13	-	63
10	8 mm	5.9 ~ 9.9	19	8	71
13		9.9 ~ 12.9	19	10	80
16		12.9 ~ 15.9	25	15	90
20		15.9 ~ 19.9	25	15	100
25		19.9 ~ 24.9	25	20	
32		24.9 ~ 31.9	25	25	

Note : Other lengths are produced as per order.

Order : BPX d2 x P x L

Material : HSS 1.3343 HRC 60 -62 ±2



Ball Lock - PARABOLIC, PILOT PIN

Light Duty, Ball-Lock, Parabolic End Guide Pins — BPP

If **P** dimension is lower than reference P dimension specified in Table, **N= 1.2 P** is minimum. In case that **P** is equal to **d1, P=d1** casing tolerance is valid.

Standard Tolerances

Round	P^{+01}_{-00}	,01	From P to d2

Ball Lock PARABOLIC, PILOT PINS — **BPP**

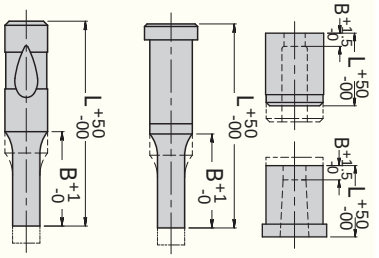
d2	d5	P	L1	N	L
6	6	2.2 ~ 6.0	13	-	63
10	8 mm	2.5 ~ 10	19	8	71
13		5.0 ~ 13	19	10	80
16		8.0 ~ 16	19	15	90
20		12~ 20	19	20	100
25		16~ 15	19	25	

Note : Other lengths are produced as per order.

Order : BPP d2 x P x L

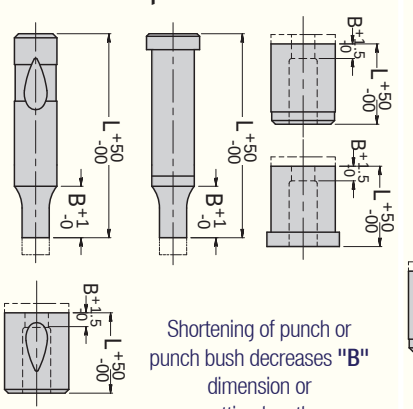
Material : HSS 1.3343 HRC 60 -62 ±2

ALTERNATIVE OPTION INFORMATION : Intervals out of punch center.



Even that total length of punch and punch bush are shortened, Shortening total length is fixed **"B"** L1 dimension. This situation is not valid for rabbet, overall flat, perforated or ball lock punch bushes.

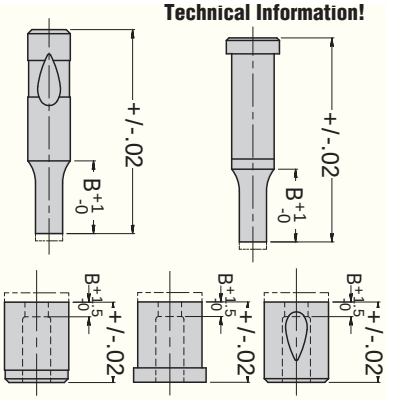
B : Main Dimension



Shortening of punch or punch bush decreases **"B"** dimension or cutting length.

B : Shortened Dimension

Technical Information!

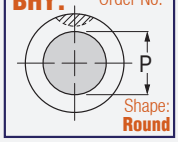


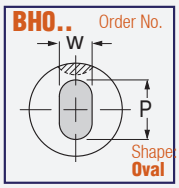
It provides ±02 sensitivity at normal length.
Note: It is removed Max 5 Chips.

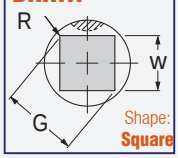
Section Press Mould

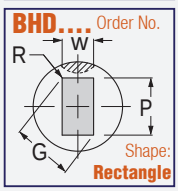
X1 X2 X3

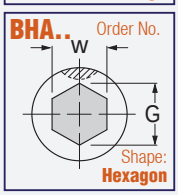
Formed Punch Shapes

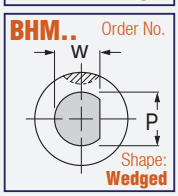
BHY. Order No.


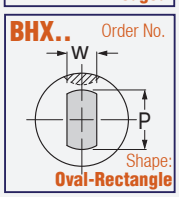
BHO.. Order No.


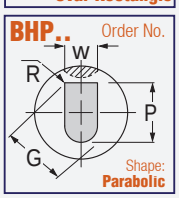
BHK... Order No.


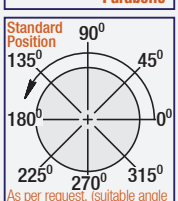
BHD.... Order No.


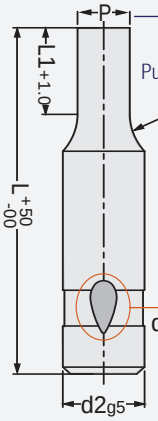
BHA.. Order No.


BHM.. Order No.


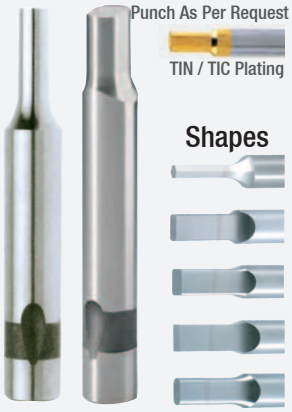
BHX.. Order No.


BHP.. Order No.






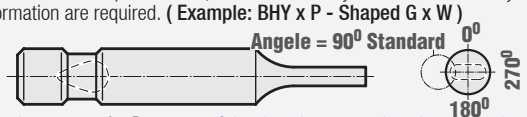
Standard position of ball slot is 90°. It can be preferred as 0° - 180°- 270°



BALL LOCK, STEPPED-PUNCHES

For Light Loads,LIGHT DUTY Ball - Lock Punches Order:

Order : Punch shape selection, technical drawing details and also usage information are required. **(Example: BHY x P - Shaped G x W)**



For tolerances, refer Page 160. Other lengths are produced as per order.

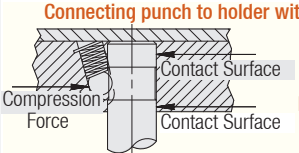
BHY - BHO - BHK - BHD - BHA - BHM - BHX - BHP

Stepped Ball Lock Punches According to Their Shapes

Order Ø d2	Ball Slot d5	Ø d1 Şekil BHY Round P	Ø d1 Şekil Other Shapes W G/P	Standard L1	Alternative L1 Min.	Alternative L1 Max.	L Length mm
BH.06	6	2.5 ~ 5.9	2.2 - 5.9	13	10	-	
BH.10	8 mm	2.5 ~ 9.9	2.5 - 9.9	19	10	19	63
BH.13		5.0 ~ 12.9	4.5 - 12.9	19	13	25	71
BH.16		8.0 ~ 15.9	6.0 - 15.9	19	13	25	80
BH.20		12 ~ 19.9	8.0 - 19.9	19	13	25	90
BH.25		16 ~ 24.9	10 - 24.9	19	13	25	100
BH.32		24 ~ 31.9	12.5 - 31.9	25	25	30	80
BH.38		30 ~ 37.9	14 - 37.9	25	25	30	90
							100

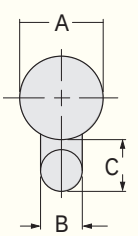
In case that **P** is equal **d2 , P= d2** casing tolerance is valid. It can be used in places where **L1 = 10 P or W < 2. 20 mm.**

Connecting punch to holder with ball slot.



Requirements of ball lock place

Technical Information!



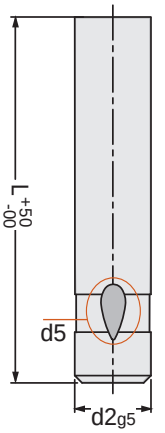
For precision holders, pls. add 1.7 to"C" dimension.

Light Load Punch/Bush

Punch Dia A	Ball Dia B	Cavity C
6.0	6.0	10
10	8	11
13		
16		
20		
25		
32		
38		

Heavy Load Punches

A Ø	B Ø	C mm
10	10	13
13	12	15
16		
20		
25		
32		
40		





BALL LOCK PUNCHES

For Light Loads, LIGHT DUTY Ball - Lock Punches

BHZ

Casing and cutting edge are precision grinded. It is for durable parts in all kinds of drilling / cutting moulds. Also, **TIN / TIC Plating** completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin).

Light Duty, Ball Lock Punches BHZ

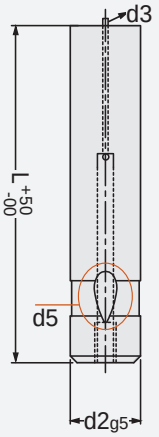
d2	d5	L
Ø 20 mm	8 mm	63
		71
		80
		100
		125
		150
		175
Ø 25 mm	8 mm	63
		71
		80
		100
		125
		150
		175
		200
Ø 32 mm	8 mm	71
		80
		100
		125
		150
		175
		200
Ø 38 mm	8 mm	80
		100
		125
		150
		175
		200

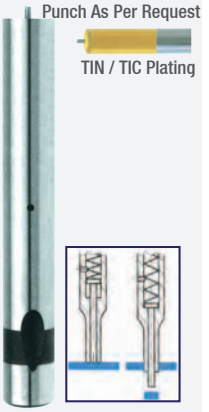
d2	d5	L
Ø 6 mm	6 mm	63
		71
		80
		100
		125
Ø 10 mm	8 mm	63
		71
		80
		100
		110
		120
Ø 13 mm	8 mm	63
		71
		80
		100
		125
		150
		175
Ø 16 mm	8 mm	63
		71
		80
		100
		125
		150
		175

Note: Other lenghts are produced as per order.

Order : **BHZ** d2 x L

Material : **HSS** 1.3343 **HRC** 60 -62





BALL - LOCK EJECTOR PUNCH

For light loads, Ball - Lock Ejector / Springy Launcher Punches — BFZ

Casing and cutting edge are precision grinded.
It is for durable parts in all kinds of drilling / cutting moulds. Also, **TIN / TIC Plating** completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin).

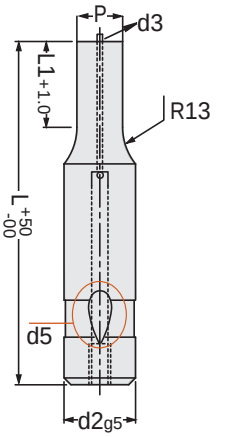
Light Duty - Ball Lock Ejector Punch — BFZ

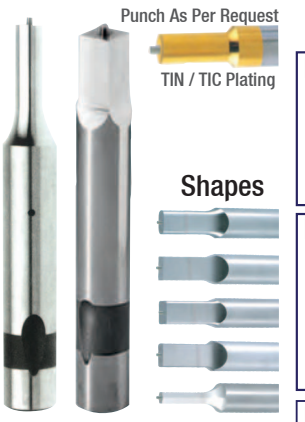
d2	d5	d3	L
Ø 6 mm	6 mm	Ø 3	63
			71
			80
			90
			100
Ø 10 mm	8 mm	Ø 3	63
			71
			80
			90
			100
Ø 13 mm	8 mm	Ø 5	63
			71
			80
			90
			100
Ø 16 mm	8 mm	Ø 5	63
			71
			80
			90
			100
Ø 20 mm	8 mm	Ø 6	63
			71
			80
			90
			100
Ø 25 mm	8 mm	Ø 6	63
			71
			80
			90
			100
Ø 32 mm	8 mm	Ø 6	71
			80
			90
			100
Ø 38 mm	8 mm	Ø 6	80
			90
			100

Note: Other lengths are produced as per order.

Order : **BFZ** d2 x L

Material : HSS 1.3343 HRC 60 -62

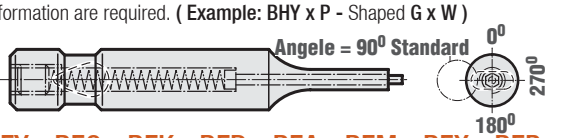




BALL - LOCK EJECTOR, STEPPED-PUNCH

LIGHT DUTY Ball - Lock, Ejector /Springy - Stepped-Punches

Order : Punch shape selection, technical drawing detail and also usage information are required. **(Example: BHY x P -** Shaped **G x W)**



BFY - BFO - BFK - BFD - BFA - BFM - BFX - BFP

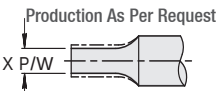
Stepped-Ejector Pins/ Springy Punches As Per Request

Order Ø d2	Ball Slot d5	Ø Pin d3	Ø d1 Shape BFY Round P	Ø d1 Shape Other Shapes W G/P	Standard L1	Alternative L1 Min.	Alternative L1 Max.	L Len. mm
BF.06	6	3	2.5 ~5.9	2.2 -5.9	13	10	-	
BF.10	8 mm	4	2.5 ~9.9	2.5 -9.9	19	10	19	63
BF.13		5	5.0 ~12.9	4.5 -12.9	19	13	25	71
BF.16		5	8.0 ~15.9	6.0 -15.9	19	13	25	80
BF.20		6	12 ~19.9	8.0 -19.9	19	13	25	90
BF.25		6	16 ~24.9	10 -24.9	19	13	25	100
BF.32		6	24 ~31.9	12.5 -31.9	25	25	30	80
BF.38		6	30 ~37.9	14 -37.9	25	25	30	90
								100

In case that **P** is equal **d2, P= d2** casing tolerance is valid.
It can be used in places where **L1 = 10 P or W < 2. 20 mm.**

XP **Punch Dimension Intervals (Alternatives)**

XW Dimensions belonging to. **"P"** or **"W"** should be according to specified in catalogue. The values in catalogue are valid for cutting length and total length. They are valid for increased **"L1"** length and decreased total length **"L"**.



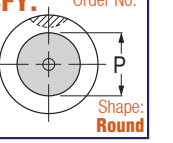
Standard Tolerances			
Round P +0.1, -.00	◎	0.1	From Pto d2
Shape P,W,G ± 0.1	◎	0.2	From Pto d2

Standard position of ball slot is 90º. It can be preferred as 0º- 180º - 270º.

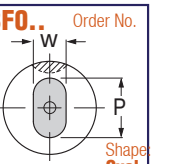
NOTE: By looking their position at mould from upper surface of mould, parts are displayed. Positions of punches are determined by looking along casing. It is determined by monitoring from the upper surface.

Formed Punch Shapes

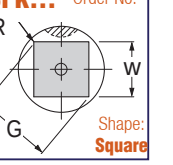
BFY. Order No.



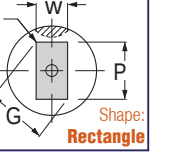
BFO.. Order No.



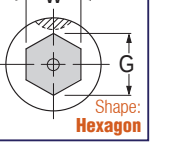
BFK... Order No.



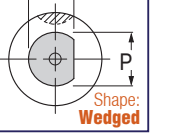
BFD.... Order No.



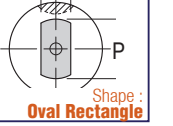
BFA.. Order No.



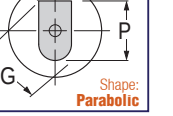
BFM.. Order No.

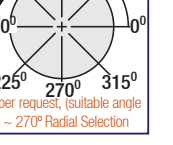


BFX.. Order No.



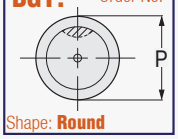
BFP.. Order No.





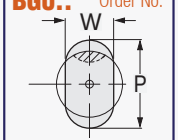
Formed Punch Shapes

BGY. Order No.



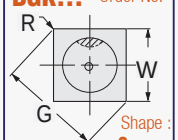
Shape: **Round**

BGO.. Order No.



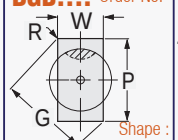
Shape : **Oval**

BGK... Order No.



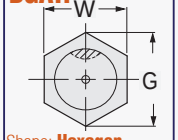
Shape : **Square**

BGD.... Order No.



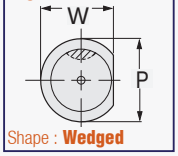
Shape : **Rectangle**

BGA.. Order No.



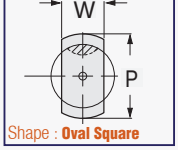
Shape: **Hexagon**

BGM.. Order No.



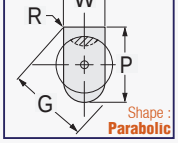
Shape : **Wedged**

BGX.. Order No.

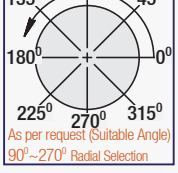


Shape : **Oval Square**

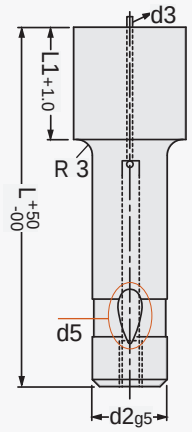
BGP.. Order No.



Shape : **Parabolic**



As per request (Suitable Angle)
90⁰~270⁰ Radial Selection





WIDE END, EJECTOR / SPRINGY PUNCHES

Light Duty, Cutting Edge, Wider Than Casing, Ball - Lock, Ejector / Springy Punch

Angele = 90⁰ Standard



Casing and External Dia. are precision grinded

Order :

BGY

d2 x P x L1 x L

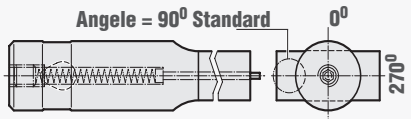
Material :
HSS 1.3343
HRC 60 -62

Light Duty

Ejector / Springy, Punches, Round End, Wider Than Casing **BGY**

Order Ø d2	Ball d5	Pin d3	Round P Min. Max.	L1 Min. Max.	L
BGY 10	8 mm	4	10.1 ~ 25	16	80 90 100
BGY 13		5	13.1 ~ 32	20	
BGY 16		5	16.1 ~ 38	25	
BGY 20		6	20.1 ~ 40	25	
BGY 25		6	25.1 ~ 44	25	
BGY 32		6	32.1 ~ 50	32	
BGY 40		6	40.1 ~ 63	32	

Angele = 90⁰ Standard



Light Duty Ejector / Springy, Punches

Ball-Lock, Wider Than Casing, Shaped

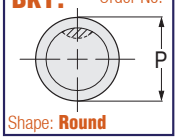
BGO - BGK - BGD - BGA - BGM - BGX - BGP

Order Ø d2	Ball d5	Pin d3	Shaped W-GP Min. Max.	L1 Min. Max.	L
BG. 10	8 mm	4	3.0 ~ 25	16	80 90 100
BG. 13		5	5.0 ~ 32	20	
BG. 16		5	6.5 ~ 38	25	
BG. 20		6	8.0 ~ 40	25	
BG. 25		6	10 ~ 44	25	
BG. 32		6	11.5 ~ 50	32	
BG. 40		6	14 ~ 63	32	

Other lengts are produced as per order.

Formed Punch Shapes

BKY. Order No.



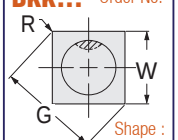
Shape: **Round**

BKO.. Order No.



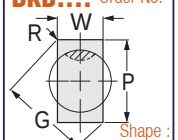
Shape : **Oval**

BKK... Order No.



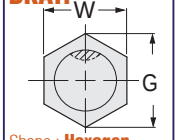
Shape : **Square**

BKD.... Order No.



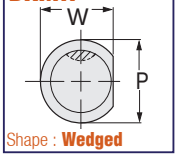
Shape : **Rectangle**

BKA.. Order No.



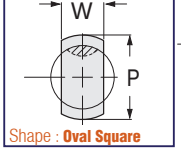
Shape : **Hexagon**

BKM.. Order No.



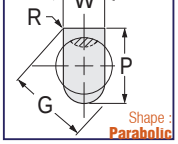
Shape : **Wedged**

BKX.. Order No.

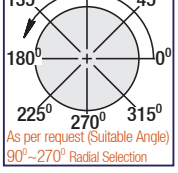


Shape : **Oval Square**

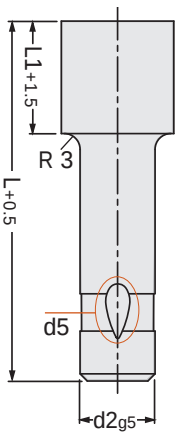
BKP.. Order No.



Shape : **Parabolic**



As per request (Suitable Angle)
90⁰~270⁰ Radial Selection

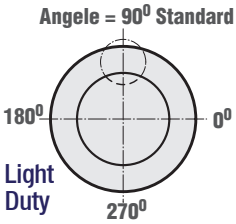




Ball Lock, WIDE END PUNCHES

Light Duty, Cutting Edge, Wider Than Casin, Ball - Lock Punches

Angele = 90⁰ Standard



Casing and External Dia. are precision grinded

Order :

BKY

d2 x P x L1 x L

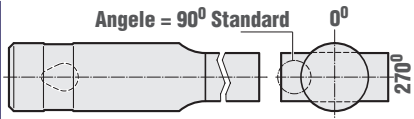
Material :
HSS 1.3343
HRC 60 -62

Light Duty

Light Duty Ball - Lock Round End, Wider Than Casing **BKY**

Order Ø d2	Ball d5	Round P Min. Max.	L1 Min. Max.	L
BKY 10	8 mm	10.1 ~ 25	16	80 90 100
BKY 13		13.1 ~ 32	20	
BKY 16		16.1 ~ 38	25	
BKY 20		20.1 ~ 40	25	
BKY 25		25.1 ~ 44	25	
BKY 32		32.1 ~ 50	32	
BKY 40		40.1 ~ 63	32	

Angele = 90⁰ Standard



Light Duty Ball - Lock

Wider Form Than Casing, Shaped Punches

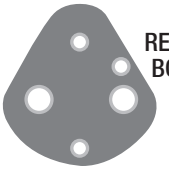
BKO - BKK - BKD - BKA - BKM - BKX - BKP

Order Ø d2	Ball d5	Shaped W-GP Min. Max.	L1 Min. Max.	L
BK.10	8 mm	3.0 ~ 25	16	80 90 100
BK.13		5.0 ~ 32	20	
BK.16		6.5 ~ 38	25	
BK.20		8.0 ~ 40	25	
BK.25		10 ~ 44	25	
BK.32		11.5 ~ 50	32	
BK.40		14 ~ 63	32	

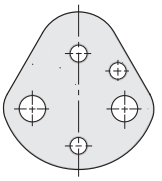
www.guneyal.net GTH

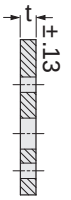
BOLSTER PLATE FOR BALL LOCK RETAINERS



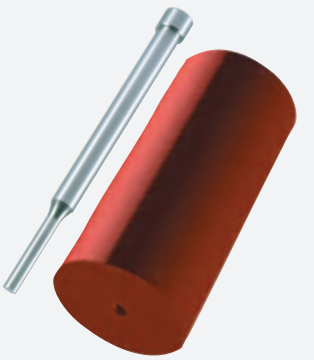


MRL RETAINER BOLSTER PLATE

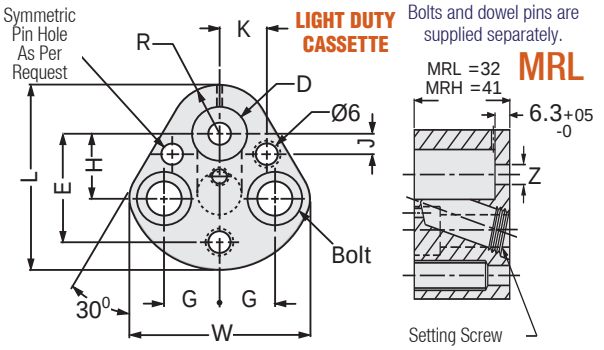




Order	Code	t
MRL.10.MAX	018	1.80
MRL.13.MAX	030	3.00
MRL.16.MAX	031	3.18
MRL.20.MAX	047	4.75
MRL.25.MAX	060	6.00
MRL.32.MAX	063	6.35
MRL.40.MAX	100	10
Order Example: Retainer Code (MRL) MAX.018	130	13

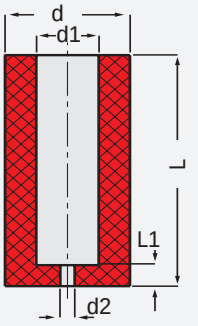


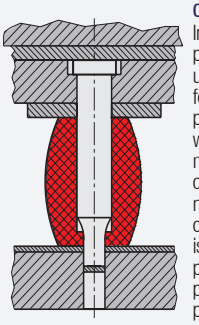
FOR LIGHT DUTY, BALL-LOCK TRIANGLE RETAINER



For Light Duty, Ball Lock Triangle Retainers	Order No. MRL					
Dimensions	MRL 06	MRL 10	MRL 13	MRL 16	MRL 20	MRL 25
Ø D	06	10	13	16	20	25
E ±0.1	23.000	26.924	29.972	31.750	33.528	40.640
G	11.10	11.12	14.27	15.87	17.47	19.84
Ø L	41.3	44.5	50.8	54.0	60.3	69.9
W	37.8	39.9	48.3	51.6	58.2	66.5
R	8.0	9.5	12.7	14.3	17.5	22.2
H	19.00	19.05	19.05	19.05	19.05	23.82
J ±0.1	8.00	9.00	12.00	13.50	16.50	22.00
K ±0.1	8.00	9.00	12.00	13.50	16.50	22.00
Z	3	6	6	6	6	6
Bold	M6	M8	M8	M8	M10	M12

POLYURETHANE PUNCH SCRAPERS PYB





Continous Stock Product

In mould that polyurethane scraper is used, there is no need for dismantling scraper plate to make repair, whetting and modification on mould components, there is not any slightest effect on precision parts, it is excellent for all painted / anodized, plastic plated and polished parts. It is compatible to use with oil and grease. It is covered on poliurethane scraper punch. Positioning is made according to the scraper hardness. There is no need for extra holder. Stepped punch hole will be opened at scraper edge with first stroke of press. Especially, this product is compatible at great moulds requiring great scraper plate.

Polyurethane Springy, Scraper /Ejector Bushes

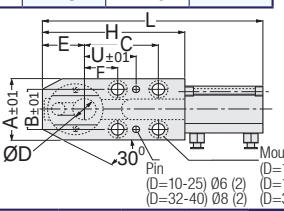
Order	d1 Ø	d Ø	d2 Ø	L mm	L1 mm	Punch Length
PYB.445	4.0	17	1.6	5.0	45	56 / 63
PYB.655	6.0	19			55	63 71 80 90
PYB.855	8.0	21	3.0 Punch Hole			
PYB.1055	10	23				
PYB.1355	13	26				
PYB.1655	16	30				
PYB.2071	20	38				100
PYB.2550	25	50				

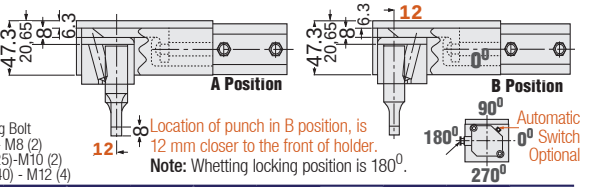
d2: (1.6 - 3.0 mm) (d1) It should be applied /drilled while opening hole diameter / drilling, in polyurethane (Punch) Stamped Bush (**S** max.) position. Spring load is obtained in expansion outwards.

BALL LOCK TWO POSITION PNEUMATIC PUNCH RETAINERS



Order **MRA**



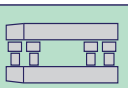


BALL LOCK TWO POSITION PNEUMATIC PUNCH RETAINERS

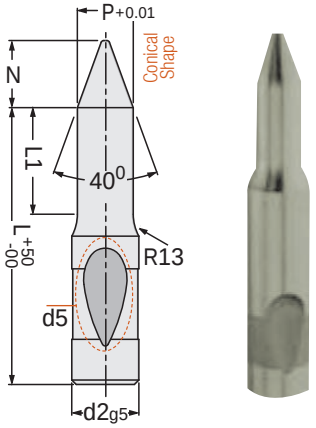
Thanks to its powerful block structure, there is no need for extra security.

D	L	A	B	C		E		F		H	U		Bolt
				Poz.A	Poz.B	Poz.A	PozB	Poz.A	PozB		Poz.A	Poz.B	
MRA10	161	46	30	-	-	28	16	21	33	93.5	37	49	M8
MRA13	172.5	50	30	-	-	28	16	25	37	100	41	53	M10
MRA16	177	50	30	-	-	31	19	25	37	104.5	41	53	M10
MRA20	191.5	58	38	-	-	32.5	20.5	29	41	113.5	45	57	M10
MRA25	206.5	58	38	-	-	35	23	29	41	123.5	45	57	M10
MRA32	260	80	56	100	112	38	26	38	50	152	60	72	M12
MRA40	264	80	56	100	112	42	30	38	50	156	60	72	M12

MRA Two Position Pneumatic Retainers do not create additional tool cost and it provide to add or remove hole without interrupting production. It is compatible with NAAMS Standards and Automative Standards. B Position is provided that punch is 12 mm closer to cutting edge.



Section Press Mould



Ball Lock - CONICAL, PILOT PIN

HEAVY DUTY, Ball - Lock, Conical Guide Pins

BAPK

If **P** dimension is lower than reference **P** dimension specified in Table, **N= 1.2 P** is minimum. In case that **P** is equal to **d1, P=d1** casing tolerance is valid.

Standard Tolerances

Round			
P^{+01}_{-00}	◯	,01	From P to d2

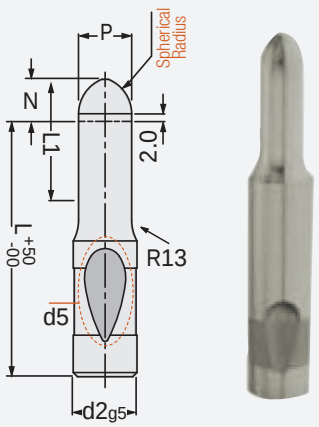
Ball - Lock CONICAL, PILOT PINS — BAPK

d2	d5	P	L1	N	L
10	10	5.9 ~ 9.9	19	8	80, 100
13	12 mm	9.9 ~ 12.9	19	10	125
16		12.9 ~ 15.9	25	15	80
20		15.9 ~ 19.9	25	20	100
25		19.9 ~ 24.9	25	25	125
32		24.9 ~ 31.9	25	30	140
40		31.9 ~ 39.9	30	40	150

Note : P / L Selection as per request

Order : **BAPK** d2 x P x L

Material : HSS 1.3343 HRC 60 -62 ±2



Ball Lock - SPHERICAL, PILOT PIN

HEAVY DUTY, Ball - Spherical, Conical Guide Pins

BAPX

It is length of **L** pilot pim except the end. **2 mm** length is guided to punch before punch contacting sheet.

	P	N
10.1 mm	≤ 10 mm	8 mm
	- 15 mm	12 mm
	> 15 mm	15 mm

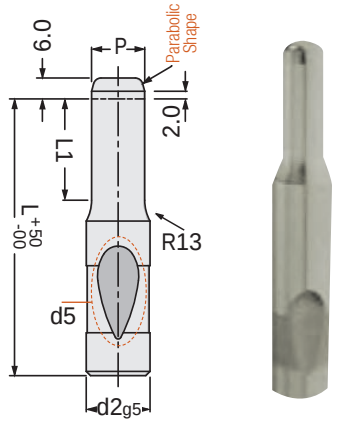
Ball - Lock SPHERICAL, PILOT PINS — BAPX

d2	d5	P	L1	N	L
10	10	2.5 ~ 10	19	10	71, 80, 100
13	12 mm	5 ~ 13	19	10	
16		8 ~ 16	19	10	71, 80, 100, 125
20		12 ~ 20	19	10	
25		16 ~ 25	19	10	
32		24 ~ 32	19	10	
40		30 ~ 40	25	10	

Note: Other lengths are produced as per order.

Order : **BAPX** d2 x P x L

Material : HSS 1.3343 HRC 60 -62 ±2



Ball Lock - PARABOLIC, PILOT PIN

HEAVY DUTY, Ball - Lock, Parabolic End Guide Pins

BAPP

If **P** dimension is lower than **Reference P** dimension specified in Table, **N= 1.2 P** is minimum. In case that **P** is equal to **d1, P=d1** casing tolerance is valid.

Standard Tolerances

Round			
P^{+01}_{-00}	◯	,01	From P to d2

Ball - Lock PARABOLIC, PILOT PINS — BAPP

d2	d5	P	L1	L
10	10	2.5 ~ 10	19	71, 80, 100
13	12 mm	5 ~ 13	19	
16		8 ~ 16	19	71, 80, 100, 125
20		12 ~ 20	19	
25		16 ~ 25	19	
32		24 ~ 32	19	
40		30 ~ 40	25	

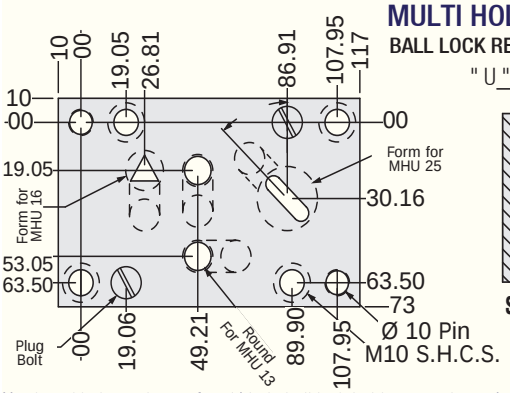
Note: Other lengths are produced as per order.

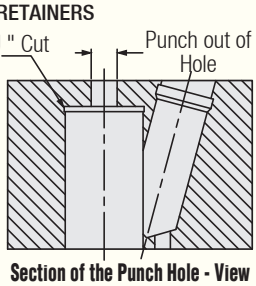
Order : **BAPP** d2 x P x L

Material : HSS 1.3343 HRC 60 -62 ±2

MULTI HOLE, BALL LOCK SPECIAL RETAINERS

BALL LOCK RETAINERS

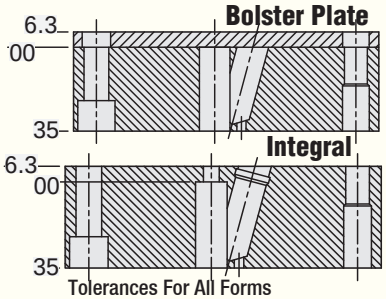




Section of the Punch Hole - View

Unless otherwise specified, "R" ball slot quality will be provided.

Technical Information!



Tolerances For All Forms

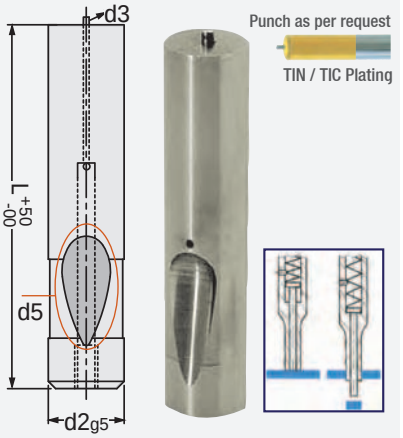
Tolerances of External Dimensions	±0.5
Tolerances of Pin Holes	±01
Tolerances of connecting holes	±1
Tolerances of component holes	±01

Hardened bolster plates of multi hole ball lock holders are shown in two different examples as traditional and integral holder in technical drawings, the point that should be considered is measuring of retainer starting from the left upper corner and that zero starting point is positioned correctly on mould by taken punch or pin holes. Thus, display helps positioning of punch holder conveniently and provides to match with its position on mould or punch bush in CNC programming.

Ball Hole Quality — Radial Tol.

R..... $+5^{0}$

F..... $+0^{0}5'$



BALL LOCK EJECTOR PUNCH

HEAVY DUTY, Ball - Lock Ejector / Springy, Launcher Punches — BAFZ

Casing and cutting edge are precision grinded.
It is for durable parts in all kinds of drilling / cutting moulds. Also, **TIN / TIC** Plating completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin).

HEAVY DUTY, Ball - Lock Ejector Punch **BAFZ**

d2	d5	d3	L
Ø 10 mm	10 mm	Ø 4	71
			80
			90
			100
Ø 13 mm	12 mm	Ø 5	71
			80
			90
			100
			125
Ø 16 mm	12 mm	Ø 5	71
			80
			90
			100
			125
Ø 20 mm	12 mm	Ø 6	71
			80
			90
			100
			125

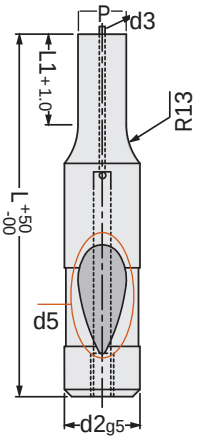
d2	d5	d3	L
Ø 25 mm	12 mm	Ø 6	80
			90
			100
			110
			125
Ø 32 mm	12 mm	Ø 6	80
			90
			100
			110
			125
Ø 40 mm	12 mm	Ø 6	80
			90
			100
			110
			125

Casing and external diameters are precision grinded and hardened.

Note: Other lengths are produced as per order.

Order : **BAFZ** d2 x L

Material : HSS 1.3343 HRC 60 -62





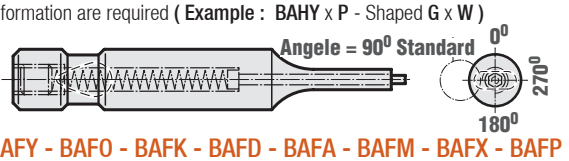
Shapes



BALL LOCK EJECTOR, STEPPED-PUNCH

HEAVY DUTY Ball - Lock, Ejector / Springy - Stepped-Punches

Order: Punch shape selection, technical drawing detail and also usage information are required **(Example : BAHY x P - Shaped G x W)**



BAFY - BAFO - BAFK - BAFD - BAFA - BAFM - BAFX - BAFP
Stepped-Ejector Pins/ Springy Punches According to Their Shapes

Order Ø d2	Ball Slot d5	Ø Pin d3	Ø d1 Shape BAFY Round P	Ø d1 Shape Other Shapes W G/P	Standard L1	Alternative L1 Min.	Alternative L1 Max.	L Len. mm
BAF.10	10	4	2.5 ~ 9.98	2.5 - 10	19	10	19	71
BAF.13	12 mm	5	5.0 ~ 12.98	4.5 - 13	19	13	25	80
BAF.16		5	8.0 ~ 15.98	6.0 - 16	19	13	25	90
BAF.20		6	12 ~ 19.98	8.0 - 20	19	13	25	100
BAF.25		6	16 ~ 24.98	10 - 25	19	13	25	110
BAF.32		6	24 ~ 31.98	12 - 32	19	13	25	125
BAF.38		6	30 ~ 39.98	14 - 40	25	19	30	

In case that P'is equal d2', P= d2 casing tolerance is valid. It can be used in places where **L1 = 10 P'** or **W < 2. 20** mm

XP **Punch Measurement Intervals (Alternatives)**
XW **"P" or "W" should** be according to standards specified in catalogue. The values in catalogue are valid for cutting length and total length. They are valid for increased "L1" length and decreased total length "L".

Production as per request
X P/W

Standard Tolerances		
Round P +0.1, -.00	0.1	From P to d2
Shape P,W,G ± 0.1	0.2	From P to d2

Standard position of ball slot is 90º. It can be preffered as 0º -180º - 270º.

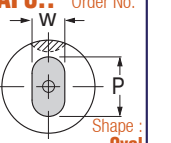
NOTE: By looking their position at mould from upper surface of mould, parts are displayed. Positions of punches are determined by looking along casing. It is determined by monitoring from the upper surface.

Formed Punch Shapes

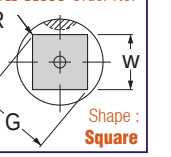
BAFY.. Order No. — Shape : **Round**



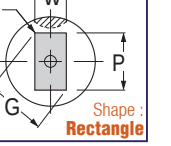
BAFO.. Order No. — Shape : **Oval**



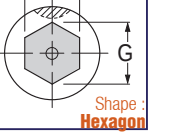
BAFK... Order No. — Shape : **Square**



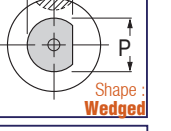
BAFD... Order No. — Shape : **Rectangle**



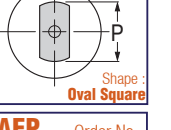
BAFA.. Order No. — Shape : **Hexagon**



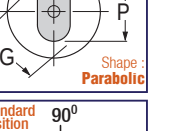
BAFM.. Order No. — Shape : **Wedged**

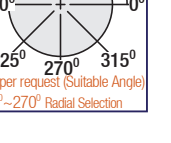


BAFX.. Order No. — Shape : **Oval Square**



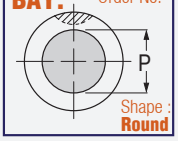
BAFP.. Order No. — Shape : **Parabolic**



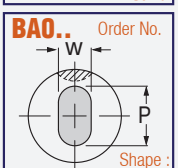


Formed Punch Shapes

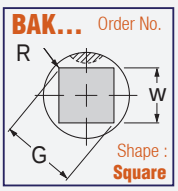
BAY. Order No. — Shape : **Round**



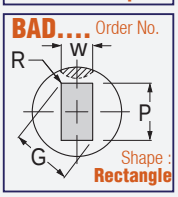
BAO.. Order No. — Shape : **Oval**



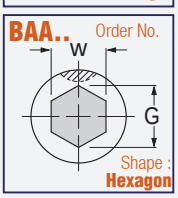
BAK... Order No. — Shape : **Square**



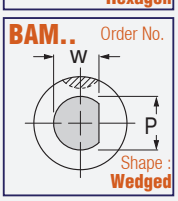
BAD.... Order No. — Shape : **Rectangle**



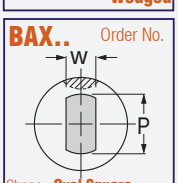
BAA.. Order No. — Shape : **Hexagon**



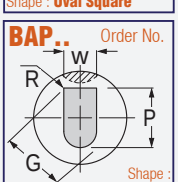
BAM.. Order No. — Shape : **Wedged**



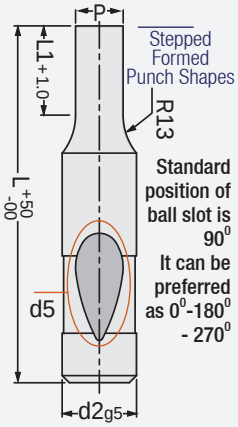
BAX.. Order No. — Shape : **Oval Square**



BAP.. Order No. — Shape : **Parabolic**



Standard Position 90⁰ — 135⁰ — 45⁰ — 180⁰ — 0⁰ — 225⁰ — 270⁰ — 315⁰
As per request (Suitable Angle) 90⁰~270⁰ Radial Selection



Stepped Formed Punch Shapes

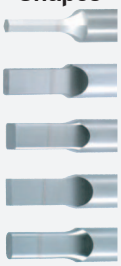
Standard position of ball slot is 90⁰ It can be preferred as 0⁰-180⁰ - 270⁰

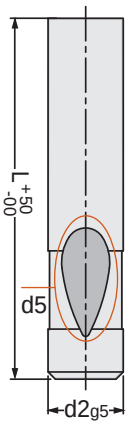


Punch As Per Request

TIN / TIC Plating

Shapes



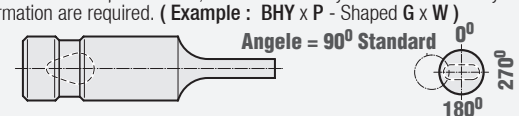




BALL LOCK, STEPPED-PUNCHES

For heavy loads, HEAVY DUTY Ball-Lock Punches

Order : Punch shape selection, technical drawing detail and also usage information are required. **(Example : BHY x P** - Shaped **G x W)**



For tolerance, refer Page 164. Other lenghts are produced as per order.

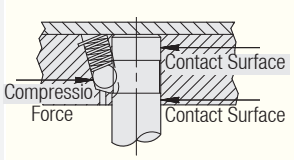
BAY - BAO - BAK - BAD - BAA - BAM - BAX - BAP

Stepped Ball - Lock Punches According To Their Shapes

Order Ø d2	Ball Slot d5	Ø d1 Şekil BAY Round P	Ø d1 Şekil Other Shapes W G/P	Standard L1	Alternative L1 Min.	Alternative L1 Max.	L Len. mm
BA.10	10	2.5 ~ 9.98	2.5 - 10	19	10	19	
BA.13	12 mm	5 ~ 12.98	4.5 - 13	19	13	25	71
BA.16		8 ~ 15.98	6 - 16	19	13	25	80
BA.20		12 ~ 19.98	8 - 20	19	13	25	90
BA.25		16 ~ 24.98	10 - 25	19	13	25	100
BA.32		24 ~ 31.98	12 - 32	19	13	25	110
BA.40		30 ~ 39.98	14 - 40	25	19	30	125

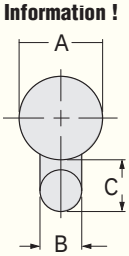
In case that **P** is equal **d2**, **P= d2** casing tolerance is valid. It can be used in places where **L1 = 10 P'** or **W < 2. 20** mm

Connecting punch to holder with ball slot.



Requirements Of Ball Locking Place

Technical Information !



For precision Retainers, pls. add. 1.7 to "C " dimension.

Light Load Punch / Bush

Punch Dia. A	Ball Dia. B	Cavity C
6.0	6.0	10
10	8	11
13		
16		
20		
25		
32		
38		

Heavy Load Punches

A Ø	B Ø	C mm
10	10	13
13	12	15
16		
20		
25		
32		
40		

BALL LOCK PUNCHES

For Heavy Loads, HEAY DUTY, Ball-Lock Punches

BAZ

Casing and cutting edge are precision grinded. It is for durable parts in all kinds of drilling / cutting moulds. Also, **TIN / TIC** Plating completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin).

HEAVY DUTY, Ball-Lock Punches BAZ

d2	d5	L
Ø 10 mm	10 mm	71
		80
		100
		125
		150
Ø 13 mm	12 mm	71
		80
		90
		100
		125
		150
Ø 16 mm	12 mm	71
		80
		90
		100
		125
		150
		165
Ø 20 mm	12 mm	71
		80
		90
		100
		110
		125
		150
		170

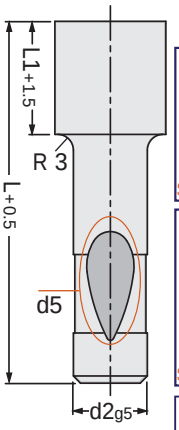
d2	d5	L
Ø 25 mm	12 mm	80
		90
		100
		110
		125
		150
		175
Ø 32 mm	12 mm	80
		90
		100
		110
		125
		150
		180
Ø 40 mm	12 mm	80
		90
		100
		110
		125
		150
		190

Note: Other lengths are produced as per order.

Material : HSS 1.3343 HRC 60 -62

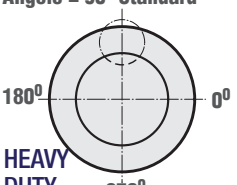
Order : BAZ d2 x L





Ball Lock, WIDE END PUNCH
HEAVY DUTY, Cutting Edge Wider Than Casing Ball - Lock Punches

Angele = 90⁰ Standard



HEAVY DUTY

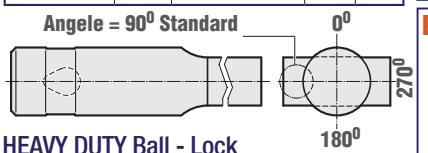
Casing and External Dia. are precision grinded

Order : **BAKY** d2 x P x L1 x L

Material : HSS 1.3343 HRC 60 -62

HEAVY DUTY Ball - Lock Round End, Wider Than Casing BAKY

Order Ø d2	Ball d5	Round P Min. Max.	L1 Min. Max.	L
BAKY 10	10	10.1 ~ 25	16	80 90 100
BAKY 13	12 mm	13.1 ~ 32	20	
BAKY 16		16.1 ~ 38	25	
BAKY 20		20.1 ~ 40	25	
BAKY 25		25.1 ~ 48	25	
BAKY 32		32.1 ~ 63	32	
BAKY 40		40.1 ~ 63	32	



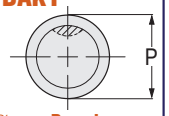
HEAVY DUTY Ball - Lock Wider Formed Than Casing Shaped Punches

BAKO - BAKK - BAKD - BAKA - BAKM - BAKX - BAKP

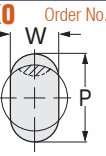
Order Ø d2	Ball d5	Shaped W-GP Min. Max.	L1 Min. Max.	L
BAK.10	10	3.0 ~ 25	16	80 90 100
BAK.13	12 mm	5.0 ~ 32	20	
BAK.16		6.0 ~ 38	25	
BAK.20		8.0 ~ 40	25	
BAK.25		10 ~ 48	25	
BAK.32		11.5 ~ 63	32	
BAK.40		14 ~ 63	32	

Formed Punch Shapes

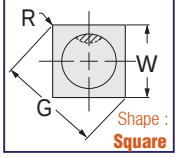
BAKY Order No. — Shape : **Round**



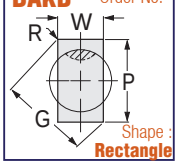
BAKO Order No. — Shape : **Oval**



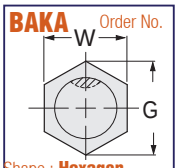
BAKK Order No. — Shape : **Square**



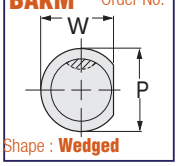
BAKD Order No. — Shape : **Rectangle**



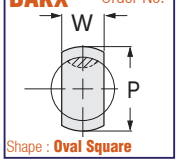
BAKA Order No. — Shape : **Hexagon**



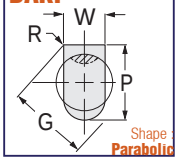
BAKM Order No. — Shape : **Wedged**

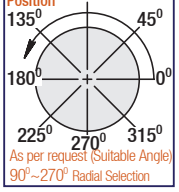


BAKX Order No. — Shape : **Oval Square**



BAKP Order No. — Shape : **Parabolic**





As per request (Suitable Angle)
90⁰~270⁰ Radial Selection



WIDE END, EJECTOR / SPRINGY PUNCH
HEAVY DUTY Cutting Edge Wider Than Casing Ball - Lock, Ejector / Springy Punch

Angle = 90⁰ Standard



HEAVY DUTY

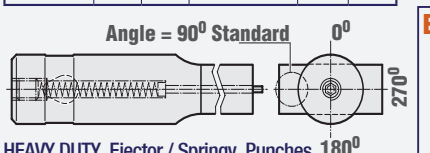
Casing and External Dia. are precision grinded

Order : **BAGY** d2 x P x L1 x L

Material : HSS 1.3343 HRC 60 -62

Ejector / Springy, Punches Round End, Wider Than Casing BAGY

Order Ø d2	Ball d5	Pin d3	Round P Min. Max.	L1 Min. Max.	L
BAGY 10	10	4	10.1 ~ 25	16	80 90 100
BAGY 13	12 mm	5	13.1 ~ 32	20	
BAGY 16		5	16.1 ~ 38	25	
BAGY 20		6	20.1 ~ 40	25	
BAGY 25		6	25.1 ~ 44	25	
BAGY 32		6	32.1 ~ 63	32	
BAGY 40		6	40.1 ~ 63	32	



HEAVY DUTY, Ejector / Springy, Punches Ball Lock wider Than Casing, Shaped

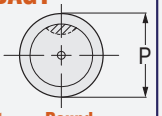
BAGO - BAGK - BAGD - BAGA - BAGM - BAGX - BAGP

Order Ø d2	Ball d5	Pin d3	Shaped W-GP Min. Max.	L1 Min. Max.	L
BAG. 10	10	4	3.0 ~ 25	16	80 90 100
BAG. 13	12 mm	5	5.0 ~ 32	20	
BAG. 16		5	6.0 ~ 38	25	
BAG. 20		6	8.0 ~ 40	25	
BAG. 25		6	10 ~ 48	25	
BAG. 32		6	11.5 ~ 63	32	
BAG. 40		6	14 ~ 63	32	

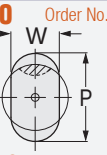
Other Lengtsh are produced as per order.

Formed Punch Shapes

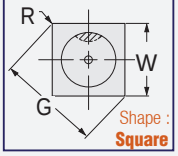
BAGY Order No. — Shape : **Round**



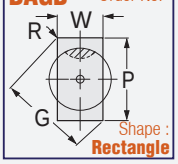
BAGO Order No. — Shape : **Oval**



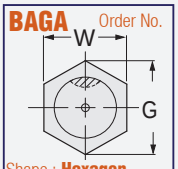
BAGK Order No. — Shape : **Square**



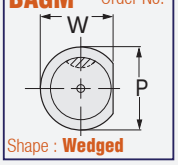
BAGD Order No. — Shape : **Rectangle**



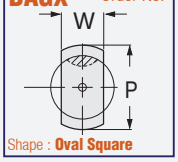
BAGA Order No. — Shape : **Hexagon**



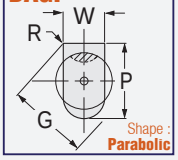
BAGM Order No. — Shape : **Wedged**

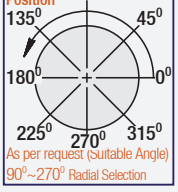


BAGX Order No. — Shape : **Oval Square**



BAGP Order No. — Shape : **Parabolic**





As per request (Suitable Angle)
90⁰~270⁰ Radial Selection



Section Press Mould

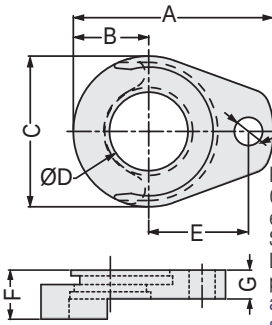
www.guvenal.net GTH

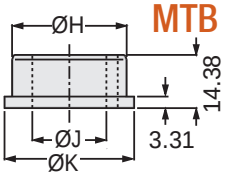




SCRAPER RETAINERS FOR PUNCHES WIDER THAN CASING

It is used with MRH Heavy Duty Ball Lock Retainers.



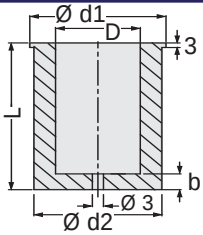


Innovative, integral Designed Patented Cost Savings holding feature at once is exhangeable and compatible with NAAMS Standards. Increased Poyurethane Spring Life due to procession sensitivitely to provide perpendicualarity, MRH Holder and Polyurethane Spring (MTS) are supplied separately.

Retainer For Wide End Punch Scrapers — Order No. **MTB**

Punch Ø / Casing P/G	MTB Ø 10	MTB Ø 13	MTB Ø 16	MTB Ø 20	MTB Ø 25	MTB Ø 32
P/G	15.75	19.75	24.75	31.75	39.75	39.75
A	53.18	58.60	63.75	73.86	83.63	83.63
B	18	20.5	24	31	36	36
C	36	41	48	62	72	72
D	16	20	25	32	40	40
E	26.93	29.97	31.75	33.53	40.64	40.64
F	17	17	17	17	17	18
G	10	10	10	10	10	10
H	15.75	19.75	24.75	31.70	39.70	39.70
J	10	13	16	20	25	32
K	19	23	28	34	44	44
Polyurethane Spring	MTS **16** Pl. Len.	MTS **20** Pl. Len.	MTS **25** Pl. Len.	MTS **32** Pl. Len.	MTS **40** Pl. Len.	MTS **40** Pl. Len.





POLYURETHANE PUNCH MTS SCRAPERS FOR MTB RETAINERS

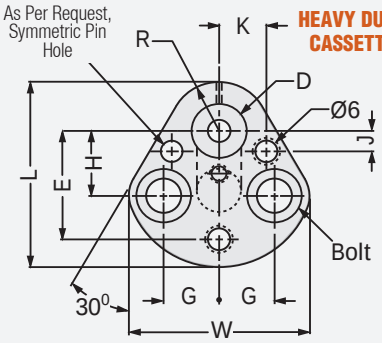
Holder Order	Punch Length	Punch	L	D	d1	d2	b
MTB 10	80	**10**	43	15.75	31	28	6
	100		63				
MTB 13	80	**13**	43	19.75	36	33	7
	100		63				
MTB 16	80	**16**	43	24.75	43	40	7
	100		63				
MTB 20	80	**20**	43	31.75	55	50	7
	100		63				
MTB 25	80	**25**	43	39.75	65	60	8
	100		63				
MTB 32	80	**32**	43	39.75	65	60	8
	100		63				

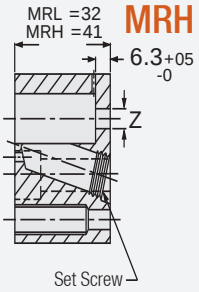
Exchangeable and Compatible with NAAMS Standards

Material: Polyurethane 95 Shore-A



FOR HEAVY LOAD, BALL-LOCK TRIANGLE RETAINERS





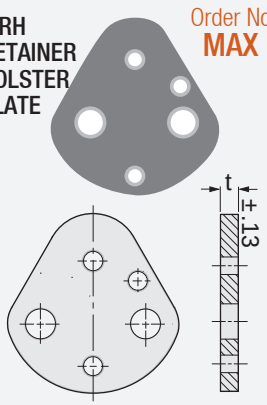
Heavy Load, Triangle Retainers for Ball Lock — Order No. **MRH**

Dimension	MRH 10	MRH 13	MRH 16	MRH 20	MRH 25	MRH 32	MRH 40
Ø D	10	13	16	20	25	32	40
E ±0.1	26.924	29.972	31.750	33.528	40.640	40.640	43.993
G	11.12	14.27	15.87	17.47	19.84	19.84	24
Ø L	44.5	50.8	54	60.3	69.9	69.9	77.4
W	39.9	48.3	51.6	58.2	66.5	66.5	77.8
R	9.5	12.7	14.3	17.5	22.2	22.2	26
H	19.05	19.05	19.05	19.05	23.82	23.82	27
J ±0.1	7.5	6.5	6.0	5.0	7.0	7.0	10
K ±0.1	9.0	12	13.5	16.5	22	22	26
Z	6	6	6	6	6	6	6
Bolt	M8	M8	M8	M10	M12	M12	M12

BOLSTER PLATES FOR BALL LOCK RETAINERS

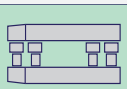
MRH RETAINER BOLSTER PLATE

Order No **MAX**



Order	Code	t
MRH.10.MAX	018	1.80
MRH.13.MAX	030	3.00
MRH.16.MAX	031	3.18
MRH.20.MAX	047	4.75
MRH.25.MAX	060	6.00
MRH.32.MAX	063	6.35
MRH.40.MAX	100	10
Order Example: Retainer Code (MRH) MAX.018	130	13

Section Press Mould



Page 167

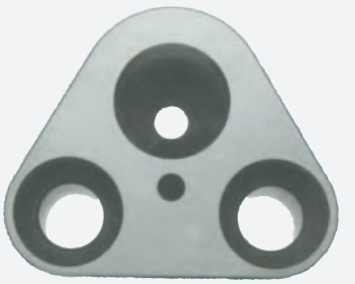
Economic Heavy Duty Round Type





Heavy Duty Small Dimensions

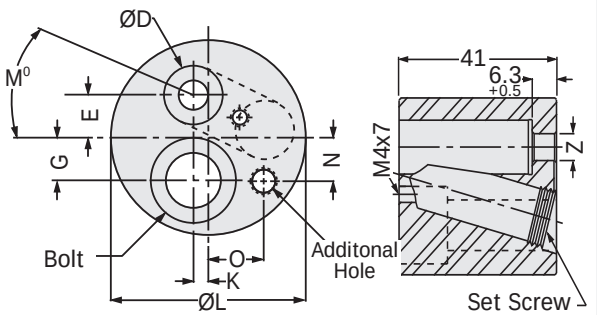




ROUND RETAINERS FOR HEAVY LOADS

Bolster Plate.MAX (t) : 1.8 mm - 3.0 mm - 3.18 mm
4.75 mm - 6.0 mm - 6.35 mm - 10 mm - 13 mm

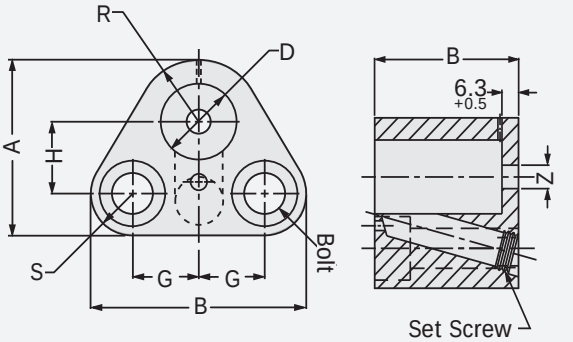
MRR



SMALL SIZE RETAINERS FOR HEAVY LOADS

Bolster Plate.MAM (t) : 3.0 mm - 6.0 mm -10 mm - 13 mm

MRM



HEAVY LOAD, Ball Lock Round Retainer / Economical Serial **MRR**

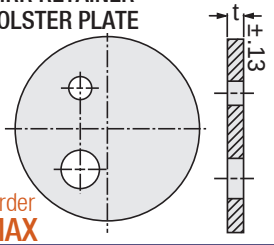
Dimensions	MRR 10	MRR 13	MRR 16	MRR 20	MRR 25	MRR 32	MRR 40
Ø D	10	13	16	20	25	32	40
Ø L	38.1	41.3	44.5	57.2	63.5	76.2	82.6
E	9.86	9.25	9.10	12.20	12.51	15.67	15.39
G	7.10	9.17	11.07	14.30	17.50	20.83	23.55
K	2.65	3.18	1.93	-	-	-	-
M	20.5^0	26^0	33.5^0	30^0	30^0	30^0	30^0
N	4.47	9.35	10.21	9.35	14.27	15.46	15.46
O	12.72	11.88	13.16	19.40	20.17	26.12	26.12
Z	6	6	6	6	6	6	6
Ad. Hole	M6X 1.0	M6X 1.0	M6X 1.0	M8X 1.25	M8X 1.25	M8X 1.25	M8X 1.25
Bolt	M12	M12	M12	M16	M16	M20	M20

HEAVY LOAD, Ball Lock Small Size Retainers **MRM**

Dimensions	MRM 10	MRM 13	MRM 16	MRM 20	MRM 25	MRM 32	MRM 40
Ø D	10	13	16	20	25	32	40
A	37.8	40.3	42.1	46.5	56.5	58.2	67.3
B	40.6	47.6	50.8	57.1	65.1	64.0	76.2
G	11.1	14.3	15.9	17.5	19.8	19.8	24.0
H	19.0	19.0	19.0	19.0	23.8	23.8	27.0
R	9.5	11.7	13.5	16.4	20.0	22.2	26.0
S	9.2	9.5	9.5	11.1	12.7	12.2	14.3
Z	6	6	6	6	6	6	6
Bolt	M8	M8	M8	M10	M12	M12	M12

BOLSTER PLATES FOR BALL LOCK RETAINER

MRR RETAINER BOLSTER PLATE

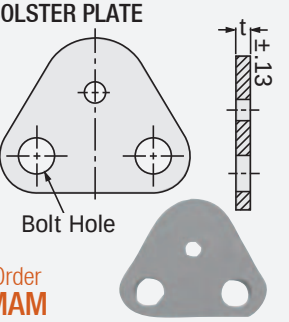


Order **MAX**

Order	Code	t
MRR.10.MAX	018	1.80
MRR.13.MAX	030	3.00
MRR.16.MAX	031	3.18
MRR.20.MAX	047	4.75
MRR.25.MAX	060	6.00
MRR.32.MAX	063	6.35
MRR.40.MAX	100	10
Order Example Retainer Code (MRR) MAX.018	130	13

BOLSTER PLATES FOR BALL LOCK RETAINERS

MRM RETAINER BOLSTER PLATE

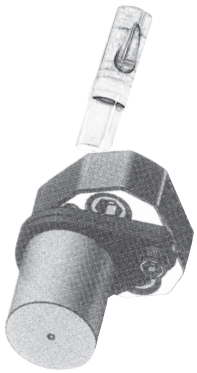


Order **MAM**

Order	Code	t
MRM.10.MAM	030	3.00
MRM.13.MAM		
MRM.16.MAM	060	6.00
MRM.20.MAM		
MRM.25.MAM	100	10
MRM32.MAM		
MRM.40.MAM	130	13
Order Example Retainer Code (MRM) MAM.030		

Section Press Mould



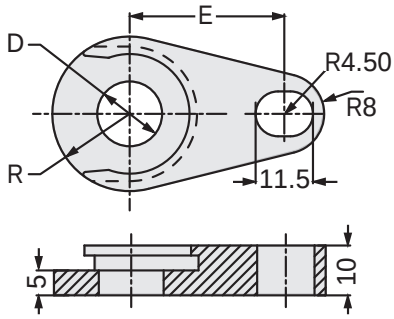




FOR PUNCH SCRAPERS MTR / MTM / MTP RETAINERS

It can be used with multi hole retainers. Due to processing sensitively to provide perpendicularity life is increased. It is exchangeable and compatible with NAAMS Standards. Patented Cost Saving, Retaing Feature At Once, Innovative Integral Design.

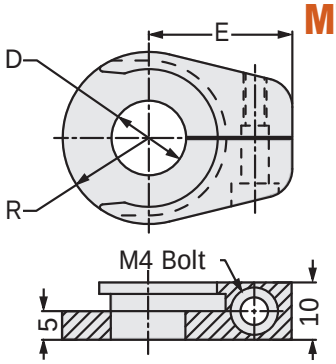
PUNCH SCRAPER RETAINERS MTR



*** IT IS USED WITH MRH RETAINERS.**

Order	D	R	E
MTR 10	10	13	28
MTR 13	13	15.5	31
MTR 16	16	18	32.9
MTR 20	20	20.5	34.8
MTR 25	25	24	39.8
MTR 32	32	31	41.3
MTR 40	40	36	45

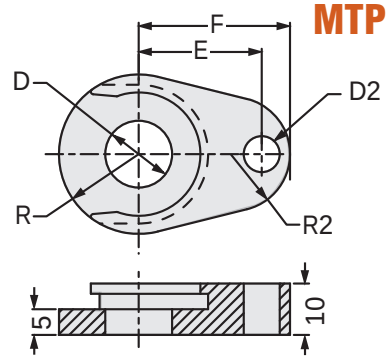
PUNCH SCRAPER RETAINERS MTM



*** IT IS USED WITH MRM RETAINERS.**

Order	D	R	E
MTM 10	10	13	22.5
MTM 13	13	15.5	25
MTM 16	16	18	27.5
MTM 20	20	20.5	30
MTM 25	25	24	35.5
MTM 32	32	31	37.5
MTM 40	40	36	42.3

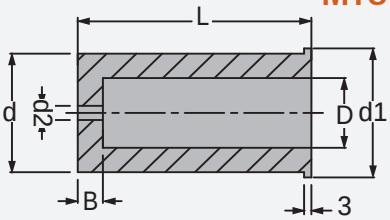
PUNCH SCRAPER RETAINERS MTP



*** IT IS USED WITH MRM RETAINERS.**

Order	D	R	E	F	D2	R2
MTP 10	10	13	21	26.5	7	10
MTP 13	13	15.5	23.9	29.4	7	11
MTP 16	16	18	24.5	30	7	12.8
MTP 20	20	20.5	29	36	9	11.8
MTP 25	25	24	33.5	40.5	9	12.9
MTP 32	32	31	40.6	49.3	9	8
MTP 40	40	36	44	53	9	8

POLYURETHANE PUNCH SCRAPER MTS

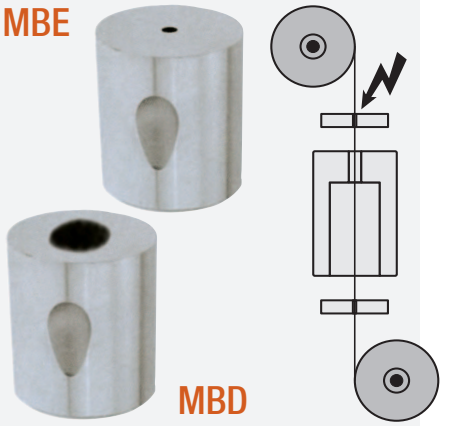


Heavy Load Ball Lock Punch Length	Light Load Ball Lock Punch Length	Recommended Scraper Length " L"
80	71	43
90	80	52
100	90	63
110	100	72

While ordering, pls. specify punch scraper length, product code. Example: 43 x MTS.L

Punch Casing	D	d	L	d1	d2	B
10	Ø 9.75	Ø 18	44 54 64 74	Ø 21	1.6	6 mm
13	Ø 12.75	Ø 23	44 54 64 74	Ø 26	3	6 mm
16	Ø 15.75	Ø 28	44 54 64 74	Ø 31	3	6 mm
20	Ø 19.75	Ø 33	44 54 64 74	Ø 36	3	7 mm
25	Ø 24.75	Ø 40	44 54 64 74	Ø 43	3	7 mm
32	Ø 31.70	Ø 50	44 54 64 74	Ø 55	3	7 mm
40	39.70	60	44 64	65	3	8 mm

MBE

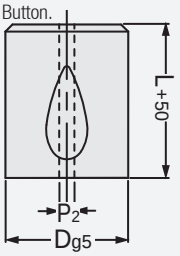


MBD

BALL LOCK FLAT MATRIX

Automative Standard Capless Bushes MBE MBD

External Diameter and Bottom Surface Grinded Die Button.

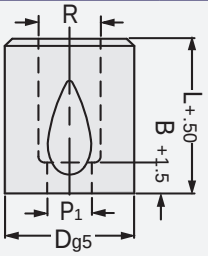


Starting Hole for wire erosion has been opened.

Important: If bush/ Die Buttons are ordered with punch during offering, precision and efficiency are high.

Capless Bushes, Wire Erosion, Front Hole MBE

Order	Ø D	P2	L
MBE.13.L	13	1.2	32 mm *Lengths are produced as per order.
MBE.16.L	16	1.6	
MBE.20.L	20	2.0	
MBE.25.L	25	2.4	
MBE.32.L	32	2.4	
MBE.38.L	38	2.4	



Flat Hole Punch Bushes

Flat Internal Dia. Along Punch Bush

Material : HSS (1.3343)
HRC 60 - 63

CAPLESS BUSH FLAT HOLE MATRIX MBD

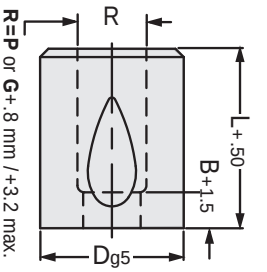
Order	Ø D	B	R	P1	L
MBD.13.L	13	4.0	5.8	1.2	32 mm *Lenghts are produced as per order.
MBD.16.L	16	5.0	8.0	1.6	
MBD.20.L	20	5.0	11.9	2.0	
MBD.25.L	25	6.0	16	3.6	
MBD.32.L	32	6.0	20	4.4	
MBD.38.L	38	8.0	27	5.6	

Shapes :
MBY- MBO- MBK
MBD- MBA- MBM
MBX- MBP



BALL LOCK FORMED MATRIX

Automotive Standard Capless Bushes MB.



Standard Tolerances		
Round P +0.1, -.00	◎ 0.1	From P to d2
Shape P,W,G ± 0.1	◎ 0.2	From P to d2

Standard position of ball lock is 90^0.
It can be preferred as 0^0- 180^0- 270^0

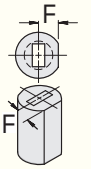
MBY - MBO - MBK - MBD - MBA - MBM - MBX - MBP

Ball Lock Punch Matrixes According To Their Shapes

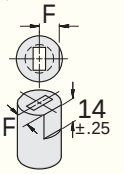
Order No	Casing D	B mm	Shape R Max.	Ø R Shape MBY Round P	Ø R Shape Other Shapes W Min.	Ø R Shape G / P Max.	L Len. mm
MB...13	13	4	6.0	1.6 - 5.0	1.6	5.0	32 mm *Lengths are produced as per order.
MB...16	16	5	8.0	3.2 - 7.2	2.0	7.2	
MB...20	20	5	12	4.0 - 11	2.5	11	
MB...25	25	6	16	8.0 - 15	4.0	15	
MB...32	32	6	20	11 - 19	5.0	19	
MB...38	38	8	27	16.5 - 26	6.5	26	

POSITIONING Ball Lock Punch Bushes

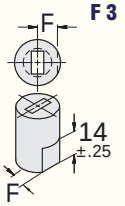
F 1 One Sided Discrete



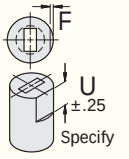
F 2 Upper Surface Discrete



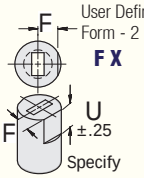
Bottom Surface Discrete **F 3**



User Defined Form - 1 **F 4**



User Defined Form - 2 **F X**



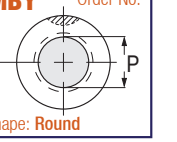
Technical Information!

Locking Punch Bushes: F1 - F2 - F3 using for " F" Dimension are given at next table. F x Dimension are defined by user. While ordering, cut surface dimension "F" and "U" should be specified.

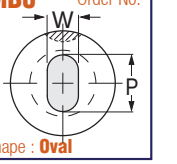
Casing Dia.	" F " +0.2
10	4.0
13	5.5
16	7.0
20	8.5
22	9.5
25	11
32	14
38	17
40	18
45	20.5
50	23
56	26
63	29.5
71	33.5
76	35.5
85	40
90	42.5
100	47.5

Formed / Bush MATRIX Shapes

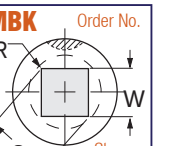
MBY Order No. — Shape: Round



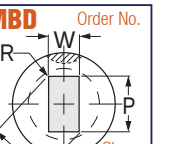
MBO Order No. — Shape : Oval



MBK Order No. — Shape : Square



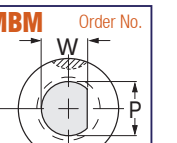
MBD Order No. — Shape: Rectangle



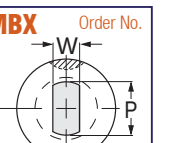
MBA Order No. — Shape : Hexagon



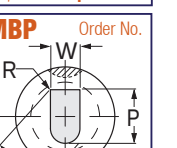
MBM Order No. — Order : Wedged



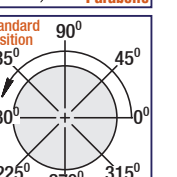
MBX Order No. — Shape : Oval Square



MBP Order No. — Shape : Parabolic



Standard Position



As per request, (suitable angle (0^0) 90^0 ~ 180^0 ~ 270^0



Section Press Mould

Formed / Bush MATRIX Shapes

MKY Order No.



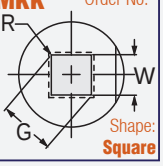
Shape: **Round**

MKO Order No.



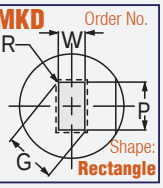
Shape: **Oval**

MKK Order No.



Shape: **Square**

MKD Order No.



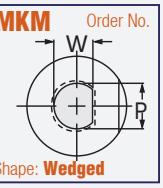
Shape: **Rectangle**

MKA Order No.



Shape: **Hexagon**

MKM Order No.



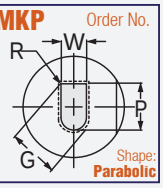
Shape: **Wedged**

MKX Order No.

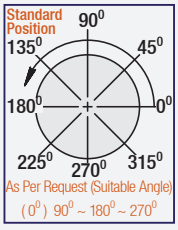


Shape: **Oval Square**

MKP Order No.



Shape: **Parabolic**



As Per Request (Suitable Angle)

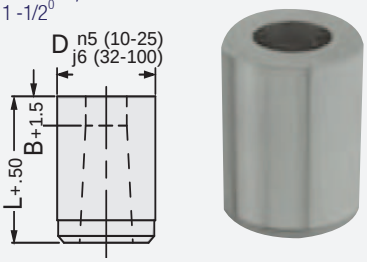
(0⁰) 90⁰ ~ 180⁰ ~ 270⁰

EXTRA LIFE BUSH CONICAL - FLAT

Conical Inner Flat Bush

Conical Standard: Per edge at round is 1^0. At shaped is $1\text{-}1/2^0$

Shapes : MKY- MKO- MKK MKD- MKA- MKM MKX- MKP



Important: If bush/ Die Buttons are ordered with punch during offering, precision and efficiency are high.

Standard position of ball slot is 90^0. It can be preferred as 0^0- 180^0- 270^0.

For positioning system, refer **Page 170** .

Order Ø d2	Casing D	Overhanging Len." B "			
		Stan dard	Alternative Length		
			A	B	C
MK..10	10	4	8	-	3
MK..13	13	5	8	-	3
MK..16	16	5	8	-	3
MK..20	20	5	12	20	3
MK..22	22	6	12	20	3
MK..25	25	6	12	20	3
MK..32	32	6	12	20	3
MK..38	38	8	12	20	3
MK..40	40	8	12	20	3
MK..45	45	8	12	20	3
MK..50	50	8	12	20	3
MK..56	56	8	12	20	3
MK..63	63	8	12	20	3
MK..71	71	8	12	20	3

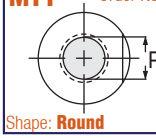
Extra Life, Conical, Flat Bushes

MKY - MKO - MKK - MKD MKA - MKM - MKX - MKP

Order Ø d2	Full Length L	Round Type P	Shaped	
			W	GP
			Min.	Max.
MK..10	22 25 28 30 mm	1.6 - 5.0	1.6	5.0
MK..13		3.0 - 7.2	1.8	7.2
MK..16		5.0 - 8.8	2.5	8.8
MK..20		5.0 - 11	3.2	11
MK..22		7.5 - 14	4.0	14
MK..25		9.5 - 16.5	4.8	16.5
MK..32		13 - 20	5.5	20
MK..38		16 - 26	6.4	26
MK..40		16.6 - 26	6.4	26
MK..45	25 28 30 32 35 38	22 - 31	7.5	31
MK..50		24 - 34	8.0	34
MK..56		26 - 38	8.5	38
MK..63		30 - 43	9.0	43
MK..71		34 - 48	9.5	48

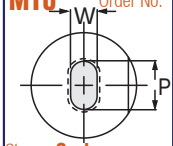
Formed / Bush MATRIX Shapes

MTY Order No.



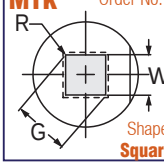
Shape: **Round**

MTO Order No.



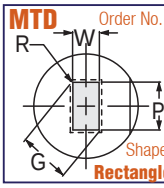
Shape: **Oval**

MTK Order No.



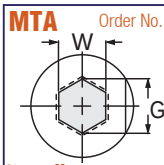
Shape: **Square**

MTD Order No.



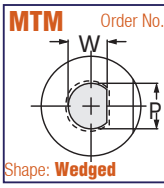
Shape: **Rectangle**

MTA Order No.



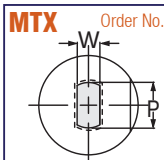
Shape: **Hexagon**

MTM Order No.



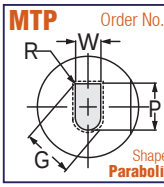
Shape: **Wedged**

MTX Order No.

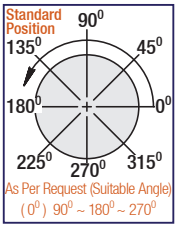


Shape: **Oval Square**

MTP Order No.



Shape: **Parabolic**



As Per Request (Suitable Angle)

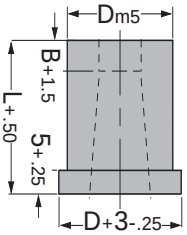
(0⁰) 90⁰ ~ 180⁰ ~ 270⁰

EXTRA LIFE GUIDE BUSH-CONICAL

Conical Inner Guide Bush

Conical Standard: Per edge at round is 1^0. At shaped is $1\text{-}1/2^0$

Shapes : MTY- MTO- MTK MTD- MTA- MTM MTX- MTP





StandartdTolerances		
Round P +0.1, -.00	◎ 0.1	From P to d2
Shape P,W,G ± 0.1	◎ 0.2	From P to d2

Standard position of ball slot is 90^0.
It can be preferred as 0^0- 180^0- 270^0

For positioning system, refer **Page 170**.

Order Ø d2	Casing D	Overhanging Len." B "			
		Stan dard	Alternative Length		
			A	B	C
MT..10	10	4	8	-	3
MT..13	13	5	8	-	3
MT..16	16	5	8	-	3
MT..20	20	5	12	20	3
MT..22	22	6	12	20	3
MT..25	25	6	12	20	3
MT..32	32	6	12	20	3
MT..38	38	8	12	20	3
MT..40	40	8	12	20	3
MT..45	45	8	12	20	3

Extra Life Conical, Guide Bush

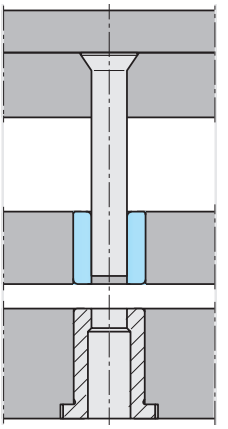
MTY - MTO - MTK - MTD MTA - MTM - MTX - MTP

Order Ø d2	Full Length L	Round Type P	Shaped	
			W	GP
			Min.	Max.
MT..10	22 25 28 30 32 35 mm	1.6 - 5.0	1.6	5.0
MT..13		1.8 - 7.2	1.8	7.2
MT..16		5.0 - 8.8	2.5	8.8
MT..20		5.5 - 11	3.2	11
MT..22		7.5 - 14	4.0	14
MT..25		9.5 - 16.5	4.8	16.5
MT..32		13 - 20	5.5	20
MT..38		16 - 26	6.4	26
MT..40		16.5 - 26	6.5	26
MT..45		22 - 31	7.5	31

GTH www.guvenal.net



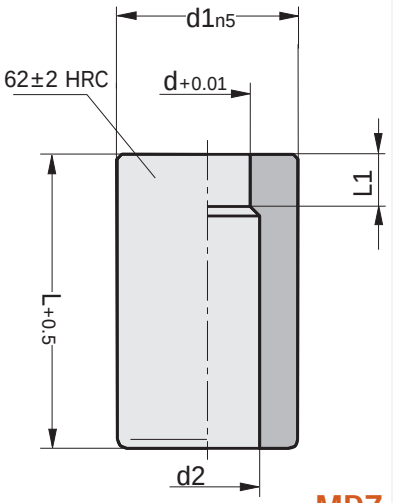






PUNCH BUSHES / DIE BUTTONS

ISO 8977 Shape A Flat Bush **MDZ**



Shape A Flat Bush / Die Buttons **MDZ**

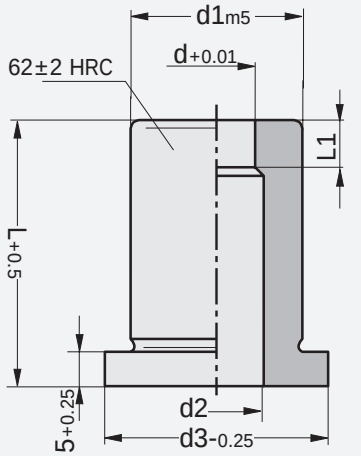
d	d1	d2	L1	L
2.0 - 3.5	**8**	4.0	4	20 / 25
2.5 - 5.0	**10**	5.8	4	20/25/32
4.0 - 7.0	**13**	8.0	5	20/25/32
6.0 - 9.0	**16**	9.5	5	20/25/32
8.0 - 11.0	**20**	12.0	8	20/25/32
10.7 - 16.0	**25**	17.3	8	20/25/32
15.0 - 20.0	**32**	20.7	8	20/25/32
19.0 - 27.0	**40**	27.7	8	25/32
26.0 - 36.0	**50**	37.0	8	32

Order: **MDZ** d1 x d x L

Material : HSS 1.3343 External Diameter and
Hardness: 62 HRC bottom surfaces are grinded

PUNCH BUSHES / DIE BUTTONS

ISO 8977 Shape B Guide Bush **MSZ**



Shape B Guide Bush / Die Buttons **MSZ**

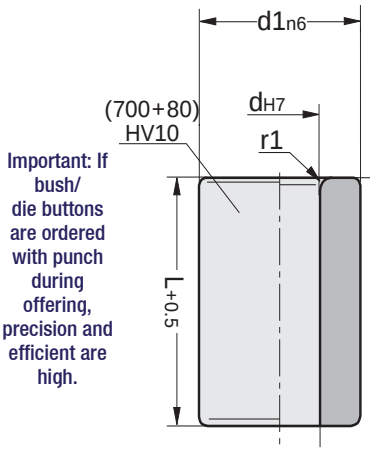
d	d1	d3	d2	L1	L
2.0 - 3.5	**8**	11	4.0	4	20/25
2.5 - 5.0	**10**	13	5.8	4	20/25/32
4.0 - 7.0	**13**	16	8.0	5	20/25/32
6.0 - 9.0	**16**	19	9.5	5	20/25/32
8.0 - 11.0	**20**	23	12.0	8	20/25/32
10.7 - 16.0	**25**	28	17.3	8	20/25/32
15.0 - 20.0	**32**	35	20.7	8	20/25/32
19.0 - 27.0	**40**	43	27.7	8	25/32
26.0 - 36.0	**50**	53	37.0	8	32

Order: **MSZ** d1 x d x L

Material : HSS 1.3343 External Diameter and
Hardness : 62 HRC bottom surfaces are grinded

PUNCH BUSHES / DIE BUTTONS

Bushes for Punch Kits **MZD**



Important: If bush/ die buttons are ordered with punch during offering, precision and efficient are high.

Bushes For Punch Kits **MZD**

d	d1	r1	L
1.0 - 2.4	**5**	1.0	8.0
1.6 - 3.0	**6**	1.0	12.5
2.0 - 3.5	**8**	1.5	12.5
3.0 - 5.0	**10**	2.0	16.0
4.0 - 7.2	**13**	2.0	16.0
6.0 - 8.8	**16**	2.0	20.0
7.5 - 11.3	**20**	2.5	20.0
11 - 16.6	**25**	2.5	25.0
15 - 20	**32**	4.0	25.0
18 - 27	**40**	4.0	32.0

Order: **MZD** d x d1 x L

Material : HSS 1.3343 External Diameter and
Hardness : 62 HRC bottom surfaces are grinded



Order
VCF 600

HAND TYPE MOBILE CHAMFERING MACHINE

Hand Type, Light, Useable, Japanese Equipped Motor Mould Plates and at Machine Production and Chamfering Processes

Adjustable Radius Selection



Slide Bearing Length 100 mm

Mobile / Diamond Plaque ... Optional Spare End : SPMW 0308

Order	Machine Dimensions	Motor Voltage	Cycle R.P.M	Corner Radius	Chamfer Capacity	Weight
VCF 600	380 x 130 mm	220 V 0.7 KW	12000	45^0	0 - 3 mm	3.7 Kg

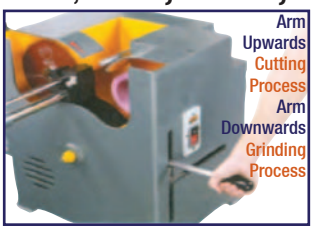


Order
PKM.1

PIN CUTTING AND GRINDING MACHINE

Ø 1 - 24 mm Cylindrical Parts, In Length Setting





Safety and Positioning of Work Piece Precision Length Cutting and Grinding

Diameter Capacity..... Up to Ø 1 mm- 24 mm
Length Capacity .....In coarse dimension, 320 - 800 mm ± 0.10
Precision Cutting in Standard Setting Unit ..... 60 - 320 mm ± 0.01
Short Cutting (Optional, With Bus Bar) ..... 40 - 320 mm ± 0.01
Grinding / Cutting, Stone Cycle / Speed ... 2800 m / min.
Motor Cycle / Speed ..... 3600 RPM
Motor ..... 220 / 280 F. 50 Hz. 0.75 Kv.
Cutting Stone (Order PKM 2 **)** ... 125 / 1 / 1.5 mm
Grinding Wheel (Order PKM 3 **)** ..... Ekr - D100
Stone Correction Diamond (Order PKM 4 **)**..0.50 Carat
Machine Dimension .. 430 x 360 x 500 mm
Weight ..... 109 Kg.

Our Ejector Pins/ Punches are precision cut and face grinded in desired length.

Easy Fast

It provides fast cutting repeatedly with length



Grinding Dresser Diamond Setting Scale

Work Piece Support Thrust

Cover Safety Switch



Work Piece Positioning Seating Area

Cutting Stone



Motion Scale for precision grinding of dish stone.



Cutting Stone Mounting Kits



Grinding Wheel After Cutting

Length Setting Unit

System Lubricant Grease Nipple

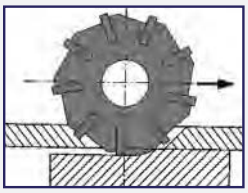
It provides recycling of rejected material.

HAND TYPE, TRAVELER / MOBILE, UNIVERSAL CHAMFERING

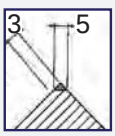


Order
VCF 700

It is for universal / heavier / wider work pieces. It is used at mould plates and machine production.

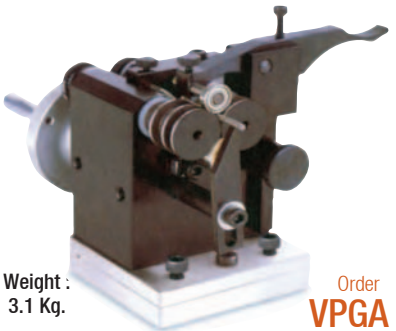


Slide Bearing Length 200 mm



Mobile / Diamond Plaque ... Optional Spare End: SPUN 1203

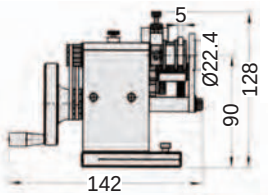
Order	Machine Dimensions	Motor Voltage	Cycle R.P.M	Corner Radius	Chamfer Capacity	Weight
VCF 700	360 x 200 mm	220 V 0.7 KW	3500	15^0-45^0	0 - 7 mm	13 Kg



Weight : 3.1 Kg.

Order **VPGA**

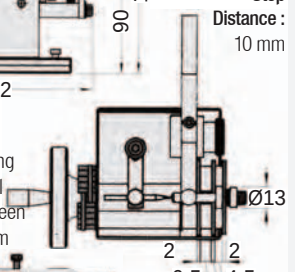
Small Type: Punch & Pin FORM PROCESSING EQUIPMENT

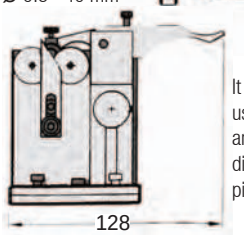


Pin Dia. Capacity : From 0.5 ' to 6 mm

Step Distance : 10 mm

Processing Equipment in surface grinding bench of small punches between Ø 0.5 - 10 mm





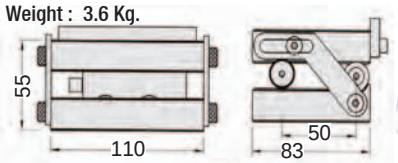
It is suitable to be used at processing and grinding of small diameters and short pins serially.

SINE - ANGULAR TABLE
For Pin Forming Equipments

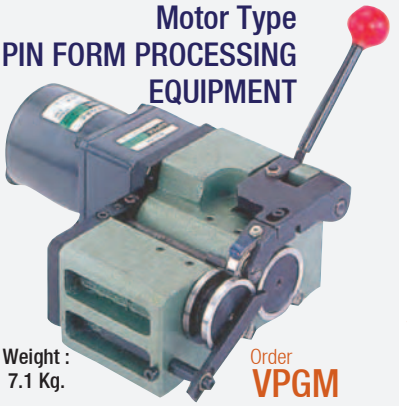
Order **VSP-S**



Weight : 3.6 Kg.

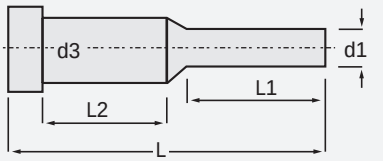


Motor Type PIN FORM PROCESSING EQUIPMENT



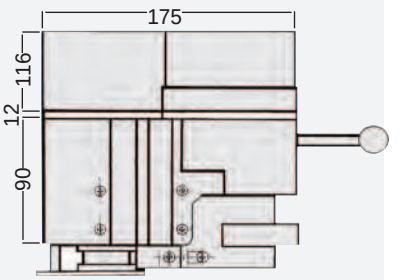
Weight : 7.1 Kg.

Order **VPGM**



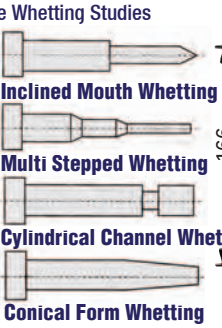
Pin Processing Information :

Pin Full Length (L) ..... 20 - 120 mm
Minimum Pin Connecting Length (L2) .. min.22 mm
Pin Grinding Length (L1)..... 5 - 35 mm
Pin Connecting Diameter (d3) ..... Ø 2 ~ 25 mm
Pin Grinding Diameter (d1) ..... Ø 0.5 ~ 25 mm
Grinding Sensitivity ..... 0.01 mm
Motor Cycle ..... 130 RPM
Motor (Monophase) ..... 120 V / 50 Hz / 25 W
Pin Bearing Roller Speed ..... 60 Hz
Step Ovality Sensitivity..... 25.4 mm
Equipment Surface Connecting Dimensions:
175 x 218 x 90 mm



Some Sample Whetting Studies



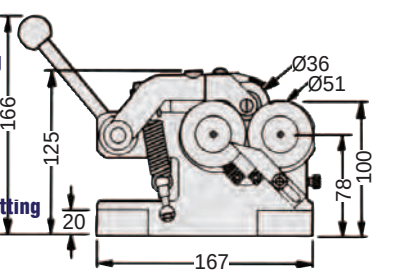


Inclined Mouth Whetting

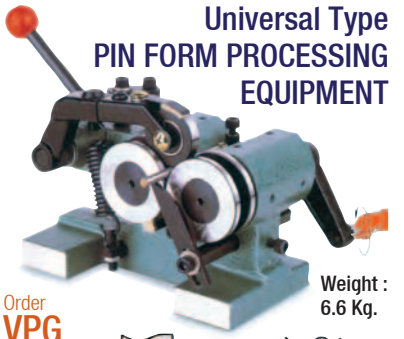
Multi Stepped Whetting

Cylindrical Channel Whetting

Conical Form Whetting

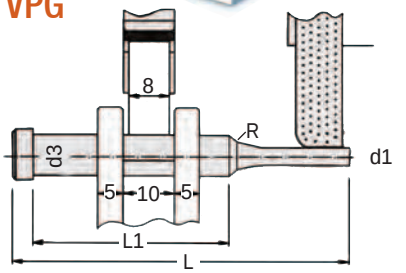


Universal Type PIN FORM PROCESSING EQUIPMENT



Weight : 6.6 Kg.

Order **VPG**



Working System:
Bench Grinding **Manual** System Equipment

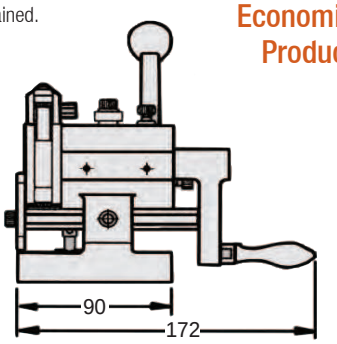
* It is used in cylindrical or stepped form grinding operations of ejector pins - punch and EDM Work Pieces surface on grinding machine.

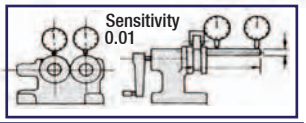
Pin Capacity: ..... 1.5 mm x 25 mm

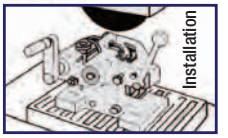
* Pin: When precision wheels are fixed, center of work has been specified automatically.

* Thanks to rigid connecting system, grinding distance from 5 mm up to 35 mm can be obtained.

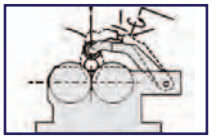
Economic Product







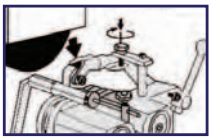
Lift depressor arm. Insert pin into its slot. Tight depressor arm screw.



When pin is placed between precision wheels, center is found automatically.



After connection equipment grinding machine, start whetting by turning arm.

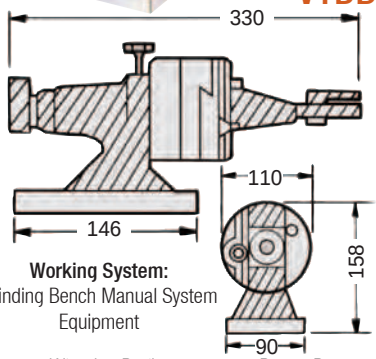


Before starting grinding, ensure that all support and Guide Screws are tightened.

STONE FORMING EQUIPMENT

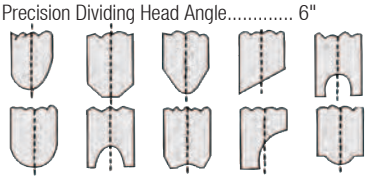


Order **VTDB**



Working System:
Grinding Bench Manual System Equipment

Convex Whetting Radius..... 0.8 R - 40 R
Concave Whetting Radius..... 0 - 40 R
Max. Grinding Machine Stone Dia. ..... Ø 250 mm
Turning Angle..... 4 x 90^0 = 360^0
Precision Dividing Head Angle..... 6"



* Precision Centers height is obtained with positive cutting angle, diamond dressers.
*Thanks to precision grinded dove tail slides, absolute distance shifts are prevented in the desired distance.
* By providing control from one point, convex and concave whetting forms are provided precisely and quickly.
* All working surfaces and measuring scale is 60 HRC'.

DIAMOND DRESSER

TDE

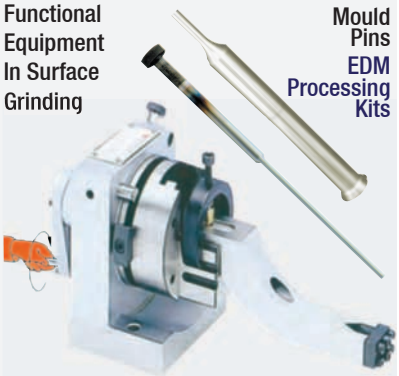


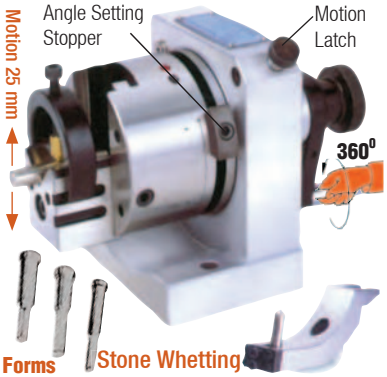
It is for whetting stones in grinding machines.

Order	Type
TDE.030	0.30 Carat
TDE.050	0.50 Carat
TDE.075	0.75 Carat
TDE.100	1.0 Carat
TDE.150	1.5 Carat
TDE.200	2.0 Carat
TDE.300	3.0 Carat

Functional Equipment In Surface Grinding

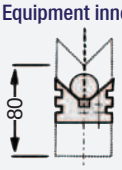
Mould Pins EDM Processing Kits





PIN FORMING EQUIPMENT

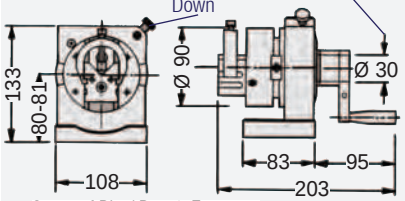
Connecting Bearing Open **V-PS**
Step Creation at Long Ejector Pins
Equipment inner " V " is open in bearing parallel.



" V " Bearing Length: 30 mm
Axial Height of Center of Rotation: 15 mm

Rotation Setting Axial and Up / Down

Inner of equipment overall open



PIN FORMING EQUIPMENT

Connecting Bearing Closed **V-PB**
Pin Bearing Length 22 mm

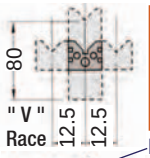
Specifications : It creates the end stage of press drilling punches or injection mould ejector pins or it enables to create the desired formed shapes as equipment manually in shaped forming processing grinding machine manually. To create form for grinding machine stone, in addition precision and quick round/ radius and multi edge complex processes are created with stone whetting bus bar practically to ejector pins of mould punches and EDM sinking Process Kits. Motion is provided in two ways with equipment, it is provided 360º Angular Return Motion and Eccentric (Up/ Down) Motions processing practicality.

Some of Pin / Punch Forms



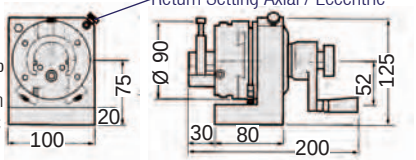
Technical Data: It is similar for both product.
d1 : Pin Connecting Dia. ..... **Ø 4 - Ø 30** mm
Model V-PB 01 (Connecting Bearing is close)
L : Pin Connecting Length ..... **22** mm
Model V-PS 02 (Connecting Bearing is open)
L : Long Pin Connecting Len. As Per Request
Motion of "V" Bearing to Up / Down..... **25** mm
Motion of "V" Bearing to Single Direction..... **12.5** mm
Total Motion of "V" Bearing..... **25** mm
Number of Mirror Dividing Head Angle **24 Psc.** $15^0 \pm 5^0$
Max. Stone Grinding Machine Stone Dia..... **Ø 200** mm
Equipment Surface and Angle / Scale Hardness **63** HRC
Total Weight of Equipment **10 -** VPS 02 **9** Kg.

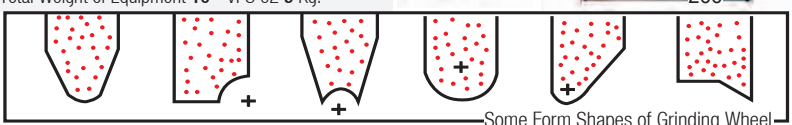
Order No
V-PB
V-PS





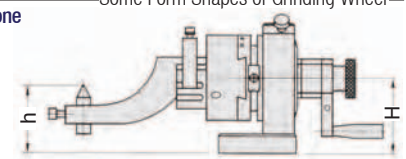
Return Setting Axial / Eccentric





Some Form Shapes of Grinding Wheel

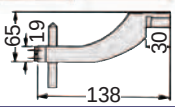
Forming Process of Surface Grinding Machine Stone
R: Radius of Grinding Wheel **R.100**
h: Diamond Dresser Kit (Height can be adjusted.)
H: Height between base and center 80 mm
Convex Angle: h = H - R Convex R = 48
Concave Angle: h = H + R Concave R = 100

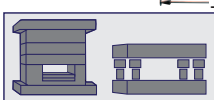




VSP
Sine Angle Table

Surface Grinding Machine Stone Forming Equipment



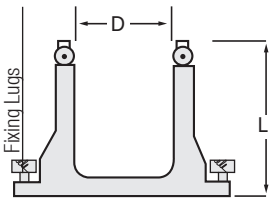


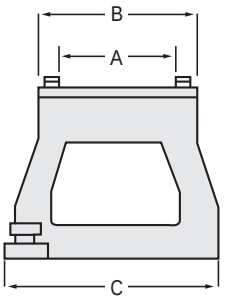


BALANCE STAND
LBS 100
LBS 350

Horizontal Flatness of Desktop Footed Round Work Pieces is Balance Control Purpose / Fast Use / High Precision.

Balance and flatness of part can be monitored by sliding suitable size round work pieces that are between slides on unit slides.
LBS 100 Maximum Diameter 200 mm.
LBS 350 Maximum Diameter 350 mm.





BALANCE STAND LBS 100 - LBS 350

Order	A	B	C	D	L	Kg.
LBS -100 Ø 200	137	152	225	110	175	8.8
LBS - 350 Ø 350	160	180	260	125	235	15.1

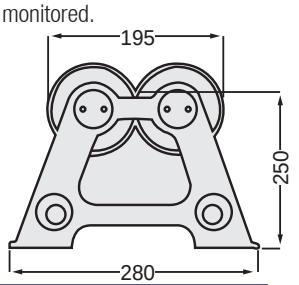


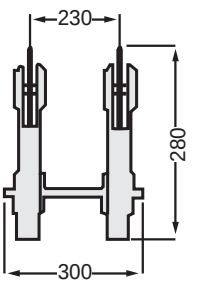
PRECISION BALANCE MEASURING STAND

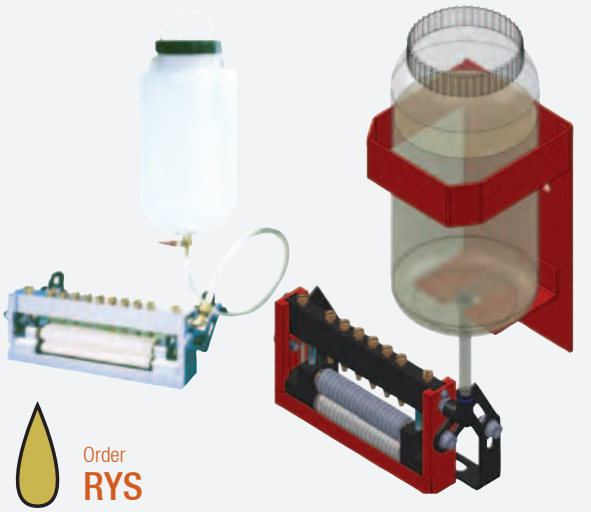
Order **WBS 300**

It helps to measure and develop grinding sensitivity correctly. All surfaces of high precision measuring stand are 55 HRC Steel Cast Casing.

Precision measuring stand / disc - rotary model are placed on round work pieces. By turning work pieces, its balance and flatness are monitored.



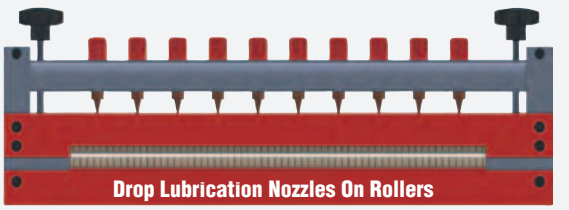




Order **RYS**

ROLLER, SHEET BAND LUBRICANTS

Sheet width capacity from 50 mm to 1600 mm



Standard Features :
* Thanks to local valves, partial lubrication on mobile sheet band.
* Industrial felt plates are available in lubricating roller.
* 3 lt. Capacity, Plastic Oil Chamber

Optional (As per request) Features :
* Time Cycled Lubricating Relay
* Hydraulic Pump Tank
* Desired Oil Capacity

SHEET BAND CAN BE MOUNTED TO DRIVE SYSTEM EASILY

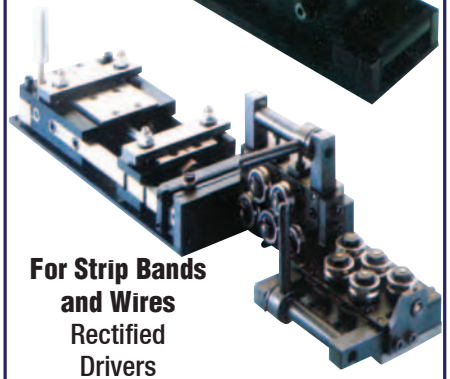
Order	Max. Band Width	Min. Band Thickness	Max. Band Thickness	Type
RYS 50	0.50 mm	1.0	2.0	Drop Roller Lubrication
RYS 100	0.100 mm			
RYS 150	0.150 mm			
RYS 300	0.300 mm	3.0	6.0	
RYS 500	0.500 mm			

Easier and faster production is obtained by lubricating band with drops while work piece / sheet product is switched between rollers in roller lubricating system press cutting and form mould processing operation. This system provides quality product without waste by increasing life time of mould. Band thickness can be adjusted from 0.1 mm to 6 mm sheet thickness.

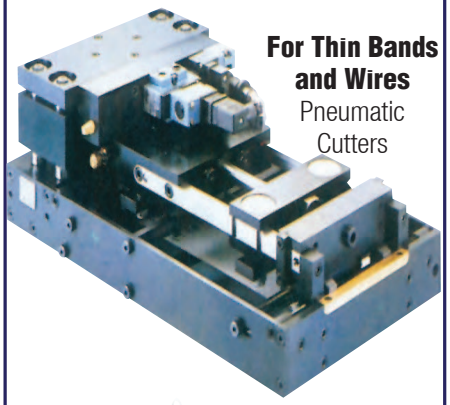
THE MOST SUITABLE AND HIGH PRECISION IMPORT DRIVER TYPES



Rectifier Drivers
Especially For Narrow Bands



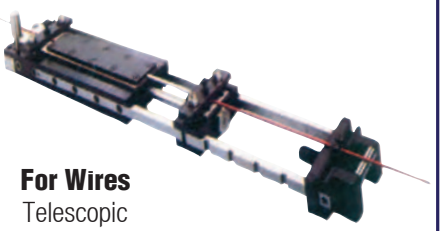
For Strip Bands and Wires
Rectified Drivers



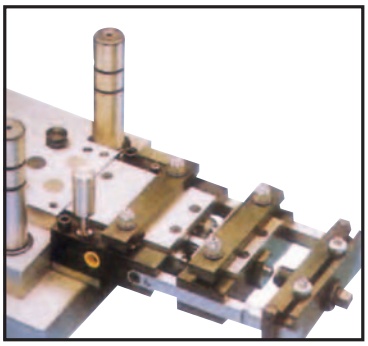
For Thin Bands and Wires
Pneumatic Cutters

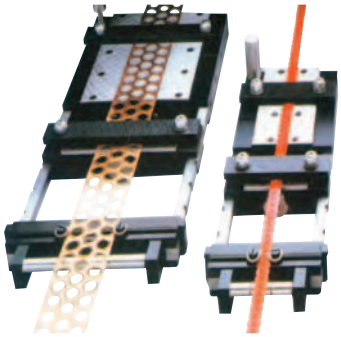


For Very Thin Bands
Guide Channel Drivers



For Wires
Telescopic Drivers





High Precision PNEUMATIC DRIVERS

Import Herrblitz ITALY Rapid Type Drivers (Guaranteed Product)

Herrblitz Pneumatic Drivers
It is at your disposal with 120 Pieces Standard and Special Model as per request. They have been made in modular system, it is quite easy to obtain different dimensions, **normal drivers** are convenient especially for small bands, **they can be mounted directly on the mould.** Vertical motion of upper mould gives command to the driver, hence their mounting is so easy. **Heavy Duty Type Drivers** are very strong, they have three pulling cylinders.

Major Structural Features : Quality of Used Material; all surfaces exposed to impacts or friction are hardened and solid chrome plated, not to affect airborne water, valves and pistons are stainless steel, cylinder jacket are made from solid bronze.

Driving Sensitivity : Powerful front and rear Airbag ensure to work in 0.02mm sensitivity. At very powerful drivers there are 5 airbags at rear and 4 airbags at the front, hardness of airbags can be adjusted.

Wide Field Sliding - Bearing Plates : For feeding of special profiles, making bearing privately is possible. For magnetic bands or very precision bands, polyamide or especially hardened plates are applied.

Input Roller : By inserting roller driver input, friction on band can be decreased.
Slide Bearings: Hardened and Grinded bearings are used at our drivers. Pitch setting is so easy, you can use slots at slide edges in different stages. Accessories also superimposable to Herrblitz Drivers;
Guiding bars for very thin and precision materials enable to feed even 0.05 mm thick band by pushing.

Six roller motorless rectifier : Thanks to this application, you can obtain very practical and economic solution in rectifying bands and wires.

Pneumatic Length Cutting Machine For Bands and Wires : (Coupled to the driver). It provides to cut many different materials such as plastic, steel, paper etc. in the desired lengths.

Speed Setting and Control are electronic and its application is very easy. Special **Pliers :** For driving circular and special section profiles.

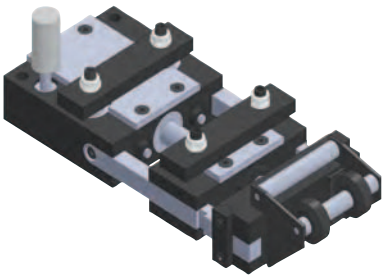
Pneumatic Valved Normal Type

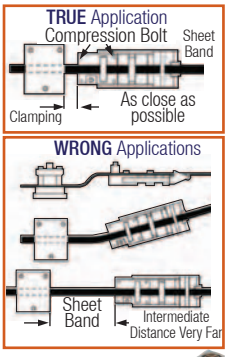
Serial	Order	Max. Band Width	Pitch Step mm	Max. Band Thickness
A Serial	A 50	0 50 mm	0 ~ 50	0 ~1.90
	A 100		0 ~100	0 ~1.80
	A 150		0 ~150	0 ~1.50
	A 200		0 ~200	0 ~1.30
	A 250		0 ~250	0 ~1.10
B Serial	B 50	0 75 mm	0 ~ 50	0 ~1.80
	B 100		0 ~100	0 ~1.70
	B 150		0 ~150	0 ~1.60
	B 200		0 ~200	0 ~1.20
	B 250		0 ~250	0 ~1.10
C Serial	C 50	0 75 mm	0 ~ 50	0 ~1.70
	C 100		0 ~100	0 ~1.50
	C 150		0 ~150	0 ~1.40
	C 200		0 ~200	0 ~1.30
	C 250		0 ~250	0 ~1.20

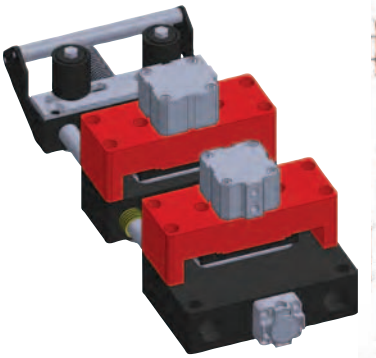
Pneumatic Valved Heavy Duty

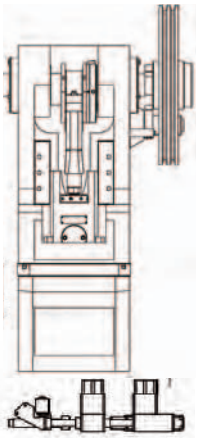
Order	Max. Band Width	Pitch Step	Max. Band Thickness
P1	0 ~155	1.00	0 ~ 3.8
P2	0 ~155	2.00	0 ~ 3.5
P3	0 ~155	3.00	0 ~3.0
S1	0 ~205	1.00	0 ~3.0
S2	0 ~205	2.00	0 ~3.0
S3	0 ~205	3.00	0 ~3.0
Z1	0 ~305	1.00	0 ~3.0
Z2	0 ~305	2.00	0 ~3.0
Z3	0 ~305	3.00	0 ~2.5

Standard Accessories ; O-Ring Kit
Optional Accessories ;
* Remote Control With Electro Valve (Instead of standard mechanic valve)
* Springy Plier (When pilot pins are used)
* Transparent Top Housing (To avoid accidents)
* Programmed counter to repeat pitch.
* Conditioner Unit and Hose Systems to filter pressured air and to lubricate.





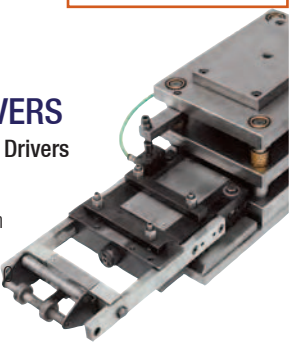




PNEUMATIC SHEET DRIVERS

Rapid Type (Domestic Production) Drivers

Economic Model



Sheet Band Width Capacity from 50 mm up to 150 mm.
Sheet sliding capacity at thickness from 2 up to 20 mm.

In Standard Features

* Manual Pitch and Speed Settings
* Mechanic Valve on Casing

In Optional

* Electronic Controlled Valve
* Stroke Repeater Unit

Standard Accessories

* O - Ring Kit of Driver
* 1/4 Conditioner (Air and Oil) Percolator
* Slide Air Valve 1/4 - Coupling
* 1.5 Meter 8's Air Hose

Pneumatic Sheet Drivers (Domestic Production) Economic Type

Order No / Type	Max. Sheet Width mm	Pitch Step mm	Sheet/Band Thickness mm	Number of Stroke Minute	Clamping Power Kg.	Clamping Power Kg.	Power Kg.	Air Consumption Liter / Minute	Unit Weight Kg.
AY 050	From 0 **50**	From 0 **50**	From 0 **1.90**	Stroke 280	Fixed Lug 64	Movable Lugs 120	Pulling Force 24	50	3.9
AY 100	From 0 **50**	From 0 **100**	From 0 **1.80**	Stroke 200				71	4.8
AY 150	From 0 **50**	From 0 **150**	From 0 **1.50**	Stroke 160				80	5.7
CY 050	From 0 **100**	From 0 **50**	From 0 **1.70**	Stroke 210				37	5.6
CY 100	From 0 **100**	From 0 **100**	From 0 **1.50**	Stroke 160				56	6.6
CY 150	From 0 **100**	From 0 **150**	From 0 **1.40**	Stroke 120				68	7.8
DY 050	From 0 **150**	From 0 **50**	From 0 **1.60**	Stroke 230	70	158	41	59	9.6
DY 100	From 0 **150**	From 0 **100**	From 0 **1.40**	Stroke 160				82	11.2
DY 150	From 0 **150**	From 0 **150**	From 0 **1.20**	Stroke 130				100	12.7

Domestic Type Pneumatic Drivers : The flatness of band to be driven in mechanic valve that can be mounted to press easily and **controlled drive from direct** press dect, should absolutely by watched, if required, rectifier should be used. Air inlet to the pneumatic driver should be dry and oily, conditioner system should absolutely be used. Lubricating for 30 minutes at conditioner is required. Spare part / repair / maintenance service are available at domestic drivers.



For precision and wasteless production roller sheet lubricant can be used.

HEAVY TYPE PNEUMATIC SHEET DRIVERS

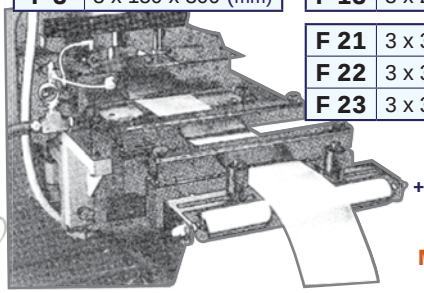
Heavy Type (Domestic Production) ECONOMIC Drivers

Sheet Band Width Capacity from 100 mm up to 150 mm.
Sheet sliding capacity at thickness from 0.2'up to 1.0 /2.0 /3.0 mm, Pitch /Stepped Driver Casing from 100 mm up to 300 mm, Bearing Column from Special Aluminium Alloy Material, Movable Parts from solid chrome plated (1080) material, Bedding with bronze material, pitch set screw are produced from 4140 material.

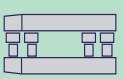
Heavy Type Drivers (Domestic Production) Economic Type

Order	Max. Band Thickness Max. Band Width Pitch / Step
A 1	1 x 100 x 100 (mm)
A 2	1 x 100 x 200 (mm)
A 3	1 x 100 x 300 (mm)
A 11	1 x 150 x 100 (mm)
A 12	1 x 150 x 200 (mm)
A 13	1 x 150 x 300 (mm)
A 21	1 x 200 x 100 (mm)
A 22	1 x 200 x 200 (mm)
A 23	1 x 200 x 300 (mm)
A 31	1 x 300 x 100 (mm)
A 32	1 x 300 x 200 (mm)
A 33	1 x 300 x 300 (mm)
A 41	1 x 400 x 100 (mm)
A 42	1 x 400 x 200 (mm)
A 43	1 x 400 x 300 (mm)
F 1	3 x 150 x 100 (mm)
F 2	3 x 150 x 200 (mm)
F 3	3 x 150 x 300 (mm)

Order	Max. Band Thickness Max. Band Width Pitch / Step
E 1	2 x 150 x 100 (mm)
E 2	2 x 150 x 200 (mm)
E 3	2 x 150 x 300 (mm)
E 11	2 x 200 x 100 (mm)
E 12	2 x 200 x 200 (mm)
E 13	2 x 200 x 300 (mm)
E 21	2 x 300 x 100 (mm)
E 22	2 x 300 x 200 (mm)
E 23	2 x 300 x 300 (mm)
E 31	2 x 400 x 100 (mm)
E 32	2 x 400 x 200 (mm)
E 33	2 x 400 x 300 (mm)
E 41	2 x 500 x 100 (mm)
E 42	2 x 500 x 200 (mm)
E 43	2 x 500 x 300 (mm)
F 11	3 x 200 x 100 (mm)
F 12	3 x 200 x 200 (mm)
F 13	3 x 200 x 300 (mm)
F 21	3 x 300 x 100 (mm)
F 22	3 x 300 x 200 (mm)
F 23	3 x 300 x 300 (mm)



DOMESTIC PRODUCTION
+ SPARE PARTS
+ SERVICE
+ PERIODIC MAINTENANCE
GUARANTY



Section Press Mould



400 Standard Model / TM-EEM-400



200 Standard Model / TM-EEM-200



100 Standard Model / TM-EEM-100

SERVO (Easily Programmable) DRIVERS MEDIUM TYPE (Domestic Production)

Production up to 1000 mm as per request

Servo Drivers providing ideal solutions up to 1.5 mm sheet thickness Economic Model

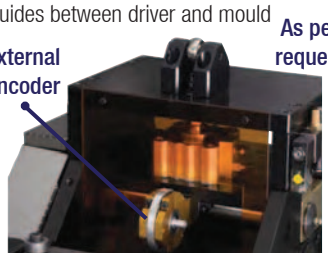
They are servo drivers that can be mounted almost to every press, Space-saving, easily mounted, provide working opportunities at high stroke press and increase high efficiency thanks to price / performance.

Standard Features;

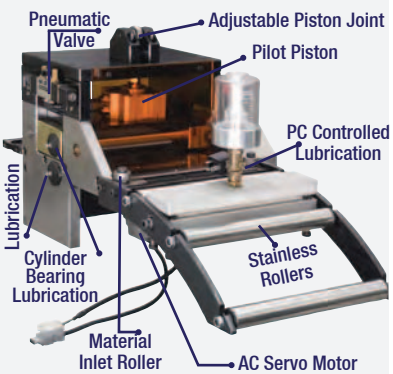
* Steel and 7075 Aluminium Casing Design
* 64 HRC Cylinder produced from 2379 Sverker Material and inertia taken (Relieved)
* Roller Structure bedding with high speed bearings
* Antiskid dual drive roller
* Band setting rollers on the inlet and outlet
* Unique measurement scale
* Piston leaving band to pilot during piloting
* PLC controlled lubricating system for 7075 custom made Trigel threadeds
* Mould protection system from 4 or 6 points
* Easy Connecting Plates to Press (Without drilling extra hole to press)
* Precision setting system taken press cran with encoder
* Mechanic roller lifting system
* 7.0 inch LCD Touch Colour Screen
* English menu programme
* Automatic Manual Button / Emergency Button

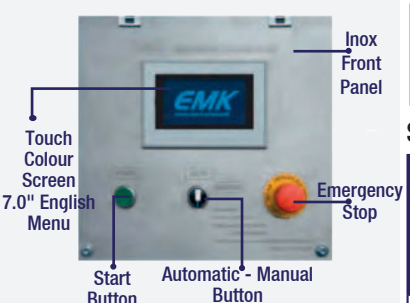
Optional (As per request) Features

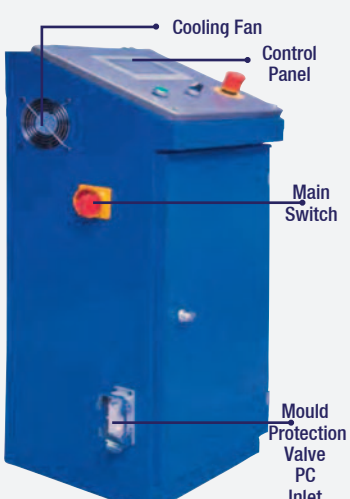
* Roll unloader / Rectifier and Driver Press Synchron Movement External Encoder
* Foldable front rollers are preferred after 300 Cycles.
* Guides between driver and mould

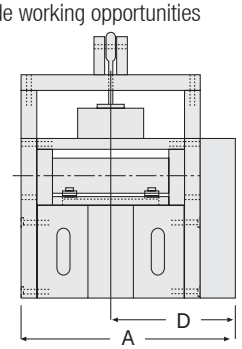


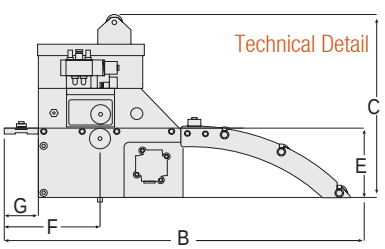












Servo Drivers Economic Type

Order No / Tip	Max.Band Width mm	Sheet/Band Thickness mm	Roller Dia. Ø	Max.Band Speed m/min.
TM EEM100	104	1.5	42	140
TM EEM200	204		42	
TM EEM400	404		63	

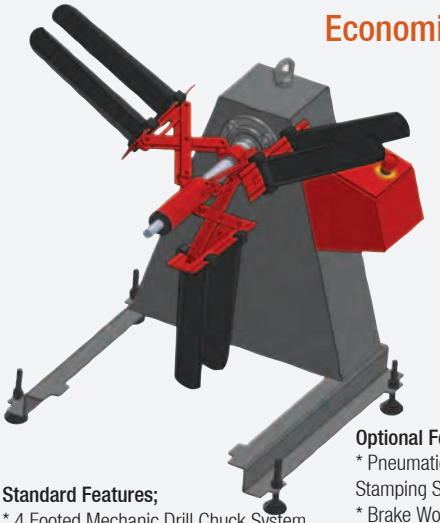
Model	A	B	C	D	E	F	G
TM EEM100	210	555	320	135	130	158	58
TM EEM200	300	555	320	180	130	158	58
TM EEM400	515	780	480	410	230	158	58

Automation Systems directing and fasting sheet



MECHANIC DRILL CHUCK ROLL OPENERS

Economic Product



Carrying capacity from 250 Kg. up to 3000 Kg.

Width capacity from 300 mm up to 1500 mm

Standard Features;
* 4 Footed Mechanic Drill Chuck System
* Independent Adjustable Side Thrus Legs
* Sensor LOOP Control System
* Bidirectional Operation

Optional Features;
* Pneumatic top and bottom Stamping System
* Brake Work System
* Speed Control System
* Conical Extrusion hub can be added as per request.

ROLL SHEET SLIDING SYSTEMS

Mechanic System Sheet Roll Openers



Model : Motor Type **AGM500M**



Model : Brake Type **AGM750M**



1500 Kg Capacity **AGM1500M**

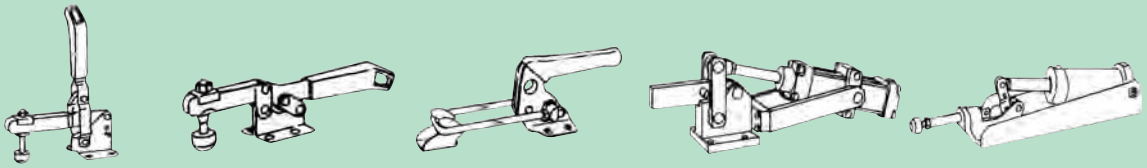


2500 Kg Capacity **AGM2500M**

Order No.	Material Width (mm)	Roll Internal Diameter(mm)		Roll External Dia. (mm)	Roll Weight Kg.	Motor Type Selection	Brake Type Selection	Upper Depressor Arm
		Minimum	Maximum					
AGM500M	20 - 300	300	550	1300	**500**	★		Optional, As Per Request
AGM500LM				1600	**500**	★		
AGM500F				1300	**500**		★	
AGM750M				1300	**750**	★		
AGM750LM				1600	**750**	★		
AGM750F				1300	**750**		★	
AGM1500M	20 - 400	350		1300	**1500**	★		
AGM1500LM				1600	**1500**	★		
AGM1500F				1300	**1500**		★	
AGM2500M	30 - 500	400		1300	**2500**	★		
AGM2500LM				1600	**2500**	★		
AGM2500F				1300	**2500**		★	
AGM3000M	30 - 600	450	600	1300	**3000**	★		
AGM3000LM				1600	**3000**	★		
AGM3000F				1300	**3000**		★	

Mechanic Opener Group, Hub Screw Shaft make clamping and unloading. System works properly between 500 Kg. and 4000 Kg. Motor Pneumatic Overpring brake models are available. Mechanic openers take small space and they are the lowest cost machines for enterprise.

"Material Fasteners" RIGHT SOLUTION ! Fixtures...



Fast - Quality Assurance (Certificated) Flexible - Pratic Fasteners

DOMESTIC MANUFACTURE

BASED TYPE PERPENDICULAR FASTENERS



STANDART Perpendicular Type Galvanic Plated

Order Model **800..** (0-1-2-3 4-5-6)



Size : **0-1**



Size : **2-5**



Size : **4**



Size : **3-6**

Horizantal Footed Drilling - Welding - Bending - Grinding for fixing mounting plates etc. in serial parts production, connecting and disconnecting - In measurement control - mounting - wood and plastic engraving processes.



Dual Transverse Arm As per request

Order 800 800/B	(kN) Force F1	F2	B	A		gr
0	0.5	0.7	90	50	M4 x25	50
1	0.8	1.1	105	60	M5 x30	114
2	1.0	1.2	140	76	M6 x35	178
3	1.8	2.5	200	105	M8 x45	400
4	2.0	3.0	230	140	M8 x65	630
5	3.0	5.0	265	190	M12 x80	1.500
6	3.5	5.5	300	230	M12 x110	2.160

Technical details are similar in both models (800/800-B)

STANDARD Perpendicular Type Black Plated

Order Model **800/B..** (0-1-2-3 4-5-6)



BASED TYPE PERPENDICULAR FASTENERS



LOCKING Perpendicular Type Galvanic Plated

Order Model **800/S..** (3 - 4)



Model: **800 /S-4** **800 /P-1**



Model: **800 /S-3** **800 /P-3**



Base Types Model: **800 /P-2**

INOX / STAINLESS Perpendicular Coupling **Model 800/P**

Order 800 /P	(kN) Force F1	F2	B	A		gr
1	0.8	1.1	105	60	M5x30	114
2	1.0	1.2	140	76	M6x35	178
3	1.8	2.5	200	105	M8x45	400

LOCKING TYPE Perpendicular Coupling **Model 800/S**

3	1.8	2.5	200	105	M8x45	400
4	2.0	3.0	230	140	m8x65	630

INOX Complete Stainless Perpendicular Type

Order Model **800/P..** (1-2-3)



BASED TYPE PERPENDICULAR FASTENER



METAL SHEET Perpendicular Type Galvanic Plated

Order Model **800/L..** (2-3-4-5)



Model: **800 /L-2** **800 /L-5**



Model: **800 /L-3** **812 /4-6**



Taban Tipleri Model: **800 /L-4**

METAL SHEET Type Perpendicular Coupling **Model 800/L**

Order 800 /L	(kN) Force F1	F2	B	A		gr
2	1.0	1.2	140	76	M6X35	178
3	1.8	2.5	200	105	M8X45	400
4	2.0	3.0	230	140	M8X65	630
5	3.0	5.0	265	190	M12X80	1500

CAST STEEL Heavy Duty Perpendicular Coupling **Model 812**

4	5.0	-	215	148	M12X80	1250
6	6.0	-	265	182	M12X110	2130

HEAVY DUTY Cast Steel Perpendicular Type Coupling

Order Model **812..** (4-6)



Section Press Mould



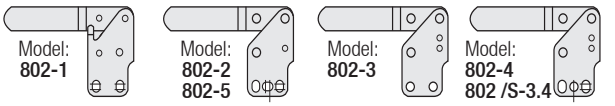
VERTICAL FOOT Perpendicular Type Galvanic Plated

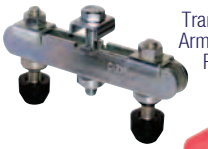


Order Model **802..** (1-2-3-4-5)

VERTICAL FOOT PERPENDICULAR FASTENERS

Base Types





Transverse Arm As Per Request

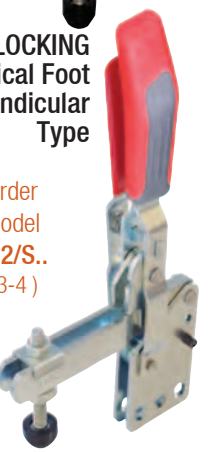
VERTICAL FOOT Perpendicular Coupling — Model 802

Order 802	(kN) Force F1	F2	B	A		gr
1	0.8	1.1	117	60	M5x30	114
2	0.8	1.2	153	76	M6x35	178
3	1.8	2.5	210	105	M8x45	400
4	2.0	3.0	255	140	M8x65	630
5	3.0	5.0	323	190	M12x80	1.500

LOCKED Vertical Foot Perpendicular Coupling — Model 802/S

3	1.8	2.5	210	105	M8x45	400
4	2.0	3.0	255	140	M8x65	630

LOCKING Vertical Foot Perpendicular Type



Order Model **802/S..** (3-4)

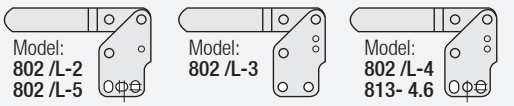
METAL SHEET Vertical Foot Perpendicular Type Galvanic Plated



Order Model **802/L..** (2-3-4-5)

VERTICAL FOOT PERPENDICULAR FASTENERS

Base Types



SHEET Vertical Foot Perpendicular Coupling — Model 802/L

Order 802/L	(kN) Force F1	F2	B	A		gr
2	0.8	1.2	153	76	M6x35	178
3	1.8	2.5	210	105	M8x45	400
4	2.0	3.0	255	140	M8x65	630
5	3.0	5.0	323	190	M12x80	1500

LOCKED Vertical Foot Perpendicular Coupling — Model 813

4	10.0	-	234	150	M12x80	1.320
6	12.0	-	288	182	M12x110	2.120

HEAVY DUTY Cast Steel Vertical Footed Perpendicular Type



Order Model **813..** (4-6)

MODÜLER BAĞLAMA HAREKETLİ / DİK AYAKLI

Modular Welded Movable Perpendicular Foot



Order Model **811..** (4-6)

Modular Coupling Accessories



MODULAR Coupling Movable Footed — Model 810

Order 810	Force F1 (kN)	B	A	Connecting Angle q - ß - y	gr
4	7.0	112	82	200^0 40^0 70^0	855
6	11.0	145	105		1.600

MODULAR Coupling Vertical Footed — Model 811

4	7.0	142	82	q:190^0	970
6	11.0	182	106		1.750

Modular Welded Vertical Foot



Order Model **810..** (4-6)

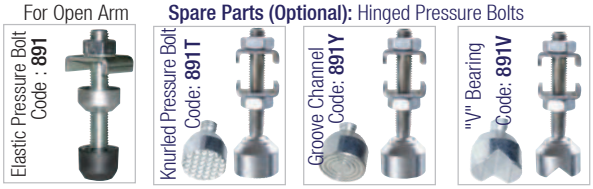
Side Mounted Perpendicular Type Galvanic Plated



Order Model **803..** (1-2-3-4-5)

SIDE MOUNTED PERPENDICULAR FASTENERS

For Open Arm — **Spare Parts (Optional):** Hinged Pressure Bolts



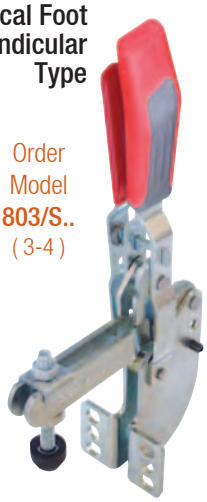
SIDE MOUNTED Perpendicular Coupling — Model 803

Order 803	(kN) Force F1	F2	B	A		gr
1	0.8	1.1	132	60	M5x30	125
2	1.0	1.2	135	76	M6x35	220
3	1.8	2.5	235	105	M8x45	470
4	2.0	3.0	270	141	M8x65	650

LOCKED - VERTICAL Footed Perpendicular Coupling — Model 803/S

3	1.8	2.5	235	105	M8x45	470
4	2.0	3.0	270	141	M8x65	650

LOCKING Side Mounted Vertical Foot Perpendicular Type



Order Model **803/S..** (3-4)

Metal Sheet Type Side Mounted Perpendicular Model Galvanic Plated



Order Model **803/L..** (2-3-4)

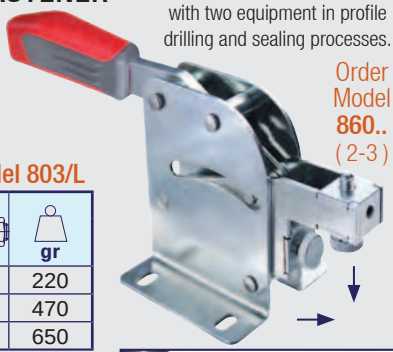
SIDE MOUNTED PERPENDICULAR FASTENER



Transverse Arm As Per Request

Push - Press Perpendicular Coupling Base Model

Specifications: It is replaced with two equipment in profile drilling and sealing processes.



Order Model **860..** (2-3)

METAL SHEET Type Side Mounted — Model 803/L

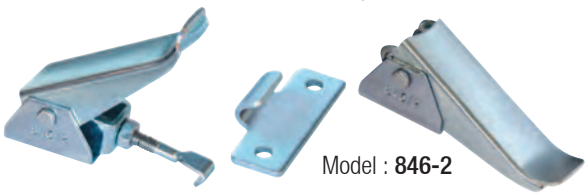
Order 803/L	(kN) Force F1	F2	B	A		gr
2	1.0	1.2	135	76	M6x35	220
3	1.8	2.5	235	105	M8x45	470
4	2.0	3.0	270	141	M8x65	650

Push - Press Based Model — Model 860

Order 860	(kN) Force → F1	← F2	Control Movement ↓ min.	↓ max.	→ min.	→ max.	Arm Stop Ver. max.	Hor. min.	Kg
2	2.0	2.0	30	40	10	20	94	87	1.5
3	3.0	3.0	40	50	20	30	110	106	2.3

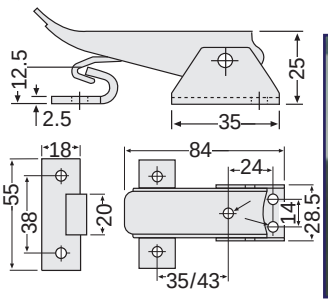


LIGHT CHUCKS (Catch hook can be adjusted.)



Model : **846-2**

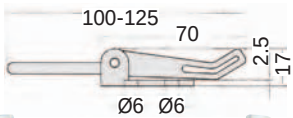
It provides to close mini mould - cabinet - tank covers and similar parts.







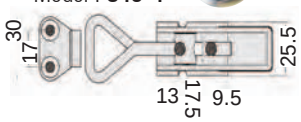
Hook Coupling
Model : **846-3**





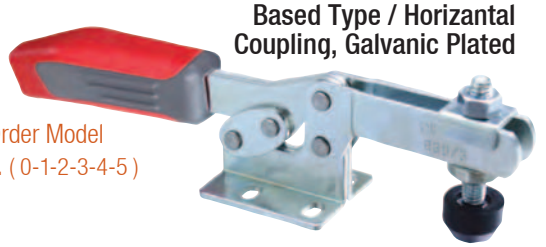


PVC Hook Coupling
Model : **846-4**



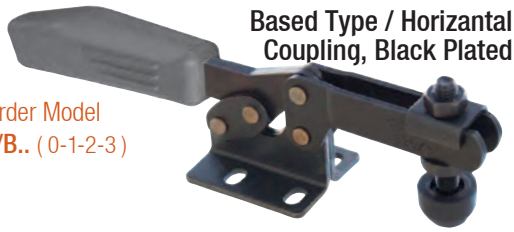
HORIZANTAL FASTENERS Vertical Arm 90^0

Based Type / Horizantal Coupling, Galvanic Plated



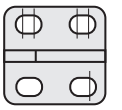
Order Model
830.. (0-1-2-3-4-5)

Based Type / Horizantal Coupling, Black Plated

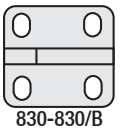


Order Model
830/B.. (0-1-2-3)

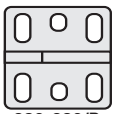
Base Types



830-830/B
Size : **0**

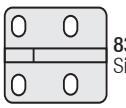


830-830/B
Size : **1**

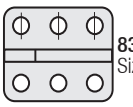


830-830/B
Size : **2/4**

In connected Status, Arm in horizantal position Operating Handle works in opposite direction as per clamping arm.



830-830/B
Size : **3**



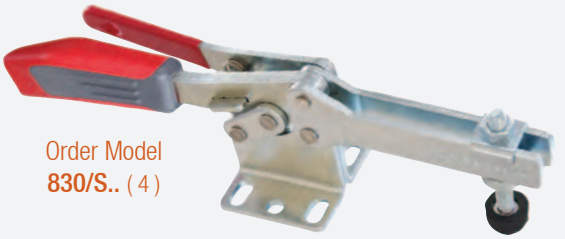
830-830/B
Size : **5**

HORIZANTAL Fasteners — Model 830-830/B

Order 830	(kN) Force F1	F2	A	B		gr
0	0.25	0.40	23	85	M4x25	37
1	0.80	1.10	30	128	M5x30	112
2	1.00	1.20	44	158	M6X35	182
3	1.80	2.50	48	221	M8X45	340
4	2.00	3.00	74	293	M8X65	700
5	3.00	5.00	81	330	M12X80	1170

Technical details are similar at both Model (830/830-B)

LOCKING Type - Based Model Horizantal Coupling - Galvanise Plated



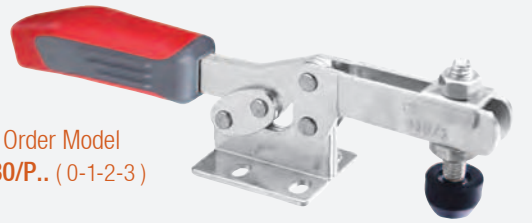
Order Model
830/S.. (4)

Safety Locked, horizantal fasteners for open and close positions are absolutely rigid thanks to safety locking in both open and closed position. Especially, against vibration and for bottom to up mounting.

LOCKING Horizantal Fasteners — 830/S

Order 830/S	(kN) Force F1	F2	A	B		gr
4	2.0	3.0	74	293	M8x65	700

INOX / Complete Stainless - Based Model Horizantal Fastener



Order Model
830/P.. (0-1-2-3)

In chemistry / food sector and hygenic places, at outdoors, machines under heavy climatic conditions, anti magnetic resistant to corrosion and acide (None Magnetic Susceptibility)

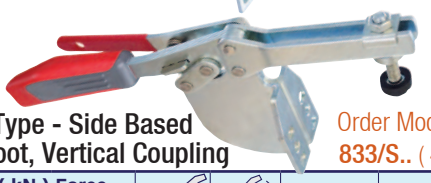
830/P

Order 830/P	(kN) Force F1	F2	A	B		gr
0	0.25	0.40	23	85	M4x25	37
1	0.80	1.10	30	128	M5x30	112
2	1.00	1.20	44	158	M6x35	182
3	1.80	2.50	48	221	M8x45	340

Side Based Angular Foot Horizantal Coupling



Order Model
833.. (2-3-4)



LOCKING Type - Side Based Angular Foot, Vertical Coupling

Order Model
833/S.. (4)

Order 833 833/S	(kN) Force F1	F2	A	B		gr
2	1.00	1.20	94	155	M6x35	250
3	1.80	2.50	96	221	M8x45	400
4	2.00	3.00	97	261	M8x65	750

Technical details in Model 832-833 are same.

Order Model
832..
(0-1-2-3-4-5)



PERPEN. FOOTED Horizantal Coupling



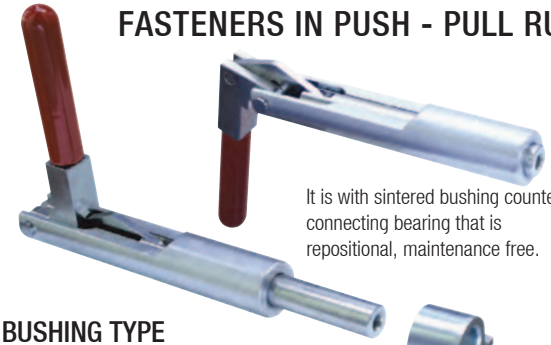
Order Model
832/S .. (4)

LOCKING Type Perpendicular Footed Horizantal Coupling

Order 832 832/S	(kN) Force F1	F2	A	B		gr
0	0.25	0.40	32	85	M4X25	37
1	0.80	1.10	42	128	M5X30	112
2	1.00	1.20	59	158	M6X35	182
3	1.80	2.50	63	221	M8X45	340
4	2.00	3.00	96	293	M8X65	700
5	3.00	5.00	103	330	M12X80	1170



FASTENERS IN PUSH - PULL RUNNING POSITION



It is with sintered bushing counter connecting bearing that is repositional, maintenance free.

BUSHING TYPE Push- Pull Fasteners

Order Model **840..** (4-5)



Order 840	(kN) Force		A	B		Kg
	F1	F2				
4	15.0	15.0	166	190	M10x40	2.0
5	15.0	15.0	172	269		2.50

Anchorage pillar as per request

Order Model **841/A**



SHORT TYPE Pull - Push Fasteners

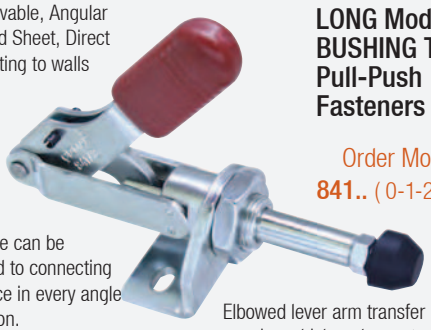
Direct Fixing to Sheet Walls, Threaded face

Order Model **844..** (2-3-5)



Order 844	(kN) Force		A	B		gr
	F1	F2				
2	1.0	1.0	85	70	M6X35	130
3	2.5	2.5	135	110	M8X35	320
5	4.0	4.0	155	175	M12X50	1200

Removable, Angular Footed Sheet, Direct mounting to walls



Handle can be turned to connecting surface in every angle position.

LONG Model, BUSHING TYPE Pull-Push Fasteners

Order Model **841..** (0-1-2-3-5)

Elbowed lever arm transfer rate prevents opening which makes automatic locking.

Order 841	(kN) Force		A	B		gr
	F1	F2				
0	0.80	0.80	40	110	M4X20	80
1	1.00	1.00	58	120	M4X20	120
2	2.00	2.00	80	175	M6X25	270
3	2.50	2.50	102	190	M8X35	450
5	4.50	4.50	123	230	M12X50	880

Robust Construction, crank shaft and lever arm are worked in same direction.

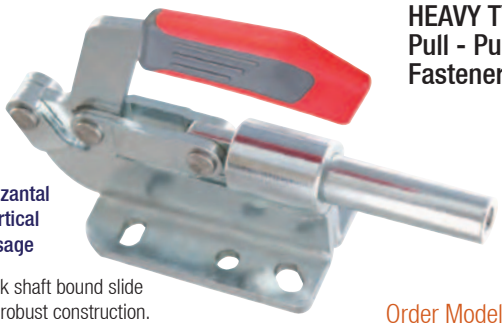


STRONG MODE Cast Casing BUSHING TYPE Pull - Push Fastener

Order Model **842..** (3-5-7)

Fast connecting / disconnecting in serial production, threaded piston shaft.

Order 842	(kN) Force		A	B		gr
	F1	F2				
3	4.00	4.00	115	191	M8x35	630
5	10.0	10.0	133	245	M12x50	1620
7	25.0	25.0	170	333	M12x50	3610



Horizantal Vertical Usage

HEAVY TYPE Pull - Push Fasteners

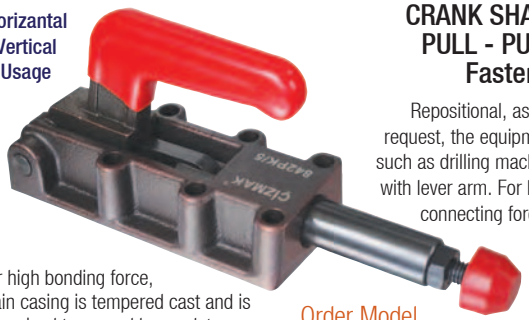
Crank shaft bound slide very robust construction.
Main casing from tempered casting.
As fast connecting /fast disconnecting and press - push coupling to serial production, it is excellent and very durable in drilling - reaming -grinding - bending - welding - mounting etc.

Order Model **842/SC** (5)

Crank Shaft and lever arm work in same direction.

Order 842/SC	(kN) Force		A	B		gr
	F1	F2				
5	3.0	3.0	166	190	M10X40	950

Horizantal Vertical Usage



CRANK SHAFT PULL - PUSH Fastener

Repositional, as per request, the equipment such as drilling machine with lever arm. For high connecting forces.

For high bonding force, main casing is tempered cast and is comprised tempered heavy duty type long shaft.

Order Model **842/PK** (5)

Order 842/PK	(kN) Force		A	B		gr
	F1	F2				
5	12.0	12.0	95	185	M10X50	1.800

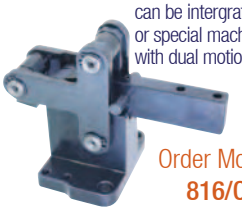
Pls. request catalogue for technical details.



HEAVY DUTY PNEUMATIC PER. TYPE INTEGRATED COUPLING

Order Model **826/CE** (4-6-8)

This perpendicular pneumatic coupling set is in bench quality, it can be intergrated to transfer lines or special machines and is together with dual motion pneumatic cylinder.



HEAVY DUTY PNEUMATIC PERP. TYPE MECHANIC BLOCK

Order Model **816/C**

Order 826/CE	kN Force F1	F2	F5	AxB	Air Inlet	Cylinder Strok	Piston	Kg
4	6 - 9		0.75	172 x340	G 1/4"	74 mm	Ø 40	5.1
6	12 - 18		1.00	195 x286		87 mm	Ø 50	7.3
8	20 - 30		1.80	272 x470		120	Ø 63	16.8

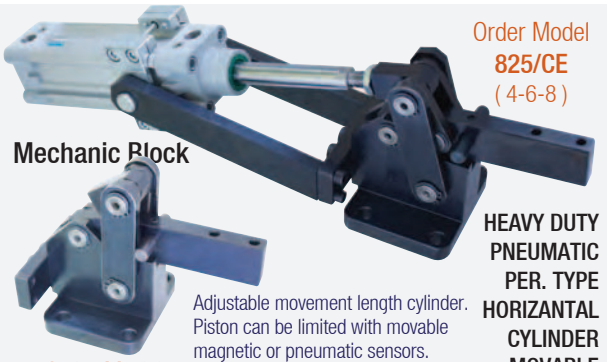


DOUBLE ACTION PNEUMATIC PER. TYPE HORIZANTAL/ VERTICAL COUPLING

Order Model **600..** (2-3-4)

In double action pneumatic system, cylinder is mounted as ready to connect main plate, thanks to its angular structure it provides space saving in horizantal and vertical connection. It has double action pneumatic cylinder and equipped, with adjustable speed. Motion of cylinder piston is limited with magnetic sensors. Double action has mounted in exchangeable structure.

Order 600	kN Force F1	F2	F5	AxB	Air Inlet	Cylinder Strok	Piston	gr.
2	1 - 1.2		0.3	170 x130	M 5	42 mm	Ø 25	800
3	1.4 -2.5		0.5	205 x160	G1/8	52 mm	Ø 32	1100
4	2 - 3		0.75	260 x220	G1/8	62 mm	Ø 40	1600



Mechanic Block

HEAVY DUTY PNEUMATIC PER. TYPE HORIZANTAL CYLINDER MOVABLE CONNECTED

Order Model **825/CE** (4-6-8)

Adjustable movement length cylinder. Piston can be limited with movable magnetic or pneumatic sensors. Hardened Steel, Grinded and shaft bolts fixed with safety rings.

Order Model **815/C** (4-6-8)

Order 825/CE	kN Force F1	F2	F5	B	Cylinder Strok	Piston	Kg
4	6 - 9		0.75	122 x416	80 mm	Ø 40	5.5
6	12 - 18		1.00	147 x480	100 mm	Ø 50	7.8
8	20 - 30		1.80	196 x580	125 mm	Ø 63	17.80

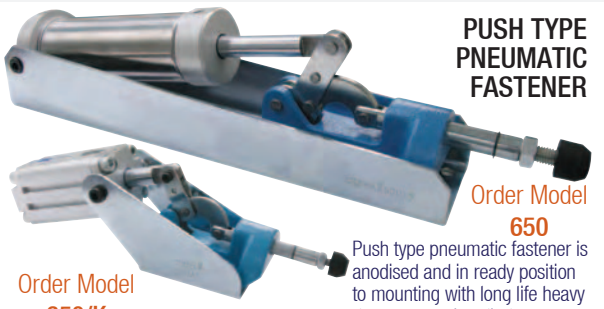


Order Model **620/K** (1-2-3-4)

DOUBLE ACTION PNEUMATIC HORIZANTAL TYPE MOTION CONTROLLED

Horizantal pneumatic fasteners is in bench quality, it can be intergrated to transfer lines or special machines. Its opening and closing can be controlled electronically. Double action, pneumatic cyclinder can be mounted replaceably.

Order 620/K	kN Force F1	F2	F5	B		Cylinder Strok	Piston	gr
1	0.8 - 1.1		0.10	52 x175	M5X30	34mm	Ø 16	610
2	1.0 - 1.2		0.30	64 x200	M6X35	41mm	Ø 25	870
3	1.4 - 2.5		0.50	85 x250	M8	52mm	Ø 32	1160
4	2.0 - 3.0		0.75	100 x290	45-65	62mm	Ø 40	1900



PUSH TYPE PNEUMATIC FASTENER

Order Model **650**

Push type pneumatic fastener is anodised and in ready position to mounting with long life heavy duty pneumatic cylinders.

Order Model **650/K**

Order 650	kN Force F1	F2	F3	B	Cylinder Stroke	Piston	Kg
3	4 - 2.5		0.75	85 x320	100 mm	Ø 40	2.0
5	10 - 5		1.00	115 x340	100 mm	Ø 50	3.5
7	25		1.00	150 x533	125 mm	Ø 63	7.7

Thanks to magnetic piston, motion control is ensured. Varnished heat threaded cast metal casing is galvanised and passivated. Steel arm and rod.



Order Model **620/Y** (1-2-3-4)

IN DOUBLE ACTION PNEUMATIC HORIZANTAL CYLINDER STRUCTURE

Double action pneumatic cylinder is mounted replaceably, thanks to magnetic piston, motion control is provided. It is together with pressure bolt. Fasteners can be worked on control panel individually or together. In case of pressure loss, fastener remains the same. More than one coupling can be used simultaneously.

Order 620/Y	kN Force F1	F2	F5	B		Cylinder Stroke	Piston	gr
1	0.8 - 1.1		0.19	55 x195	M5X30	34mm	Ø 20	630
2	1.0 - 1.2		0.30	65 x220	M6X35	41mm	Ø 25	800
3	1.4 - 2.5		0.50	90 x250	M8	52mm	Ø 32	1200
4	2.0 - 3.0		0.75	105 x320	45-65	62mm	Ø 40	2000



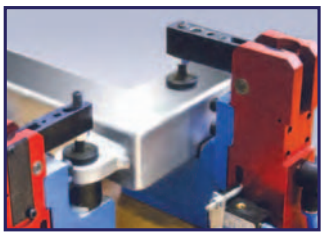
Section Press Mould



PNEUMATIC DOUBLE ACTION PERPENDICULAR FASTENERS

Order Model
628 M/20

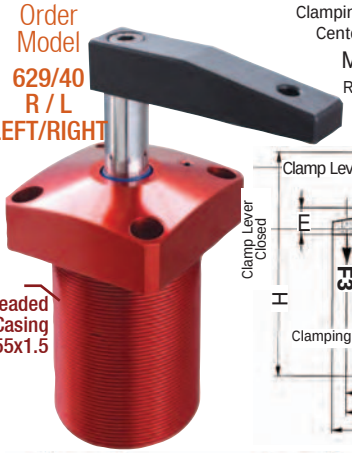
Mini designed casing structure, solid aluminium and red colour anodix oxidation plated casing, double position magnetic piston motion, retainer claw is solid steel and is heat threated.

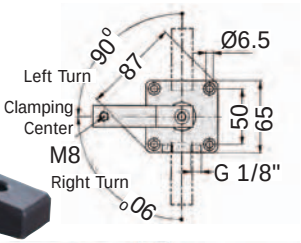


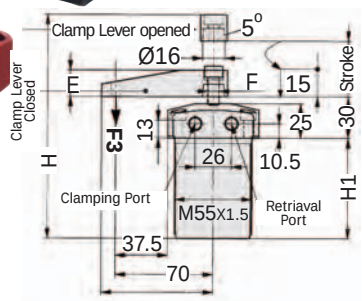
Order 628	Force (Nm) F1 ↓	Force (Nm) F3 ↑	A B	Piston Dia.	Air Inlet	gr
M20	Clamping 15	Holding 54	146 x158	Ø 20	G 1.8"	550

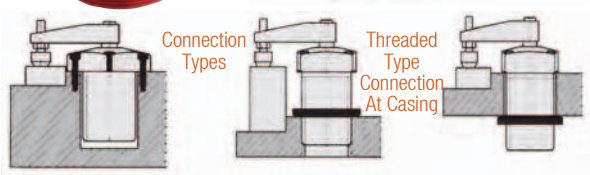
CYCLINDER CASING THREADED, PNEUMATIC DOUBLE ACTION ROTARY FASTENER

Order Model
629/40 R / L
LEFT/RIGHT







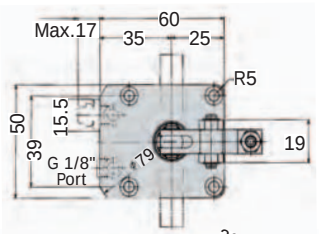


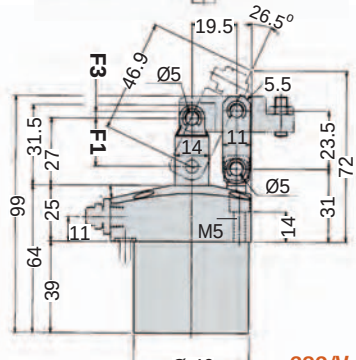
Order 629 R/L	Return Direction	F3 (kN)	H mm	H1 mm	E mm	F Ø	Piston Ø	Stroke mm	gr
40	Right	0.45	152	73	19	M8	40	30	800
40	Left		164	80	25.5	M10			

CYCLINDER / HINGED PNEUMATIC DOUBLE ACTION PERPENDICULAR FASTENER

Order Model
629/V







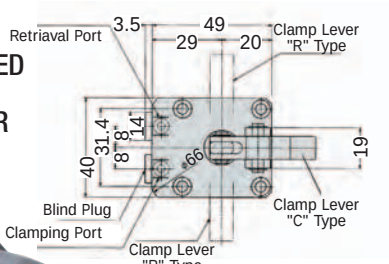
Hinged Pneumatic Connection Double Action:
Solid aluminium, red colour anodix oxidation plated, piston shaft resistant to corrosion, solid chrome plated clamping lug resistant to abrasion with solid steel complete clamping bolts.

629/V

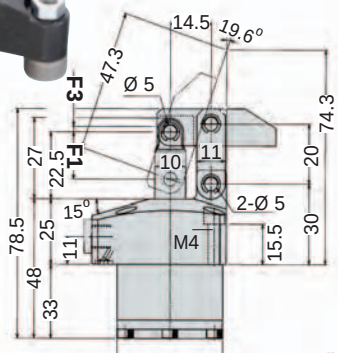
Order 629/V	Full Stroke	Clamping F1	Locking F3	Max. Pressure	Max. Heat	Cyclinder Cap. Clamp	Cyclinder Cap. Back	Dia. Ø	gr
25	23	20	3	1.0 Bar	0-70 Degree	18.5 cm³	40	46	400

CYLINDER / HINGED HYDRAULIC PERPENDICULAR FASTENER

Order Model
942 K / 25





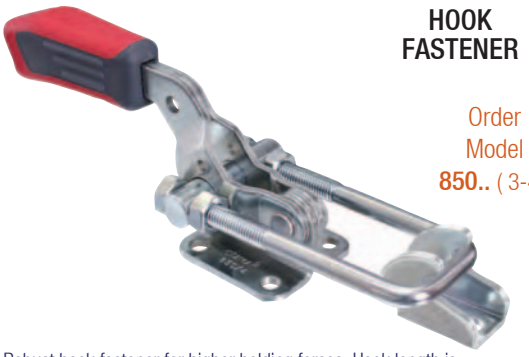


DOUBLE ACTION - AESTHETIC DRAWN **942/K**

Order 942/K	Full Stroke	Clamping F1	Locking F3	Max. Pressure	Max. Heat	Used Fluid	Dia Ø	gr
25	18.5	16	2.5	7.0 Bar	0-70 Degree	Hydraulic Oil	36	600

Black Colour, anodix oxidation plated casing resistant to corrosion, solid chrome plated piston shaft with clamping bolt.

HOOK FASTENER



Order Model **850..** (3-4)

Robust hook fastener for higher holding forces. Hook length is adjustable. It is with thrust sleeve.

Order 850..	(kN) Force		B		gr
	← F1	Setting Range	A		
3	3.2	26	64	170	230
4	10	32	77	255	800

LOCK - HOOK NARROW FOOTED MODEL FASTENER

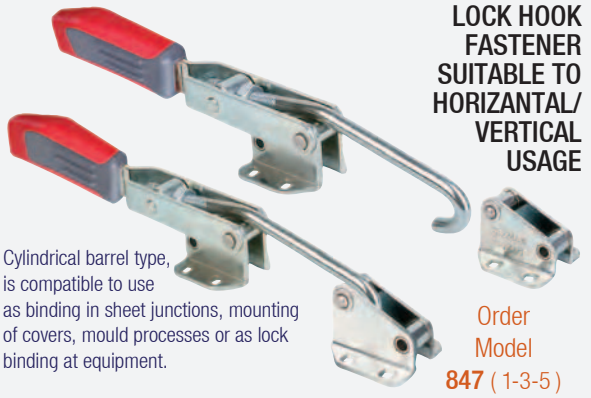


Order Model **847/K** (3)

Galvanised and Passivated Casing, Stainless Steel Riveted Hardened Hook and Thrust Bush for hardened and oiled bushes, conventionaloil resistant, plastic handle, hook arm can be shortened as partial motion.

Order 847/K	(kN) Force		A	B	gr
	F1	Setting Range			
3	2.0	-	38	242	295

LOCK HOOK FASTENER SUITABLE TO HORIZANTAL/ VERTICAL USAGE



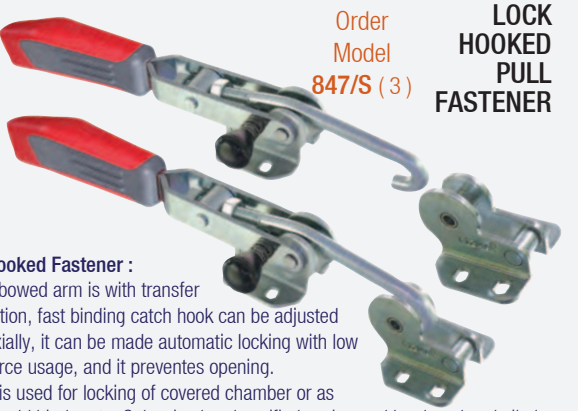
Cylindrical barrel type, is compatible to use as binding in sheet junctions, mounting of covers, mould processes or as lock binding at equipment.

Order Model **847** (1-3-5)

Order 847	(kN) Force		A	B	gr
	F1	Setting Range			
1	2.0	5	33	130	100
3	3.0	12	36	230	300
5	5.0	12	70	310	850

LOCK HOOKED PULL FASTENER

Order Model **847/S** (3)

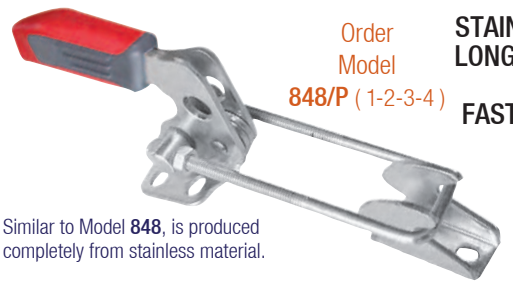


Hooked Fastener :
Elbowed arm is with transfer ration, fast binding catch hook can be adjusted axially, it can be made automatic locking with low force usage, and it preventes opening.
It is used for locking of covered chamber or as mould binder etc. Galvanised and pasified casing and hardened and oiled contra holder bushes are equipped with stainless steel rivets.

Order 847/S	(kN) Force		A	B	gr
	F1	Setting Range			
5	3.0	12	36	230	300

STAINLESS LONG TYPE HOOK FASTENER

Order Model **848/P** (1-2-3-4)

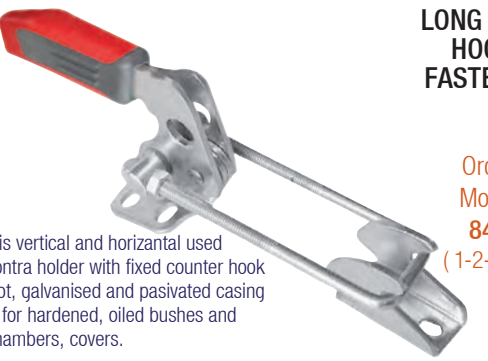


Similar to Model **848**, is produced completely from stainless material.

Order 848/P	(kN) Force		A	B	gr
	F1	Setting Range			
1	1.0	26	28	60	90
2	1.4	32	43	70	110
3	2.5	42	64	102	300
4	4.5	55	84	140	710

It can be used in chemistry / food sector and hygenic places, outdoors and at machines under heavy climatic conditions, it is anti magnetic resistant to corrosion and acide.

LONG TYPE HOOK FASTENER



Order Model **848** (1-2-3-4)

It is vertical and horizantal used contra holder with fixed counter hook slot, galvanised and pasivated casing is for hardened, oiled bushes and chambers, covers.

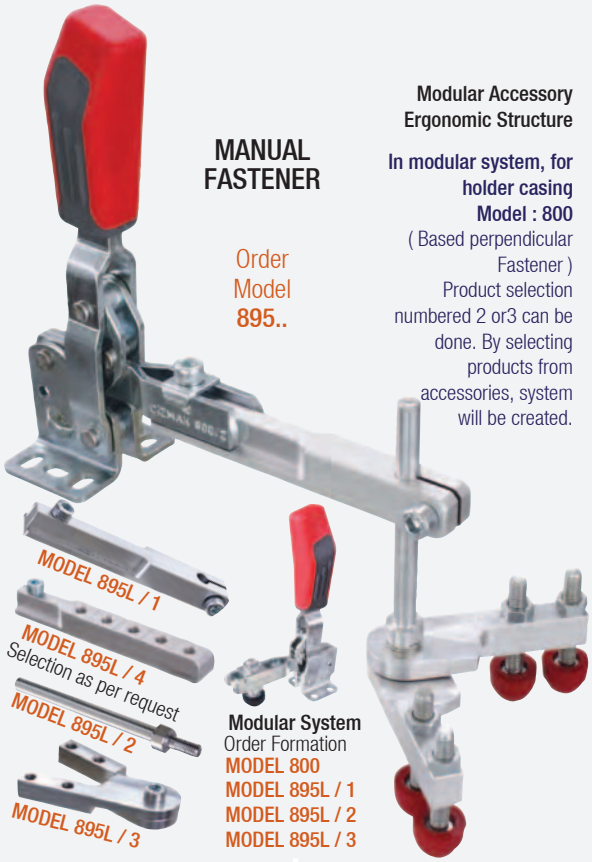
Order 848	(kN) Force		A	B	gr
	F1	Setting Range			
1	1.0	26	28	60	90
2	1.4	32	43	70	110
3	2.5	42	64	102	300
4	4.5	55	84	140	710

MANUAL FASTENER

Order Model **895..**

Modular Accessory Ergonomic Structure

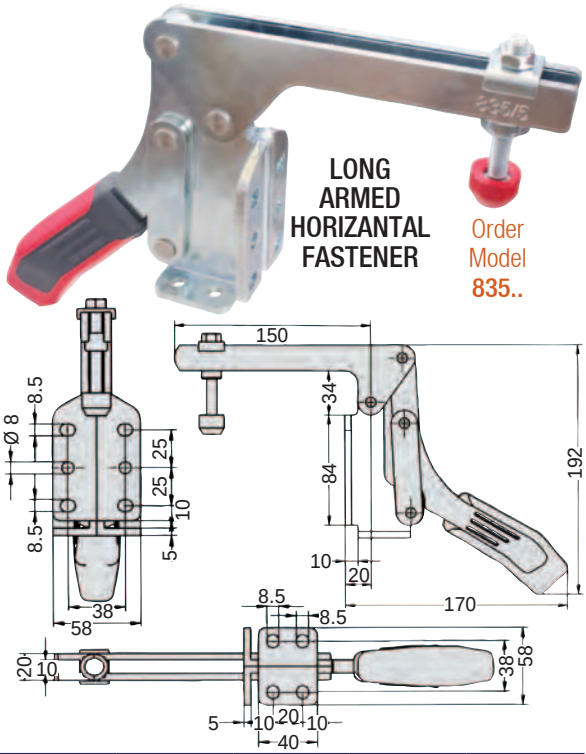
In modular system, for holder casing Model : 800
(Based perpendicular Fastener)
Product selection numbered 2 or3 can be done. By selecting products from accessories, system will be created.



Modular System
Order Formation
MODEL 800
MODEL 895L / 1
MODEL 895L / 2
MODEL 895L / 3

LONG ARMED HORIZANTAL FASTENER

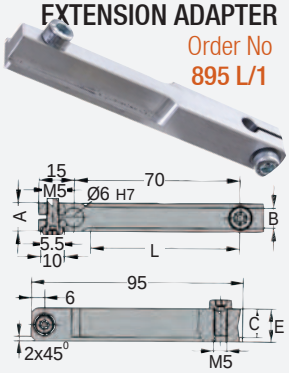
Order Model **835..**



Order **835**	(kN) Force F1	F2		gr
Lenght : 5	2.50	5.00	M8 x 65	1.560

EXTENSION ADAPTER

Order No **895 L/1**



Length	A	B	C	E	L
2	12	6.5	9	12	48
3	15	9.5	12	15	78

EXTENSION ADAPTER Multi Hole

Order No **895 L/4**

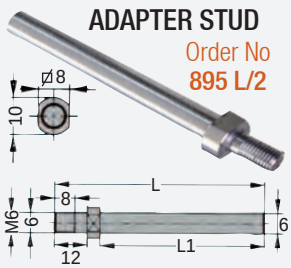


Length	A	B	C	E
2	12	6.5	9	12
3	15	8.5	12	15

Length	L	L1	L2	L3	L4
2	127	110	35	48	75
3	167	150	45	73	105

ADAPTER STUD

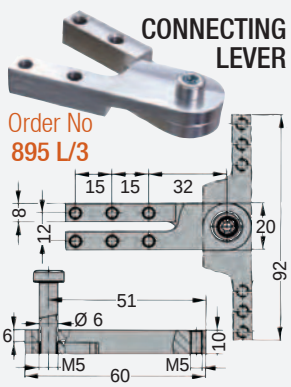
Order No **895 L/2**



Lenght	L	L1
2	52	35
3	82	65

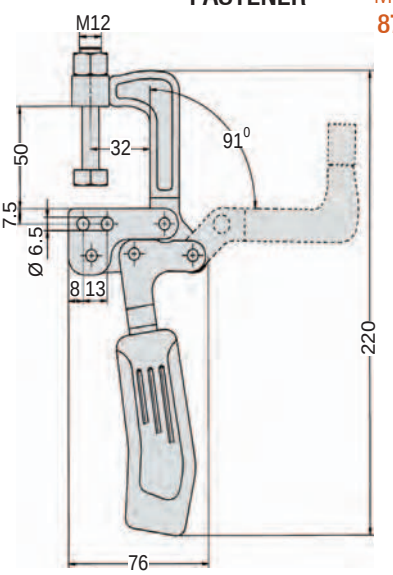
CONNECTING LEVER

Order No **895 L/3**



DOGWRENCH TYPE FASTENER

Order Model **870..**



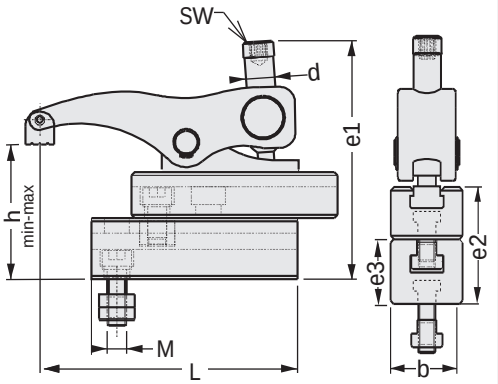


Order **870**	(kN) Force F3		gr
Lenght : 4	4.00	M12 x 80	600

Complete presentation with pressure bolt, protective rubber, double color handle and dogwrench unit.

Section Press Mould
Page 189





SLIDING COMBINE LUG

For "T" Channel Machine Plates

As well as, can be used in single system (1130 T / 1150 T / 1160 T), also it can be used for overlapped high parts with additional sliding slide kits.

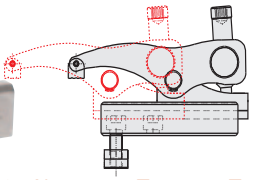
Clamping Forces: Product 1130 (Bottom Supported) 2000 Kgf
Clamping force for 1 Unit Product 1150 (Bottom Supported) 2500 Kgf
Product 1160 (Bottom Supported) 5500 Kgf

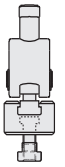
Usage information / advantages are similar with **Page 191**

Order No		m	Height h	h	e1	e2	d	Wrench SW	L	b	e3	kg
1130-014 DT	14	M 12	Min. 45 Max. 105	Min. 0 Max. 60	158 mm	83 mm	M 18	10 mm	130 mm	48 mm	45 mm	4.0 kg
1130-016 DT	16											
1130-018 DT	18											
1130-020 DT	20											
1130-022 DT	22											
1150-118 DT	18	M 16	Min. 48 Max. 110	Min. 0 Max. 62	173 mm	90 mm	M 20	12 mm	140 mm	55 mm	48 mm	5.4 kg
1150-120 DT	20											
1150-122 DT	22											
1150-124 DT	24											
1150-128 DT	28											
1160-222 DT	22	M 20	Min. 79 Max. 139	Min. 20 Max. 80	235 mm	114 mm	M 24	12 mm	178 mm	74 mm	59 mm	12.8 kg
1160-224 DT	24											
1160-228 DT	28	M 24						24 mm				
1160-232 DT	32											
1160-236 DT	36	M30										

"T" CHANNEL SLIDE COMBINED LUG



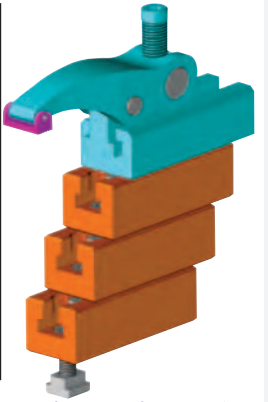




Order No : **1130 T - 1150 T - 1160 T**

"T" Channel Sliding Slide Combined Clamping Lug / Single Use Group

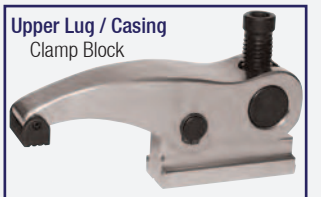
According to height status of work piece (mould), single connecting group can be selected. Its technical details is similar with Slide Combine Lug in Page 191. For technical dimension, pls. refer to Page 191.
In our page, dual (bottom supported) connecting group data are available.



"T" Channel Sliding Combined Clamping Lug can make high dimensional connection according to work piece status by increasing slides at more higher work pieces in single unit (0 - 60 /62/80).

Sliding Combine Slide Lug SPARE EQUIPMENT

Upper Lug / Casing
Clamp Block

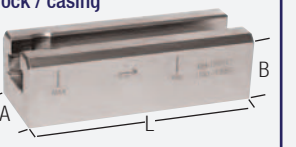


Clamping Block:Forged Steel 42 CrMo
Hardened : 38 - 42 HRC

It is compatible with all systems in sliding combined connecting system.

Order No		Lug Height Motion h
1130-060	14-22	0 ~ 60
1150-062	18-28	0 ~ 62
1160-2080	22-36	20 ~ 80

Sliding slide kit for clamping block / casing



Order No		T Channel	L	A	B
1130 047	M12 M16	14-22	130	48	39
1150 053	M16 M18 M20	18-28	140	55	42
1160 074	M20 M22 M24 M30	22-36	178	74	55

Bottom Support Team (In lifting),
according to work piece dimension

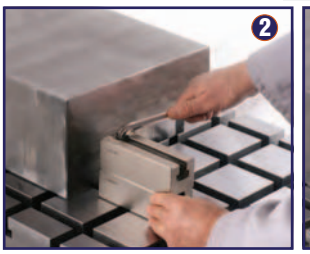


Order No		T Channel	L	A	B
1130 045	M12 M16	14-22	130	48	45
1150 048	M16 M18 M20	18-28	140	55	48
1160 059	M20 M22 M24	22-36	178	74	59





Slide is fixed, than upper casing is placed on slide and fixed.



Accoring to work piece dimension, distance is completed by increasing support slides.



Bottom slide is fixed to T Channel by making suitable to work piece.

Slide Combine Sliding Lug SPARE EQUIPMENT

Lug lifting Kit

Casing Lug Kit



It is compatible with all slide combined lug models.

Order	Thread	Length
1130 - 818	M 18	83
1150 - 920	M 20	96
1160 - 1024	M 24	134

Slide, Fixing Bolt

It is suitable for all of slide combined lug models.



Order	ThreadxLenth
1130 -412	M12 x30
1130 -416	M16 x34
1150 -516	M16 x34
1150 -518	M18 x38
1150 -520	M20 x38
1160 -724	M24 x55
1160-730	M30 x66



Pre Press Lug

DP Flat Part Clamping
1130 - 1150 - 1160



BSP Longitudinal Cylinder Clamping Lug
1130 - 1150 - 1160



ESP Transverse Cylinder Clamping Lug
1130 - 1150 - 1160

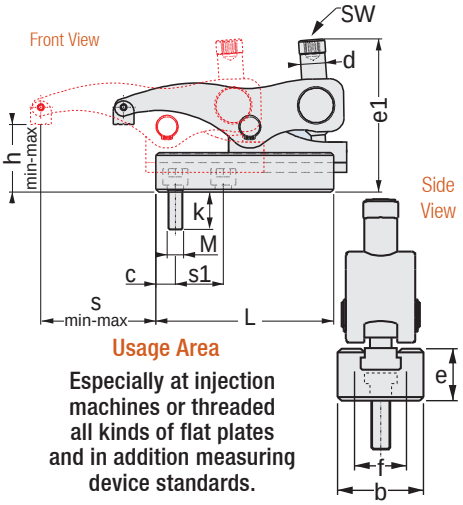
Slide Fixing Bolt for " T " Channel Plates



Code : 1130
"T" Lug
14 - 16 -18
20 - 22

Code : 1150
"T" Lug
18 - 20 - 22
24 - 28

Code: 1160
"T" Lug
22 - 24 - 28 - 32 -36



Usage Area

Especially at injection machines or threaded all kinds of flat plates and in addition measuring device standards.



SLIDING COMBINE LUG

For threaded machine plates

Material: CK 45 DIN **Slide Group:** 35-38 HRC Hardened **Lug Forged Steel**

For threaded hole plates, slide system, combined clamping lug **Code: 1130 - 1150 - 1160**

Order No	M	Height h	Lug s	s1	e1	d	Wrench SW	L	e	b	c	f	k	Clamping Force	kg
1130-012 M	**M12**	Up to 60mm	From 15 up to 83 mm	30 mm	113 mm	M 18	10 mm	130 mm	38 mm	48 mm	16 mm	28 mm	22	2000 kgf	2.6 kg
1130-016 M	**M16**												26		
1150-116 M	**M16**	Up to 62mm	Between From 18 and 96 mm	35 mm	125 mm	M 20	12 mm	140 mm	42 mm	55 mm	18 mm	32 mm	26	2500 kgf	3.8 kg
1150-118 M	**M18**												30 mm		
1150-120 M	**M20**														
1160-220 M	**M20**	From 20 Up to 80mm	Between From 22 and 95 mm	41.5 mm	175 mm	M 24	12 / 24	178 mm	55 mm	74 mm	24 mm	45 mm	34	5500 kgf	8.9 kg
1160-222 M	**M22**												38		
1160-224 M	**M24**												44		
1160-230 M	**M30**												55		

SLIDING SLIDE THREADED SCREW CLAMPING LUG : The difference of this system from other kits, is that is prepared to mount to connecting system threaded screw machine table, other connecting forces and working system are similar. Its mounting and connecting system is as follows.

Model 1130 M; M12 - M16 Thread hole mounting is completed with Cylinder Head Cap Screw. Part Height Clamping Range: 0 - 60 mm. **1 Set Lug Clamping Force: 2000 kgf.**

Model 1150 M; M16 - M18 Thread hole mounting is completed with Cylinder Head Cap Screw. Part Height Clamping Range: 0 - 62 mm'. **1 Set Lug Clamping Force: 2500 kgf.**

Model 1160 M; M20 - M22 - M24 Thread hole mounting is completed with Cylinder Head Cap Screw. Part Height Clamping Range: 20 - 28 mm. **1 Set Lug Clamping Force: 5500 kgf.**

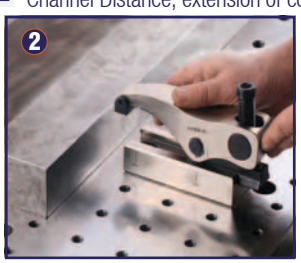
According to work piece dimension and thread similarity in machine table, it is presented as optional model. Especially, it is preferred at mounting of injection moulds and press sheet moulds to machine. In addition it is quite useful and compact product in processing parts of machine tools.

Advantages : 2000 kgf - 5500 kgf Clamping force - Use in perforated plates - fixing in different position by sliding on slide - Clamping unsupported high and low distance by Cylinder Head Cap Screw - due to its practical structure, (Compact tool that has not protrusion part), it presents fast and easy connection .

Connection system having vertical effect bonding force- Stepless and Resistless Connection - Quick pull back of fastener - ensures fast and best access facility in work piece changement - By bridging hole or "T" Channel Distance, extension of connecting area (Strengthening) is provided.



Bottom slide is made suitable to work piece and fixed.



Upper casing is slided to slide, it is brought to position on work pieces.



Fix upper bolt of lug to work piece.



TAKILON Acrylic





LIQUID / Water

POWDER / Granulated

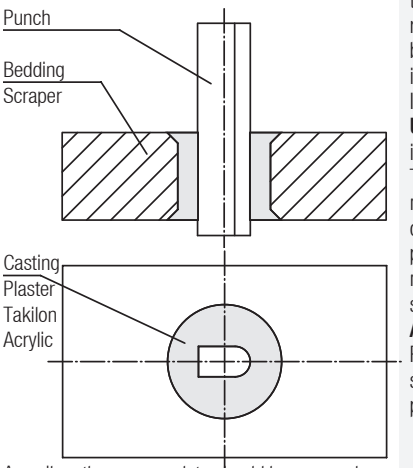
TAKILON - COLD ACRYLIC

Mould Repair, In Feeding / Filling

Mould : It is self hardening repair acrylic that is used in scraper and bedding plates, plastering gaps, cancelling of undesired holes as well as used for punch bearing in simple cutting and drilling moulds providing suitability at drilling and levelling processes done on filled surfaces.

Technical Data :

Mixing Ratio : 5 Unit Dosage - 3.5 Unit Liquid
Dosage : Dosing without measuring tank (As per requests)
Mixing : 30 - 35 Second (yoghurt consistency)
Working Time : At the end of 2 - 2.5 minutes
Hardening Time : In 15 minutes
Application : It should be castable consistency. Specified data are in 23^0C room temperature and from the beginning of
Order : TAKILON Acrylic Repair Filler
Large Model : 500 gr. Powder & 250 ml. Water
Small Model : 100 gr. Powder & 50 ml. Water



Any oil on the scraper plate should be removed. Use solvent (Release agentsilicon) to avoid sticking. Place the Scraper and the matrix correctly and connect to each other. the correct alignment is important for the operation. Using Magnetic 'V' Block for this operation guarantees vertikality. Or Setting Shims can be used to ensure the alignment for Punch Bush/Matrix. Later the surface finish works are done. The mixture solidifies and spoils if it is kept for too long.

POLINAT

Component

Order : Polinat 21

Electrical Insulation Casting and Model Filler



POLINAT - CASTING RESIN

It can be processed easily with turning leveling at mould and casting works.

Definition : Polinat 8021 is two component not-solvent, poliurethane base, electrical insulation and casting resine.
Specifications : Electrical imperviousness and dielectric constant number is high in different terms and various temperatures. It is resistant to abrasion, acid alkaline and other chemical or corrosive materials. It is hardened in low temperatures without changing any significiant volume. Thanks to catalyzers, drying time can be shortened.
Usage Areas : It is used in electric cable industry, casting of head and additional joints, insulating of end fasteners, plunger pump, insulator, transformers and various electrical component productions. In addition, it is used in all kinds of high voltage devices, transformers, television broadcast lines, telephone cord fasteners and rollers, to prevent flowing and leading in all kinds of condesators as well as to prevent noice that can be occurred Through resonance and vibration in devices such as ballast , regulator. It is suitable to complete filling in casting works at mould and machine sectors. It can be processed with turning levelling easily.
Usage: 2. component in upper section of box is emptied into main material in large box. Then, it is mixed until obtaning homogenous mixture. The surface to be applied is decontaminated from oil, dirt, rust and burrs, prepared mixture should be used in 30 40 minutes. If all of material is not used, sufficient mixture should be done.
Attention !!! : If breathed, R20 is harmful. R36 / 37 / 38 is irritant for eyes, respiratory system and skin. While working, use suitable protective clothing, gloves.

100 ml. Luminescent Paint





AZUL - MOULD EXERCISE PAINT

Blue Colour Limiting Paint as remarkable density , fast drying.

Blue oily mix liquid leaves a clear sign on any kind of metal, AZUL is indicated blue, bright sign on all metal parts that can be seen easily, This is coupled to show transfers and defects from another surface, it is ideal for marking surface. Due to its high cohesion feature, it can be easily transferred from one surface to another one. It can be used by mixing water. It can be cleaned from surfaces easily, before using, should be shake well and protected from cold.
Note: There is no need for extra precaution for respiration. For sporadic and typical use, vinyl gloves is sufficient. In long period use, rubber gloves should be used. It should be stored under room temperature.
Order : AZUL Exercise Paint



MOULD MARKING PAINT
MOULD EXERCISE PAINT

Mould marking and exercise paint is presented in 95 cc. and 115 cc. packing. It is quick dried in applied surfaces - after dried, it is not effected from oil, Drawing or exercise processes are continued on applied surfaces. Also, it has feature that is protected metal against rust (It drifts applied surface away).
Attention !!! : Burnable with fire
Order : 95 cc Marking Paint (Red) 95 cc Exercise Paint (Blue)
In addition, 115 cc packing is available.



ALCON (Thick / Thin) Exercise Paste
Double component (Thick - Thin) Exercise Paste

DRY PIGMENT PAINT
It is 400 gr, thinned with oil and is provided coloured view in exercise processes.





Page 10 Injection Mould Ready Standard Mould Base



Page 12 Injection Mould ID Card Writing Pen



Page 13 Injection Mould Ground Plate Liner Band/ Shimmer



Page 18 Injection Mould Ejector Plate Ball Bush Kit



Page 28 Ejector Plate / Cores Guide Pillar Without Oil Groove



Page 29 Ejector Plate Guide Pillar With Oil Groove



Page 30 Ejector Plate - Guide Pillar Without Oil Groove Ball Bush Kit



Page 30 Injection Mould Support Plate, Shaft Intermediate Link Block



Page 30 Thrust Tablet Mould Plates Dowel Pin



Page 31 Injection Mould Core Pillar Angular Pillar



Page 31 Angular Core Pin Bearing Retainer Plate



Page 32 Injection Mould Strike Back Pillar Ejector Threaded Pillar



Page 33 Stepped Guide Pillar With Collar With / Without Oil Groove



Page 36 Stepped Guide Pillar With / Without Oil Groove



Page 38 Steel Guide Bush With Collar



Page 38 Retainer Bush Length Centering Steel Bush



Page 39 Ejector Plate Centre Collar Steel Bush



Page 39 Standard Guide Bush, Steel



Page 40 Sliding Guide Bush, Self lubricating



Page 38 Ejector Plate, Bush with Center Collar, Self Lubricating



Page 41 Bush with Collar, Self Lubricating



Page 41 Standard Guide Bush, Self Lubricating



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Page 42 Two Way Sliding, Special Cut, Self Lubricating



Page 42 'T' Shaped Plate, Special Cut Self Lubricating



Page 43 Ejector Plate Ball / Steel Bush Kits



Page 43 Linear Ball Bearing Guide Bush



Page 43 Ejector Plate, Linear Ball Bearing Bush, With Collar



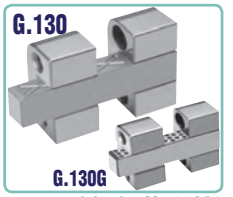
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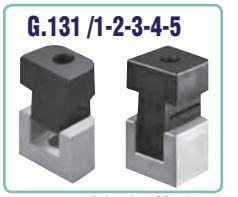
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Page 71 Locking Cone, Precision Locating, Support Washer



Page 74 Injection Mould Slide Locating, Oil Groove / Self Lubricating



Page 74 Injection Mould Locating Blocks



Page 75 Injection Mould Square Lock Group Block



Page 75 Injection Mould Square Block Locating



Page 76 Injection Mould Locating Cone Block



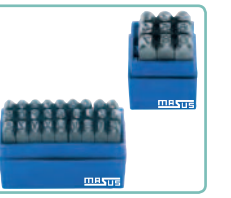
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Page 77 Injection Mould Non Resettable Production Counter



Page 78 Injection Mould Tube, Non Resettable Production Counter



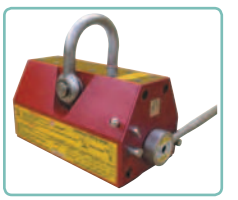
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Page 80 Plunger Erosion Chucks EDM Sets



Page 80 Plunger Erosion Chucks EDM Vise



Page 81 Permanent Magnetic Conveyor Block



Page 82 Injection Mould Safety Lock Split Pin



Page 87 Heavy Tonnage Conveyor Swivel Eyebolt



Page 87 Heavy Tonnage Angular Conveyor Swivel Eyebolt



Page 88 Conveyor Stray / Hook Work Safety



Page 89 Screwed Load Eyebolt, fixing Type Import/ Domestic



Page 89 Angular, Swivel Screwed Eyebolt



Page 90 Fasteners, Countersunk Bolt, Cylinder Head Cap Screw, Nut, Washer



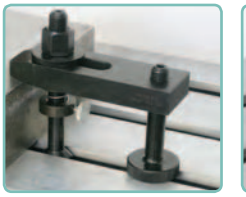
Page 91 Fasteners, Cylinder Head Cap Screw, Countersunk Burr



Page 92 Mould Assembly Set, Allen Key and Sets



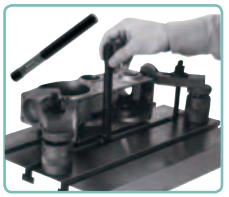
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Page 94 Modular Mould Coupling Sets



Page 95 Mould Clamping ' T ' Footing Stud



Page 96 Mould Clamping, Plain Stud, Nut - Washer



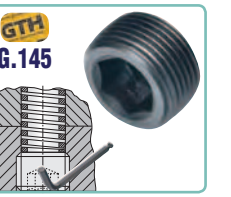
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Page 132 Ball, Spring, Shoulder Screw, Core Pins



Page 135 Spring Compressing Precision Adjust Toothed Plug



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Page 137 Round Wire Steel, Special Winding Spring



Page 139 Rectangular Extra Light Load Light Green Spring



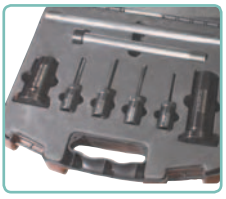
Page 140 Rectangular Light Load Green Spring



Page 141 Rectangular Medium Load Blue Spring



Page 142 Rectangular Heavy Load Red Spring



Page 146 Dowel Pin 7979, Puller Complete Set



Page 147 Dowel Pin 7979, With Air Groove



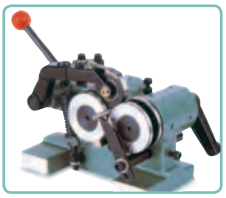
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Page 173 Hand Type/Traveller Chamfering Machine



Page 173 Pin Cutting, Face Grinding Machine



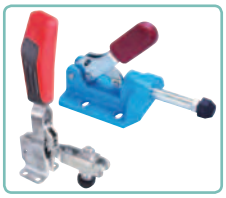
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Page 181 Chucks, Accurate Solution Fixtures



Page 190 Slide Combined Shoe In " T " Grooves



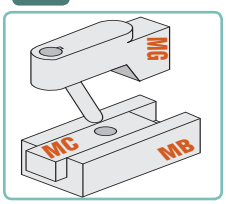
Page 191 Slide Combined Shoe in Toothed Plate



Page 192 Mould and Manufacturing Chemicals



Page 200 CUMSA Pls.Mould / Identificiation Standard Elements



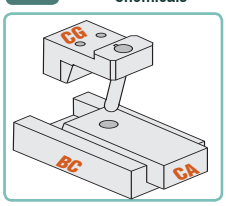
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Page 204 CUMSA Ready Core and Wedge



Page 205 CUMSA Standard, Core Combination



Page 206 CUMSA Angle Core Pin and Bush Combination



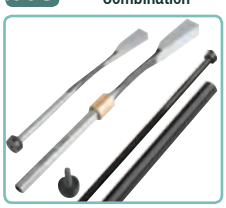
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Page 208 CUMSA Core Retainer and Mould Lock



Page 209 CUMSA Core Retainer and Accessories



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Page 211 CUMSA Flexible Inner Core & Length Cutting Device



Page 212 CUMSA Inner Core Housing and Angular Bush

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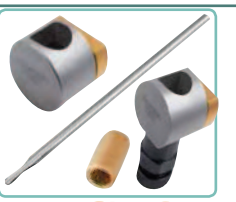
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Page 213 CUMSA 2 / 4 Flexible Inner Core



Page 214 CUMSA Calibrated / Fixed Core Retainer, Pin



Page 215 CUMSA Angular / Core Slide Housing



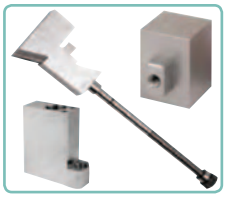
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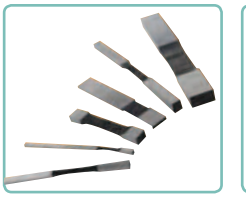
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Page 218 CUMSA Ready Perpendicular Core Complete Unit



Page 219 CUMSA Ready Perpendicular Core and Blocks



Page 220 CUMSA Special Flex Core Order Example



Page 220 CUMSA Magnetic Disc and Shock Absorber



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Page 222 CUMSA Dual Ejector Plate Opening System



Page 223 CUMSA Dual Ejector Plate Fast Opening Sys.



Page 223 CUMSA Dual Plate Ejector System



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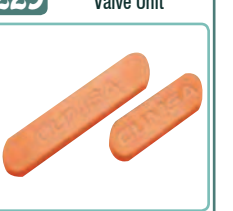
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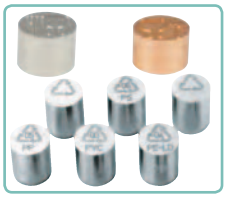
Page 230 CUMSA Two-Way Pneumatic Valve Unit



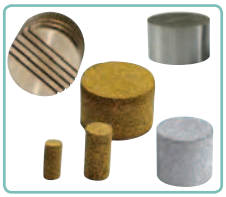
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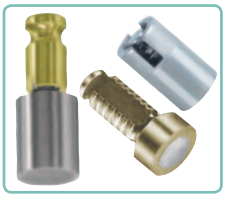


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Page 232 Injection Mould Recycling Tablets


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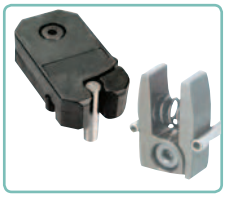

Page 234 Injection Mould Air Valve Gas Reliefs


Page 235 Injection Mould Pneumatic Ejector Valve

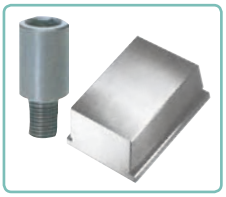

Page 236 Plate Puller Frictional Thrust Puller

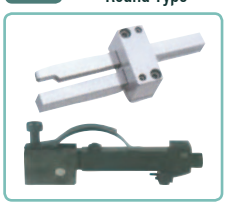

Page 237 Core Block Retainer, Round Type

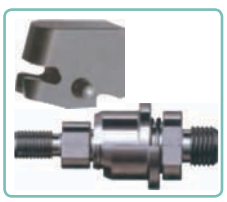

Page 238 Rectangular Core Block Retainers


Page 239 Injection Mould, Core Retainer Latch


Page 240 Core Block, Wear Plates


Page 241 Ready Core Blocks and Stops


Page 242 Mould Plate Spacer Combination


Page 243 Ejector Plate Automatic Stroke Accelerator Unit


Page 244 Injection Mould Hydraulic Cylinder Cores


Page 245 Ejector Plate Inclined Ejector Pin Unit


Page 246 Ejector Pin Cutting Face Grinding Machine


Page 247 Plastic Injection Countersunk Ejector Pin


Page 248 Plastic Injection Stepped Ejector Pin


Page 249 Plastic Injection Cylindrical head Ejector Pin


Page 250 Plastic -Metal Inj. Cylindrical head Ejector Pin


Page 251 Plastic -Metal Inj. Plate Ejector Pin


Page 252 Metal Injection Plate Ejector, Oxidation


Page 253 Metal Injection Cylinder Head Ejector, Oxidation


Page 254 Metal Injection Stepped Ejector and Threaded Pin



Page 255 Ejector Pins, Copper Alloy, Stainless


Page 256 Plastic Injection, Ejector Sleeves

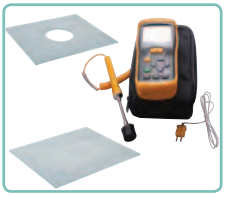

Page 257 Metal Injection Ejector Sleeves


Page 258 Metal Injection Nozzle Runner Inclined Flange


Page 259 Plastic Injection Nozzle Runner, Runner Flange


Page 260 Tunnel Runner Special Types

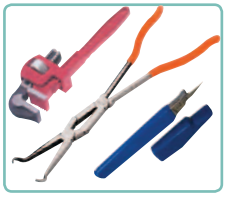

Page 261 Tunnel Runner, Standart Types



Page 262 Heat Insulation Plates Mould Heat Meter



Page 263 Pls. Raw Material Seperators Colour Change



Page 264 Mould Assembly Pliers, Deburring



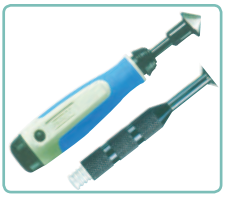
Page 265 Runner Cutting with Heat Controllled



Page 266 Scraping, Deburring Sets



Page 267 Scraping, Deburring Sets



Page 268 Countersinking, Deburring Sets



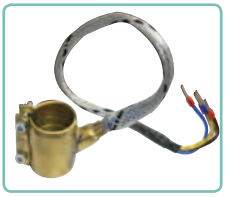
Page 269 Scraping, Countersinking Sets



Page 270 Mould Lubrication Protective Cleaning Spray



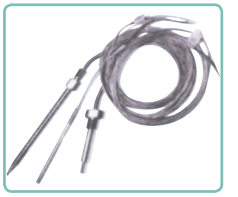
Page 271 Hot Runner Nozzle, Assembly Cleaning Gaskets



Page 272 Hot Runner Clamp & Cartdridge Resistances



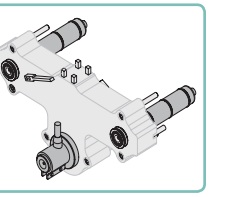
Page 273 Hot Runner Spiral Nozzle, Runner Resistance



Page 274 Manifold System Resistances, Termokupls



Page 275 Hot Runner Plugs and Sockets



Page 276 Hot Runner Manifold Systems



Page 278 Hot Runner Heat Control Units



Page 280 Hot Runner and Pls. Raw Material Technical Information



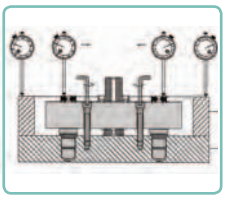
Page 281 Hot Runner Standard Nozzle Series



Page 282 Hot Runner Multi Nozzle Series



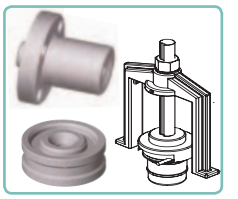
Page 283 Hot Runner Spinning Type Economic Nozzle



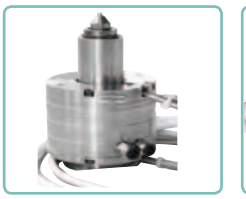
Page 284 Hot Runner Systems Assembly Process



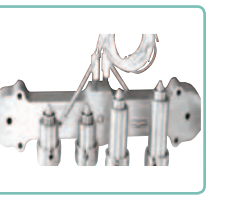
Page 285 Hot Runner Main & Input Nozzles



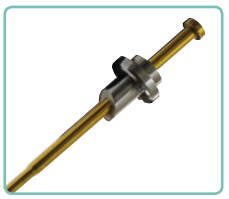
Page 286 Hot Runner Assembly Kits



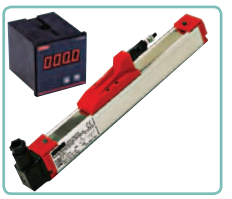
Page 287 Hot Runner Gate Valve Runners



Page 288 Hot Runner, Gate Valve, Manifold Systems



Page 290 Hot Runner Gate Valve Assembly Kits



Page 291 Linear Slide Linear Optical Scales



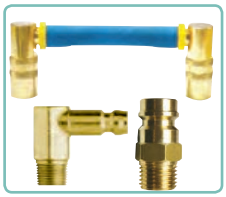
Page 293 Linear Slide Linear Optical Scales



Page 295 Linear Rotary Encoder-Optical Scales

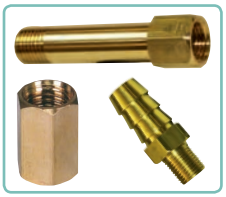


Page 296 Injection Mould Cooling Systems


Page 297 Automatic System End Couplings


Page 298 Metal Injection Cooling, Fast Systems


Page 299 USA System Fast Automatic Couplings


Page 300 Cooling System Hose Entry Couplings


Page 301 Water Runners, Plugs, Couplings

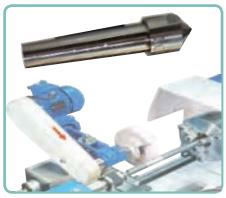

Page 302 Automatic Hose Entry Fittings Group

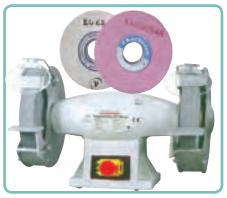

Page 303 Water Runners Drilling Punch Distribution Header

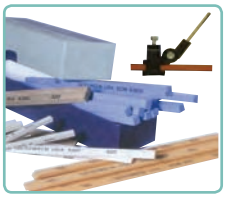

Page 304 Cooling System Control & Test Equipments


Page 305 Deep Insertion Cooling Separators

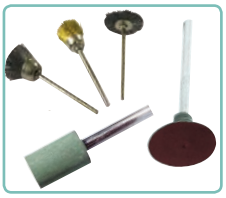

Page 306 Chisel Sharpening Machine Diamond Stones


Page 307 Stone Sharpening Hole Inner Grindings


Page 308 Steel Grinding EKR Stones & Motors


Page 309 Polishing and Ceramic Stones in Leveling Process


Page 310 Mounted Points Shaft: 3 - 6 mm in Leveling Process


Page 311 Mounted Brushes, Rubbers, Emeries


Page 312 Mounted Felt Bobs Shaft: 3-6 mm in Polishing Process


Page 313 Diamond Compounds in Lapping and Polishing Process

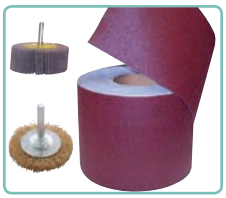

Page 314 Electrical Spiral Leveling / Polishing Machines


Page 315 Pneumatic Machines Precision Filing Rotary Leveling


Page 316 Diamond Burr, Deburring, Leveling


Page 319 Diamond Riffler and Burrs


Page 320 Fitter Rifflers and Running-in Sets


Page 323 Emery Cloth Industrial Fiber Mops


Page 325 Polishing and Workshop Sets


Page 327 Disc Stones Flap Sandpapers and Machines


Page 329 Pneumatic Tools and Machines


Page 330 Drill Sharpening Burr Sharpening Machines

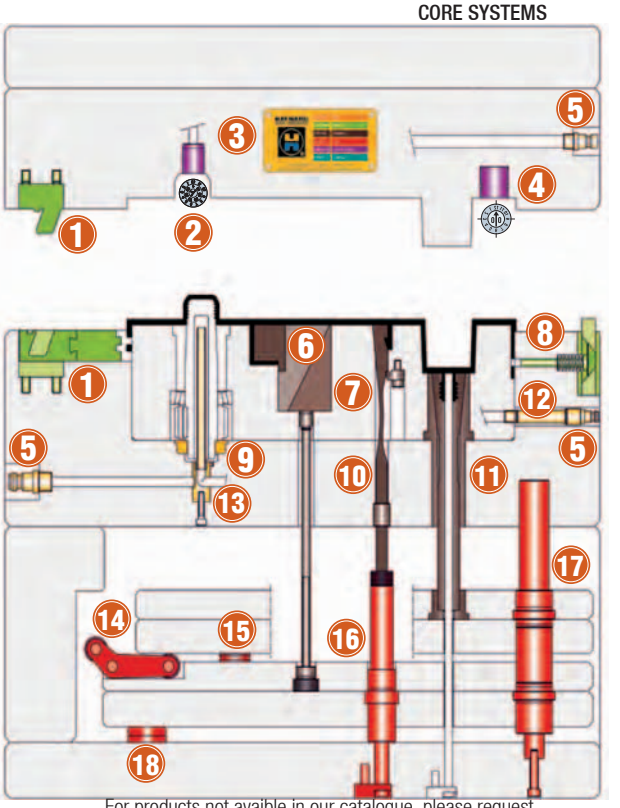

Page 331 Band Sanding Machines


Page 333 Magnetic Chucks


Page 334 Mould Handling, Stacking Machines

PLASTIC INJECTION MOULD STANDARD SYSTEMS

CORE SYSTEMS



1 **SU** Slide Core Unit Page 203

2 Code: **FD** Combined Mould Calendar

3 **CP** Coloured Mould ID Manual Writing

4 Code: **FP** Mould Calendar Changeable Hub

5 Code: **BR** Automatic Cooling Water Coupling

6 Code: **ID** Core Plate Changeable Page 219

7 **DHO** Perpendicular Core External Contact Page 219

8 Code: **UA** Compact Orifice Core Page 207

9 Code: **SB** Cooling Disc With Gearbox

10 **PX** Flexible Inner Core Page 211

11 **PE** Automatic Flexible Inner Core

12 Code: **TH** Mould Coupling Intermediate Extender Length Extension

13 Code: **TB** Cooling Tube Copper 2 Way With Gearbox

14 Code: **EP** Ejector Plate Accelerator Page 222

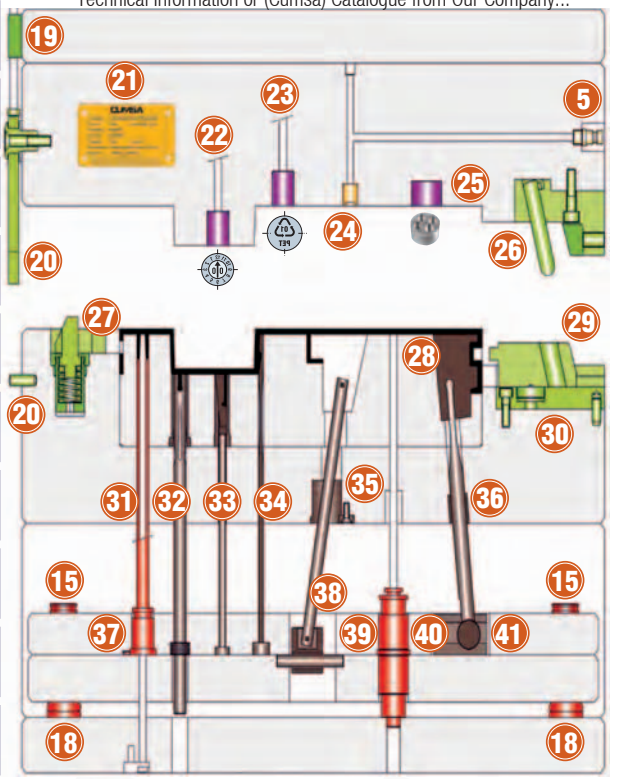
15 Code: **TM** Magnetic Pin Stops Page 220

16 Code: **LR** Perdendicular Core Limiter Page 226

17 Code: **DX** Double Plate Ejector System Page 222

18 Code: **TA** Ejector Plate Shock Absorber Page 220

For products not avaible in our catalogue, please request Technical Information or (Cumsa) Catalogue from Our Company...



19 Code: **AB** Safety Lock Extender Page 208

20 Code: **BS** Mould Safety Lock Page 208

21 **PI** LazerWriting Mould ID Label

22 Code: **FA** Mould Calendar Max. 150^0 Page 228

23 Code: **IR** Recycling Symbol Seals

24 Code: **VA** Pneumatic Ejector Valve Page 229

25 **BM** Block Calendar Page 228

26 Code: **CG** Core Thrust Plate Page 204

27 Code: **UC** Side Hole Core Page 207

28 Code: **IF** Movable Core Head Page 214

29 Code: **CA** Mini Core Holder Page 205

30 Code: **BC** Core Housing Page 205

31 Code: **TE** Pipe Ejector Plain Ejector Without Cap

32 Code: **EE** Quartet Inner Core Page 213

33 Code: **PS** Bush Per. Core Page 216

34 **PF** Inner Core Flat Type Page 212

35 Code: **CI** Angular Guide Bush Page 212

36 **VI** Shaft Core Pin Page 215

37 Code: **BA** Flat Ejector Retainer Page 227

38 Code: **SD** Inner Core Slide Bearing Page 212

39 Code: **AE** Ejector Plate Accelerator Page 227

40 Code **BD** Angular Slide Housing Page 215

41 Code **DF** Fixed Core BD Slide Page 214

18 Code: TA — Ejector Plate Shock Absorber — Page 220

42 Code: MX — Ejector Plate Lock — Page 225

43 Code: SL — Stroke Limiter — Page 224

44 Code: PR — Plate Retainer — Page 224

45 Code: UU — Slide Core Engraving — Page 203

46 Code: JV — Vacuum Jet Hose (VK)

47 Code: VH — High Pressure Air Valve — Page 229

49 Code: DH — SpecialAngle Mechanic Perpendicular

50 Code: VS — Spiral Ended(NP) Pipe Ejector(VP)

51 Code: VP — Spiral Ended (NP) Ejector Pin

52 Code: VT — Vacuum Jet Valve Pipe for (VK)

54 Code: CV — Vacuum Jet Connection Socket

55 Code: PT — Vacuum Jet Pneumatic Cyclinder

56 Code: VK — Automatic Vacuum Jet System

57 Code: DY — Double Plate Ejector System

58 Code: BT — Flat Pin Hole Retainer — Page 227

59 NP — Ejector (Spiral) Position Fixing (Irrotational Type)

71 Code: PH — Flat Ejector Without Cap

Accessories

48 Code: VV — Vacuum /Jet Air Suction Valve

60 Code: SC — Cable Protection Cap — Page 231

61 Code: CR — Adjustable Core Thrust — Page 204

62 Code: GR — Angle Core Pin Retainer — Page 206

63 Code: BG — Rectangular Angle Core Pin Retainer — Page 206

64 Code: GI — Angular Core Pin — Page 206

65 RCM — Holder (With Rotary Pin) — Page 209

New Mould Systems

53 Code: CC — Digital Mould Counter — Page 221

66 Code: DB — Automatic Per. Core Slide (LD)

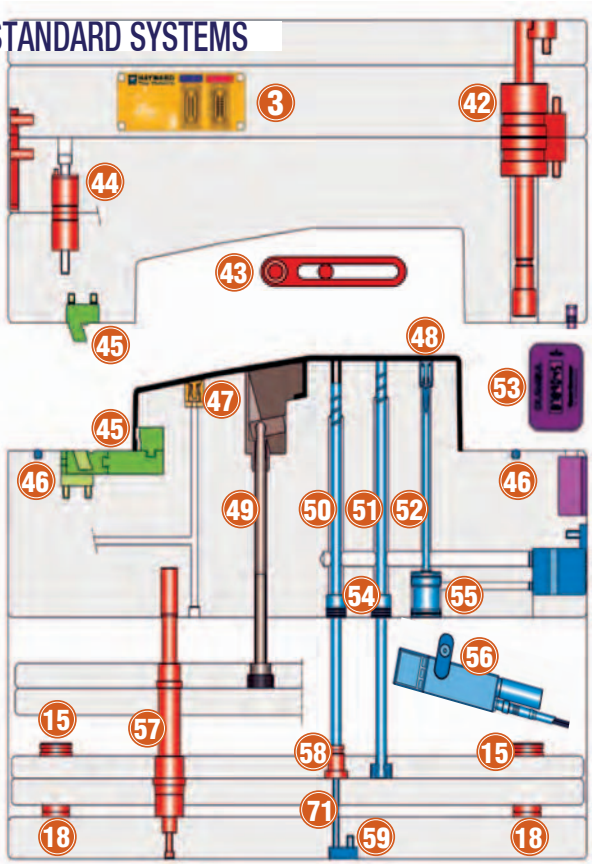
67 Code: RA — Automatic Core Retainer Stops — Page 208

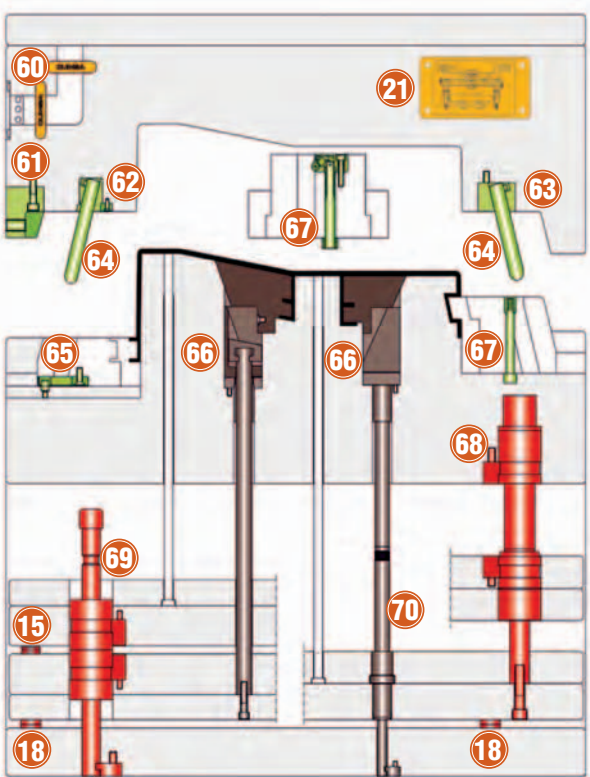
68 Code: SY — Compact Double Plate Ejector System — Page 223

69 Code: DX — Double Ejector Plate Ejector Plate — Page 222

70 Code: LD — Automatic Per. Core Shaft

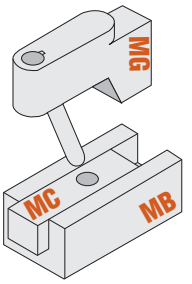
15 Code: TM — Magnetic Stopper Pin — Page 220





For products not available in our catalogue, please request Technical Information or (Cumsa) Catalogue from Our Company...









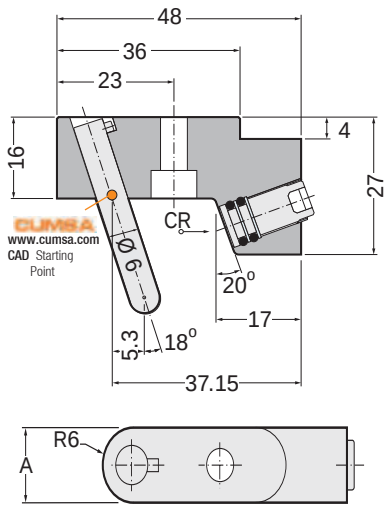
STANDARD CORE COMBINATION

MINI GUIDE MG

Mini Guide: It is consisted of Angle Pin and Locking Thrust Shoe. While Mould is Closed, it can easily adjust with Alien Key.

Material : 1.2510 Hardened 52/56 HRC
Patented System

Attention !!! Standard Stroke (Motion) is 4 mm.



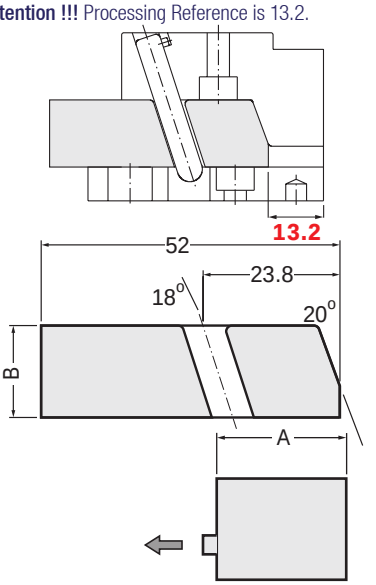
STANDARD CORE COMBINATION

MINI SLIDE MC

Mini Slide: Ready for processing, the only thing to be done is processing cavity surfaces.

Material : 1.2344 Patented System
Hardened 42/45 HRC

Attention !!! Processing Reference is 13.2.

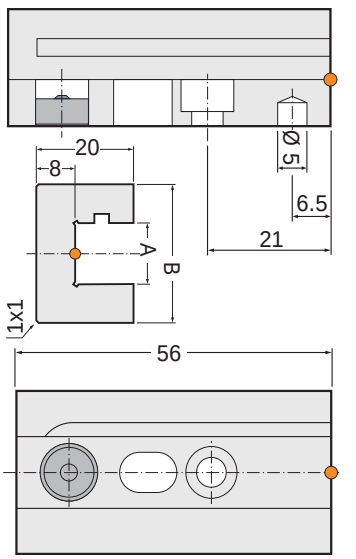


STANDARD CORE COMBINATION

MINI HOUSING MB

Mini Casing: It is a hardened and ground ready unit. There are different assembly possibilities, also replacement is easy.
It is with magnetic retainer.

Material : 1.2510 Patented System
Hardened 52/56 HRC



MINI GUIDE MG

Order Reference	A mm	CR (N)
MG.12 1648	12	50.000
MG.20 1648	20	90.000

MINI SLIDE MC

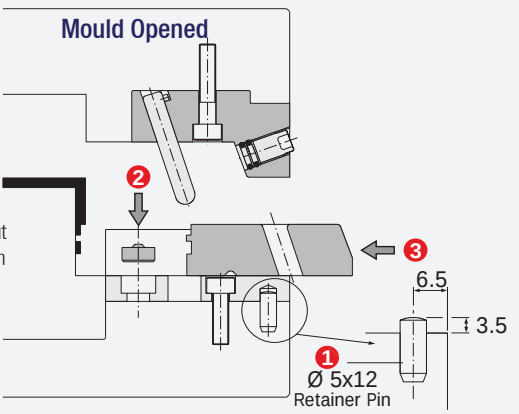
Order Reference	A mm	B mm
MC.12 1252	12.5	12
MC.12 1652	12.5	16
MC.20 1252	20.5	12
MC.20 1652	20.5	16

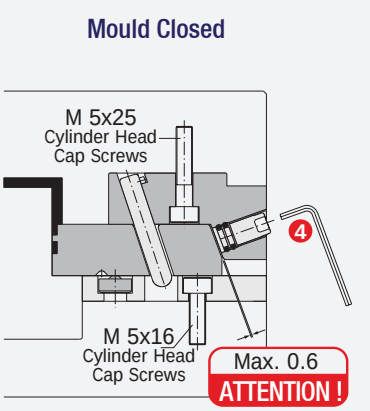
MINI CASING MB

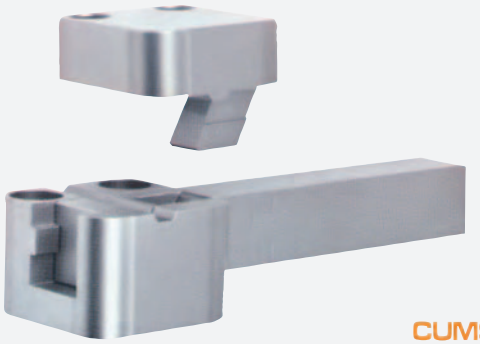
Order Reference	A mm	B mm
MB.12 2056	12.5	28
MB.20 2056	20.5	36

ASSEMBLY (CONNECT) and OPERATING

1- Determine the position of Mini Housing (MB) and mount it.
2- Please insert Magnetic Retainer into hole.
3- Insert Mini Slide (MC)
4- While mould is closed, please a d jut Mini Slide (MC) to maximum 0.6 mm







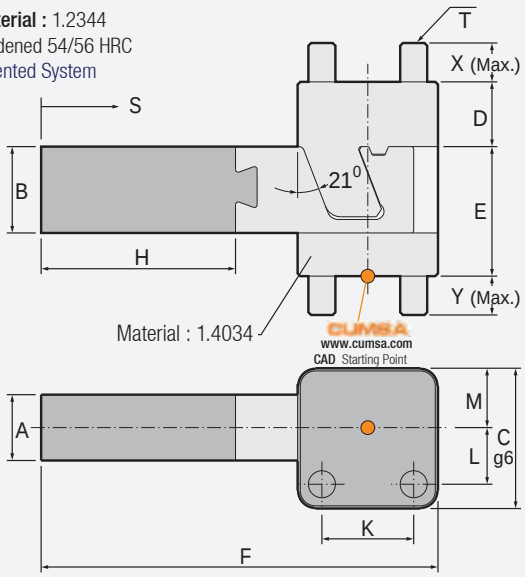
CUMSA

SLIDE CORE UNIT SU

Bottom Hole Forming, (Engraving) Processing Core Group

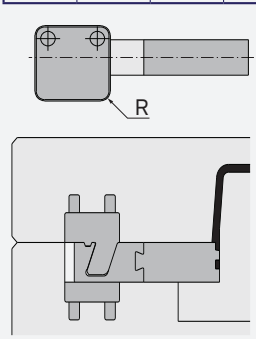
Demountable External Core Unit **Max. 5mm Stroke Distance 3 Pieces Compact System.** All surfaces are precisely grinded 90º perpendicularly. Ideal Structure for Injection Mould Internal/External Details, Mould Consisted Movable and 2 Different Slider Inserts, Flexibility Provided related with its property.

Material : 1.2344
Hardened 54/56 HRC
Patented System

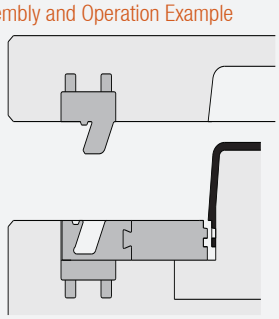


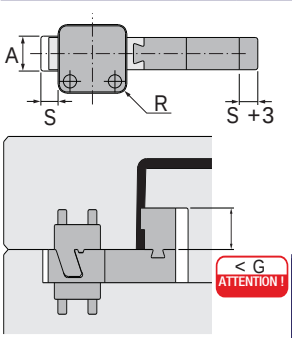
Order	A	B	C	D	E	F	H
SU.08 1220	8.2	12	20	10	18	60	32
SU.12 1626	12.2	16	26	12	24	73	36
SU.16 2032	16.2	20	32	16	30	86	40

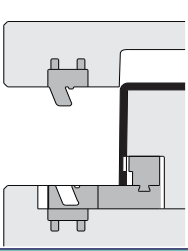
K	L	M	R	S	T	X	Y
12.5	8.25	8	3.75	3	M4	7	8
17	10.5	11	4.5	4	M5	9	7
22	13	14	5	5	M6	10	11

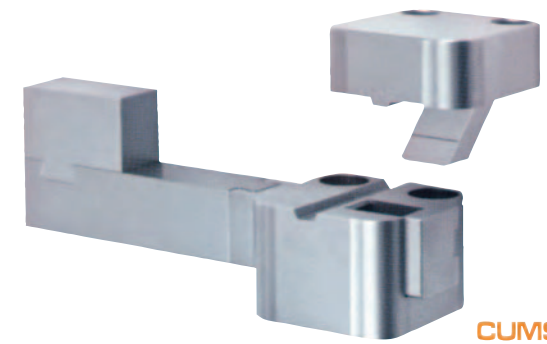


Assembly and Operation Example









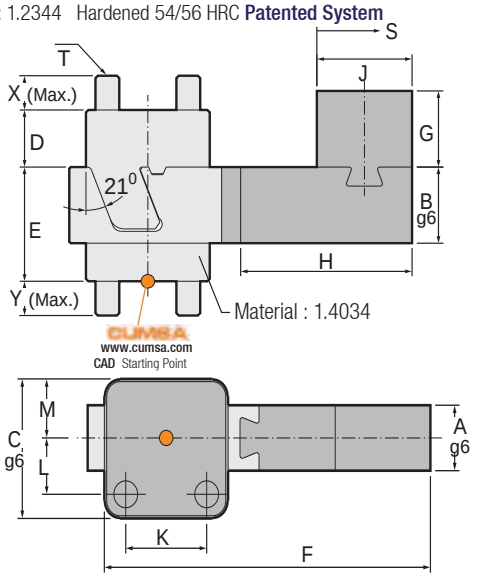
CUMSA

SLIDE HIDDEN CORE UNIT UU

Bottom Hidden (Core) Forming (Cavity) Processing Core Group

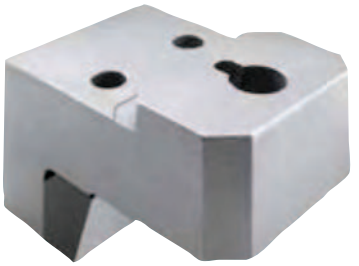
In contrast to Normal Core, provides reverse motion, **5 mm Stroke Mini Product is ideal for production of internal nails**. Forming of slide from 2 parts, provides easily process possibility the desired nail form, All processes are made 90º perpendicularly to mould parting surface.

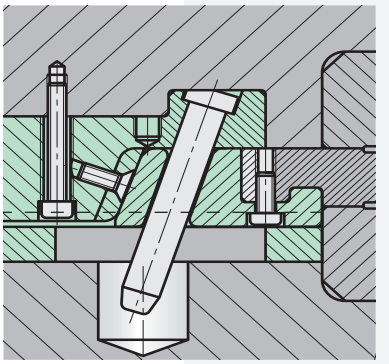
Material : 1.2344 Hardened 54/56 HRC **Patented System**



Order	A	B	C	D	E	F	G
UU.08 1220	8.2	12	20	10	18	53	12
UU.12 1626	12.2	16	26	12	24	64	16
UU.16 2032	16.2	20	32	16	30	86	20

H	J	K	L	M	S	R	T	X	Y
32	16	12.5	8.25	8	3	3.75	M4	7	8
36	20	17	10.5	11	4	4.5	M5	9	7
50	25	22	13	14	5	5	M6	10	11







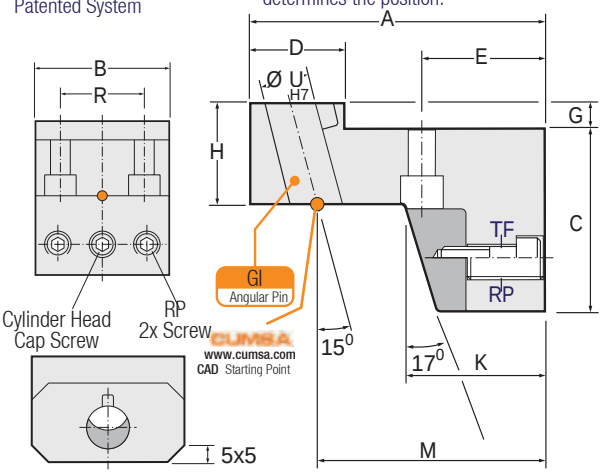
READY CORE GUIDE UNIT CG

It is unit of core system starting motion

It is delivered in position that angle and mounting holes are drilled and also presets are made. **It requires very small mounting area on mould.** All surfaces are precisely grinded and 90º perpendicular surfaces are precisely processed.

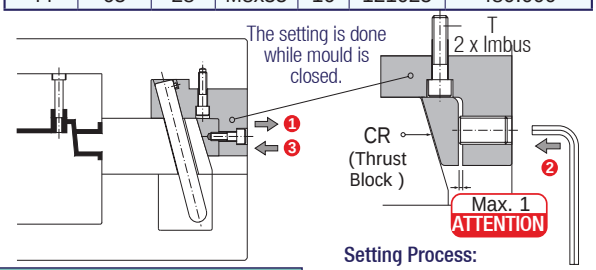
Material : 1.2312
Improved 1.080 N/ mm^2
Patented System

Two retaining pins on the outer are fixed thrust block. The intermediate screw determines the position.



Order	A	B	C	D	E	G	H
CG.60 3035	60	30	35	25	23	6	23
CG.60 4035	60	40	35	25	23	6	23
CG.75 4049	75	40	49	30	32	7	27
CG.86 4857	86	48	57	35	36	8	32

K	M	R	T	U	RP	CR (N)
29	43.7	17	M6x25	10	081015	180.000
29	43.7	22	M6x25	10	101015	320.000
39	58	22	M8x30	12	101020	320.000
44	65	28	M8x35	16	121025	480.000



Setting Process:
1- Unbolt TF (Bolt)
2- Tight RP (Screw)
3- Lock TF.

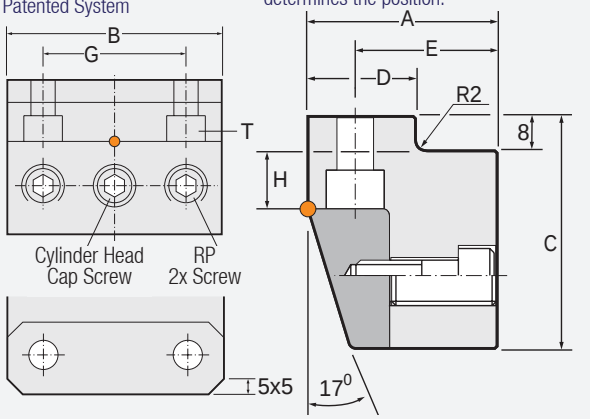
READY CORE THRUST BLOCK CR

When the mould is closed, it lets you set the core slide

It is delivered in position that connection holes are drilled and also presets are made. **It requires very small mounting area on mould.** All surfaces are precise grinded and 90º perpendicular surfaces are processed with precision.

Material : 1.2312
Improved 1.080 N/ mm^2
Patented System

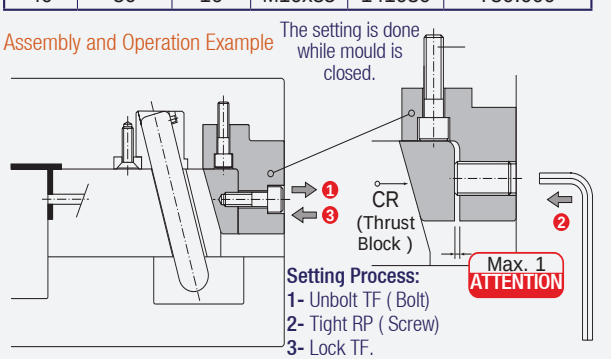
Two retaining pins on the outer are fixed thrust block. The intermediate screw determines the position.



Order	A	B	C	D
CR.40 3840	40	38	40	25
CR.45 4849	45	48	49	28
CR.52 6052	52	60	52	32
CR. 52 6852	52	68	52	32
CR.52 7556	52	75	56	32

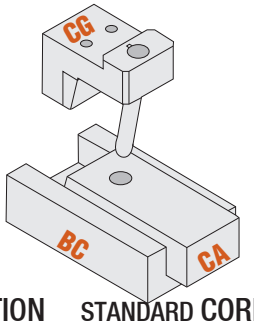
E	G	H	T	RP	CR (N)
30	22	12	M8x30	101020	320.000
35	28	16	M10x35	121025	480.000
40	35	16	M10x35	141030	750.000
40	45	16	M10x35	141030	750.000
40	50	16	M10x35	141030	750.000

Assembly and Operation Example



Setting Process:
1- Unbolt TF (Bolt)
2- Tight RP (Screw)
3- Lock TF.









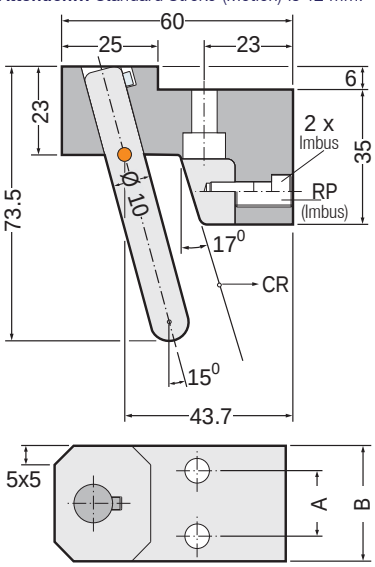
STANDARD CORE COMBINATION
PIN CORE GUIDE CG

Core Guide - Set: This unit is procured along with angle pin(GI - 010 0090).

There is Standard 12 mm Stroke. The setting can be done with a key from outside of mould.

Material : 1.2312
Improved 1.080 N/ mm^2
Patented System

Attention!!! Standard Stroke (Motion) is 12 mm.

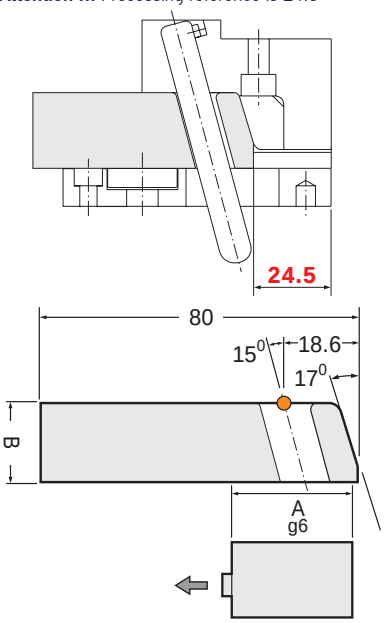


STANDARD CORE COMBINATION
CORE SLIDE CA

Core Slide: Ready for processing, the only thing to be done is processing cavity surfaces.
The core element to be used should be mounted on this casing. Angle Hole should be drilled on core slide.

Material : 1.2344 Patented System
Hardened 42/45 HRC

Attention !!! Processing reference is 24.5

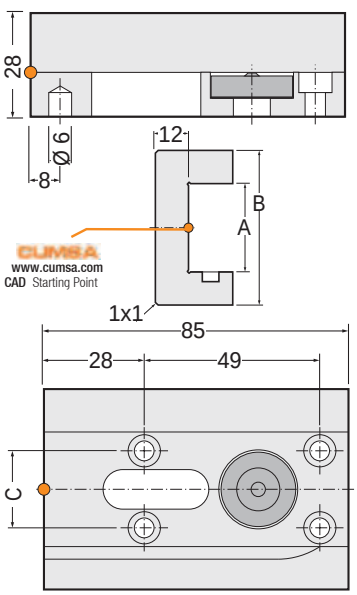


STANDARD CORE COMBINATION
CORE HOUSING BC

Core Housing: It is a hardened and grinded ready unit. There are different assembly possibilities, also the replacement is easy.

It also has a Magnetic Retainer.
Slide Grooves and Connection Holes are in ready position inside of Core Casing and is along with its Magnetic Stops. It has been manufactured in different material and in different hardness from **CA - BC** to continue its operation as smooth, frictionless and without impairment.

Material : 1.2510 Patented System
Hardened 54/56 HRC



CORE GUIDE CG

Order	A	B
CG.60 3075	17	30
CG.60 4075	22	40

CR (N)	RP	Angular Pin
180.000	081015	GI.010075
320.000	101015	GI.010075

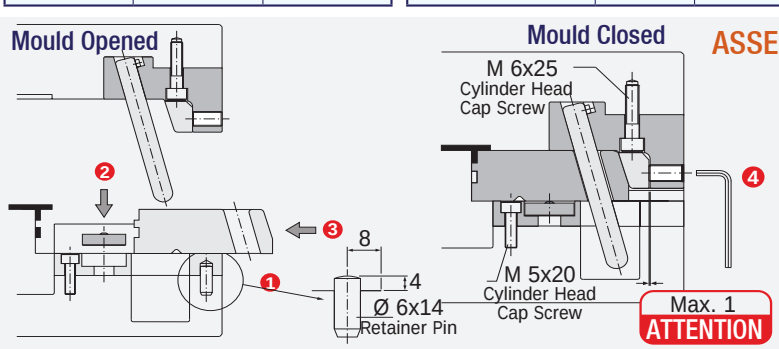
CORE SLIDE CA

Order	A	B
CA.32 2080	32	20
CA.32 2480	32	24
CA.42 2080	42	20
CA.42 2480	42	24

CORE HOUSING BC

Order	A	B	C
BC.32 2885	32	56	21.5
BC.42 2885	42	66	26.5

ASSEMBLY



1- Pls. determine the position of Core Housing (BC) and mount it.
2- Place Magnetic Retainer into hole.
3- Determine the position of Core Slide (CA).
4- While mould is closed, pls. set core slide to max. 1 mm.



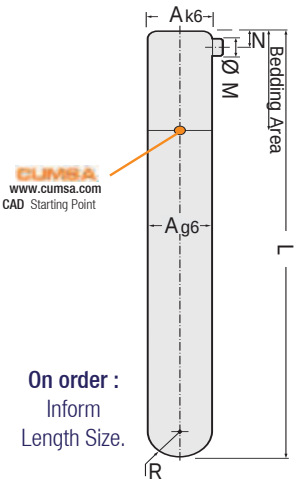
CUMSA

STANDARD CORE COMBINATION

ANGULAR PIN GI

Angular Pin: This pin, works compatibly with each core set in Cumsa Serie.

Material : 1.7242 **Hardness :** 60 HRC



On order : Inform Length Size.

ANGULAR PIN GI

Order	A	Bedding Area
GI.010.. L	10	≃ 25
GI.012.. L	12	≃ 30
GI.016.. L	16	≃ 35
GI.020.. L	20	≃ 40
GI.024.. L	24	≃ 45
GI.028.. L	28	≃ 50

M	N	L (Length)			R
4	4	075	090	105	5
4	4	095	110	130	6
4	4	115	135	160	8
6	6	140	165	190	10
6	6	170	195	220	12
6	6	200	225	250	14

Orderte : Pls. Inform " L " length size



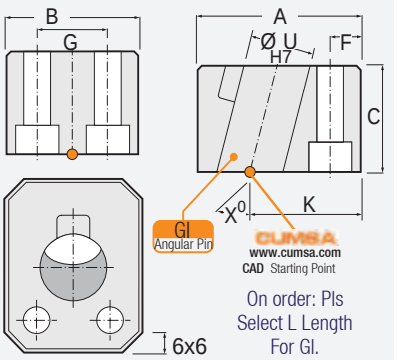
CUMSA

STANDARD CORE COMBINATION

ANGULAR PIN RETAINER BG

Angular Pin Retainer: It is same with round angularpin retainer (GR). **However, it is 15º or 20º.** Due to using this unit in more wider angle, it is greater than GR and it requests that a rectangular slot should be opened on mould.

Material : 1.2312 Improved 1.080 N/ mm^2

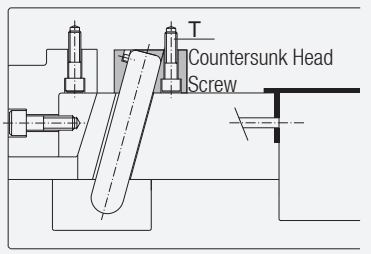


On order: Pls Select L Length For GI.

ANGULAR PIN RETAINER BG

Order	A	B	C	F
BG.423016-15	42	30	30	7.5
BG.504020-15	50	40	36	9
BG.554024-15	55	40	40	9
BG.655028-15	65	50	45	12
BG.423016-20	42	30	30	7.5
BG.504020-20	50	40	36	9
BG.554024-20	55	40	40	9
BG.655028-20	65	50	45	12

G	K	T	U	X
15	28	M6x35	Ø 16	15^0
22	34	M8x40	Ø 20	
22	38	M8x45	Ø 24	
26	45	M10x50	Ø 28	
15	28	M6x35	Ø 16	20^0
22	34	M8x40	Ø 20	
22	38	M8x45	Ø 24	
26	45	M10x50	Ø 28	



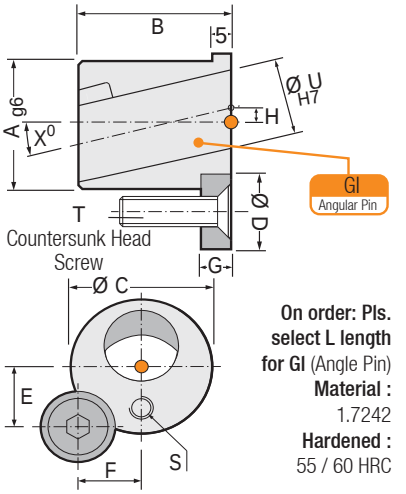


CUMSA

STANDARD CORE COMBINATION

ANGULAR PIN RETAINER GR

Angular Pin Retainer: This unit eliminates the Need for Angle Drilling on mould. Only, a hole is drilled from front face of mould to place unit and select 10^0 or 15^0.



On order: Pls. select L length for GI (Angle Pin)
Material : 1.7242
Hardened : 55 / 60 HRC

Order	A	B	C	D	E
GR.182622-10	18	26	22	12	10.8
GR.222826-10	22	28	26	16	11
GR.283432-10	28	34	32	16	13
GR.344038-10	34	40	38	20	17
GR.424546-10	42	45	46	20	19.5
GR.465050-10	46	50	50	20	21
GR.182622-15	18	26	22	12	10.8
GR.222826-15	22	28	26	16	11
GR.283432-15	28	34	32	16	13
GR.344038-15	34	40	38	20	17
GR.424546-15	42	45	46	20	19.5
GR.465050-15	46	50	50	20	21

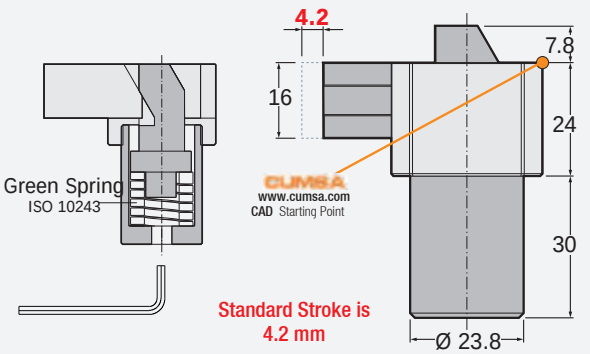
F	G	H	S	T	U	X^0
7.5	6	3.8	M5x5	M5x16	10	10^0
11		4	M6x6	M6x16	12	
13		5			16	
17	8	5.5	M8x6	M8x20	20	
19.5		6			24	
21		7			28	
7.5	6	3.8	M5x5	M5x16	10	15^0
11		4	M6x6	M6x16	12	
13		5			16	
17	8	5.5	M8x6	M8x20	20	
19.5		6			24	
21		7			28	

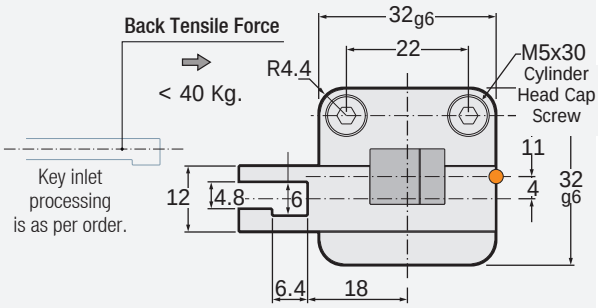


READY CORE, SIDE HOLLOW UC

Injection Plastic Mould is to Create Side Hole.

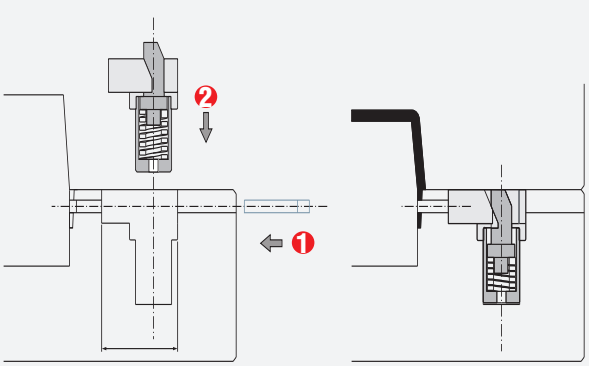
It is working mechanism used to form side holes. Core Pin is held with Automatic Locking System. The required area for mounting is very small. All surfaces are precisely grinded 900 perpendicularly. It is delivered with drilled mounting holes and also presets are made. **It requires very small mounting area on mould.**





Order:
UC.32 5445

Material : 1.2344
Hardened : 52-54 HRC



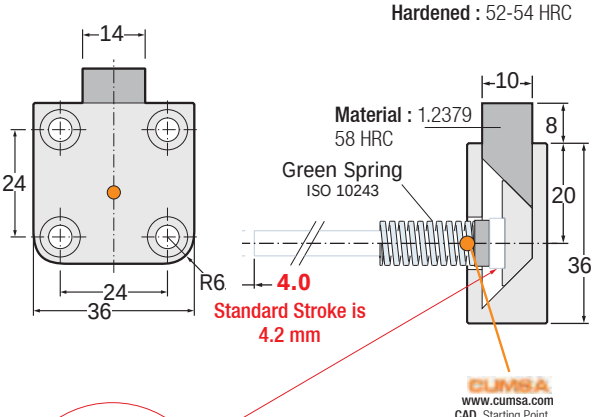


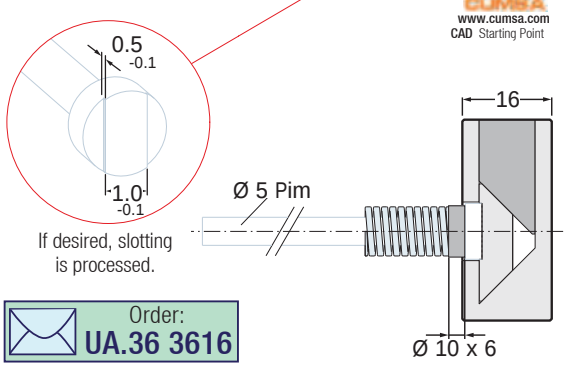
COMPACT CORE UNIT UA

Spring / Pin Loaded Compact Core / Hole Unit.

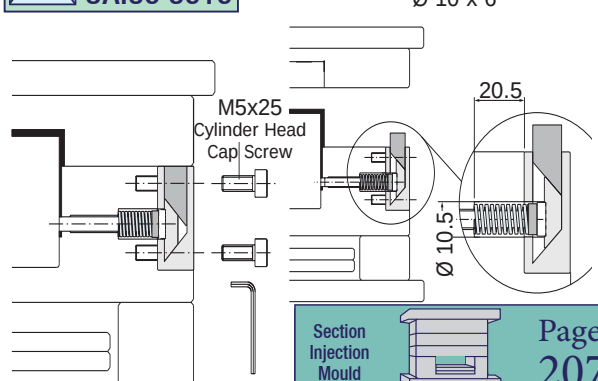
It reduces slot processing and assembly costs.
The unit used in forming side holes on plastic parts is operated with opening and closing of mould. Mounting and demounting to mould is so easy. In comparison with the classic core system, it requires a lot fewer space on mould All surfaces are grinded 900 and super finished. It is a standard solution for moulders.

Material : 1.2344
Hardened : 52-54 HRC





Order:
UA.36 3616



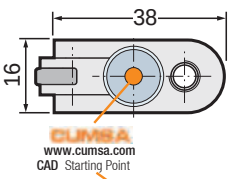


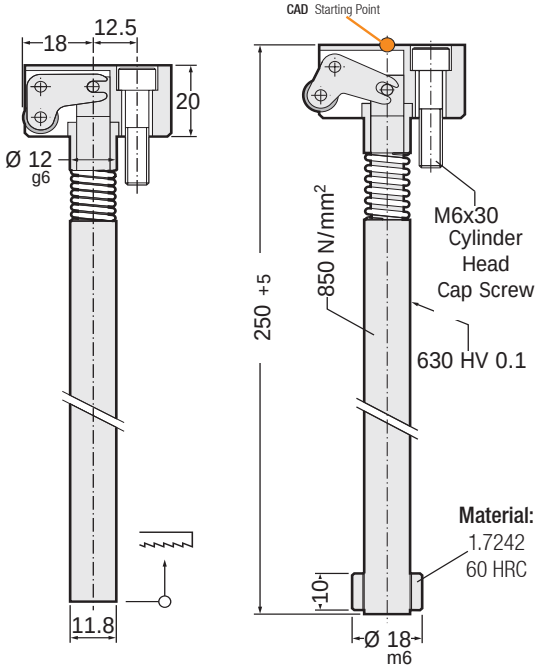
AUTOMATIC CORE RETAINER RA

It is for large Hydraulic Cores Operating With Angle Pin

It is ready standard solution for moulders. It is worked easily and smoothly without requiring large loads. This Core retainer has 2000 Kg. load capacity.

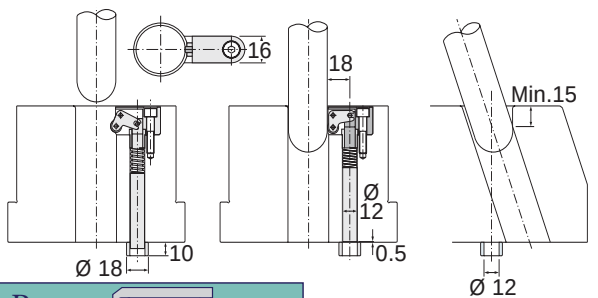
Material : 1.2510
Hardened : 56 HRC





Order:
RA.16 3812

Pin Size: It should be 0.5 shorter than core height.





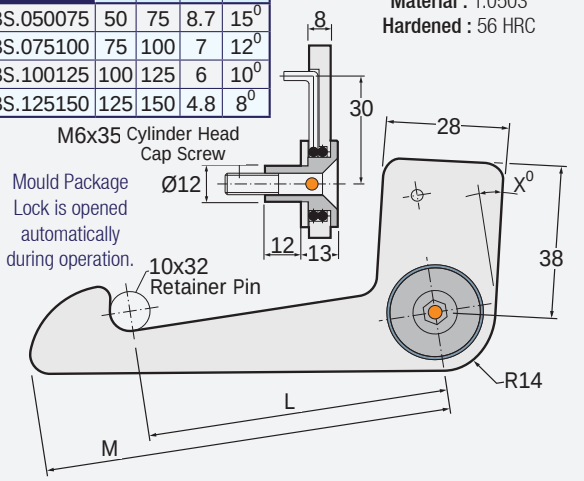
MOULD PACKAGE, SAFETY LOCK BS

While Mould is non manufactured, it is holds mould closed, opens automatically.

In the event that mould is not connected to the Injection Machine, it keeps the mould closed and protects it. When the mould is connected to injection, mould lock is opened automatically.

Order	L	M	N	X
BS.050075	50	75	8.7	15^0
BS.075100	75	100	7	12^0
BS.100125	100	125	6	10^0
BS.125150	125	150	4.8	8^0

Material : 1.0503
Hardened : 56 HRC



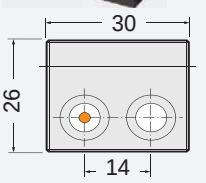


MOULD SAFETY LOCK INTERMEDIATE EXTENDER AB

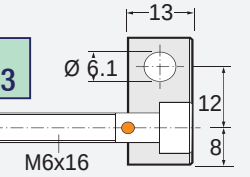
It is used for thick plate moulds.

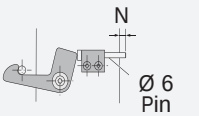
Extender Unit: It is used in spaces that mould plate is thicker than 120 mm.

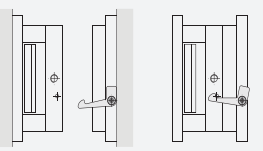
Material : 1.0503

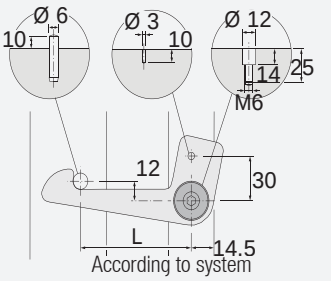


Order:
AB.302613







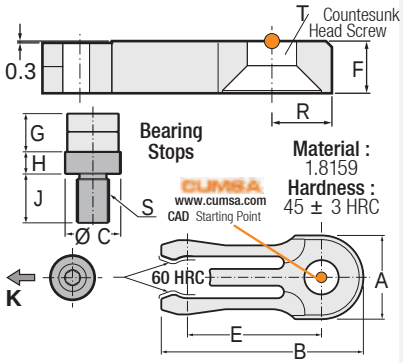




STOPPER CORE RETAINRER RCM

The bearing in mechanical stops prevents the abrasion arising from friction force, in contrast with its equivalents, it occupies less place on mould and its mounting requires less processing.

Heat Resistance is 150^0.

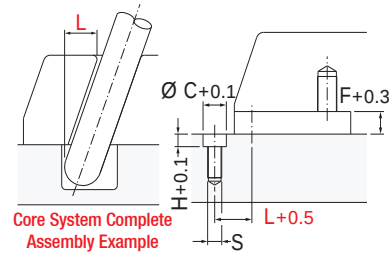


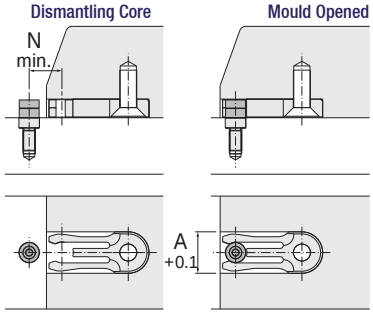
STOPPER CORE HOLDER RCM

Order	A	B	C	E	F	G
RCM.16 3808	16	38	8	25	7.7	7.6
RCM.20 4810	20	48	10	32	8.7	8.6
RCM.24 5712	24	57	12	37.5	9.7	9.6

H	J	K	N	R	S	T
4	10	10 Kg.	7	8	M5	M6
5	11	14 Kg.	8	10	M6	M8
6	12	18 Kg.	9	12	M8	M10

K : Forcing to release safety



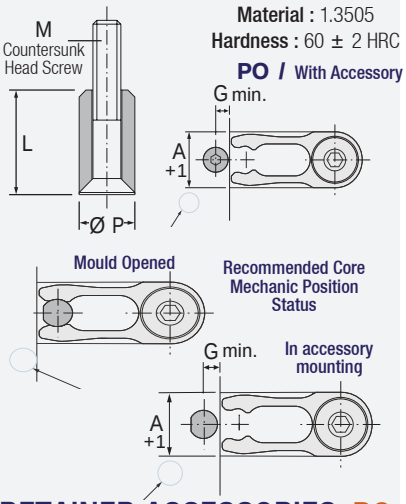




RETAINER ACCESSORIES PO

Optional belonging to RC Retainer (As per order)Bush-Countersunk Bold Set

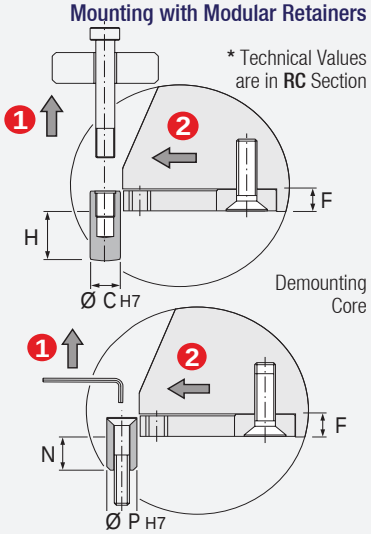
Optional Pin: To fastening core retainer, the bolt bush is fastened with set by drilling bush hole. It is optional / as per order method facilitating dismantling, this product should be ordered separately.



RETAINER ACCESSORIES PO

Order	L	M	N	P
PO.120320	12	M3x20	7.5	6
PO.150425	15	M4x25	10	8
PO.200530	20	M5x30	13	10
PO.250635	25	M6x35	16	12
PO.340850	34	M8x50	23	16

Mounting with Modular Retainers

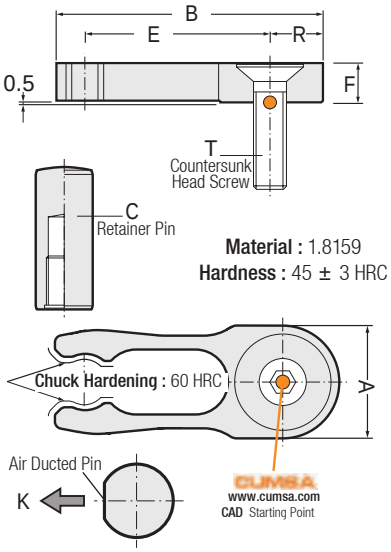




CORE RETAINER RC

As Core Retainer or Different use of Retainer : It is a secure system preventing the falls of casings such as core etc. in vertical direction and centering mould. It is presented with Modular Retainer, Mounting Bolt and Retaining Pin requires very little mounting area in mould.

Heat Resistance is 150^0'dir.



" K " is the approximate load value required to disengage from retainers.

CORE RETAINER RC

Order	A	B	C	E	F
RC.123006	12	30	6x20	21	5
RC.164008	16	40	8x20	28	6
RC.205010	20	50	10x24	34	8
RC.246012	24	60	12x32	42	10
RC.328012	32	80	16x40	56	12
RC.328016	32	80	16x40	56	16

G	H	K	R	T
4	16	5 Kg.	6	M5x16
5	15	7 Kg.	8	M6x25
6	17	14 Kg.	10	M8x30
7	23	21 Kg.	12	M10x40
9	27	28 Kg.	16	M12x50
9	25	38 Kg.	16	M12x50

Reliable Label

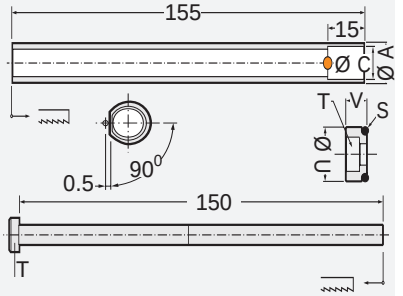


CUMSA

LENGTH EXTENSION SET AP

It is used to extend length (up to 315 mm) of flexible inner cores (Such as PW).

It is a standard extension element, it is hardened and dimensionally grinded. **There is a slotting available.**

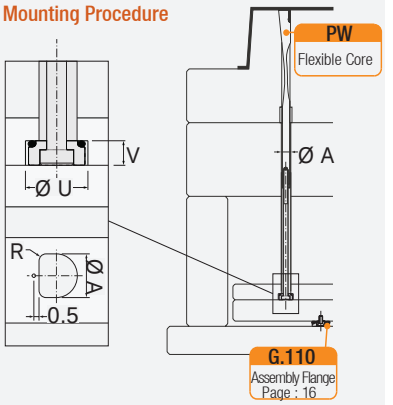


FLEXIBLE CORE L. EXTENSION SET

Order	A	C	R
AP. 08 06 15	8	6	1.25
AP. 10 08 15	10	8	2.0
AP. 12 10 15	12	10	2.5

S	T	U	V
9.5 x 2	M4	14	5
11.5 x 2	M5	16	6
14.5 x 2.5	M6	20	8

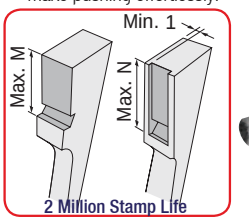
Mounting Procedure

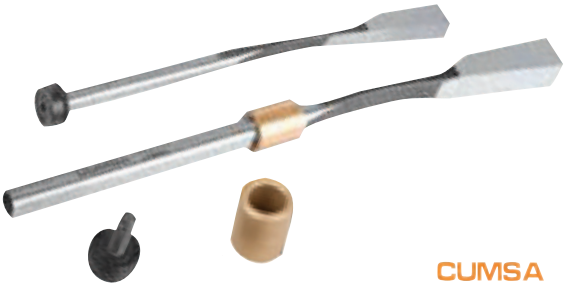


CUMSA

Injection Plastic Mould EJECTOR systems

After setting core, pls. process 0.1 mm from end section to make pushing effortlessly.



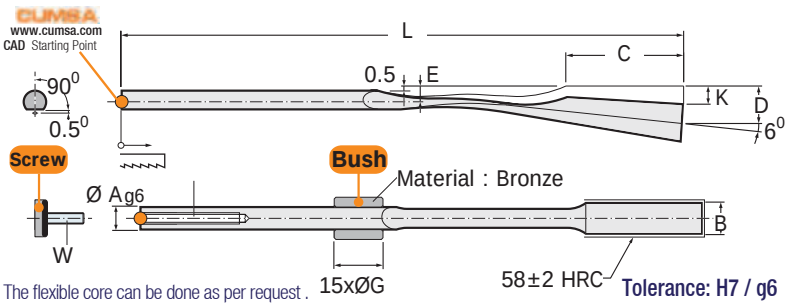


CUMSA

FLEXIBLE INNER CORE (Radial Motion, Bedding, Threaded) PW

The required area for mounting is very small, it requires area as much as ejector pin. Excluding the desired form of operation, there is no need for any processing, grinding or hardening processes. Due to that parting surface is 900, mounting procedure is easy, it eliminates the needs of complex mechanic systems, opening process is radial motion. At the end of the stroke, according to the opening **K** values are 3.5 mm , 4.5 mm and 5.5 mm. **Working Temperature is 150° Material :** 1.8159 - **Hardness :** 45 ± 3 HRC (We don't recommended welding / covering processes).

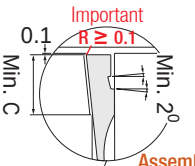
As other ejectors, it is worked with ejector plates. Especially, it is ideal to remove small claws



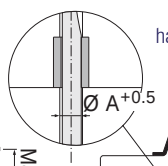
The flexible core can be done as per request .

Tolerance: H7 / g6

Order	A	B	C	D	E	G	K	L	M	N	R	T	U	V	W
PW.060622	6	6.2	22	9	3.5	-	3.5	125	16	18	1.25	M4 x 36	12	5	M4 x 16
PW.060630			30	10		12	4.5	175	20	26					
PW.060822		8.2	22	9		-	3.5	125	16	18					
PW.060830			30	10		12	4.5	175	20	26					
PW.080825	8	8.2	25	11.5	4.5	-	4.5	140	18	21	2.0	M5 x 36	14	6	M5 x 16
PW.081025		10.2				-									
PW.081030			30	11.2		12		175	20	26					
PW.081225		12.2	25	11.5		-		140	18	21					
PW.081230			30	11.2		12		175	20	26					
PW.101430	10	14.2	30	13.6	5.5	16	5.5	175	20	26	2.5	M6 x 36	18	8	M6 x 16
PW.101630		16.2													
PW.101830		18.2													

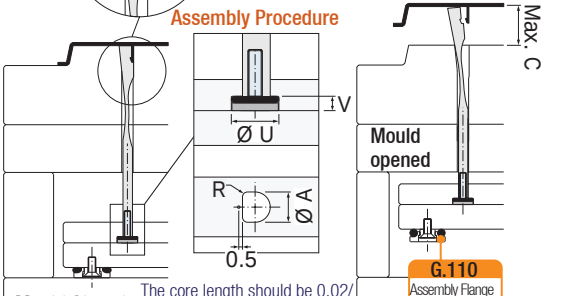


D Opening (6mm) : < Up to 3 mm
B Width : Min. 2° Can be slopped.
6° Surface / Bedding : Min. 5 mm
Core Could can be adjusted with its cavity. **Slot :** (6°)



Flexible cores have key surfaces to their sides, they should be connected.

Assembly Procedure



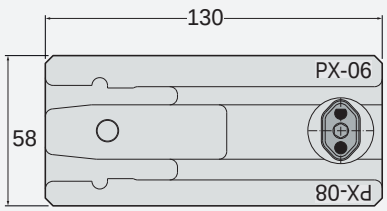


CUMSA **CX**

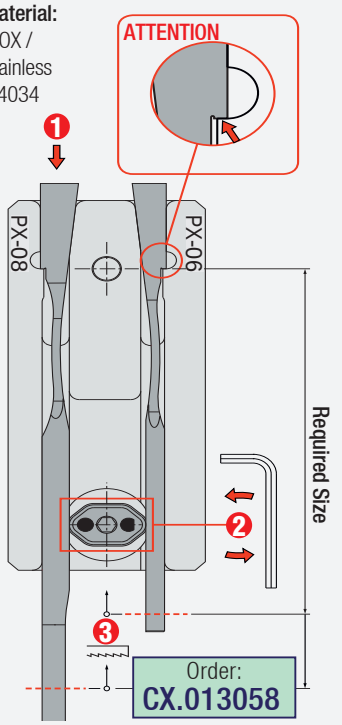
" PX " LENGTH CUTTING DEVICE

It is a device which is facilitated measuring and **PX** Shaft Cutting Processes ensuring fine tuning towards to its height in length setting of PX Flexible Inner Cores. A great quantity of PX Cores is prepared Fast / Precision Measurement and Cutting easily. How to use **CX** Cutting Device.

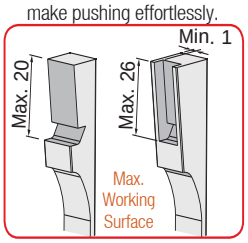
1. For 6 or 8 mm flexible core, place in slot of the device corresponding to the related product. Pls. be sure that is in correct position. Byretaing core supportively, bring to cutting position.
2. Pls. tight flat/flap or round core with Alien Key in related slot.
3. According to the desired length size, your core is ready position for cutting.



Material:
INOX /
Stainless
1.4034

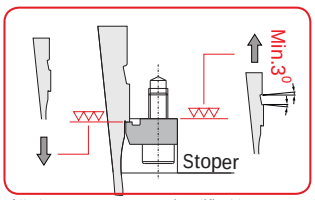


After setting core, pls. process 0.1 mm from end section to make pushing effortlessly.





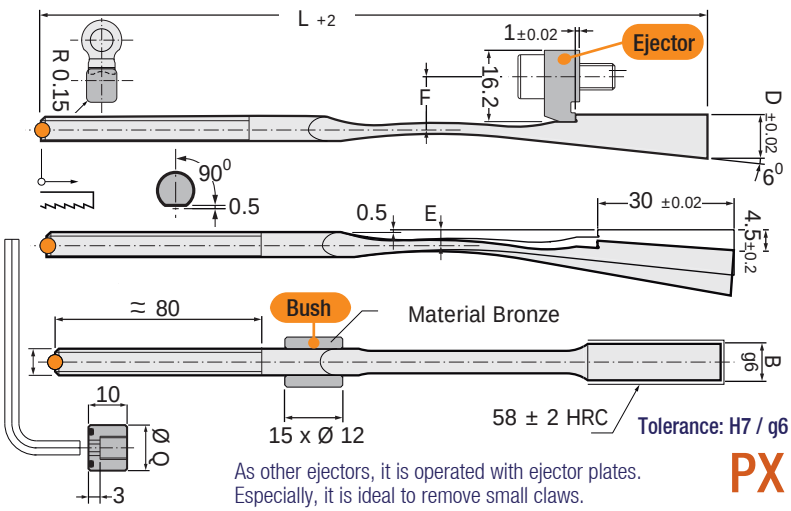
CUMSA



EXTRA - FLEXIBLE INNER CORE **PX**

By facilitating stopper setting, longevity and guaranty are provided. Technical Data (PW - Flexible Inner Core) is in similar status, it is guaranteed to work of inner core facilitating stopper setting precisely and longevity.
H7 is set to correspond to the tolerances and has been precisely processed according to the slot details.

All sharp corners, are simplified by appropriate Radius. Doing cutting processes by CX Device is recommended. Basic fixing system are available in three lengths. **Working Temperature is 150°**
Material: 1.8159 **Hardness:** 45 +3 HRC (We don't recommended welding / covering processes.



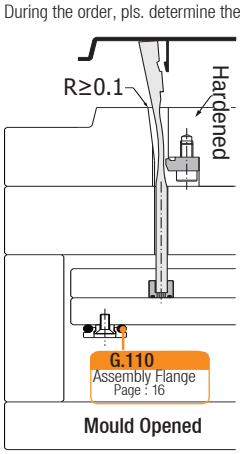
As other ejectors, it is operated with ejector plates. Especially, it is ideal to remove small claws.

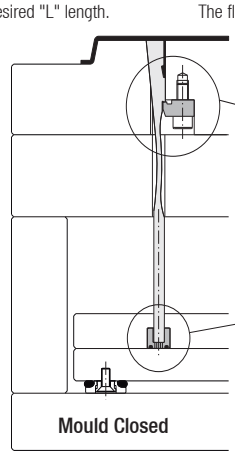
PX

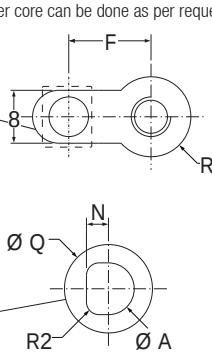
Order	A	B	D	E	F	L=175 Bush	L=250 Bush	L=325 Bush	N	Q
PX. 06 06 30-...	6	6.2	10	3.5	12.5	-	+	+	2.5	12
PX. 06 08 30-...	6	8.2	10	3.5	12.5	-	+	+	2.5	12
PX. 08 10 30-...	8	10.2	11.2	4.5	13.5	-	+	+	3.5	14
PX. 08 12 30-...	8	12.2	11.2	4.5	13.5	-	+	+	3.5	14

During the order, pls. determine the desired "L" length.

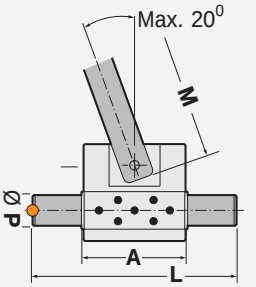
The flexible inner core can be done as per request.









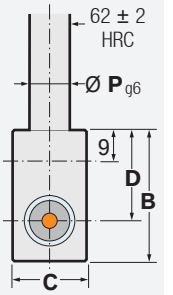


INNER CORE HOUSING SD

It is used in internal motion that requires pushing in different angles. Self lubricating bush facilitates operating.

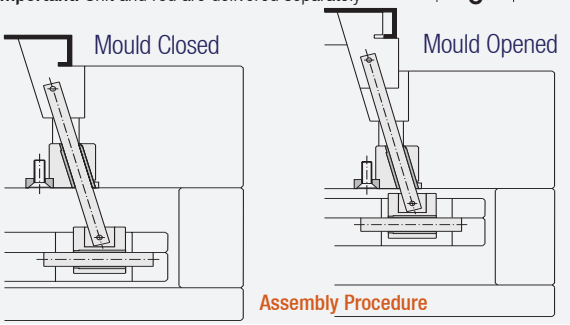
Maximum weight that inner core housing can be lifted.

SD.322010 - 320 kg
SD382412 - 420 kg
SD.452816 - 680 kg.

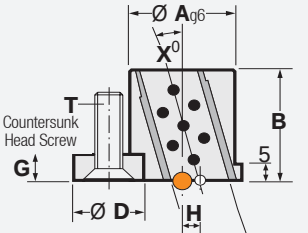


Order	A	B	C	D	L	M	P
SD. 3220GR	32	37	20	27	80	180	10
SD. 3824GR	38	40	24	28	80	210	12
SD. 4528GR	45	44	28	30	100	250	16

Important: Unit and rod are delivered separately

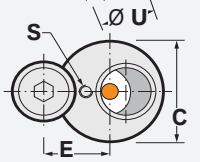




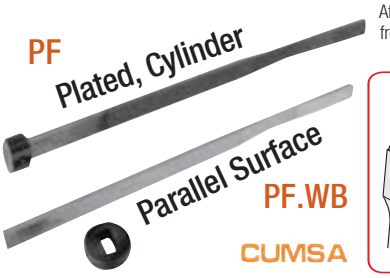


ANGLE GUIDE BUSH CI

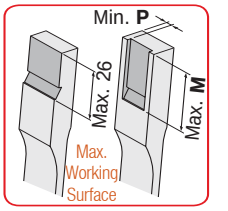
It is used as guide bush of angle core blocks. Only a plain hole for mounting is required. Due to it is Self Lubricating Bedding, there is no need lubrication. **Material:** 1.7242 **Hardness:** 60 HRC



Order	A	B	C	D	E	G	H	S	T	U	X°
CI.3034-5	30	34	34	16	20	6	0	M6x6	M6x16	10	5°
CI.3438-5	34	38	38	20	24	8	0	M8x6	M8x20	12	
CI.4040-5	40	40	44	20	27	8	0			16	
CI.3034-10	30	34	34	16	20	6	7	M6x6	M6x16	10	10°
CI.3438-10	34	38	38	20	24	8	8.5	M8x6	M8x20	12	
CI.4040-10	40	40	44	20	27	8	8.5			16	
CI.3034-15	30	34	34	16	20	6	7	M6x6	M6x16	10	15°
CI.3438-15	34	38	38	20	24	8	8.5	M8x6	M8x20	12	
CI.4040-15	40	40	44	20	27	8	8.5			16	
CI.3034-20	30	34	34	16	20	6	7	M6x6	M6x16	10	20°
CI.3438-20	34	38	38	20	24	8	8.5	M8x6	M8x20	12	
CI.4040-20	40	40	44	20	27	8	8.5			16	

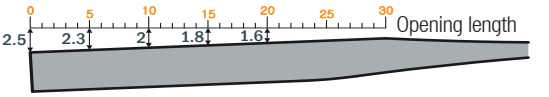


After setting core, pls. process from end section to P to make pushing effortlessly

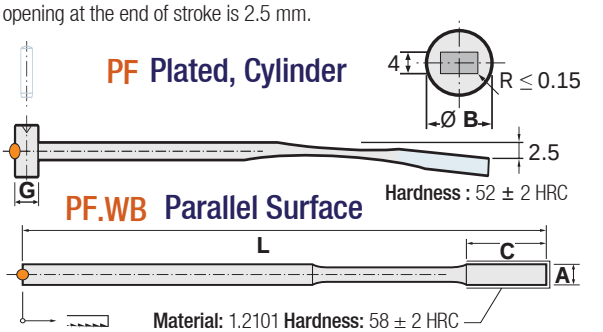


FLEXIBLE, PLATED INNER CORE PF
PARALLEL SURFACE FLEXIBLE INNER CORE PF.WB

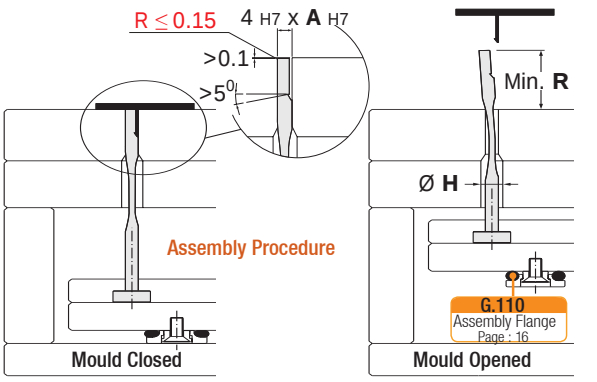
Flexible Plated Inner Core: The core surfaces are parallel and is used on cylinder (4mm) surfaces. **Plate / Balinit** C provides a smooth operation and reduces friction **Especially,** First pushes the part, later removes from claws.
Maximum Opening Length With a radial motion Opening at the end of stroke is 2.5 mm



Flexible Inner Core 8x4 Parallel Surface: Due to its parallel surfaces, it provides the removal of claws in compact areas (Thickness 4 mm), it has basic system for setting. **Especially,** first gives power impulses, later removes from claws. **Maximum Opening Length** With a radial motion, opening at the end of stroke is 2.5 mm.



Order	A	B	C	G	H	L	M	N	P	R
PF. 044150	4	8	2	46	5	150	12	14	0.8	30
PF. 054150	5				6					
PF. 064200	6	12	30	8	7	200	18	20	1.0	36
PF. 084200	8	14			9					
PF. 104200	10	16			11					
PF. 124200	12	18			13					
PF. 0642 WB	6	12	30	8	7	200	18	20	1.0	36
PF. 0842 WB	8	14			9					
PF. 01042 WB	10	16			11					
PF1 01242 WB	12	18			13					





CUMSA

DUAL FLEXIBLE INNER CORE UNIT ED

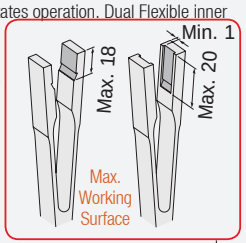
It is very useful for the removal of small claws

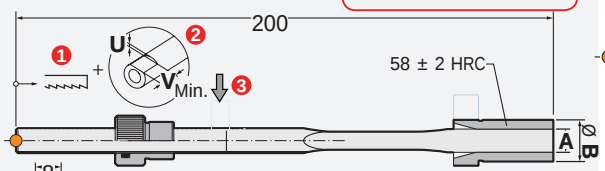
The running in of double flexible inner core has been made and length setting can be done easily. Its mounting and processing are very easy, it processes 90º to part surface .

Balinit C Plating It is best plating used in flexible inner cores, provides high hardness and low friction coefficient, protects part and facilitates operation. Dual Flexible inner core holders are **Balinit C Plated.**

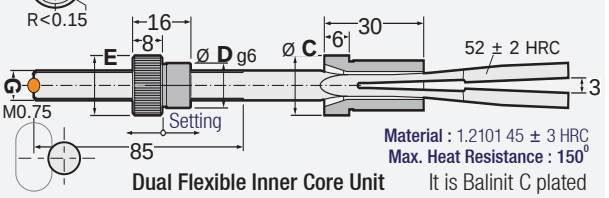
Each ejector has been adjusted according to its bush. **Their tolerances are g6 / H7.** Hence, while exchanging the parts, compliance to each other should be considered during interchange of cores, the opening of flexible inner core is radial motion.

The opening at the end of stroke is **3 mm.**





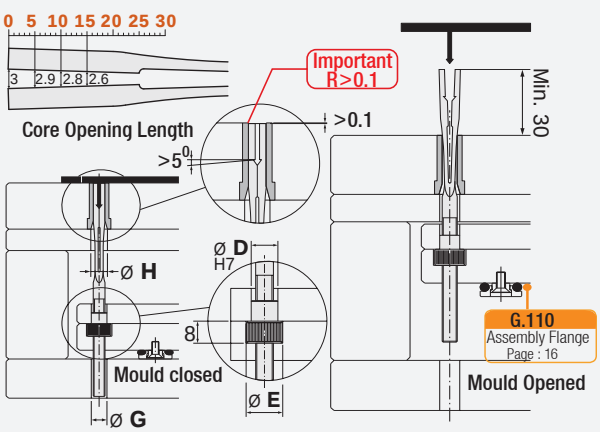
275 - 300 mm sizes are available as per request



Material : 1.2101 45 ± 3 HRC
Max. Heat Resistance : 150º

Dual Flexible Inner Core Unit It is Balinit C plated

Order	A	B	C	D	E	G	H	U	V
ED.068200	6	12	14	10	14	6	10	0.5	10
ED.088200	8	14	16	12	16	8	12		
ED.108200	10	16	18	14	18	8	14		15
ED.128200	12	16	18	16	20	8	15		





CUMSA

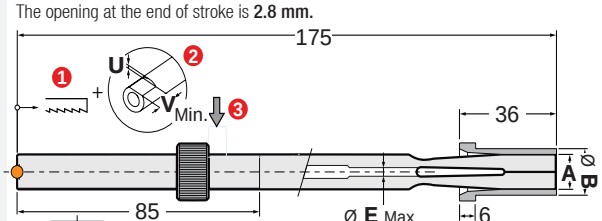
QUARTET FLEXIBLE INNER CORE UNIT EE

It is very useful for the removal of small claws

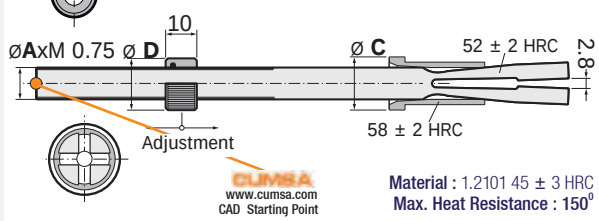
The running in of quartet flexible inner core has been made and the length setting can be done easily. Its mounting and processing are very easy, it processes 90º to part surface.

Balinit C Plating: It is best plating used in flexible inner cores, provides high hardness and low friction coefficient, protects part and facilitates operation. Dual Flexible inner core holders are **Balinit C Plated.** Each ejector has been adjusted according to its bush. Their tolerances are g6 / H7. Hence, while exchanging the parts, compliance to each other should be considered during interchange of cores, the opening of flexible inner core is radial motion.

The opening at the end of stroke is **2.8 mm.**



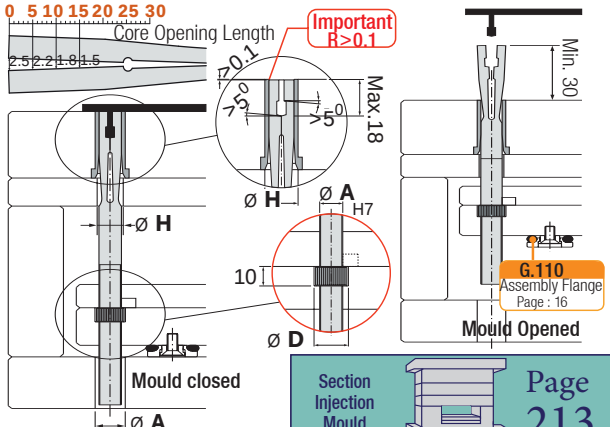
250 - 325 mm sizes are available as per request



Material : 1.2101 45 ± 3 HRC
Max. Heat Resistance : 150º

Quartet Flexible Inner Core Unit It is Balinit C plated EE

Order	A	B	C	D	E	H	U	V
EE.060175	6	10	12	12	-	9	0.5	10
EE.082175	8	12	14	14	2	11		
EE.103175	10	14	16	16	3	13		15
EE.124175	12	16	18	18	4	15		
EE.168175	16	20	22	22	8	19	1.0	20





CUMSA

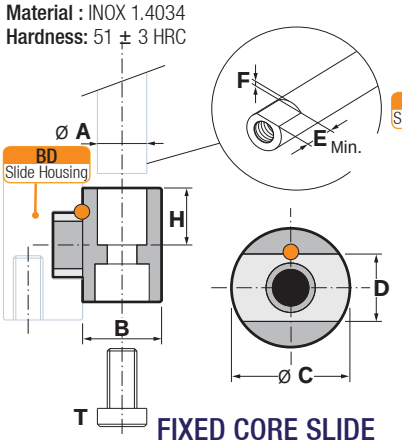
Ejector Plate Angular Pin Systems

FIXED CORE SLIDE DF

It Is Stepped Holder Of Core Pin

Occupies a very small place on ejector plate. **VI** (Core) is used as core pin. It provides angle motion of core pin.

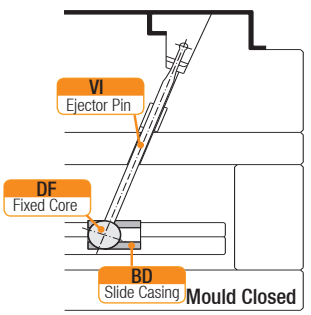
Material : INOX 1.4034
Hardness: 51 ± 3 HRC

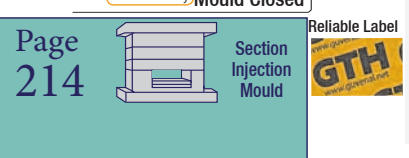


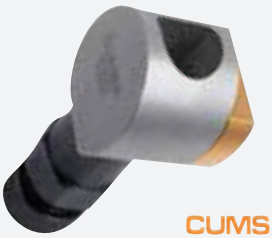
FIXED CORE SLIDE

Order	A	B	C	D
DF. 061220	6	12	20	11.5
DF. 081220	8	12	20	11.5
DF. 101624	10	16	24	13.5
DF. 121624	12	16	24	13.5
DF. 162032	16	20	32	19
DF. 202538	20	25	38	21
DF. 253148	25	31	48	28

E	F	H	T
12	05	10	M4 x 12
12	05	10	M5 x 12
14	05	12	M6 x 16
14	1.0	12	M8 x 16
18	1.5	16	M8 x 22
21	1.5	19	M10 x 25
26	2.0	24	M12 x 35







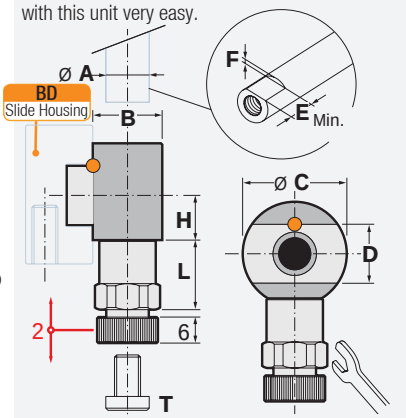
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Ejector Plate Angular Pin Systems

ADJUSTABLE CORE SLIDE DA

It Is Wedged Holder Of Core Pin

Occupies a very small place on ejector plate, making height setting of core pin with this unit very easy.

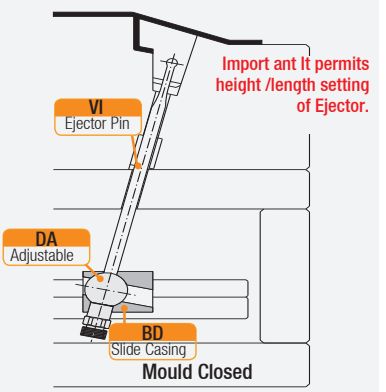


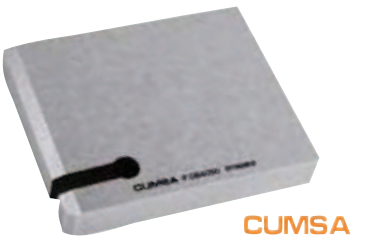
ADJUSTABLE CORE SLIDE

Order	A	B	C	D
DA. 061020	6	10	20	11.5
DA. 081220	8	12	20	11.5
DA. 101624	10	16	24	13.5
DA. 121824	12	18	24	13.5

E	F	H	L	T
15	0.5	9.0	14	M4 x40
15	0.5	8.5	14	M5 x40
17	0.5	10.2	16	M6 x40
17	1.0	9.6	16	M8 x40

Material : INOX 1.4034 **Hardness:** 51 ± 3 HRC





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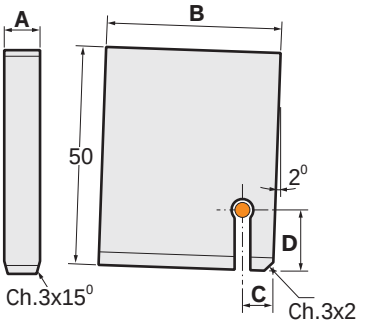
Ejector Plate Angular Pin Systems

MOVABLE CORE HEAD IF

Screw To Fasten Core Cage To Pin

The core head is hardened and grinded.
To fasten ready unit to pin, there is no extra need apparatus such as screw,retainer pin. **VI** Ejector core, acts as accessory to pin. It is presented standard solutions to the moulders.

Patented System

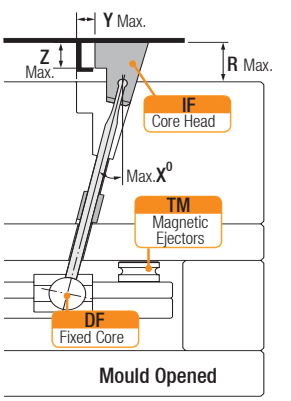


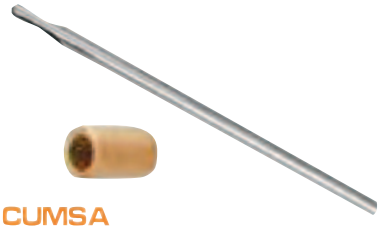
PROCESSABLE FIXED CORE HEAD

Order	A	B	C	D
IF. 064050	6.2	40	6	12
IF. 084050	8.2	40	7	14
IF. 104450	10.2	44	8	16
IF. 124450	12.2	44	9	18

R	X	Y	Z
40	5	3.5	36
38	10	6.7	35
38	15	10.2	34
37	20	13.5	32

Material : 1.2344 **Hardness :** 45 ± 2 HRC

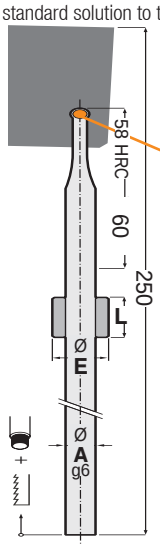




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Ejector Plate Angular Pin Systems
EJECTOR PIN, BUSH VI

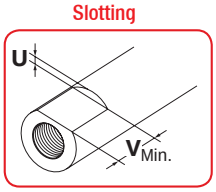
This core pin is along with bronze bush.
For connection to the core head, there is no need for screw cutting or retainer pin. It is presented to standard solution to the moulders.



Material : 1.3505
Patented System

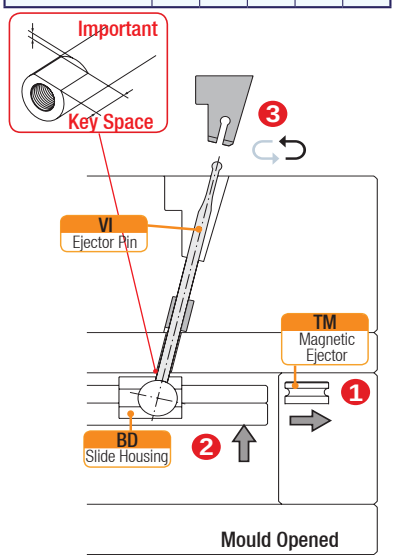
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www.cumsa.com
CAD Starting Point

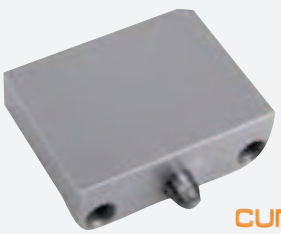
IMPORTANT !
Milling of Slotting



CORE PIN, BUSH SET

Order	A	E	L	U	V
VI. 064200	6	10	15	0.5	12
VI. 085200	8	12	20	0.5	12
VI.106200	10	14	20	0.5	14
VI. 127200	12	16	20	1.0	14

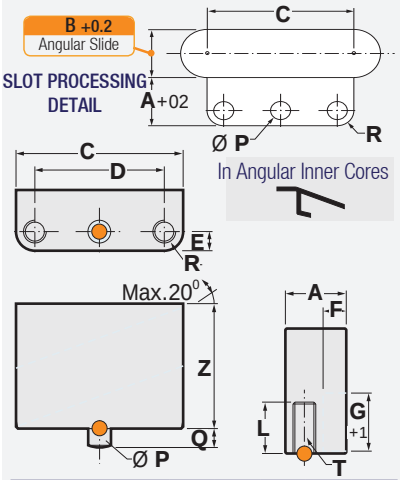




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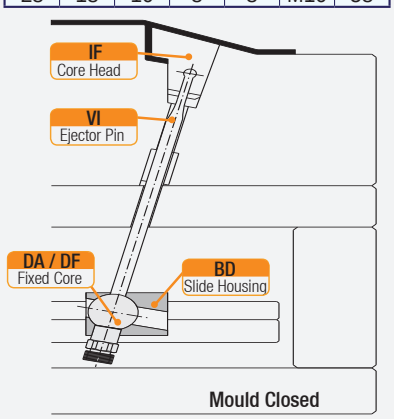
Ejector Plate Angular Pin Systems
ANGLE SLIDE HOUSING BD

It can be worked/processed with horizontal inner cores.
Can be used as angle core slide for inner cores. The casing and slide are from different materials, provides processability with smooth motion. Horizontal and adjustable slide housing.



Order	A	C	D	E	F
BD. 122836	12	36	28	4	4.8
BD. 143866	14	66	42	4	6.3
BD. 163240	16	40	30	5	6.3
BD. 204060	20	60	44	5	8.3
BD. 254672	25	72	56	7	10.3
BD. 315890	31	90	74	8	13.3

G	L	P	Q	R	T	Z
11.5	1	05	5	4	M5	28
11.5	1	05	5	4	M5	38
13.5	1	26	5	5	M6	32
19	1	56	5	5	M6	40
21	1	88	5	6	M8	46
28	18	10	8	8	M10	58

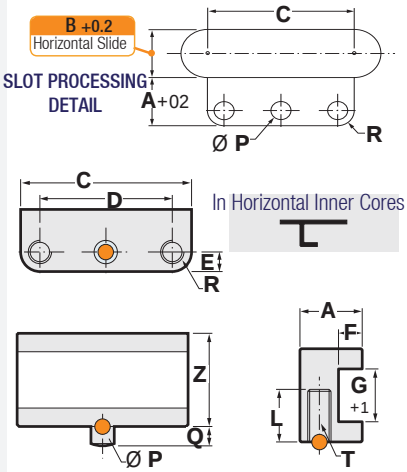




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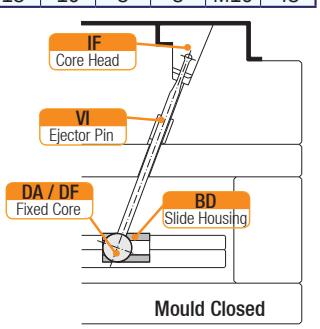
Ejector Plate Angular Pin Systems
HORIZANTAL SLIDE HOUSING BD

It can be worked/processed with horizontal inner cores.
Can be used as horizantal core slide for inner cores. The casing and slide are from different materials, provides processability with smooth motion. Horizontal and adjustable slide housing.



Order	A	C	D	E	F
BD. 122036	12	36	28	4	4.8
BD. 142266	14	66	42	4	6.3
BD. 162440	16	40	30	5	6.3
BD. 203260	20	60	44	5	8.3
BD. 253872	25	72	56	7	10.3
BD. 314890	31	90	74	8	13.3

G	L	P	Q	R	T	Z
11.5	1	05	5	4	M5	20
11.5	1	05	5	4	M5	22
13.5	1	26	5	5	M6	24
19	1	56	5	5	M6	32
21	1	88	5	6	M8	38
28	18	10	8	8	M10	48





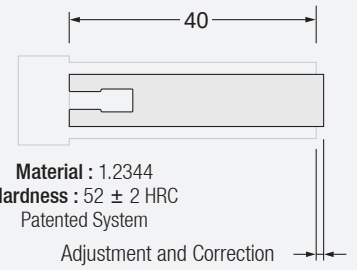
CUMSA

Perpendicular Ejector Core Systems

REPLACEMENT BLOCK RP

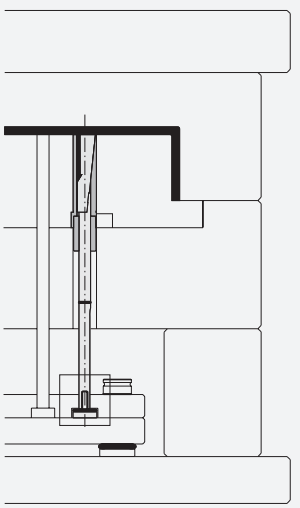
They are used with Mechanical Perpendicular Cores (PS) and they are for adjustments and corrections.

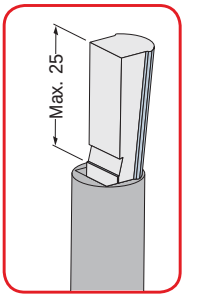
Replacement and Lifting Block is compatible to use with PS (Perpendicular Core) Unit. The length of replacement block is set as per request.



REPLACEMENT BLOCK

Order	For Per. Core PS
RP. 064000	PS. 062250
RP. 084000	PS. 082250
RP. 104000	PS. 102250
RP. 124000	PS. 122250





Maximum Operation Length

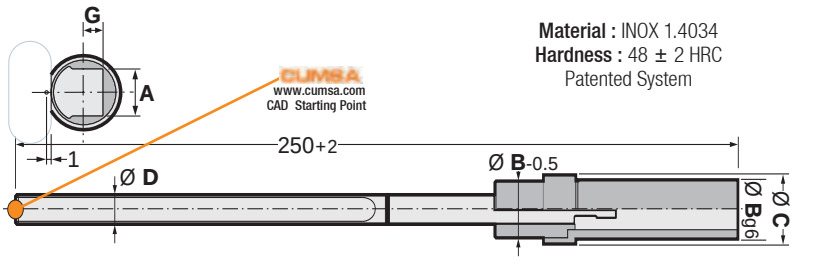


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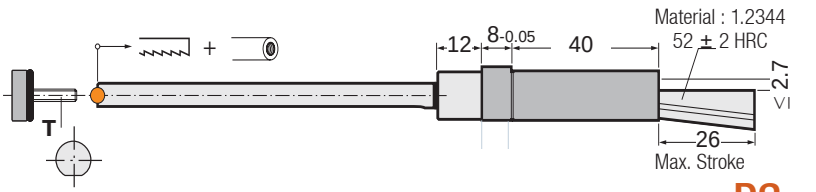
Perpendicular Ejector Core Systems

MECHANICAL PERPENDICULAR CORES / STANDARD MECHANICAL CORE PS

Standard Mechanical Perpendicular Core: This product is more developed in comparison with the other core systems used for small claw parts. The mounting of chuking / bush cores are rapid and easy. They work more rigid. Due to that this product which its running in has been done by moving perpendicularly to ejector plate, required area for mounting on your mould is smaller. The form of claw on the product can be processed on inner core, it makes same function as flexible inner core.



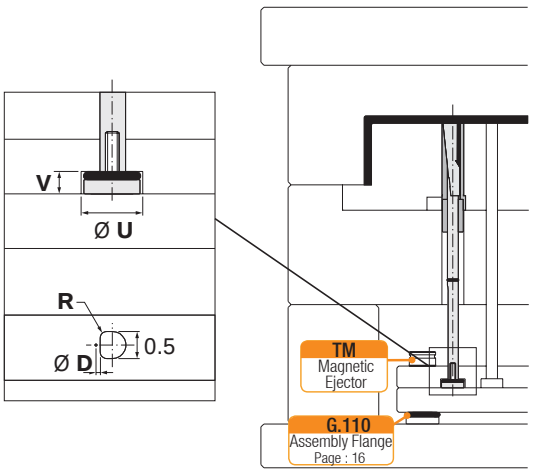
Material : INOX 1.4034
Hardness : 48 ± 2 HRC
Patented System

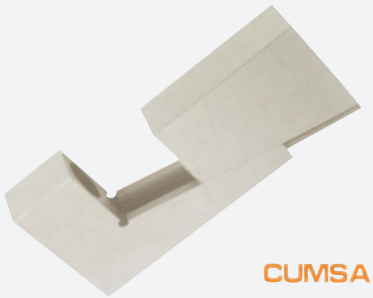


Material : 1.2344
52 ± 2 HRC

MECHANICAL PERPENDICULAR CORES / STANDARD MECHANICAL CORE PS

Order	A	B	C	D	G	R	T	U	V
PS. 06 22 50	6.2	10	12	6	3.4	1.25	M4x16	12	5
PS. 08 22 50	8.2	12	14	6	4	1.25	M4x16	12	5
PS. 10 22 50	10.2	14	16	8	4.2	2	M5x16	14	6
PS. 12 22 50	12.2	16	18	8	4.2	2	M5x16	14	6





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Perpendicular Ejector Type Core Systems

SLIDE PERPENDICULAR CORE END PV

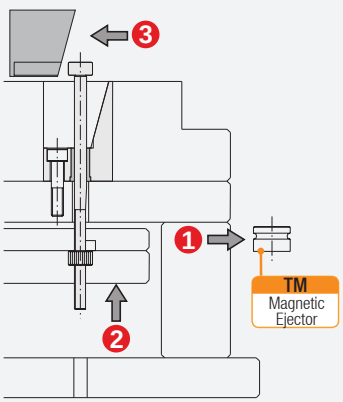
They are used along with Mechanic Perpendicular Cores (PV), in Profile Block Vertical Lifting.

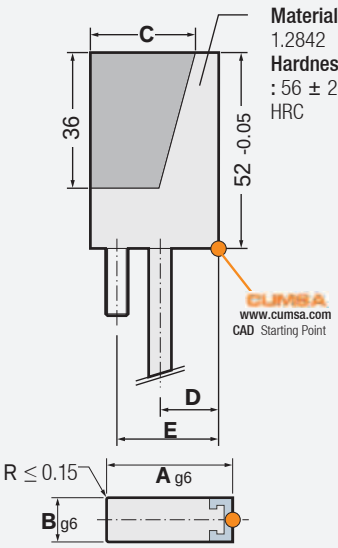
Usage: Removal Process of Profile Block (According to Technical Drawing Detail)

1- Pull TM (Magnetic Stopper) Safety Disc

2- Push Ejector Plate forward.

3- Pls. remove core casing.





Material: 1.2842
Hardness: : 56 ± 2 HRC

PROFILE LIFTING BLOCK PV

Order	A	B	C	D	E
PV. 34 12 52	34	12	28	15.5	27
PV. 36 16 52	36	16	30	16.5	29
PV. 38 20 52	38	20	32	17.5	31
PV. 40 24 52	40	24	34	18.5	33

" PV " Profile Block should be ordered separately.

During order, pls. determine the desired "L" length...



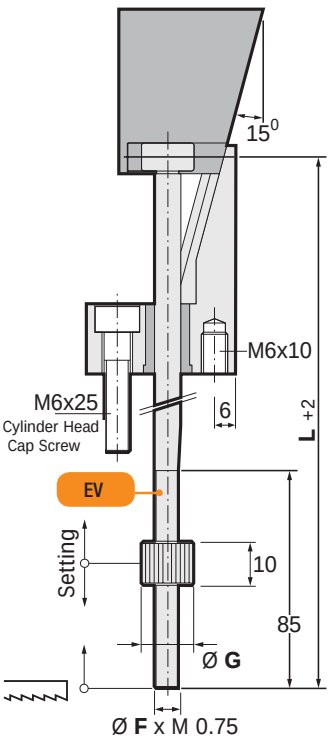
CUMSA

Perpendicular Ejector Type Core Sytems

MECHANIC PERPENDICULAR HOUSING (Core Connection Shaft) EV

Perpendicular Lifting Block: The required area for mounting is small, mounting process is easy, the need for complex mechanic systems is eliminated. This product is ideal for small claw parts.

Material: 1.2344 **Hardness:** 50 ± 2 HRC



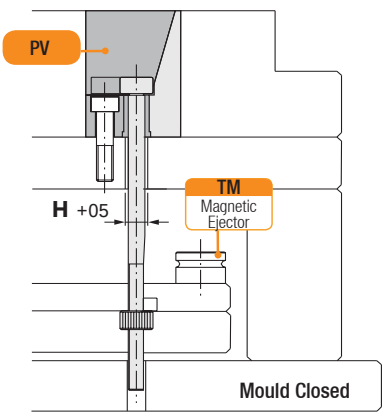
The main feature of this product is to make setting very easily and to work 90º perpendicular to ejector plate.

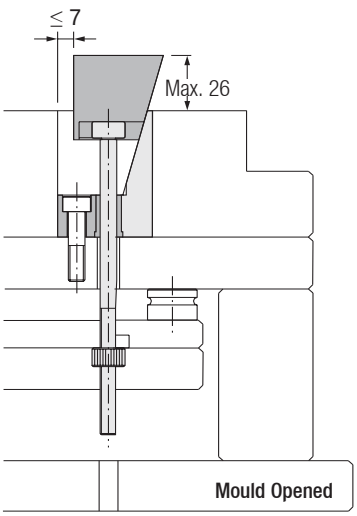
" PV " Profile Block should be ordered separately.

PERPENDICULAR LIFTING SPECIAL CORE EV

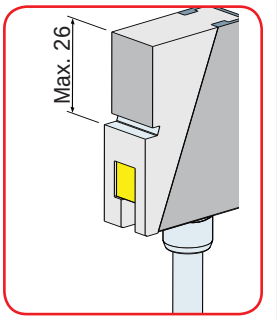
Order	F	G	H	L	
EV. 006. (L)	6	12	6.5	150	225
EV. 008. (L)	8	14	8.5	150	225
EV. 010. (L)	10	16	10.5	150	225
EV. 012. (L)	12	18	12.5	150	225

During order, pls. determine the desired "L" length...







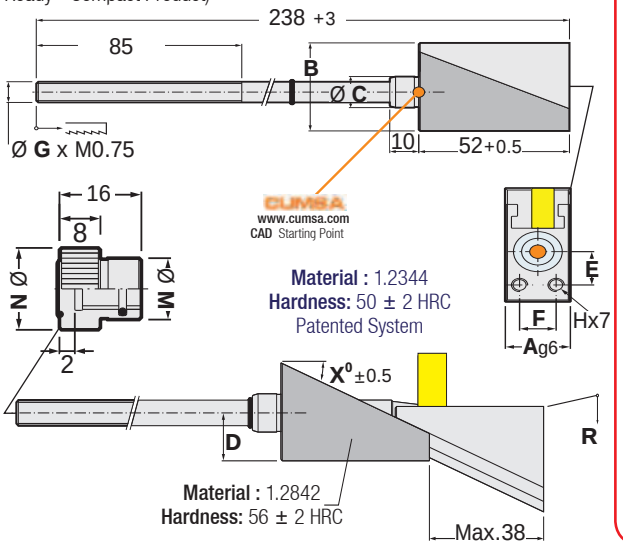




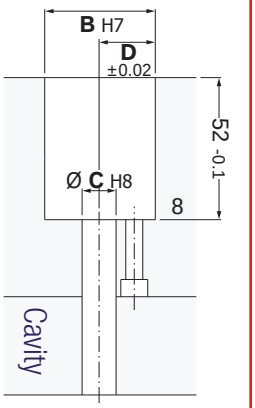
CUMSA

MECHANIC READY PERPENDICULAR CORE UNIT DHI

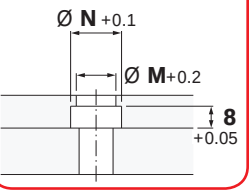
INTERNAL Core Formed Perpendicular Core Unit (Ready Compact Product)
It is a ready mechanical solution for moulders, a small area is sufficient for mounting. 90º Perpendicular slot is opened to mould parting surface, excluding special form workmanship, milling, turning and hardening are not required (Ready - Compact Product)



Pouch / Slot Detail

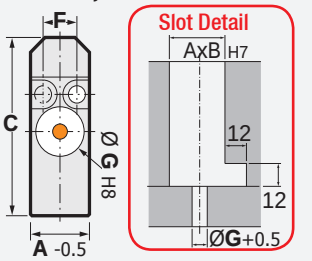


Ejector Plates

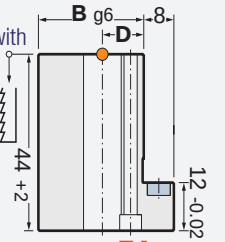


CORE BLOCK EA

Easy Mounted, Optional Core Lifting Block



EA Block: It is used with DHI / DHO Special Core Units



Optional Core Block **EA**

Order	A	B	C
EA.122844	12.2	28	36
EA.123844	12.2	38	46
EA.162844	16.2	28	36
EA.163844	16.2	38	46
EA.202844	20.2	28	36
EA.204444	20.2	44	52
EA.242844	24.2	28	36
EA.244444	24.2	44	52

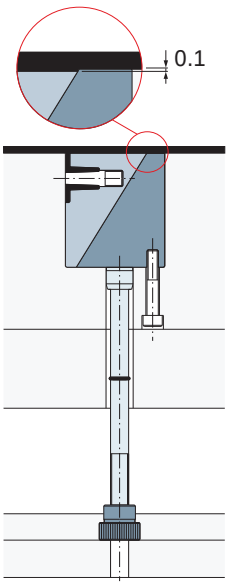
Used Together	D	F	G
DHI/DHO 122852	11	7	10
DHI/DHO 123852	18	-	10
DHI/DHO 162852	11	7	10
DHI/DHO 163852	18	-	12
DHI/DHO 202852	10.5	11	12
DHI/DHO 204452	20	11	14
DHI/DHO 242852	10.5	14	12
DHI/DHO 244452	20	14	14

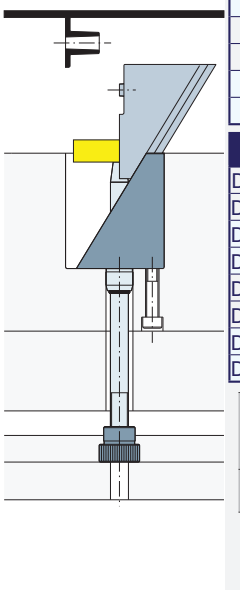
MECHANIC READY PERPENDICULAR CORE

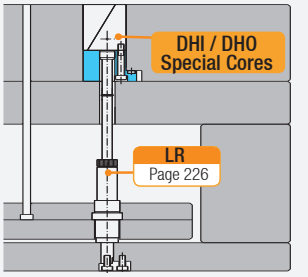
Internal Core Formed **DHI**

Order	A	B	C	D	E
DHI. 12 28 52	12.2	28	10	11	7.5
DHI. 12 38 52		38		18	12
DHI. 16 28 52	16.2	28	10	11	7.5
DHI. 16 38 52		38	12	18	12
DHI. 20 28 52	20.2	28	12	10.5	7
DHI. 20 44 52		44	14	20	14
DHI. 24 28 52	24.2	28	12	10.5	7
DHI. 24 44 52		44	14	20	14

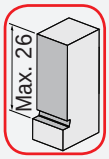
F	G	H	M	N	R	X
7	6	M3	12	16	12	17.5
-		M5			19	27
7	6	M3	12	16	12	17.5
-	8	M5	14	18	19	27
11	8	M4	14	18	12	17.5
	10	M5	16	20	22.5	31
14	8	M4	14	18	12	17.5
	10	M5	16	20	22.5	31







Note: It is used distinctively.
Complete Presentation with Perpendicular Lifting Special Pin Set and Perpendicular Profile Lifting Block

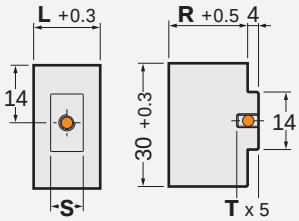


Working Plane



CORE BLOCK ID

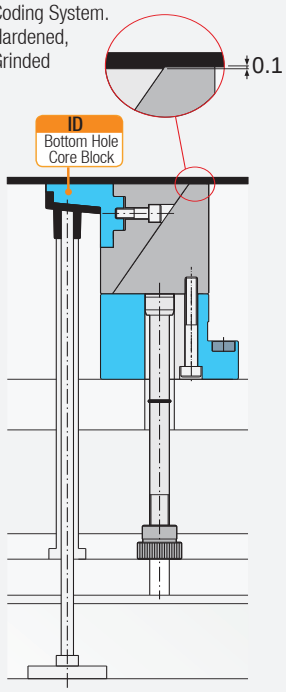
In forming of Inner Core Holes
ID Block : It is used along with "DHO" Perpendicular Core Unit for hidden bottom holes.

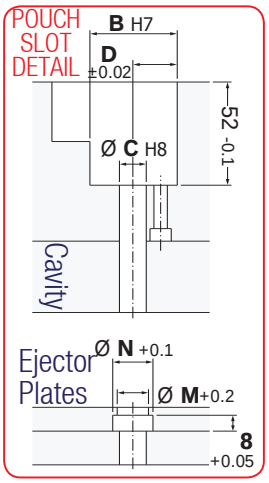


Optional (As per request) Core Block

Order	L	R	S	T
ID.121730	12.2	17	6	M4
ID.122630		26		
ID.161730	16.2	17	8	M5
ID.162630		26		
ID.201730	20.2	17	10	M6
ID.203030		30		
ID.241730	24.2	17	10	M6
ID.243030		30		

It can be ordered along with "DHO" Perpendicular Core Unit and Similar Coding System.
Hardened, Grinded







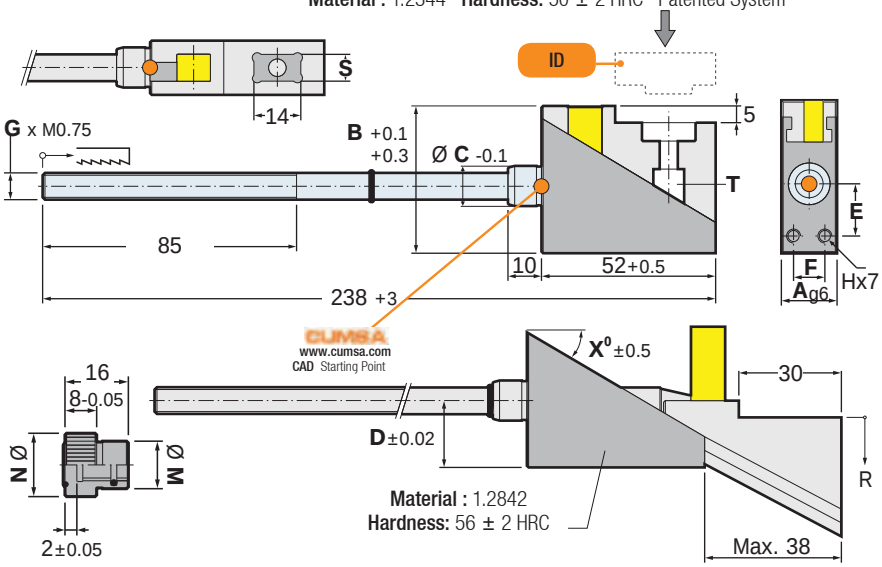
CORE BLOCK EA

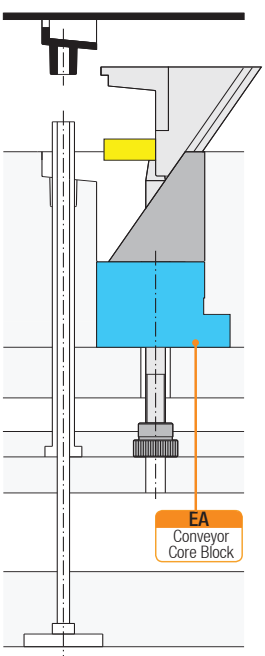
CUMSA

MECHANIC READY EXTERNAL PERPENDICULAR CORE DHO

EXTERNAL Core Formed Perpendicular Core Unit (Ready Compact Unit)
It is ready mechanic solution for moulders, a small area is sufficient for mounting. 90º Perpendicular slot is opened to mould parting surface, excluding special form workmanship, milling, turning and hardening are not required (Ready - Compact Product)

Material : 1.2344 **Hardness:** 50 ± 2 HRC Patented System





MECHANIC READY EXTERNAL PERPENDICULAR CORE UNIT DHO

Order	A	B	C	D	E
DHO. 12 85 52	12.2	28	10	11	7.5
DHO. 12 38 52		38		18	12
DHO. 16 28 52	16.2	28	10	11	7.5
DHO. 16 38 52		38	12	18	12
DHO. 20 28 52	20.2	28	12	10.5	7
DHO. 20 44 52		44	14	20	14
DHO. 24 28 52	24.2	28	12	10.5	7
DHO. 24 44 52		44	14	20	14

F	G	H	M	N	R	X
7	6	M3	12	16	12	17.5
-		M5			19	27
7	6	M3	12	16	12	17.5
-	8	M5	14	18	19	27
11	8	M4	14	18	12	17.5
	10	M5	16	20	22.5	31
14	8	M4	14	18	12	17.5
	10	M5	16	20	22.5	31

Note: It can be worked distinctively. Complete Presentation with Perpendicular Lifting Special Pin Set and Perpendicular Profile Lifting Block



CUMSA

SPECIAL FLEXIBLE INNER COREA (SPECIAL ORDERS)

Flexible inner core can be produced in each desired model and size

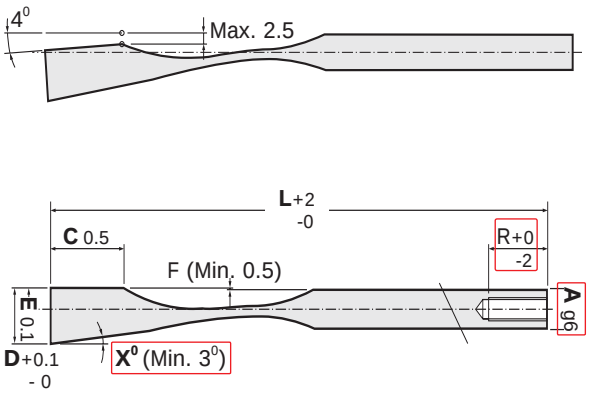
Pls. send us by filling special sizes in technical drawing details.

Important : **Material:** 1.8159 **Hardness:** 45 ± 3 HRC

1- The delivery is 6-8 weeks after order date.

2- The shaft of cores are rectangular.

3- After your inquiry, CUMSA will be sent an proposal including Design, Unit and Delivery Information.



A , R and **X°** Sizes will be determined by CUMSA depending on dimensions given by customers.

SPECIAL FLEXIBLE INNER COREA (SPECIAL ORDERS)

Order	B	C	D	E	F	L	Piece

Note: In special orders, pls. inform sizes in table by writing.



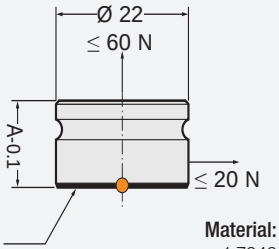
CUMSA

In-Mould Mounting Elements

SAFETY DISC TM

Magnetic Ejector

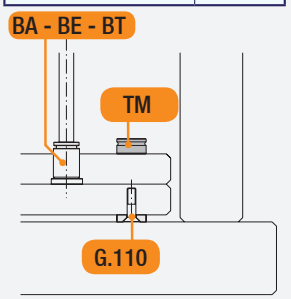
Its Ejector Plate is prevented to apply pressure to upper part of holder , when necessary to change ejector plate, it can be removed easily. The magnet is in NeFeBo power.



Material: 1.7242
Hardness: 58 ± 3 HRC

SAFETY DISC TM

Order	A
TM. 10 22 14	10
TM. 12 22 14	12.5
TM. 15 22 14	15
TM. 20 22 14	20



G.120



THRUST TABLET

Pls. refer to page 30 for detailed information / technical drawing.

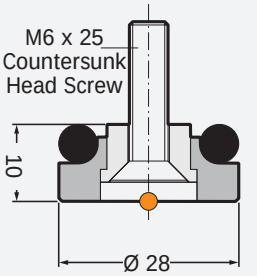


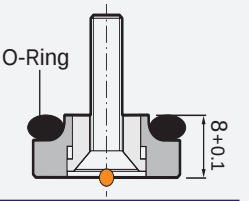
CUMSA

EJECTOR PLATE TA

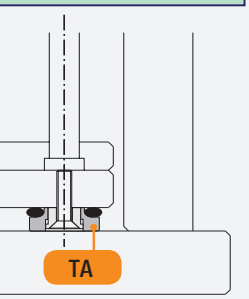
Shock Absorber (With O-Ring)

It prevents vibrations and impacts during return of ejector plates, the most important advantage is to prolong bench life of all parts.





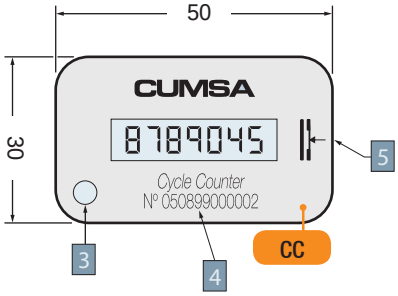
Order:
TA. 28 08 06



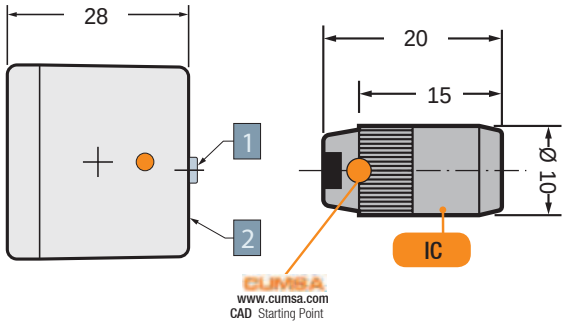


G.110 ASSEMBLY FLANGE

Pls. refer to page 16 for detailed information / technical drawing.







INJECTION MOULD COUNTER CC

1 Safety Button
Security Switch

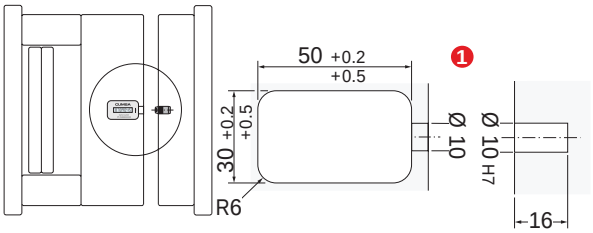
2 Magnetic Assembly
Magnetic Fixing

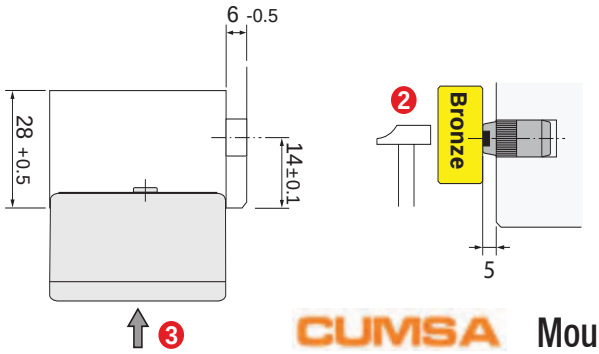
3 Resetting (Deleting / Setting up)
Reset

4 Product Number
Unique Part Number

5 IC Side - Position Indicator
IC Position Indicator

Order Reference	Deleting Setting Up	Cycle / Min. Up to
CC. 50 30 28 Orange Colour	Non	100
CC. RE 53 28 Bulue Colour	Available	100
CC. HS 53 28 Yellow Colour	Available	500





INJECTION MOULD, MOULD COUNTER CC

Production Counter, under maximum working temperature 60ºC

Production counter has 7/ 24 hours and 3 year life time (battery life), it starts to work when battery is installed. When the counter is removed from its mould, " E " (Error) Letter is appeared and cannot be deleted, this security mechanism is stepped in after sequence 25 counting, If you want to count parts printed in Mould Test / Trial, pls. remove back before 25 counting with band by inserting counter, if you remove counter from mould after 25 counting, " E " (Error) Letter appears on unit screen and this cannot be deleted. After this step, the counter is counted, however the sign showing that is falsified stays on the screen constantly. Maximum 9.999.999 counting can be made with counter. There is a 7 digit Digital screen.

The Product is presented in three different types;

1- Product No: CC 503028 (Orange Colour) : It has two versions, it counts opening of mould electronically, beside total counting, Model CC. RE 5328 also makes another counting. This counter, gives exact and constant numbers to the moulder and by looking at the number in maintenance operations, it enables to make maintenance plan, in case the device is removed from its slot, is reflected as warning to the screen.

2- Product No: CC HS5328 (Blue Colour): It has two versions, it counts opening of mould electronically, beside total counting, Model CC. RE 5328 also makes another counting. This counter, gives exact and constant numbers to the moulder and by looking at the number in maintenance operations, it enables to make maintenance plan, in case the device is removed from its slot, is reflected as warning to the screen.

3- Product No: CC RE5328 (Yellow Colour) It has two versions, it counts opening of mould electronically, beside total counting, Model CC. RE 5328 also makes another counting. This counter, gives exact and constant numbers to the moulder and by looking at the number in maintenance operations, it enables to make maintenance plan, in case the device is removed from its slot, is reflected as warning to the screen.

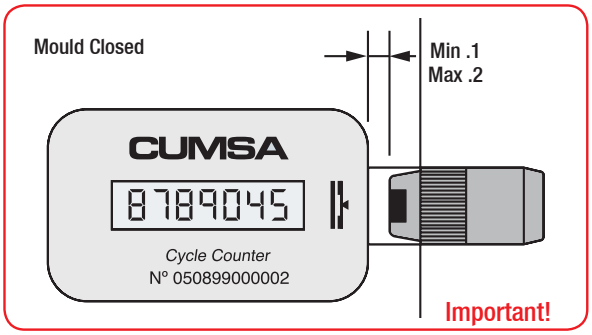
This unit is included an electronic circuit counting prints.

Assembly Procedure:

1- Process slot in a way that as determined in technical drawing.

2- Hammer counter pin **(IC)** of counter to slot with bronze hammer.

3- Insert counter/ Numerator unit **(CC)** its slot.



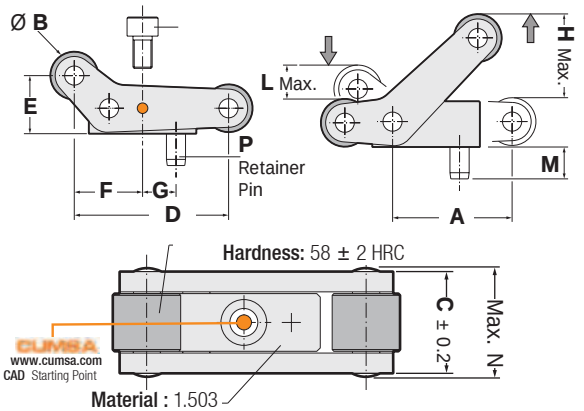


CUMSA

EJECTOR PLATE ACCERELATOR EP

In addition to ejector stroke, it gives an extra movement to the 2. Plate

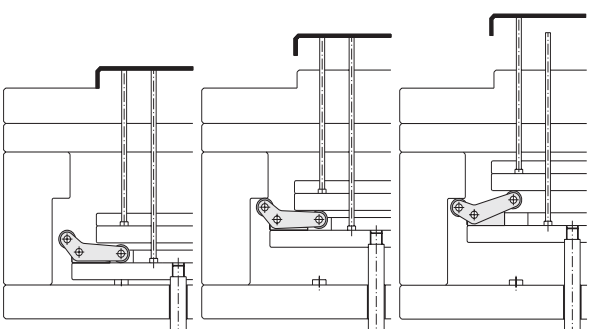
It can be used in injection moulds and moulds that are dual ejector plate group by easily mounting. This mechanical system that is simple and precise puts the dual ejector system into use. In addition to normal ejector stroke, this product, saves an extra motion to second ejector plate. In small and medium moulds with ejector, 1 piece is sufficient and in more dimensional moulds and systematic moulds according to their configurations, dual plate accelerator can be used. In terms of symmetry, generally it is consisted from 4 pieces.



EJECTOR PLATE ACCERELATOR UNIT EP

Order	A	B	C	D	E	F	G
EP.200813	20	8	13.2	25.8	9.4	11.4	6
EP.251016	25	10	16	32.3	11.8	14.3	7
EP.371522	37.5	15	22	48.5	17.7	21.5	10.5
EP.502030	50	20	30	64.6	23.6	28.6	14

H Max.	L Max.	M	N	Ø P	T	Max. Power
13.6	5.5	5	15	2.5 x10	M3 x12	125 Kg.
17	6.8	6	18.5	3 x12	M4 x16	250 Kg.
25.5	10.2	8	25	4 x16	M6 x25	350 Kg.
34	13.6	10	34	5 x20	M8 x30	800 Kg.



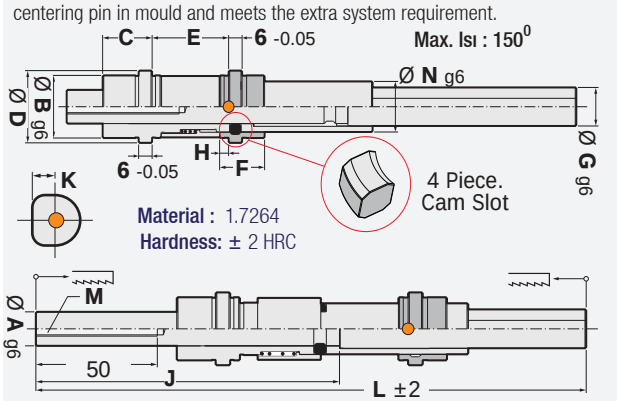


CUMSA

DUAL EJECTOR PLATE OPENING SYSTEM DX

It is also operated as ejector plate centering pin.

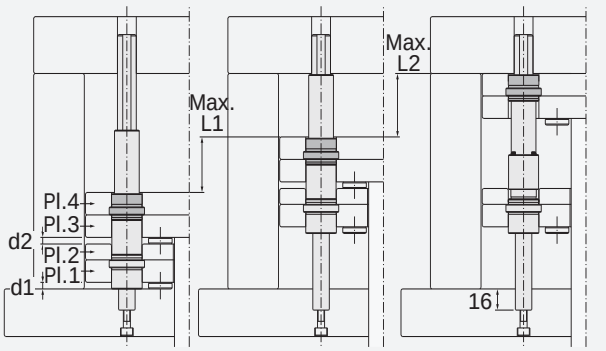
In dual ejector plate (2 + 2) mould system, rear plate group stops and the front group continues its motion to complete its full stroke. Thanks to this system, assembly area is too reduced, this system also works as ejector centering pin in mould and meets the extra system requirement.



DUAL PLATE EJECTOR SYSTEM DX

Order	A	B	C	D	E	F	G	H
DX. 142622	14	26	22	30	34	20	16	4
DX. 163027	16	30	27	34	44	23	18	6

J	K	L	M	N	L1	L2
125	7.2	243	M6	21	6 - 42	48
152	8	314	M8	24	6 - 54	80



Standard Ejector Plate Combination

Size mm	DX . 142622			
	1	2	3	4
d1	5	5	5	5
Pl.1	17	17	17	17
Pl.2	9	12	12	12
d2	13	10	5	5
Pl.3	12	12	17	17
Pl.4	9	9	19	12

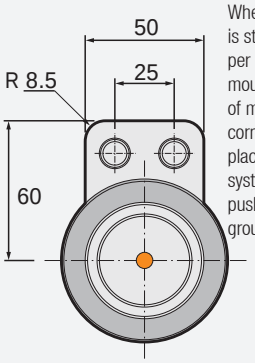
Size mm	DX . 163027 Coded Product								
	1	2	3	4	5	6	7	8	9
d1	5	5	5	5	0	0	0	0	0
Pl.1	22	22	22	22	27	27	27	27	27
Pl.2	12	12	17	17	17	17	17	22	22
d2	5	5	5	5	5	5	10	0	0
Pl.3	27	27	22	22	22	22	17	22	22
Pl.4	17	22	12	17	12	17	12	12	17



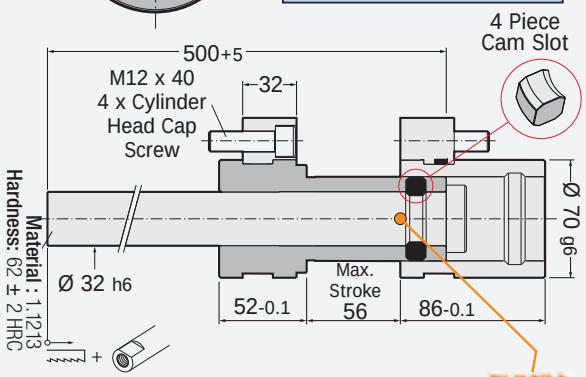
COMPACT DUAL EJECTOR PLATE TENSILE SY

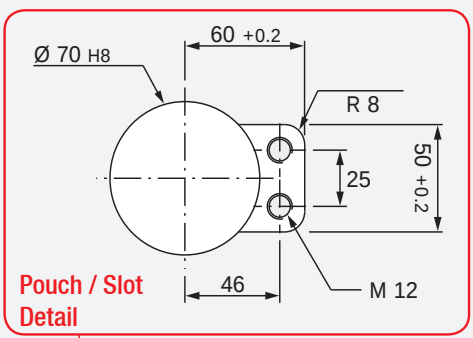
It is designed for Mould with Compact System Larger Ejector.

Stepped Ejector Plate Tensile System: When bearing is reached to plate, Ultimate Tensile is stopped 1. Group step and until reached to upper plate, rear ejector plate group continues. The mounting of compact unit is not put in the middle of mould position, in a way that is formed at the corner edge of ejector plate group, substantially place is reserved to other ejector elements. The system developed for medium size moulds, is for pushing - pulling distance of dual plate ejector group 56 mm. All units are included.

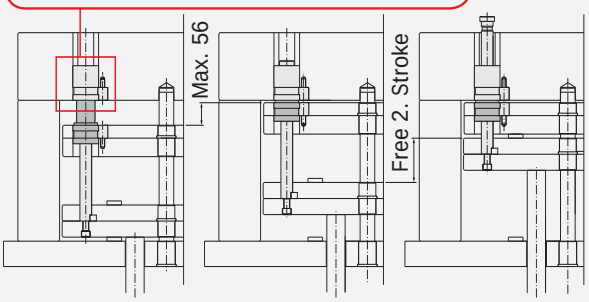


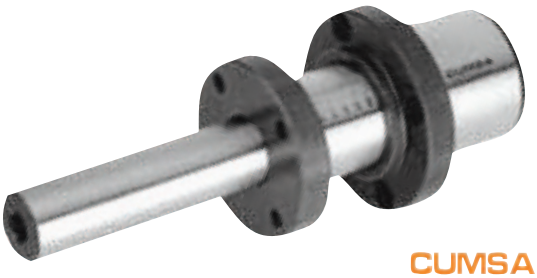
Order: **SY. 327054**





Material: 1.7242
Hardness: 56 ± 2 HRC
Patented System



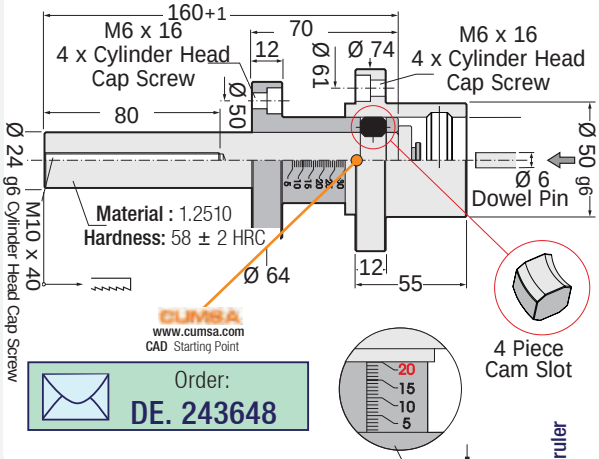


DUAL EJECTOR PLATE PUSH SYSTEM DE

It provides a stepped push in flexible inner core system.

Dual Plate Ejector System: This unit is performed predetermined two stepped motion. It is very useful to obtain stepped pushing in flexible inner core moulds, **Max .dual ejector stroke is 30 mm.**

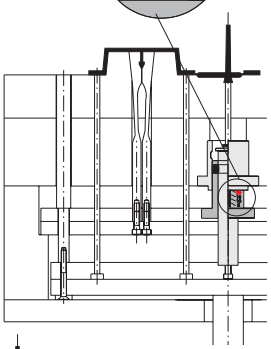
IMPORTANT!: To determine ,mounting dimensions, in selecting the first stroke, pls. use the ruler on 0-30 mm unit.



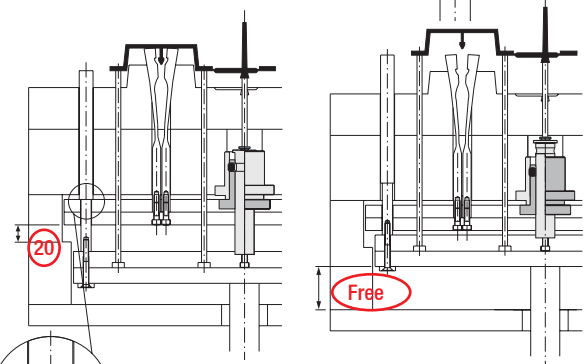
Order: **DE. 243648**

Material: 1.7243
Hardness: 58 ± 2 HRC

IMPORTANT!: To determine, mounting dimensions, in selecting the first stroke, pls. use the ruler on 0-30 mm unit.



If 20 mm stroke is selected on the ruler



1. Stroke will be 20 mm

2. The stroke is free

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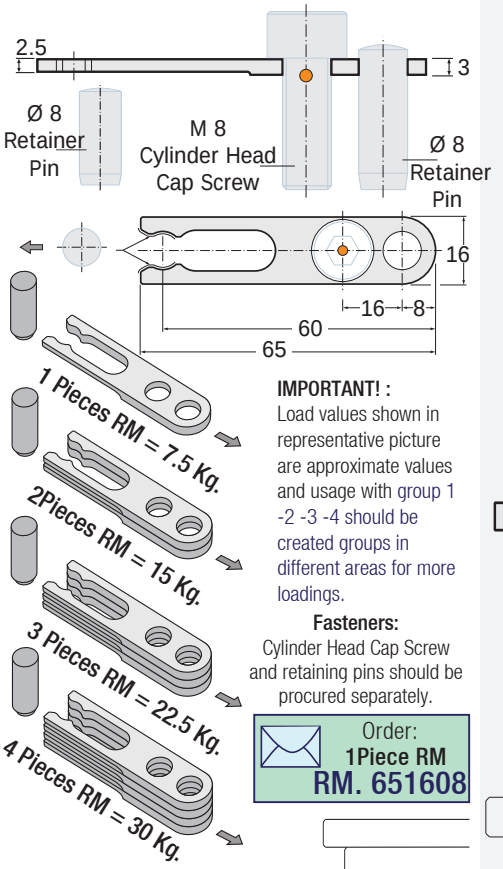
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MODULAR RETAINER RM

It provides the gradual opening of the mould.

By propagating the number of Modular Retainer Unit providing gradual opening of mould, loading capacity is increased. Max. 4 pieces can be used on same surface. If the more use is needed, the system should be distributed to different areas. **Max Temperature:** Should not be exceed 150^{0}C

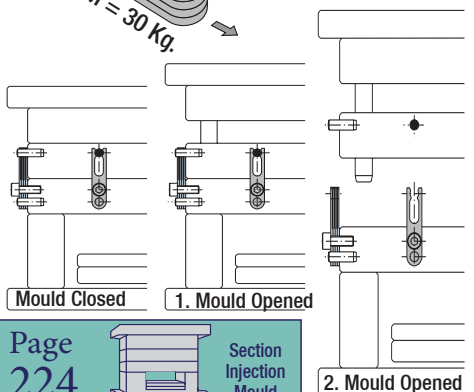
Material : 1.8159 **Hardness:** 45±3 HRC



IMPORTANT! :
Load values shown in representative picture are approximate values and usage with group 1 -2 -3 -4 should be created groups in different areas for more loadings.

Fasteners:
Cylinder Head Cap Screw and retaining pins should be procured separately.

Order:
1Piece RM
RM. 651608



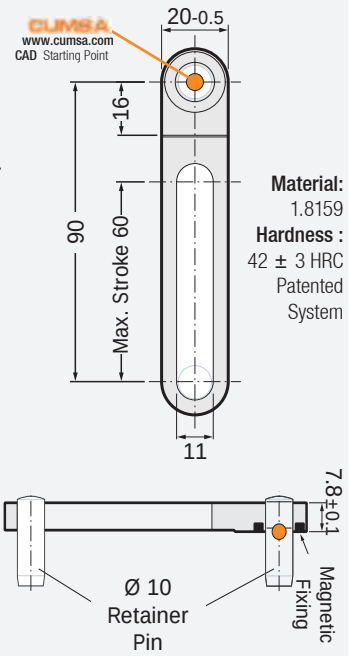


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STROKE STOPS SL

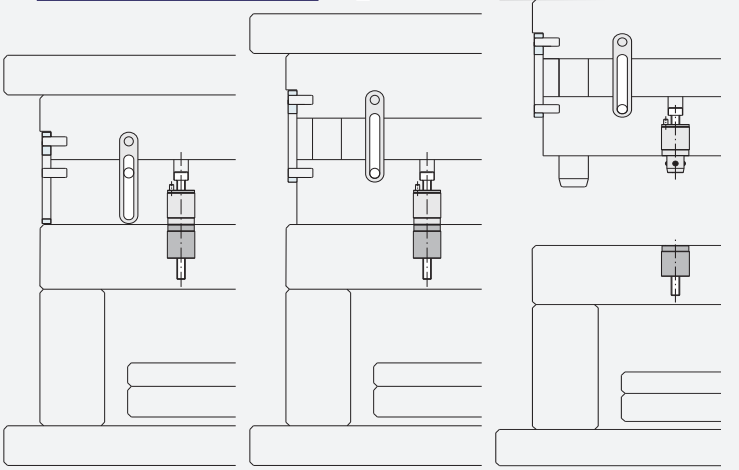
Mould Plate Opening, Stroke Stops

In moulds that PR. Coded Product is used, Dual Opening Systems with Scraper, is limited stroke of bearing plate which is opened first in 1. Group. It provides max. 60 mm opening, then 2. group's opening is engaged.



Material: 1.8159
Hardness : 42 ± 3 HRC
Patented System

Order:
SL. 602008



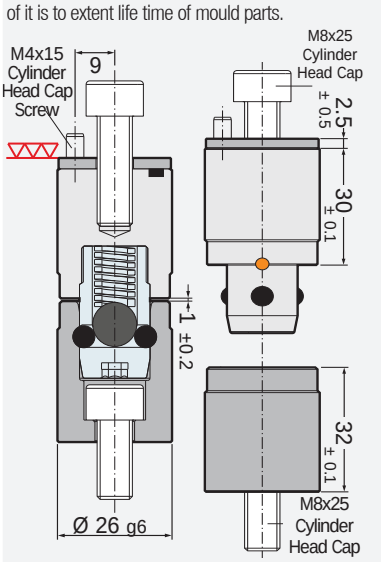


CUMSA

PLATE RETAINER PR

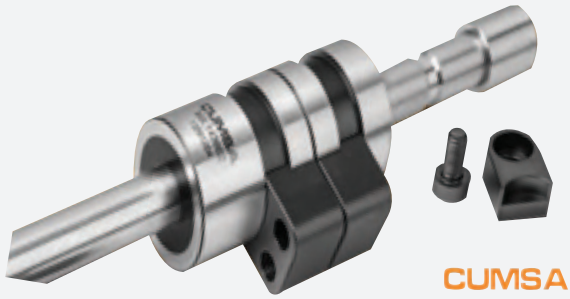
Stepped Mould Plate Retainer with Stripper

In Spring and O Ring loaded Compact System and Dual Opening Moulds with Stripper, it holds 2. Group closed until 1. Group opening is completed (Max. 50 Kg), also protects mould affecting from vibrations and impacts by reducing speed tension and absorbing pinking during opening. The most important advantage of it is to extent life time of mould parts.



Order:
PR. 263230

Material : 1.1203 **Hardness :** 58 ± 2 HRC

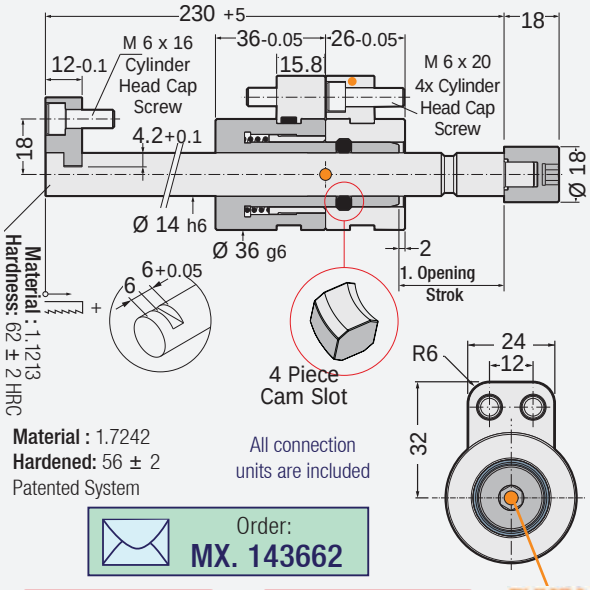


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STEPPED / LOCKED PLATE OPENING MX

It is designed for two stepped moulds, safe and locked unit

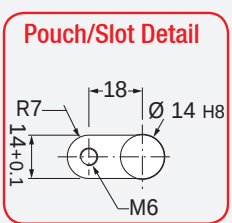
stepped opening unit: It is controlled to open safe/ accurate first plate for two stepped moulds (in moulds in stripper), the unit is required less space on the mould and is designed for small/ medium sized moulds. It is an internal latch lock plate opening unit controlling safety of opening system for 2 stepped opening.

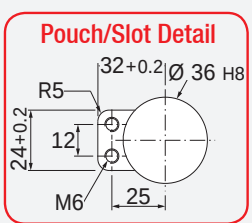


Material : 1.7242
Hardened: 56 ± 2
Patented System

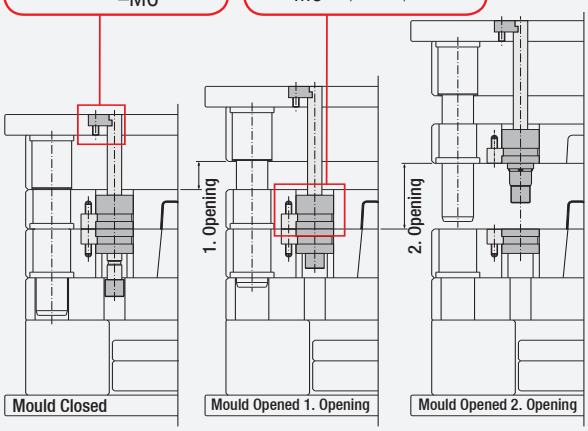
All connection units are included

Order:
MX. 143662

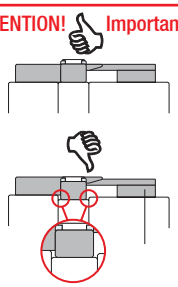




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CAD Starting Point



ATTENTION! Important



After selected desired stroke, fix the rules from unscaled part.



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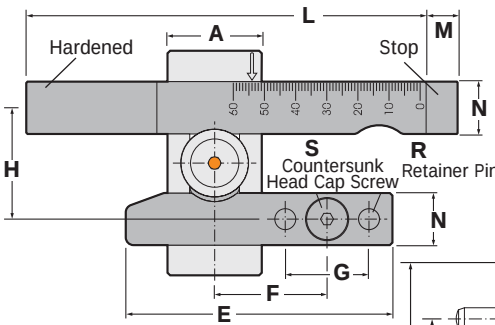
STEPPED OPENING GS

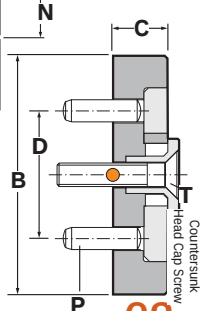
It is designed for two stepped moulds

Stepped Opening Unit: The desired measurement values on the ruler in unit are determined for two stepped moulds (In moulds with stripper) .
Opening Priority of Plates is depended the mounting direction of unit.
Stepped Opening Unit **GS. 226616** can be used in three stepped moulds up to (500 x 500mm) and **GS 368619** can be used up to (800 x 800 mm). According to mould size, it is recommended to use 4 units for balanced use.

Patented System

Material : 1.0503 **Hardened:** 55 ± 3 (Friction Area)



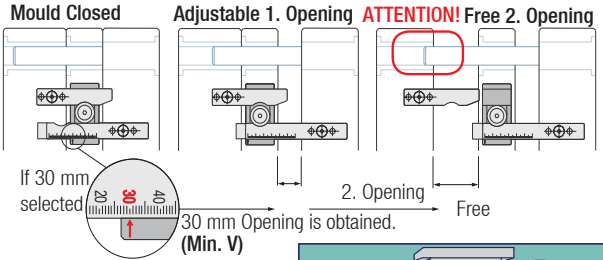


Bearing Capacity of Stepped Opening Unit:
Max. Pressure Recommended Per Part
GS.226616 : 200 Kg. / Mould Plate
GS.368619 : 400 Kg. / Mould Plate
GS.421024 : 800 Kg. / Mould Plate

STEPPED OPENING UNIT GS

Order	A	B	C	D	E	F	G	H	L
GS.226616	22	66	16	38	75	30	25	32	105
GS.368619	36	86	19	46	102	43	32	42.7	153
GS.421024	42	106	24	56	124	51	40	50.2	190

M	N	P (x2)	R (x4)	S (x2)	T	V	Scale
10	15	6x20	6x30	M6x30	M6x35	10	40
12	20	8x24	8x36	M8x35	M8x40	11.5	60
15	24.5	10x30	10x40	M10x40	10x45	14	80



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Dual Opening Systems



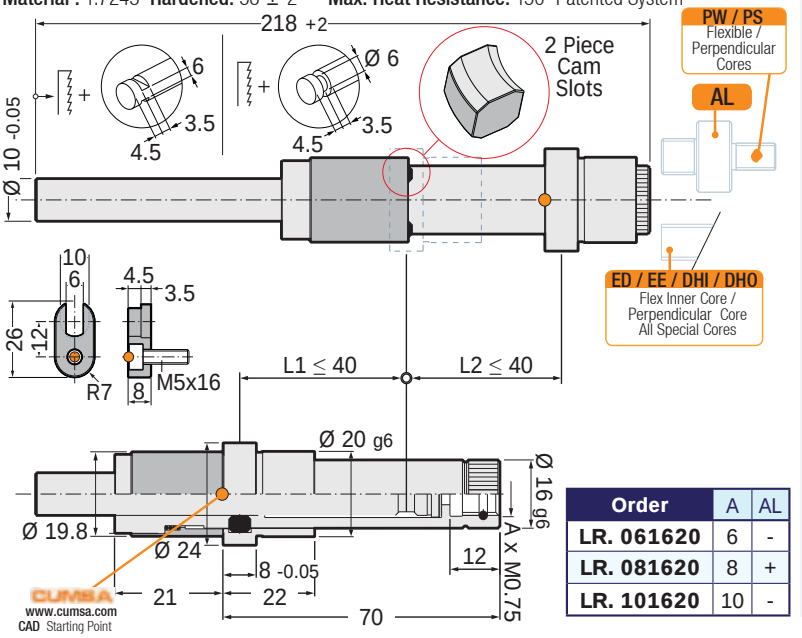
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LIMITER UNIT FOR FLEXIBLE AND PER. CORE SYSTEMS LR

Stroke Distance Limiter Unit (For Flex / Per. and All Special Core Connections)

It is mounted and fixed to injection mould rear connection plate (H5 A). Movable bush part of the unit is embedded into the ejector plates. By limiting motion stroke in full stroke of ejector plates, it ends the motion of inner core stroke without affecting stroke motion of injection machine.

Material : 1.7243 **Hardened:** 58 ± 2 **Max. Heat Resistance:** 150^{0} Patented System



Order	A	AL
LR. 061620	6	-
LR. 081620	8	+
LR. 101620	10	-



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INTERCONNECT REDUCER AL

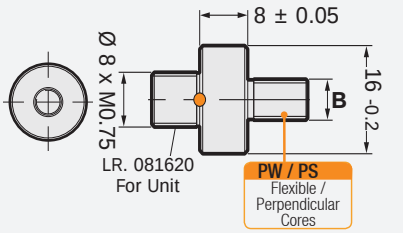
Threaded Unit, Flexible Inner Core and Perpendicular Core Limiter Unit

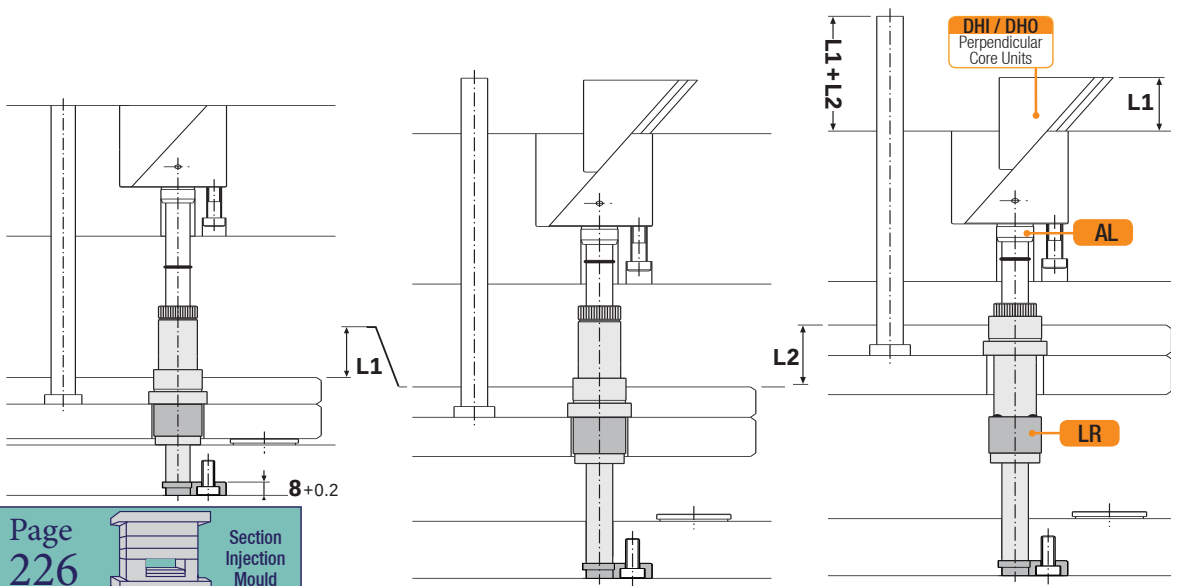
Material : 1.5060

It is a dual different threaded link adapter providing positioning of **LR.** Limiter Unit by making connection to its upper surface for other core connections. **In addition:** Fine Toothed Part **PW** also can be used as link adapter for flexible inner core and PS mechanical perpendicular cores.

INTERCONNECT REDUCER AL

Order	B
AL.0800M4	M4
AL.0800M5	M5
AL.0800M6	M6
AL.0800M8	M8





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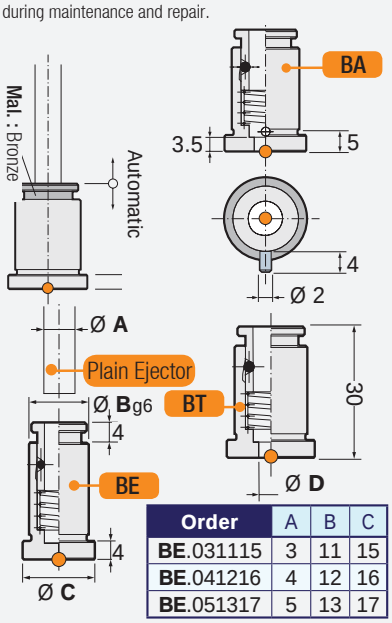
BE BT BA

BE /BT /BA

EJECTOR RETAINER

Automatic System Holding Headless Ejector Pins

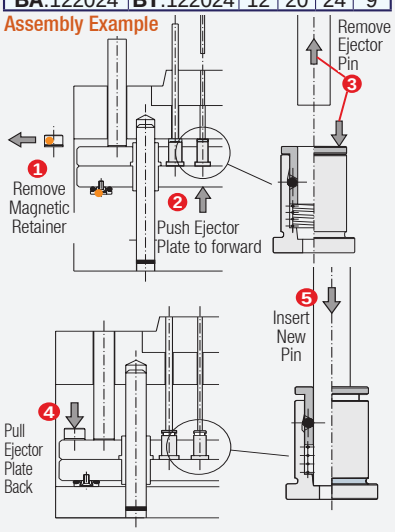
Plain pins can be removed automatically by pressing on the upper part of holder from the front of the mould. There is no need to open mould and to stop production during maintenance and repair.



Order	A	B	C
BE.031115	3	11	15
BE.041216	4	12	16
BE.051317	5	13	17

Order		A	B	C	D
BA.061418	BT.061418	6	14	18	3.5
BA.081620	BT.081620	8	16	20	5.5
BA.101822	BT.101822	10	18	22	7
BA.122024	BT.122024	12	20	24	9

Assembly Example



EJECTOR ACCELERATOR AE
CYLINDRICAL / THREADED UNIT

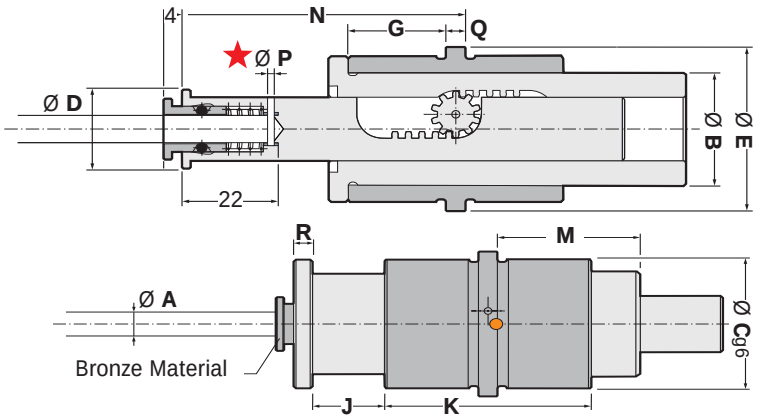
It provides the increase of motion stroke of the selected ejectors.

Ejector Accelerator: Its mounting can be made easily to injection mould ejector plates and middle of bottom support place, it is applicable on all moulds. (With Dimensional Options) It creates a second motion on standard moulds that are single ejector plate group.
Maximum Stroke 15mm x 2 = 30 mm.

Material : 1.7225 **Hardened :** 54 ± 2
Max Heat Resistance : 150^0 **Patented System**



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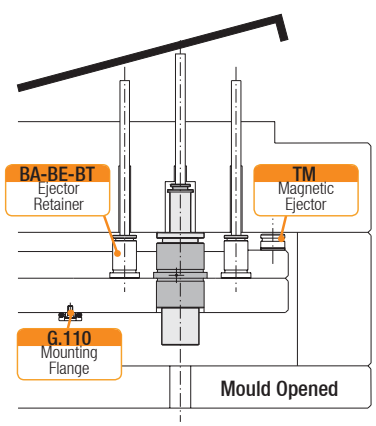


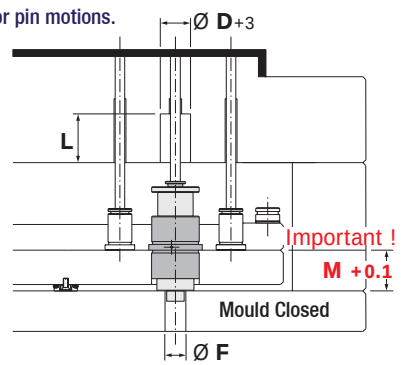
Order	A	B	C	D	E	F	G
AE. 031620	3	16	20	12.5	22	13	14
AE. 041620	4	16	20	12.5	22	13	14
AE. 052430	5	24	30	16	34	16	20
AE. 062430	6	24	30	16	34	16	20
AE. 082430	8	24	30	17	34	17	20
AE. 103036	10	30	36	21.5	40	21	28
AE. 123036	12	30	36	21.5	40	21	28

J	K	L	M	N	P	Q	R
8	32	22	17	37	-	4	3
8	32	22	17	37	-	4	3
15	44	36	27	57	2	4	3
15	44	36	27	57	2	4	3
15	44	36	27	57	2	4	3
20	62	46	34	78	2	6	4
20	62	46	34	78	2	6	4

★ On ejector accelerator unit, pliers systems providing plain ejector pin connection are available on other units except (AE.031620 / AE.041620) products.

It is enabled to 8 mm / 15 mm / 20 mm to ejector pin motions.





Section Injection Mould
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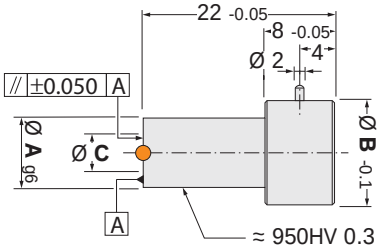


CUMSA

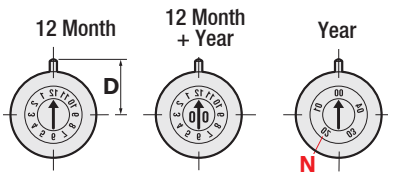
HIGH TEMPERATURE DATE STAMP FT

In Heat Resistance Moulds Containing High Tem.

It is used in injection moulds in high temperature such as Zamak, Zinc, Polyester, Bakelite and Rubber. Special Processes can be applied on unit. Due to replacing and settings can be done on front part of mould, there is no need to remove and dismantle mould from machine.



Material : 1.2344 Nitrite + INCONEL : 2.4669
Max. Heat Resistance: 450^0
Date stamp, can be changed unit hub.



H. TEMPERATURE DATE STAMP FT

Order **12 Month**	A	B	C	D	N
FT. 0847SF	8	12	4.7	11	5
FT. 1267SF	12	16	6.7	12	8

Order **12 M + YEAR**	A	B	C	D	N
FT. 084712	8	12	4.7	11	5
FT. 126712	12	16	6.7	12	8

* Pls. inform year as per request in order.

Order **YEAR**	A	B	C	D	N
FT. 084705	8	12	4.7	11	5
FT. 126708	12	16	6.7	12	8

Inside of Date Stamp, M. Processing Depth Moulding

FT 08 (YEAR) : 0.15 - 0.25 mm
FT 08 (OK) : 0.40 - 0.50 mm
FT 12 (YEAR) : 0.15 - 0.25 mm
FT 12 (OK) : 0.50 - 0.60 mm



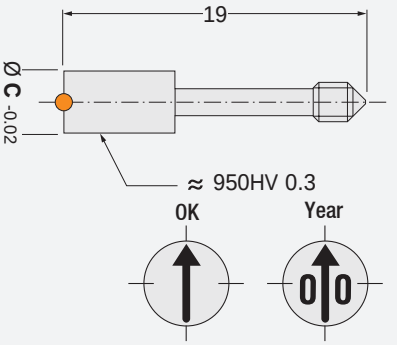
CUMSA

DATE STAMP INNER (Hub) IT

Replacement from Front of Mould and Adjustable

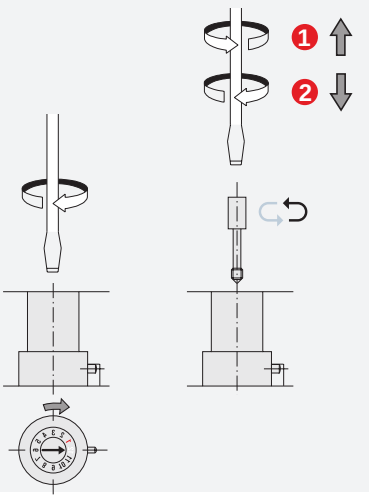
Inner Date Stamp : Due to replacing and settings can be done on front part of mould, there is no need to remove and dismantle mould from machine.

Material : 1.2344 Nitrite
Max. Heat Resistance: 450^0
Date stamp unit hub can be changed.



Order **OK**	Order **YEAR**	C
IT. 4719SF	**IT. 4719 ..**	4.7
IT. 6719SF	**IT. 6719 ..**	6.7

***Important:** To remove year, turn left, to insert new one, turn clockwise until you hear a "click" sound.





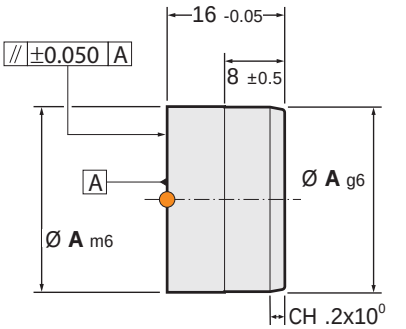
CUMSA

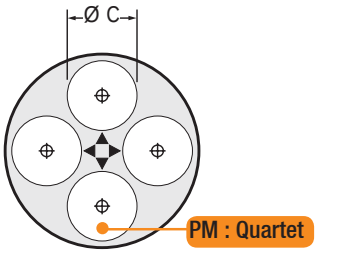
MULTIPLE STAMPING BLOCK BM

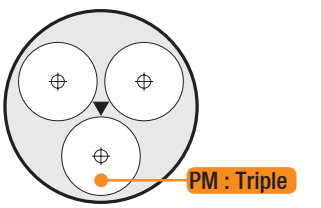
Stamping Unit, Date/ Stamping

Multiple Stamping: It is a triple or quartet stamping unit. Standard Date Stamps, Recycling or Logos can be aligned on unit.

Material : INOX. 1.4034 Hardened
Hardness : 48±2 HRC







MULTIPLE STAMPING BLOCK BM

Order	A	C	E	#PM
BM. 160603	16	6.5	8	3
BM. 180604	18	6.5	8	4
BM. 220903	22	8.7	10	3
BM. 250904	25	8.7	10	4
BM. 281103	28	11.5	12	3
BM. 321104	32	11.5	12	4

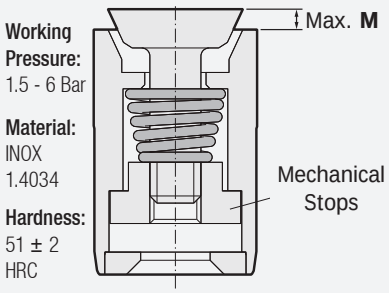


CUMSA

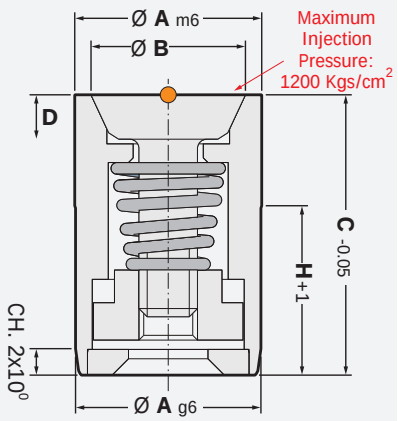
AIR VALVE / EJECTOR PLATE VA

It is an effective method in air ejecting

Air Ejector Valve: It is produced from stainless steel and provides air discharge in high range. Also, the conical ejector rises and helps the product exit from mould . The working temperature under 150ºC is recommended. In higher temperature, steel starts to expand and melt plastic raw white slips into valve and prevents operation.



1 BAR ≃ 1 Kg. / cm²

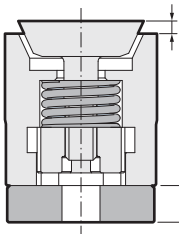


AIR VALVE / EJECTOR VA

Order	A	B	C	D	E	H	M
VA. 050412	5	3	12	1.5	4	7	2.5
VA. 065212	6	5.2	12	1.5	4	7	0.95
VA. 086512	8	6.5	12	1.5	4	7	0.95
VA. 100812	10	8	12	2	8	7	0.95
VA. 121012	12	10	12	2.5	10	7	0.95
VA. 161320	16	13	20	3	12	12	1.55
VA. 201720	20	17	20	3.5	16	12	1.55

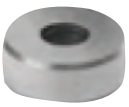
* The mechanical stop is not available on product VA 040512

Max. Conical Ejector Motion









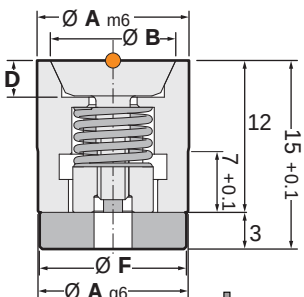
CUMSA

RAPID AIR VALVE / EJECTOR (It is for fast production) VH

It is compatible to use on high injection pressure and fast production stamps.

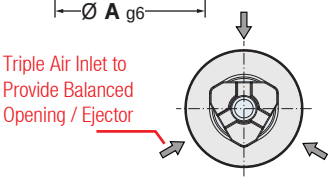
Powerful Air Ejector Valve: Internal Stopper is available, can be mounted easily. W. Pressure: 2-10 Bar.
1 BAR ≃ 1 Kg. / cm² It can be used on inclined and angle surfaces.

Material : INOX 1.4021 **Hardness:** 46 - 48 HRC

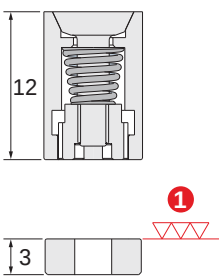


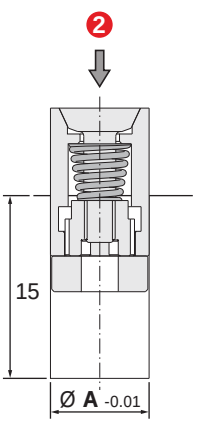
Rapid Air Valve / Ejector

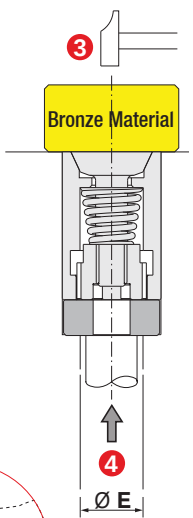
Order	A	B	C	D	E	H
VH. 065215	6	5.3	1.9	4	5.8	0.25
VH. 086515	8	6.7	2.1	5	7.8	0.75
VH. 121015	12	9.8	2.9	5	11.8	1.0



Mounting Washer is included.

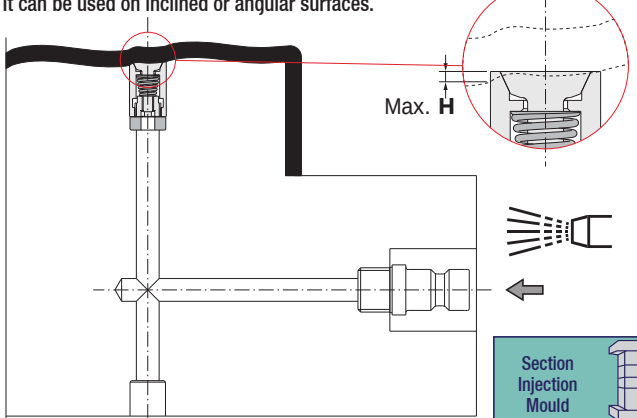






Forming Permitted Maximum Processing

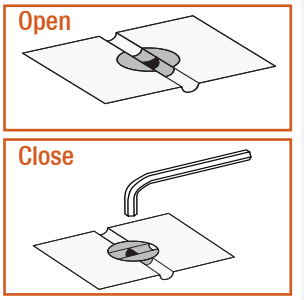
It can be used on inclined or angular surfaces.





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RUNNER ADJUSTOR



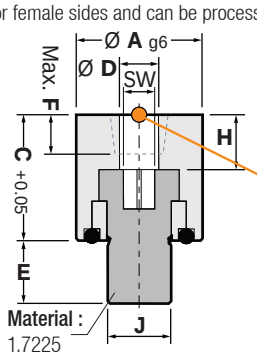


CUMSA

DIVERTER VALVE FOR INJECTION COLD RUNNERS SA

It is compatible in high injection pressure or rapid production stamping.

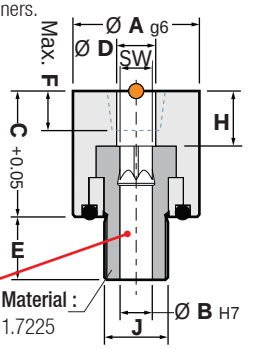
Runner diverter unit: By closing runner duct, the connection to mould parting surface is disconnected. According to the requirement of ejector pin, there are two different models. It can be mounted to male or female sides and can be processed as Trapezoid or wholly round runners.



Material : INOX 1.4034
Hardness: 48 ± 3 HRC
Max. Temperature : 100°C

CUMSA
www.cumsa.com
CAD Starting Point

Hole Injector



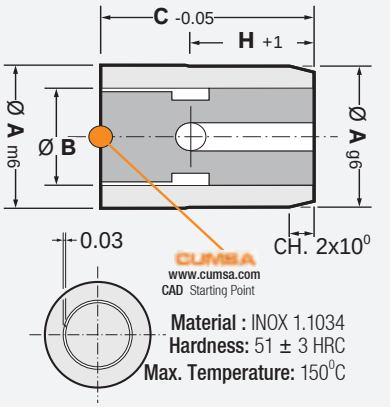
Order	A	C	D	E	F	H	J	SW
SA. 120014	1	2	4	6	3	5	M6	3
SA. 160016	1	6	6	8	5	7	M8	4
SA. 200018	20	18	6	10	6	9	M10	5

Order	A	B	C	D	E	F	H	J	SW
SA. 120314	12	3	14	4	6	3	5	M6	3
SA. 160416	16	4	16	5	8	5	7	M8	4
SA. 200518	20	5	18	6	10	6	9	M10	5

TWO WAY AIR VALVE VD

It allows the pass of each two way air

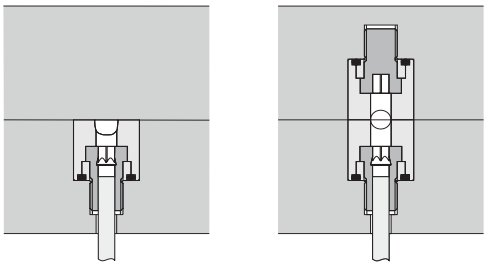
Two Way / Double Valve It is an effective method for semi air pushes. It is used in case of gas temprament or vacuum formation at ends (In thin walled vessel). It allows the pass of each two way air, is uses external air for pushing process intro cavity. It deflates internal air to reverse direction to throw compressed gas containing in mould.



CUMSA
www.cumsa.com
CAD Starting Point

Material : INOX 1.1034
Hardness: 51 ± 3 HRC
Max. Temperature: 150°C

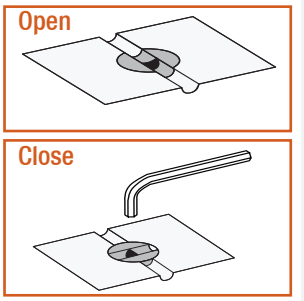
RUNNER POSITION CONFIGURATIONS



Two Edged Trapezoid Figure

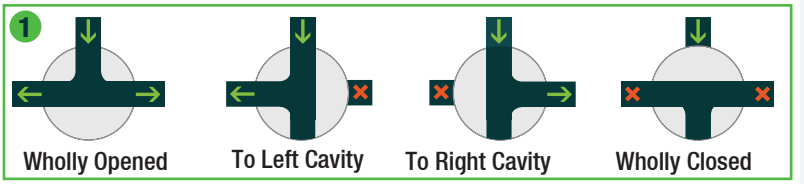
Full Round

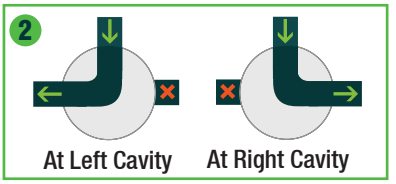
RUNNER ADJUSTOR

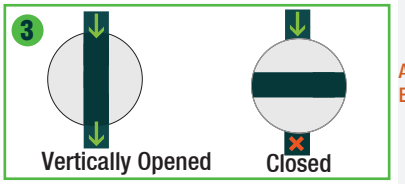


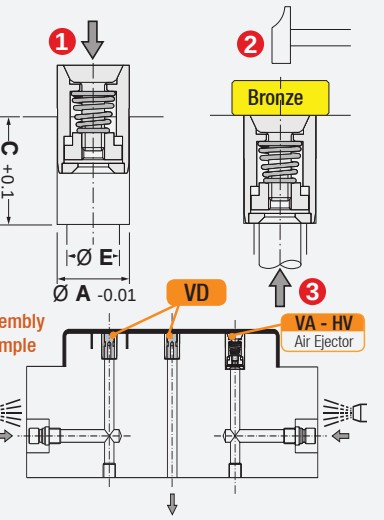
TWO WAY AIR VALVE VD

Order	A	B	C	E	H
VD. 080512	8	5	1	24	7
VD. 100612	1	06	1	25	7
VD. 120812	1	28	1	27	7
VD. 161020	16	10	20	9	12









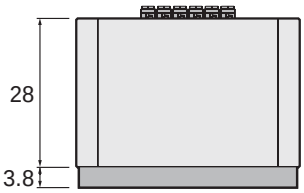


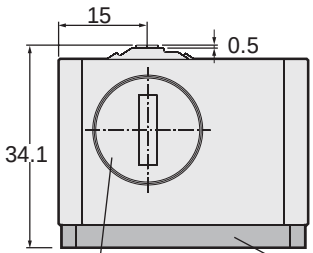
CUMSA

QUARTET STAMP UNIT UM

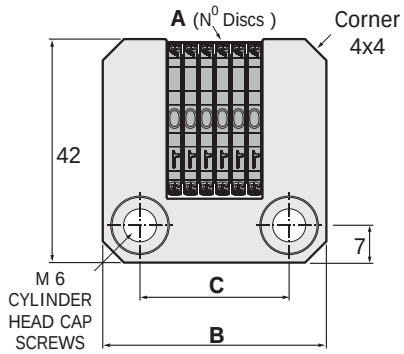
In press / sheet mould parts stamping

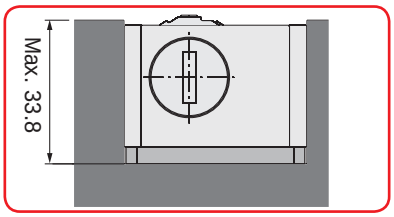
It is ensured the traceability of sheet mould parts. There are 4 or 6 wheel options. The positions of wheels can be changed easily. There is no need to separate stamp form mould. Its mounting and usage are easy.





Material : F-524 **Material :** 1.2510
Hardness: 56 -58 HRC





Order	A	J	SW
UM. 043642	4	36	22
UM. 064242	6	42	28

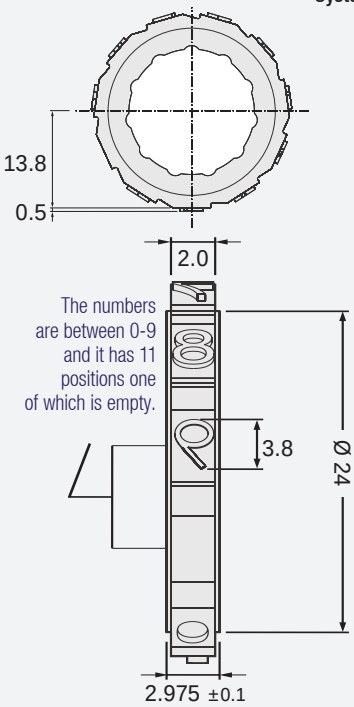


CUMSA

STAMP WHEEL 0 - 9 RR

It is a changeable stamp wheel of UM Unit.

Material: 1.2379 **Hardness:** 56 - 59 HRC **Patented System**



Order:
RR. 180311



PERCUSSIVE REVERSE LETTER/ NUMBER

Reverse Side Letter /Figure Sets: It is for marking numbering on and in mould and hammering in text creation. The characters stamped on mould are seen as reverse. The production is stamped as straight on product. (As mirror image) **Refer to Page 79** **Especially, in injection moulds**

Order	Product/ Letter- Figure
15706	Reverse Figure 9 Set)
15747	Reverse Letter (27 Set)

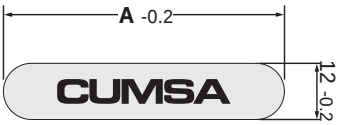


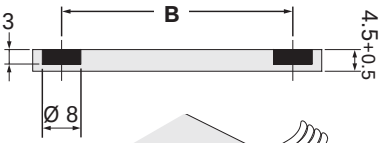
CUMSA

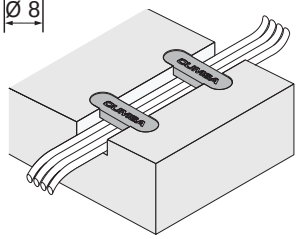
CABLE RETAINER CAP SC

Magnetic Product does not require extra hole

Cable Retainer 40 x 12: Specially in hot runner moulds, it keeps the diffused cables clean and smooth in duct. The product is magnetic material, it is self adhesive, there is no need to drill an extra hole. We recommend to keep max. mould temperature under 80º C. Because, plastic even magnets can be effected and broke down from high temperature.

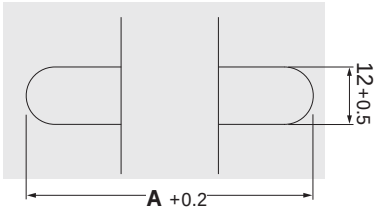




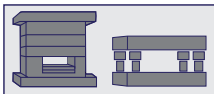


Mould Pouch / Slot Detail





Order	A	B	Material	SW
SC. 401245	40	28	ABS + NfFeB	80ºC
SC. 401245H	40	28	PA + 30% Glass Fiber	150ºC
SC. 601245	60	48	ABS + NfFeB	80ºC
SC. 601245H	60	48	PA + 30% Glass Fiber	150ºC



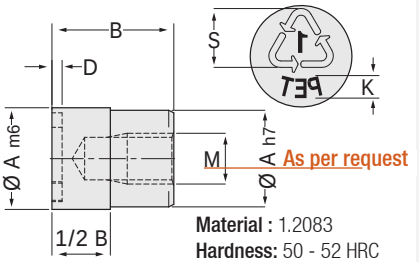


RECYLING, MOULD TABLETS GDM

Plastic Raw Material Data, Definition, Transformation Seals

Text and Definition Characters: It is for precise sign and definition of plastic raw material that is inlaid in 0,2 Depth (Conical Gradient) processing on moulds in production according to diameters. In addition: It is facilitated to recognize raw material that is about to break. See: It is compatible with DIN 6120 Single Symbol and ISO 1043-1 Normal Sign and International Codes.

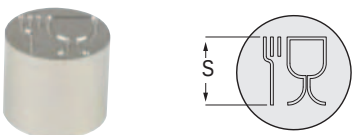
DIVERSIFICATION	
Logo /OK	GDM.01
EMPTY	GDM.02
PET	GDM.03
HDPE	GDM.04
PE-HD	GDM.05
PVC	GDM.06
LDPE	GDM.07
PE-LD	GDM.08
PE-BD	GDM.09
PP	GDM.10
PS	GDM.11
OTHERS (OTHER)	GDM.12
OTHERS (0)	GDM.13
FOOD (Food)	GDM.14



Material : 1.2083
Hardness: 50 - 52 HRC

RECYCLING TABLETS GDM

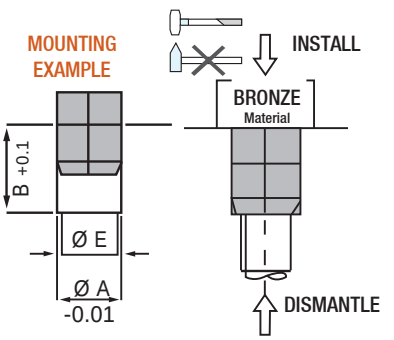
Order	A	B	D	E	K	S	M
GDM... 06	6	10	0.3	6	-	4.0	M4
GDM... 08	8	10		6	-	4.0	M4
GDM... 10	10	12		8	1.6	5.6	M5
GDM... 12	12	12		10	2.0	6.8	M6
GDM... 16	16	14		12	2.6	9.0	M6
GDM... 20	20	16		16	3.2	11.5	M6



TABLET COMPATIBLE WITH ALIMENTARY P. LAW

Order	A	B	D	E	S	M
GDM 14 10	10	12	0.3	10	6.10	M5
GDM 14 16	16	14		16	9.08	M6
GDM 14 20	20	16		20	12.30	M6

MOUNTING EXAMPLE



GTH
Production As Per Request

Page 232
Section Injection Mould



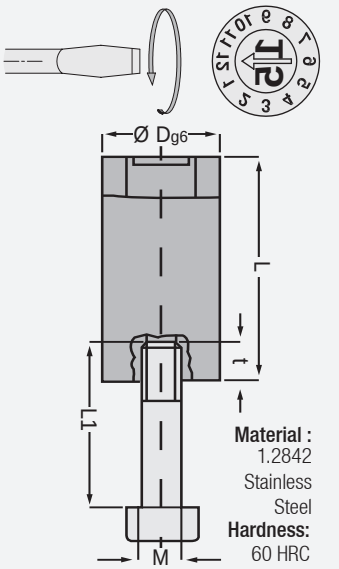
SCREWED DATE STAMP / MOULD CALENDAR VKT

Long Type Mould Date Stamp With threaded Rear Side

We are offer wide options with our economic prices.

Mould Calendars that are preferred mostly for medium and small moulds, easy for mounting, also can be mounted on devices such as pins. Rotary Inner Hub of Mould Calendar can be adjusted limitlessly (Worm Gear).
Mounting is completed by pressing thoroughly from the inner hub and pulling from the bottom with bolt.

DIVERSIFICATION	
Standard Model Year Calendar	VKT.01
Month and Year Calendar	VKT.02
Year Calendar	VKT.03
Weekly Calendar	VKT.04
Daily Calendar	VKT.05
Work / Shift Calendar	VKT.06
Figure Calendar	VKT.07
Letter Calendar From A to M	VKT.08
Letter Calendar From N to Z	VKT.09
Marked / Arrowed Calendar	VKT.10
As per request Calendar	VKT.11

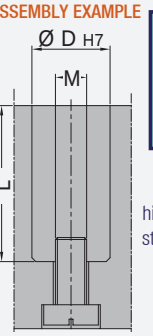


Material : 1.2842 Stainless Steel
Hardness: 60 HRC

D	L	t	L1	M
4	12.5	3	4	M2
5	14	3	4	M2.5
6	16	3	4	M3
8	18	4	4	M3
10	22	4	4	M3
12	25	6	6	M4

Order:
VKT.TİPNO D x L

ASSEMBLY EXAMPLE





For metal injection moulds containing high temperature, date stamp involved in page 228 FT (Cumsa) Product should be selected.



DATE STAMP/ MOULD CALENDAR KT

Cylindrical, Standard Model - Production as per request

Wide variety of options are available with quite economic prices. It is compatible to use in all injection mould systems. For mounting, it is enough to mould, only a hole as product diameter (H7 Reamed). Mounting: By drilling a suitable hole in the desired part of mould, place mould calendar into it (With Bronze or Rubber Hammer), making a tight hole (not to rotate date stamp) is useful.

DIVERSIFICATION



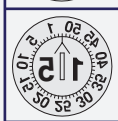
STANDARD Month Calendar **KT.01**



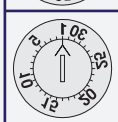
STANDARD Month and Year **KT.02**



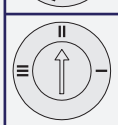
STANDARD Year Calendar **KT.03**



Weekly Calendar **KT.04**



Daily Calendar **KT.05**



Work / Shift Calendar **KT.06**

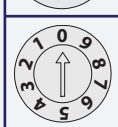
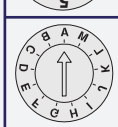
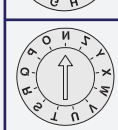


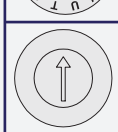
Figure Calendar **KT.07**



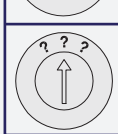
Letter Calendar From A to M **KT.08**



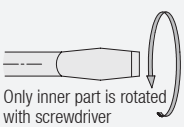
Letter Calendar From N to Z **KT.09**

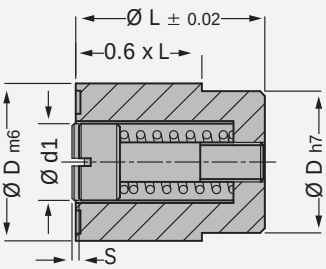


Marked/ Arrowed Calendar **KT.10**



As per request Calendar **KT.11**

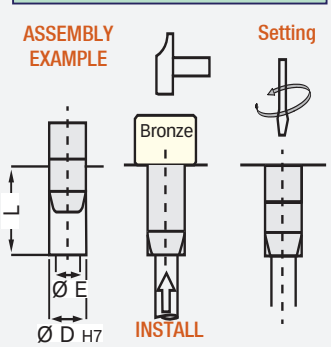




MOULD CALENDAR KT

D	L	d1	S	E
4	6	2	0.2	3.5
5	8	2.5	0.2	3.5
6	8	3.5	0.2	4.0
8	10	4.5	0.2	6.0
10	10	4.8	0.2	8.0
12	12	6.0	0.25	10
16	14	7.8	0.35	12
20	14	9.7	0.35	14
25	25	12.7	0.35	16

Order:
KT.TYPE NO D x L
Pls. specify year in Month/Year Models.





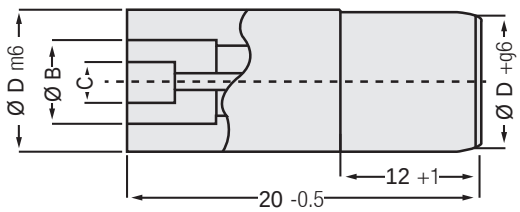


DKT

COMPLICATED (DUAL) MOULD CALENDAR

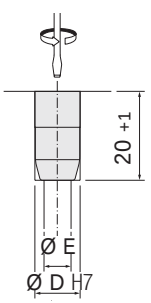
Two Different Date Stamp, Dual Date Stamp With a Unit as 12 Month + 6 Year: This product reducing needs and area required for cost and two different date stamp, shows two different criterias on unit. Its Standard Model is as 12 Month+ 6 Year, i.e. is not required any change along 6 years.

The length of all date stamps (20 mm) are same.

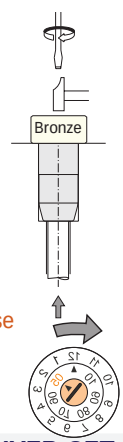


COMPLICATED (DUAL) MOULD CALENDAR DKT

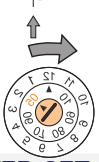
Order	D	B	C	E	N
DKT.08	8	5.5	3	6	5
DKT.10	10	6	3	10	6
DKT.12	12	8	4	10	6
DKT.16	16	10.5	5.3	12	10
DKT.20	20	12	6	16	12



Important :
To change the month, the hub arrow on the unit is turned counter clockwise and the inner two parts are rotated. To change they year, pls. turn clockwise
Material : 1.2842 Stainless Steel
Hardness : 60 HRC





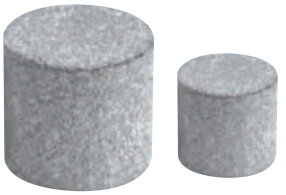


6 PIECES WATCHMAKER SCREWDRIVER SET



Watchmaker Screwdriver Set:
6 Pieces Rotary Turret Set
4 Pieces (1.5 - 2 - 2.5 - 3) Flat Ended Mini Screwdriver
2 Pieces PHO - PH1) Star Edged **Mini Screwdriver**
Chrome Vanadium Steel
Blackened Stainless Ends
Ergonomic Handles Upper Part of Handle is with turret.

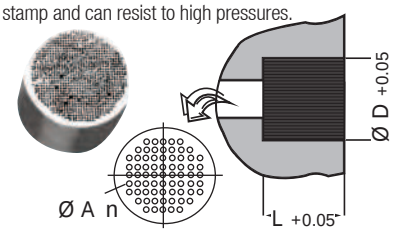
Order No : CRP-TK 9000



SINTERED GAS RELIEF FILTER

Inner Mould Gas Relief Valve SGA

With Sintered (Multi Channel) Structure, It is a featured product implementing entrapped gas relief in injection moulds and is high quality stainless product that does not leave a mark on objects in stamp and can resist to high pressures.

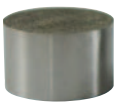


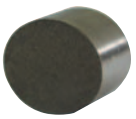
SINTERED GAS RELIEF FILTER SGA

D	L	A	n
1.6	5	0.03	250 / 400
2.0			
2.5			
3.6			
4.1	9		880
5.0	10		

D	L	A	n
6.5	10	0.05	880
9.0			
10			
12.5			1200
15			
20			

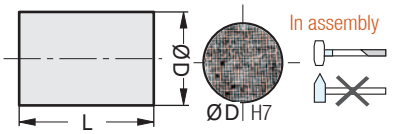
Order: **SGA D x L**





STEEL HOUSING SINTERED GAS RELIEF FILTER GVSY

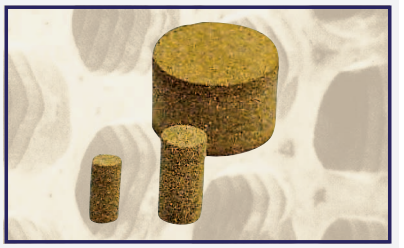
External Surface is similar with grinded sinter structure mould inner gas relief valve SGA Model.



Material: Sintered Stainless Steel - HRC 40
Filter Thickness: 10 Micron **Tension**: 300 N/mm²
Durability: Weak Bases - Organic Acids Plastic Melts - Synthetic Resins

Order	D	L
GVSY 04	4	10
GVSY 06	6	
GVSY 08	8	
GVSY 10	10	12

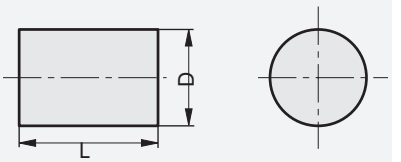
Order	D	L
GVSY 12	12	12
GVSY 16	16	14
GVSY 20	20	15
GVSY 28	28	



YELLOW WIRED GAS RELIEF FILTER

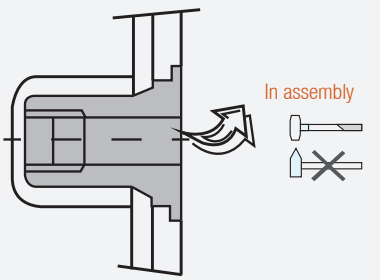
Wide Channel, Gas Relief Valve GGA

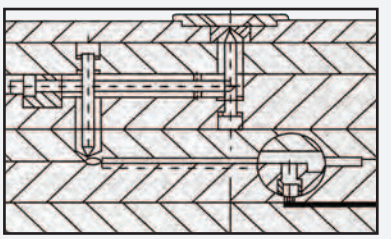
In injection moulds, it drains unwanted gas created by melted raw white fastly via wide channels, does not resist to very high pressures, can be collapsed. It can leave a mark on objects in stamp. Mostly it is suitable to use in inner parts, can be used in metal injection moulds not containing very high temperatures. I**t is an Economic Product. In mounting;** Exactly, use copper/rubber hammer. Don't make any mechanic or levelling process on filter unit (The pores are effected) **In production**; Exactly, should be manually touched to gas filters on working mould.



YELLOW WIRED GAS RELIEF FILTER GGA

Order	D	L
GGA.03	3.0	8
GGA.04	4.0	10
GGA.05	5.0	10
GGA.06	6.0	10
GGA.08	8.0	10
GGA.10	10	10
GGA.12	12	10
GGA.16	16	10



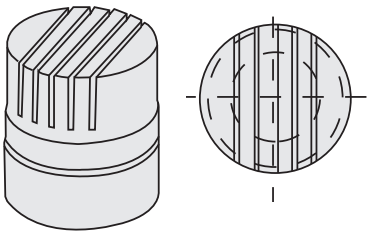


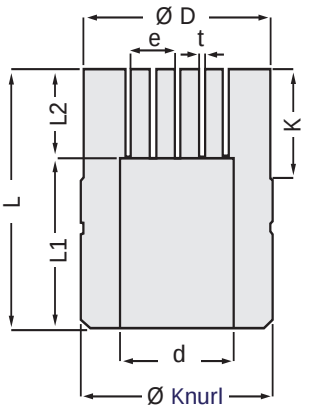
HEADING MOULD AIR RELIEF VALVE

Plastic Inj. Heading Moulds STV

It is used in ventilation plug and plastic injection heading moulds for optimum ventilation to mould cavity. Due to the air channels of plug being parallel and wide, it drains the air in mould rapidly, also air chamber inside of the unit acts as a pool in drainage of the air. The burns on product should be cleaned instantly. These burrs can result to adhere to the pores. For cleaning, the compressed air or cleaning spray can be used (WINKEL 451280).
Mounting; Due to the knurled outer part of product, it provides tight keep and inside the safe of hole.





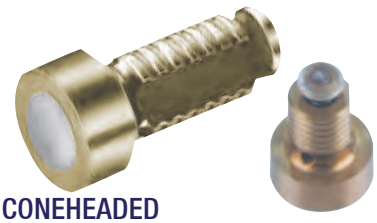


HEADING MOULD AIR RELIEF VALVE

Order	STV 6x10	STV 8x10	STV 10x10	STV 12x10
D	6	8	10	12
L	10	10	10	10
d	3.5	5.0	6.0	8.0
t	1.0	1.1	1.3	1.5
e	0.3	0.3	0.3	0.3
K	4.0	4.0	5.0	5.0
L1	6.5	6.5	8.0	8.0
L2	3.5	3.5	4.0	4.0
Knurl	6.2	8.2	10.2	12.2



GTH Production As Per Request

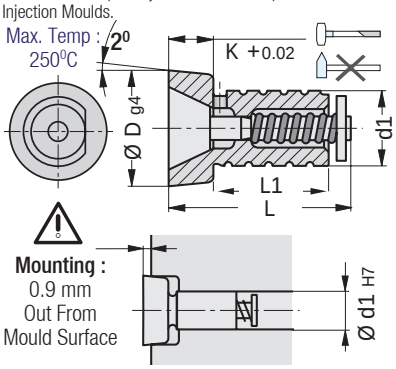


CONEHEADED PNEUMATIC EJECTOR VHV

2⁰ Coneheaded / Special Reamer

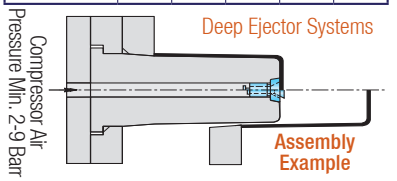
Mounted Coneheaded Pneumatic Ejector, Temperature Sensitive/ From Amcolay Material **Mounting:** It should be provided with special reamer and should be 0.9 mm out from mould parting surface. It is compatible for Metal Injection Moulds.

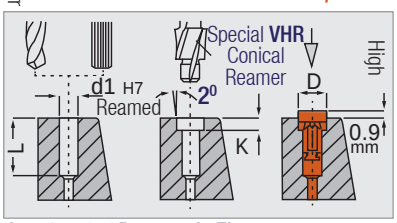
Max. Temp : 250⁰C



CONEHEADED PNEUMATIC EJECTOR VHV

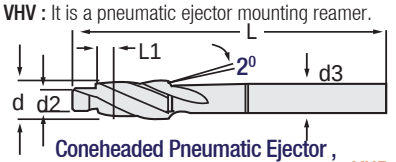
Order	D	d1	K	L	L1
VHV.08	8	6	5	16	8
VHV.12	12	8	5	21	13
VHV.16	16	10	6	22	14





Coneheaded Pneumatic Ejector , SPECIAL REAMER VHR

VHV : It is a pneumatic ejector mounting reamer.



Coneheaded Pneumatic Ejector , SPECIAL REAMER VHR

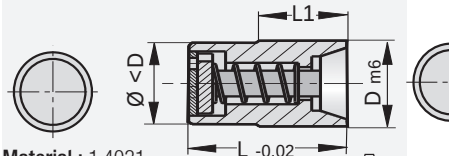
Order	d	d2	d3	L1	L
VHR.08	8	6	10	5	69
VHR.12	12	8	12	5	100
VHR.16	16	10	12	6	122



SLEEVE PNEUMATIC EJECTOR V. KHV

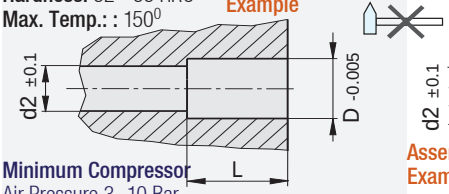
Ejector Position-Vacuum Dissolver - Short Type

It is the most suitable method for dissolving vacuum during injection. In wide and narrow walled objects, it continues to drain compressed air by vacuum in mould, all casing and processed surfaces have been produced from stainless steel. According to Pin(PHV)-Pneumatic Ejector, the **shorter length is advantageous.** Other technical details are similar.



Material : 1.4031
Hardness: 52 - 55 HRC
Max. Temp.: : 150⁰

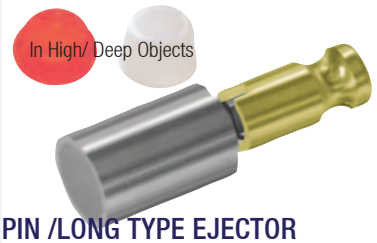
Assembly Example



Minimum Compressor Air Pressure 3- 10 Bar

Economic Product: All diameters are available in our stocks

Order	D	L	L1	d2
KHV.06	6	12	7	3.5
KHV.08	8	15	9	5
KHV.10	10	20	13	6
KHV.12	12	25	15	8
KHV.16	16	30	17.5	8
KHV.20	20	30	19	10
KHV.25	25	30	19	12
KHV.30	30	30	27.5	15



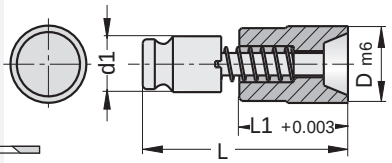
PIN /LONG TYPE EJECTOR VALVE

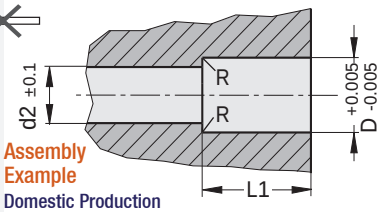
Standard Pneumatic Ejector Valve PHV

It is known as the most effective pneumatic ejector group. Especially, is ideal for deep and great mould. In mounting, definitely use the copper or rubber tipped hammer and bronze wedge.

Material : 1.4031 **Hardness:** 52 - 55 HRC

Minimum Compressor Air Pressure 2- 9 Bar **Max. Temp. :** 150⁰





Assembly Example

Domestic Production

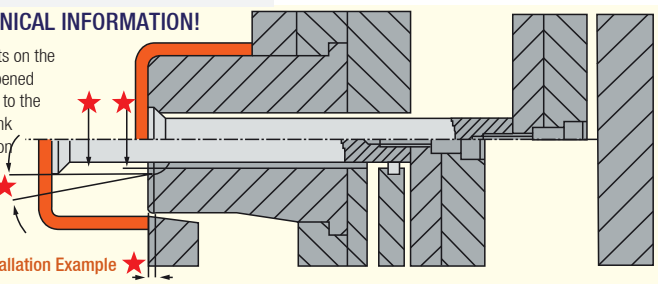
Economic Product: All diameters are available in our stocks

Order	D	L	L1	d1	d2	R
PHV.08	8	28	11	6	7	01
PHV.10	10	28	11	7	8	01
PHV.12	12	30	11	8	9	02
PHV.16	16	43	20	10	14	02
PHV.18	18	43	20	10	14	03
PHV.20	20	43	20	10	16	03
PHV.25	25	60	20/28	16	16	04

SPECIAL TECHNICAL INFORMATION!

Important: The slots on the mould should be opened precisely according to the selected countersunk ejector pin dimension.

The information is advisory.



Mounting and Installation Example

In İnjection Moulds: Especially In Great Objects/Deep Boxing Moulds, For Using In System Presented In Technical Drawing By Simple And Economical Method Facilitating Product/Object Desintegration With Compressed Air Vacuum Problem, It Is Processed (★) Marked Areas In Application On Moulds Precisely By Cutting Suitable To Special Length Mould With Selection Of Countersunk Ejector Pin (Page 247) As 6-8-10 Diameter And 315 Length Selection In Countersunk Pin Dimension Parallel. In Prepared System, It Is Provided To Drain Compressed Air / Vacuum Drainage In Mould By Connection To Ejector Plates In Such Way That Head Of Countersunk Ejectors Are Up Inversely. Also, It Can Be Provided To Be Used With It Is Pneumatic Ejector Valve Feature.

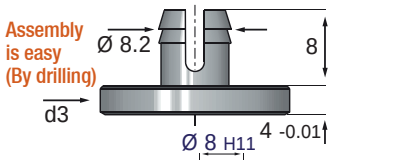
Section Injection Mould
Page 235



THRUST PLATE, GAITER G.144

Rapid Mounted Thrust Plate With A Hole

For using inside of the mould, (gaiter) can be put to bottom of the plates as support. By drilling a hole (8 mm H11), flexible claws on thrust are opened inside of the hole and is molded. During effect, can be easily dismantled. Thus, symmetry could be provided in mounting and repetition of plates.



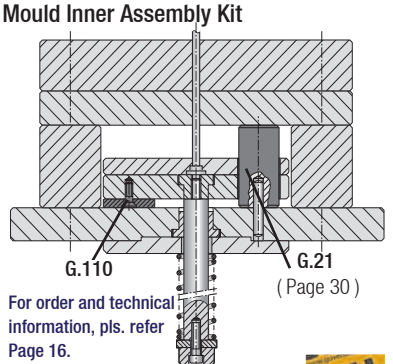
THRUST PLATE G. 144

Order	d3
G.144.20	20
G.144.30	30



THRUST PLATE G.110

Mould Inner Assembly Kit



For order and technical information, pls. refer Page 16.

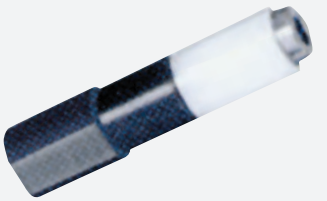


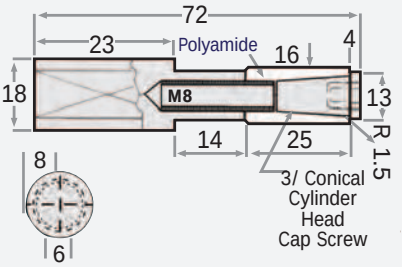
PLATE PULLER SCP M8

Frictional Plate Puller (Braking)

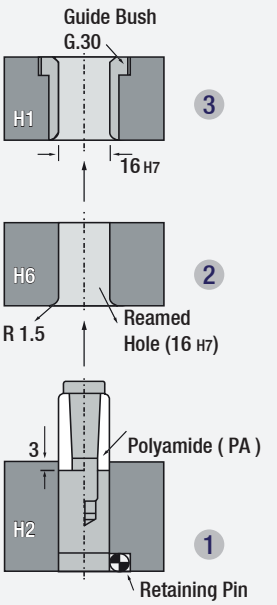
This simple plate puller, provides great benefit in 3 plate moulds that average gravitation force and plate sensitivity are sufficient, similarly, this standard plate part can be used as brake with stopping purpose between plates. For example, if it is desired to wait or postpone opposite/counter parts motions or to avoid collision of hard, detrimental plates, it provides suitability for use.

Maximum Temperature : 120°C

Polyamide Extrusion Holes Ends, should be left radiuses. Don't use any oil on extrusion surfaces.



Order: **SCP M8**



Frictional Plate Puller (Figure 1) is sended its force via friction between Polyamide Bush and (Figure 2) extrusion wall (Figure 3). Friction force can be adjusted stepless. Optionally, (3 mm) can be adjusted as the suitable length of cylinder head cap screw.



FRICTIONAL PULLER GPLA

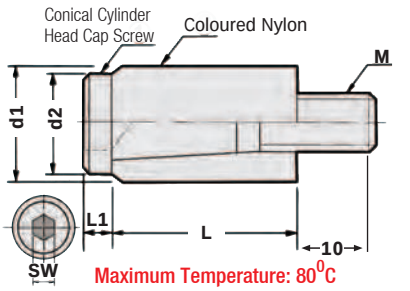
Mould, Plate Parting, Setting Bolt

Frictional Plate Puller

With this simple part, you can separate desired plate group in mould. Life time is 50.000 stamps, beside being cost effective, it is provided mounting and dismantling facility. It is also used in small and medium moulds beside two stepped moulds or side cores.

According to mould weights:

Up to 100 Kg. 4 Pieces 12 mm diameter
Up to 500 Kg. 4 Piece 16 mm diameter
Up to 1000 Kg. 4 Pieces 20 mm diameter
Over 1000 Kg. should be used minimum 6 pieces.
Polyamide extrusion holes in moulds should be H7 Reamed and also should be left as Radiuses, don't use any oil on extrusion surfaces.

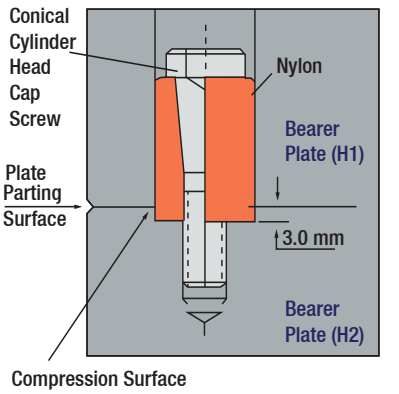


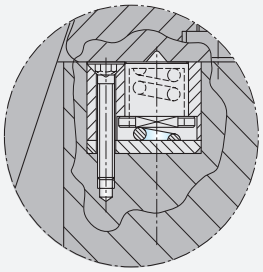
Maximum Temperature: 80°C

Mould Parting, Adjusting Bolt GPLA

Order	d1	d2	M	SW	L1	L
GPLA.10	10	8.5	M5	4	3	18
GPLA.12	12	11	M6	5	3.5	20
GPLA.13	13	11	M6	5	3.5	20
GPLA.16	16	14	M8	6	4	25
GPLA.20	20	16	M10	8	5	30

Assembly Example





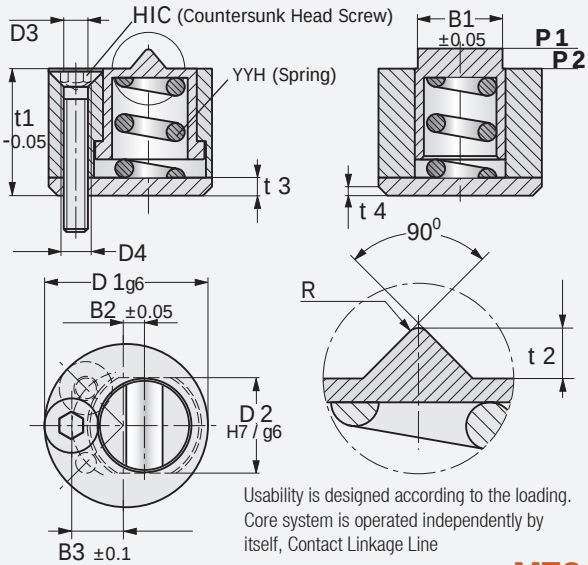


Maximum Temperature: 100^0

CORE SLIDE: SPRING RETAINER UNIT MTC

Slide Holder in Core Systems of Injection Moulds

Round core holders are operated without retaining pin and also can lift the core without core holder. Being round facilitates mounting. **Material :** 1.2767



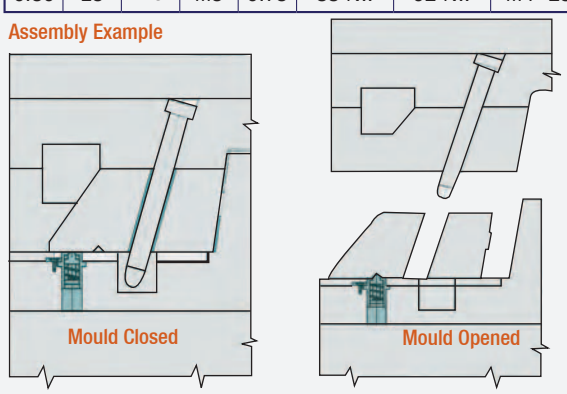
Usability is designed according to the loading. Core system is operated independently by itself, Contact Linkage Line

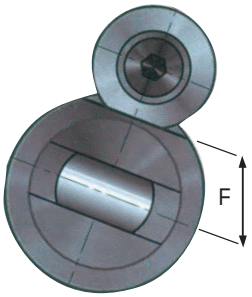
CORE SLIDE RETAINER SPRING UNIT MTC

Order	D1	B1	B2	B3	t1	t2	t3
MTC.13	13	6.6	1.4	4.3	10	1.0	1.6
MTC.18	18	9.6	2.0	6.0	14	1.8	2.0
MTC.27	27	14.4	3.0	9.0	21	2.8	3.0

t4	D2	D3	D4	R	P1	P2	HIC
0.35	7	2.2	M3	0.35	28 Nw	34 Nw	M2 -16
0.50	10	3.2	M4	0.50	38 Nw	42 Nw	M3 -50
0.50	15	4.3	M5	0.75	38 Nw	92 Nw	M4 -25

Assembly Example



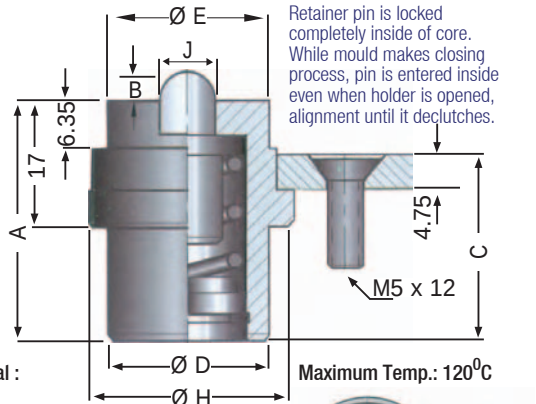




CORE SLIDE: SPRING RETAINER/PIN UNIT MTY

Small, Round, Easy To Mount, Independent, Contact Linkage

Usability is designed according to the loading. **With 3 mm holding rate**, it presents 48 / 88 / 176 Nw force requirements according to the types.

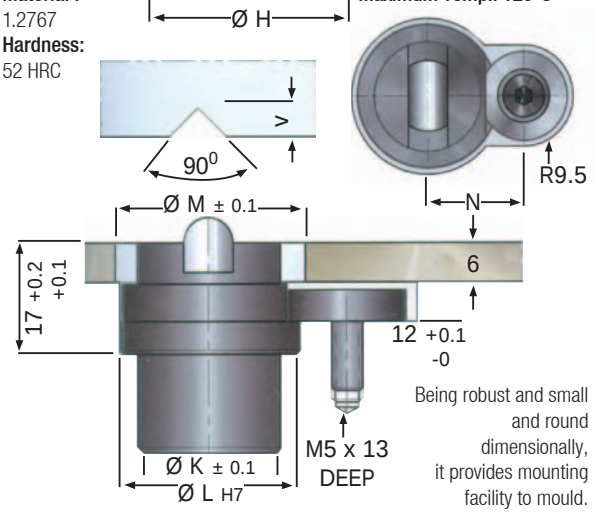


Retainer pin is locked completely inside of core. While mould makes closing process, pin is entered inside even when holder is opened, alignment until it declutches.

Material : 1.2767

Hardness: 52 HRC

Maximum Temp.: 120^0C



Being robust and small and round dimensionally, it provides mounting facility to mould.

Order	A	B	C	D	E	F
MTY.100	27.43	1.83	20.2	15.75	16	9.52
MTY.200	33.53	3.07	26.29	18.8	19	10.67
MTY.400	32	3.78	24.76	22.1	22	11.86

H	J	V	K	L	M	N	Kgf.
22	4.8	2.3	15.87	22	24	17	4.5
25	6.35	3.9	19.05	25	27	18.2	9
28	7.92	4.9	22.23	28	30	19.4	18

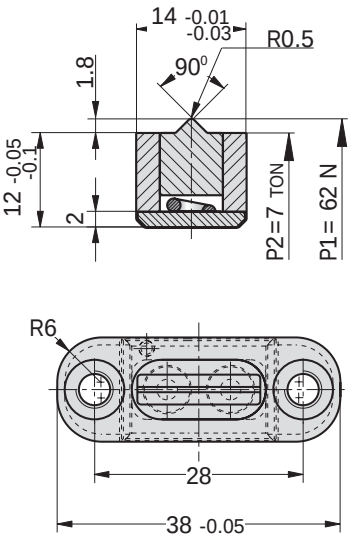
GTH Reliable Label

BOTH Producing Selling With Proper Price



CORE RETAINER TYPE: 1 MTK.1

Contact Linkage Line in Core Systems



Maximum Temperature : 100°C

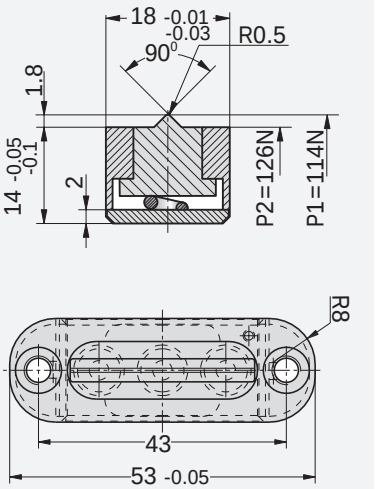
Material : 1.2343 **Hardness :** 54 ± 2 HRC

Order: **MTK.1**



CORE RETAINER TYPE: 2 MTK.2

It lifts the core without the holder in core system



Maximum Temperature : 100°C

Material : 1.2343 **Hardness :** 54 ± 2 HRC

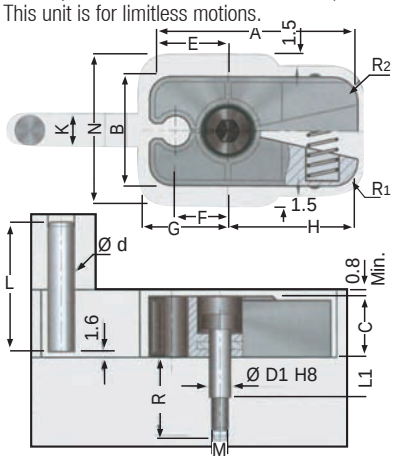
Order: **MTK.2**



CORE RETAINER, PINNED MTS

Precise - Locked and Alignment, Pinned

During the fixed mounting with body bolts, some spare holes and cavities can be required. This unit is for limitless motions.



Order	A	B	C	E	F	G
MTS 10M	38	19	16	16	**9.1**	19
MTS 20M	54	32	20	21	**12.7**	24
MTS 40M	86	45	30	53	**20.3**	36

H	N	K	D1	L1	R	R1	R2	M
26	25	**8**	6	6	15.5	8	5	M5
36	36	**10**	8	8.5	20.5	10	6	M6
56	56	**12**	10	10	25	13	10	M8

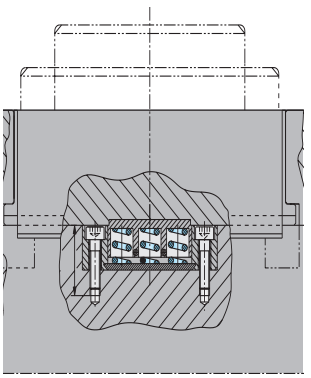
Core Block
10 (Kgf.)
20 (Kgf.)
40 (Kgf.)

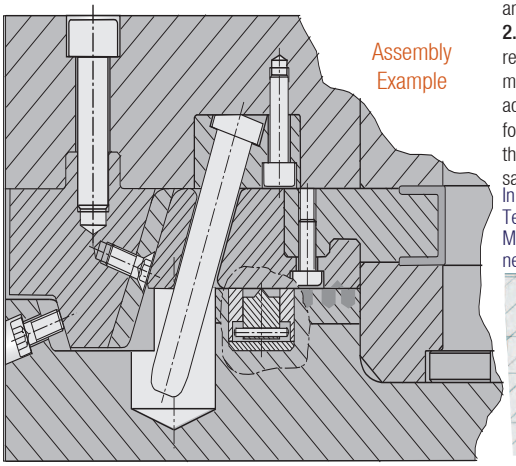
K value: It i s a load value required to emerge core block from core retainer.

While core is opened, it is entered into pin holdretainer even if there are minor errors(misalignment), process is still continued.

Assembly Procedure:

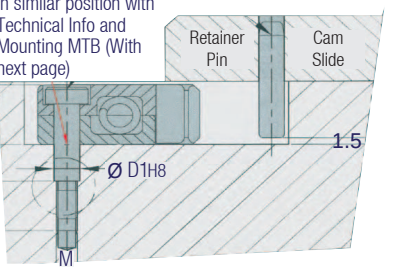
1. To remove core holder casing from slot again, an extractor pin hole should be opened on mould. **2.** The distance between pin center on the core retainer and bolt center on core holder during mounting are precise, (F) should be calculated and adjusted in a best way. **3.** Prefer a model with more force than the ultimate load requires for MTS/MTB that is suitable for your mould. (This is important for safety).



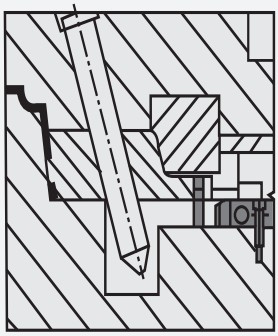


Assembly Example

In similar position with Technical Info and Mounting MTB (With next page)





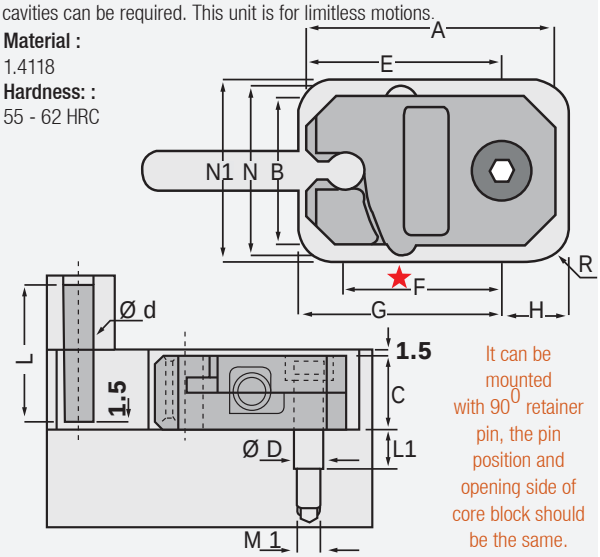


PIN, CLOSED SPRING TYPE CORE RETAINER MTB

Precise - Lock and Alignment Pinned, Spring Type Core

Retainer During fixed mounting with body core bolts, some spare hole and cavities can be required. This unit is for limitless motions.

Material :
1.4118
Hardness: :
55 - 62 HRC



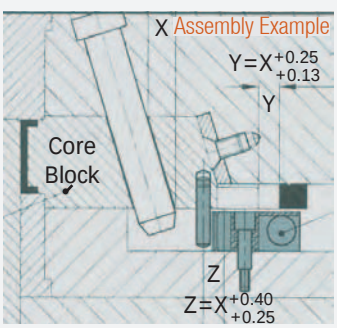
It can be mounted with 90^0 retainer pin, the pin position and opening side of core block should be the same.

If there is no different change in mould closing; this product can be used as core lock in system.

Order	A	B	C	E	★F	N	G	H
MTB. 38	38	19	16	31.5	24.89	24	34.5	10
MTB. 54	54	32	20	43	34.93	36.5	46	14.5
MTB. 86	86	45	30	67	53.98	49.5	70	22.5

N1	R	D	L1	M1	d/L	Core
25.5	8	6	8.5	M5X11	6x30	10 Kg.
38	10	8	10.5	M6X14	8x40	20 Kg.
51	12	10	17	M8X18	10x60	40 Kg.

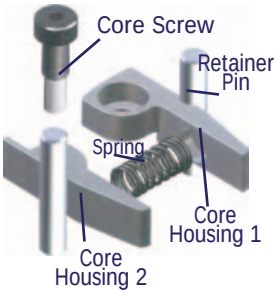
Application: While core retainer is opened, pin is entered into holder, even if there are minor errors (misalignment), the process is continued.



★ **Dimension is important.**

Important: The distance from the center of retainer pin should be until the center of MTB bolt. This is very important. The retainer pin should be locked inside of the holder in a way that is fully tightened to the core. In mould closing process, it has been applied as an efficient design until it is unlatched.

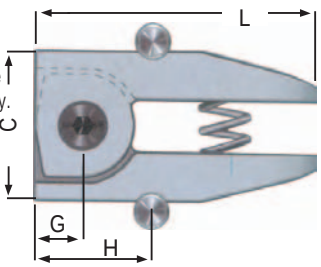




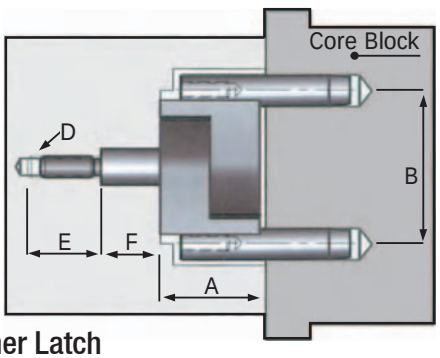
CORE RETAINER LATCH MTM

Retaining Pin Mounted, Balanced/ Precise Core Lock Unit

Core Retainer Latch:
Core Bolt (F) added to holes should not be in too deep. After it locks itself, core casing should be operated smoothly and seamlessly. Therefore, don't tight the bolt too much. When retaining pin is on core, core casing is attached on mould, also core sliding distance should be calculated exactly and then should be mounted.



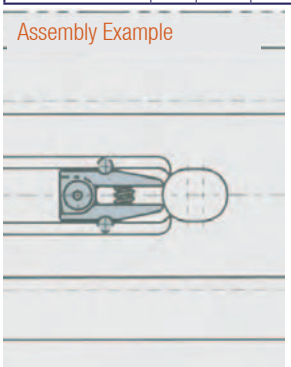
Material :
1.2767
Hardness :
55 - 62 HRC
Maximum Temp. : 100^0
Especially, it can be preferred in alloy material moulds.

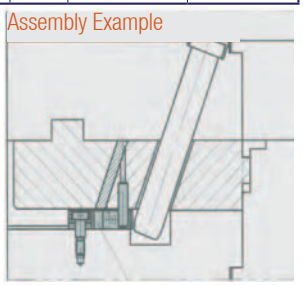


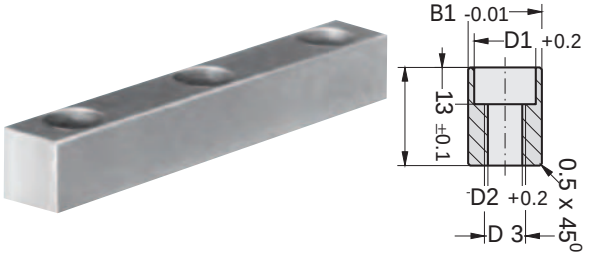
Core Retainer Latch

Order	A	B	C	E	F
MTM 1040	10	21.5	18	9.5	5.1
MTM 1243	12	25.5	22	11	6.1
MTM 1650	16	31.5	28	11	8.1

Order	G	H	L	D	Max.Retaining	Ret. Pin
MTM 1040	7	17.5	40	M5	Ø 6 - 30	10
MTM 1243	7.5	18	43	M6		15
MTM 1650	9.5	20.5	50	M6		25





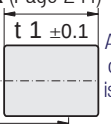


CORE SLIDE, BOTTOM SUPPORT & INCLINED UNIT G.147

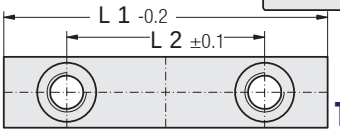
It can be used also as Core Guide Block Bottom Support Plate or Inclined Angular Pin Unit Guide Block (Page 241)

Material : 1.2842

Hardness : 58 + 2 HRC
Milled, Precision Grinded, Perpendicularity Controlled, Block With Prepared Connection Holes

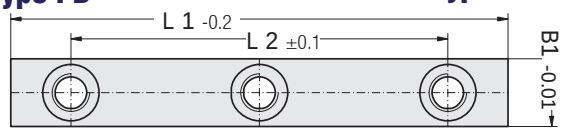


As per request, our production is also available in special material and special sizes.



Type : B

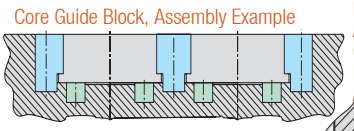
Type : A



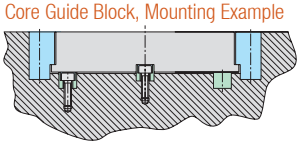
CORE SLIDE, BOTTOM SUPPORT& INCLINED UNIT G.147

Order	B1	t1	L1	Type	t3	L2	D1	D2	D3
G.147.1250			**50**	A		30			
G.147.1260			**60**	A		40			
G.147.1270		11	**70**	B		50			
G.147.1275			**75**	B		60			
G.147.1280			**80**	B		60			
G.147.1290	**12**		**90**	B	5.7	70	10	5.3	M6
G.147.12100			**100**	B		80			
G.147.12120			**120**	B		100			
G.147.12140		16	**140**	B		120			
G.147.12160			**160**	B		140			
G.147.12180			**180**	B		160			
G.147.18100			**100**	A		76			
G.147.18120			**120**	A		96			
G.147.18140	**18**	16	**140**	B	6.8	116	11	6.4	M8
G.147.18160			**160**	B		136			
G.147.18180			**180**	B		156			
G.147.24140			**140**	B		116			
G.147.24160			**160**	B		136			
G.147.24180	**24**	21	**180**	B	6.8	156	11	6.4	M8
G.147.24200			**200**	B		176			
G.147.24220			**220**	B		196			

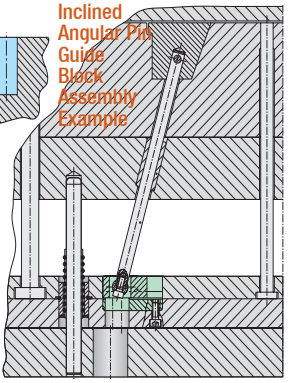
Core Guide Block, Assembly Example

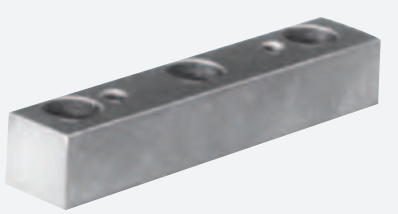


Core Guide Block, Mounting Example



Inclined Angular Pin Guide Block Assembly Example



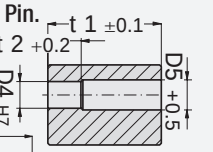


CORE SLIDE; LATERAL GUIDE PLATES G.148

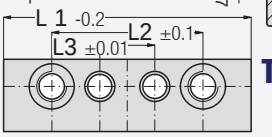
Core Block Lateral Support Ready Guide Plates. Bolt Slots and Ready Perforated Retainer Pin.

Material : 1.2842

Hardness: : 58 + 2 HRC
Milled, Precision Grinded, Perpendicularity Controlled Block With Prepared Connection Holes

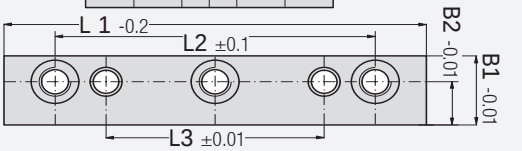


As per request, our special productions are available.



Type : A

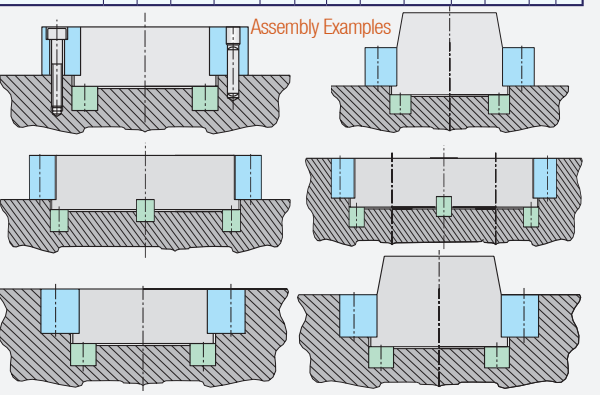
Type : B



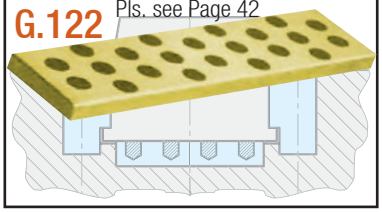
CORE SLIDE; LATERAL GUIDE PLATES G.148

Order	B1	t1	L1	Type	B2	t2	t3	L2	L3	D1	D3	D4	D5
G.148.1550			**50**	A		-		30	10				
G.1481560			**60**	A		-		40	20				
G.1481570	**15**	11	**70**	B	9	-	5.7	50	30	10	M6	4	-
G.1481575			**75**	B		-		60	40				
G.1481580			**80**	B		-		60	40				
G.1481590			**90**	B		-		70	50				
G.1481880			**80**	A				56	32				
G.14818100			**100**	B				76	52				
G.14818120	**18**	22	**120**	B	11	12	6.8	96	72	11	M8	6	7
G.14818140			**140**	B				106	92				
G.14818160			**160**	B				136	112				
G.14824100			**100**	A				68	36				
G.14824120			**120**	A				88	56				
G.14824140	**24**	36	**140**	B	15	12	9.0	108	76	15	M10	8	9
G.14824160			**160**	B				128	96				
G.14824180			**180**	B				148	116				
G.14830120			**120**	A				80	40				
G.14830140			**140**	A				100	60				
G.14830160	**30**	50	**160**	B	18	15	11	120	80	18	M12	10	11
G.14830180			**180**	B				140	100				
G.14830200			**200**	B				160	120				

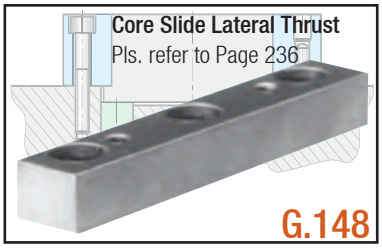
Assembly Examples



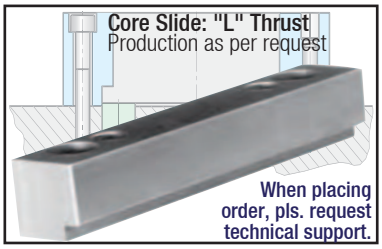
Wear Plates, Self Lubricating
G.122
Pls. see Page 42



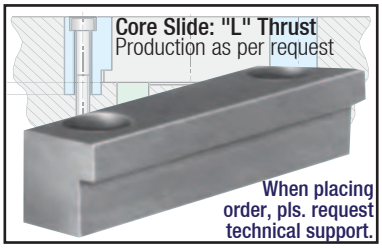
Core Slide Lateral Thrust
Pls. refer to Page 236
G.148



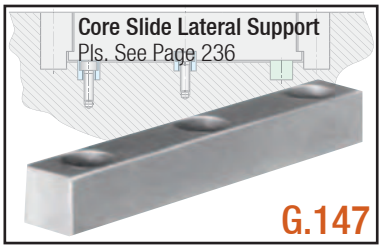
Core Slide: "L" Thrust
Production as per request
When placing order, pls. request technical support.



Core Slide: "L" Thrust
Production as per request
When placing order, pls. request technical support.



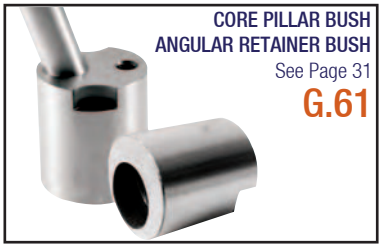
Core Slide Lateral Support
Pls. See Page 236
G.147



CORE PILLAR
See Page 31
G.14



CORE PILLAR BUSH
ANGULAR RETAINER BUSH
See Page 31
G.61







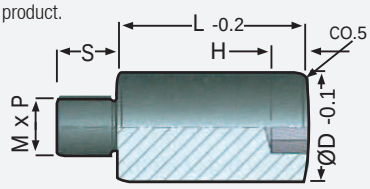
For clamping bolt, alien key is used

G.150

CORE SLIDE: STOPPING

Core Slide, Ejector Pin

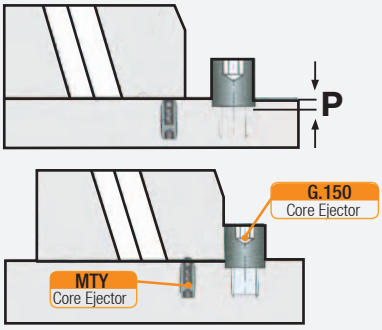
It can be used as joint in inner mould designs. Ejector Pin is a pratical and easy to mount product.



CORE SLIDE: STOPPING G.150

Order	M x P	SW
G150. M6	M6 x 1.0	5 Alien
G150. M10	M10 x 1.5	8 Alien
G150. M12	M12 x 1.75	10 Alien
G150. M16	M16 x 2.0	14 Alien

D	L	H	S	P
10	40	4	10	15
16	40	5	15	15
20	40	6	28	15
25	40	9	24	15



CORE STOPPERS



Ball Locking Screw
For order and Technical Info, refer to Page 132



Toothed Screwed Spring Locking
For order and Technical Info, refer to Page 132



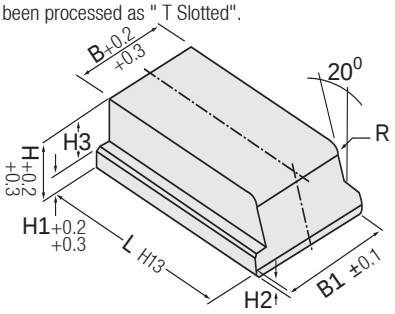
Belt and Spigot Spring Stops
For order and Technical Info, refer to Page 132



READY, CORE SLIDE G.149

It is ready for processing, the only thing to be done is processing cavity surfaces.

Core Slide: It is a ready core slide that has been milled, precision grinded and 20º C inclined angular has been given to cavity surface. All edge corner bevels of core slide are broken, Slide has been processed as " T Slotted".

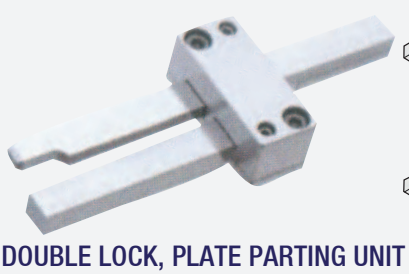


Material: 1.2344 **Hardness:** 42 - 45 HRC

READY, CORE SLIDE G.149

Order	H	L	B	B1	H1	H2	H3	R
G149.1220	12	40	20	26	4	1.5	8	1.5
G149.1225			25	31				
G149.1240			40	46				
G149.1263			63	69				
G149.1620	16	50	20	26	4	1.5	12	1.5
G149.1625			25	31				
G149.1640			40	46				
G149.1663			63	69				
G149.2040	20	63	40	46	5	2	15	2
G149.2063			63	69				
G149.2080			80	86				
G149.2540	25	71	40	46	5	2	20	2
G149.2563			63	69				
G149.2580			80	86				
G149.3263	32	100	63	71	6	3	26	3
G149.3280			80	88				
G149.32100			100	108				
G149.4063	40	100	63	71	6	3	34	3
G149.4080			80	88				
G149.40100			100	108				
G149.5080	50	112	80	90	8	4	42	4
G149.50100			100	110				
G149.50135			125	135				
G149.6380	63	112	80	90	8	4	56	4
G149.63100			100	110				
G149.63125			125	135				

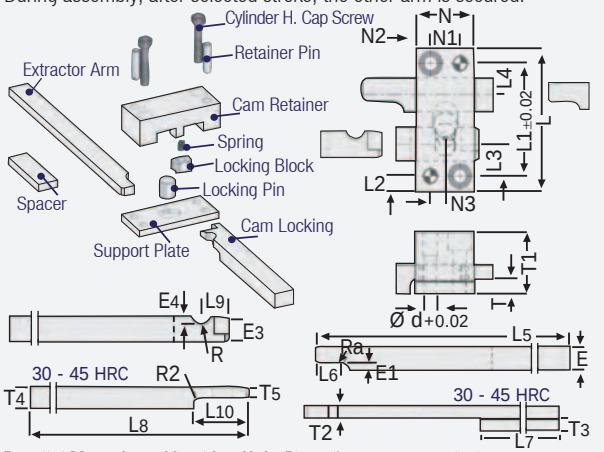
GTH Reliable Label



DOUBLE LOCK, PLATE PARTING UNIT KAU

By Double Sided Lock System, Safe and Reliable, Often Heat Toothed, Easy Mounting with Control Arms on Lock

In injection moulds, it is for two stage (Stripper Plate) moulds. Opening priority of plates is related in assembly direction of the unit. During assembly, after selected stroke, the other arm is secured.



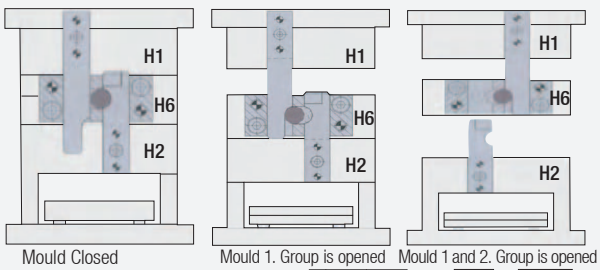
Parallel Mounting of Locking Unit: Pls. adjust or cut cam lock arm in required distance, open hole positions of bolts, tight cam locks on their positions, complete adjusting position with compatible parts. By forming dowel, secure cam locks. Pls. cut extractor arm in required distance and insert into mould perpendicularly. For being equal of drop points on each sliding, pls. be sure that " L " length pops out. (For emerging of outlets smooth/ compatible and fast, also it is to avoid inclining of scraper plate).

* Pls. insert cam lock arm, extractor arms on minimum two plate on mould.

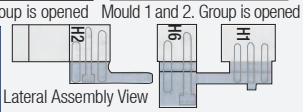
Important: After mounting unit, the operation test should be applied to your mould exactly, before production, the controls of opening and closing test controls of movable system should be separately. Movable parts can be greased.

Order	L	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	N
KAU.55	55	43	6	12	12	150	12	40	100	14	28	24
KAU.67	67	53	7	15	14	200	16	50	150	18	36	32

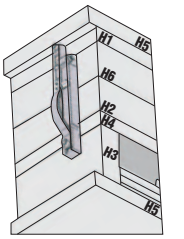
N1	N2	N3	d	E	E1	E3	E4	R	Ra	T	T1	T2	T3	T4	T5
12	6	6	5	13	4	13	4	5	5	5	24	6	5.5	11.5	6
16	8	8	6	16	5	18	5	6	6	6	32.5	10	6.5	16.5	10

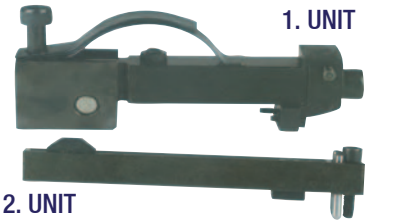


Mould Closed | Mould 1. Group is opened | Mould 1 and 2. Group is opened



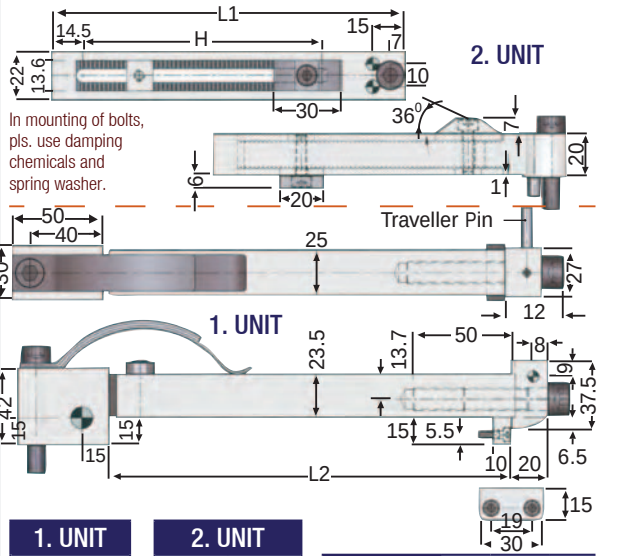
Lateral Assembly View





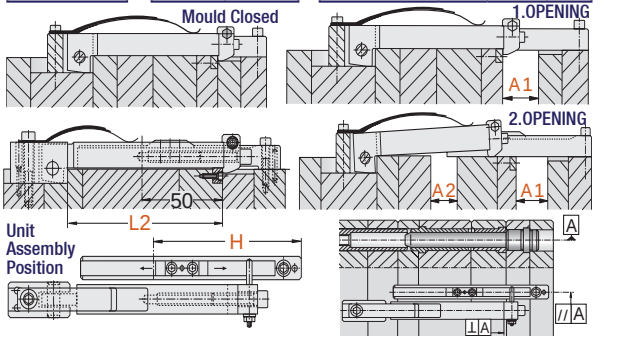
DOUBLE UNIT - MOULD PLATE PARTING COMBINATION BOX

In this double unit system, 2. Unit is consisted from fixed and 1. Unit is consisted from movable group. While mould is opened, movable spring (1. Unit) is moved on fixed part (2.Unit) on sliding, while pin of spring group is passed over elevation on fixed group, hook is remained free and 2. group of mould scrapper starts to open. Free arm starts to open freely on mould casing. Free arm should be moved freely on mould casing. **Settings:** Both units (spring/holder - freearm) should be left well-timedly, incorrect or improper mounting is caused to tapper off and to bend of movable plate (HG) or to break unit arm. Units: Before mould is closed, it should be adjusted, open mould and control movable plate (H6) and movements of arms... **(Fine tuning is required)** Pls. apply until free/movable arms are fully working with each other with springs and lock system, then Free/Extractor Arm will become centered/ linked with locked /spring unit. While processes are continued, pls. grease movable parts of units with thin grease oil. In mounting, impacts and stroke of plate should be considered. During and after assembly, bolts and other fasteners should be controlled, in part replacement, first, it should be started by dismantling spring /lock unit. Pls. determine your products in suitable dimensions.

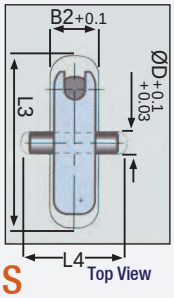


1. UNIT	2. UNIT	
L2	L1	H
90	140	83.5
170	204	152
220	254	194.5

Order	L1	H	L2
BOX460.140	140	83.5	90
BOX460.204	204	152	170
BOX460.254	254	194.5	220

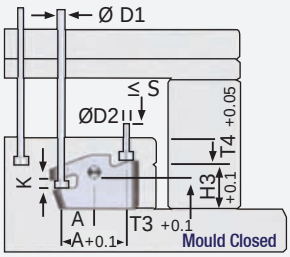




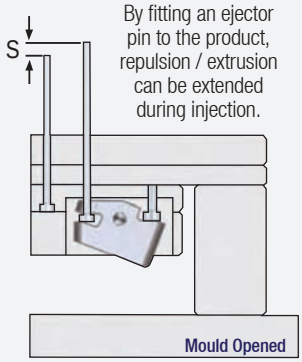


EJECTOR ACCERELATOR SWING IHS

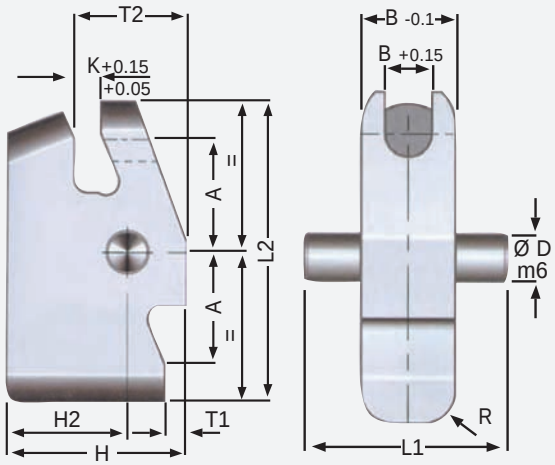
It is used in case that ejector plate requires motion/stroke more than normal motion distance.



By fitting an ejector pin to the product, repulsion / extrusion can be extended during injection.



Mechanical swing system increasing stroke distance of system connected



EJECTOR ACCERELATOR SWING IHS

Order	D	D2	B	B1	B2	B3	A	A1	T1	T2
IHS.3	4	4	3	8	8.5	4	10	20	2	10
IHS.6	8	8	6	16	16.5	8	21	42	4	21
IHS.8	8	8	8	16	16.5	8	21	42	4	21

T3	T4	D1	L1	L2	L3	L4	H	H2	H3	K	R	S
4	4	3	16	26	31	23	19	14	16	3	4	2.5
8	8	6	36	56	63	45	34	23	27	5	8	7.6
8	8	8	36	56	63	45	34	23	27	5	8	7.6



Accerelated Core Protector



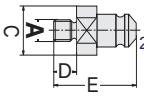
AUTOMATIC PERCUSSION EJECTOR PLATE SYSTEM

Reliable Back Stroke in Ejectors - Reliable Injection Automatic Ejector System in Moulding: it can be used in each positions with rapid and simple mounting (even within existing mould), only it is released during injection. In any injection mould, it makes contact with returns especially hydraulic ejector systems or it protects ejector pins to possible core contact in mechanical ejectors/core systems. The installation period is so simple and short. Initial settings can be done to unit on mould. In mounting, it should be controlled that back stroke is completely in back position and in contact manually. For serial and economic processes, it can be increased up to 25-30 per minute.

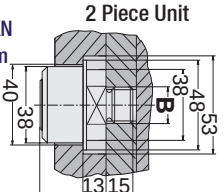
Material : 1.7147
Hardness: 60 HRC



Medium Force F = 23.5 KN Automatic Ejector System

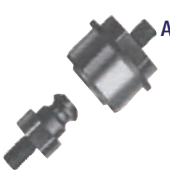


2 Piece Unit

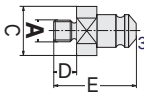


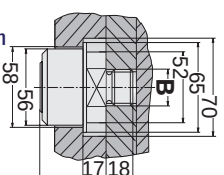
Medium Force F = 2.400 Kg. Automatic Ejector G.115

Order	A	C	D	E	B
G.115 A/B	M10 x 1.5	26	20	55	M16 x 1.5
	M12 x 1.75				
	M14 x 2.0				
	M16 x 2.0				



High Force F = 31.4 KN Automatic Ejector System



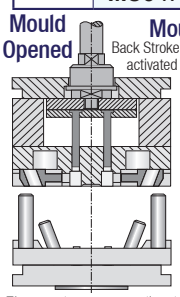


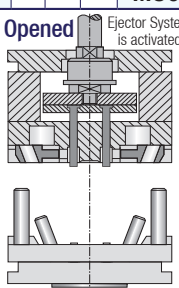
High Force F = 3.200 Kg. Automatic Ejector G.116

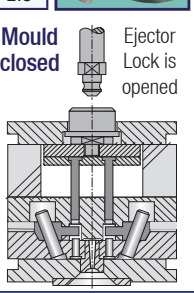
Order	A	C	D	E	B
G.116 A/B	M16 x 2.0	35	25	68	M16 x 1.5
	M18 x 2.5				M18 x 1.5
	M20 x 2.5				M20 x 1.5
	M24 x 3.0				M24 x 1.5
	M27 x 3.0				M27 x 1.5
	M30 x 3.5				M30 x 1.5

Stroke Back Colomn Please see page 32.





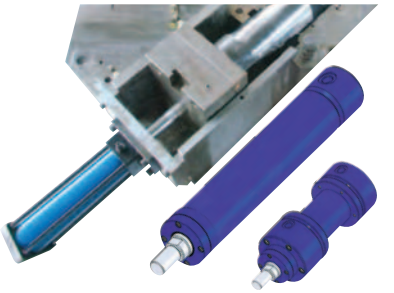




Ejector plates are reclined back with retractors, during resting, automatic stroke system is invalidated unit (spring rollers) and end part is released.

Section Injection Mould
Page 243





CONNECTED HYDRAULIC CYLINDER

THSE - THSF - THSM

Head Flange Various Cylinder Connection Types

Except Standard Piston, as per request, there is also special type hydraulic cylinder piston production available. For excessive heat environments, as per request, special / single effect (spring return) shaft dimensions can be changed. In types, also hydraulic cylinders are available. The following table, is diversification of some connection types belonging to these cylinders.

INJECTION MOULDS, HYDRAULIC CYLINDERS

THS Standard Type

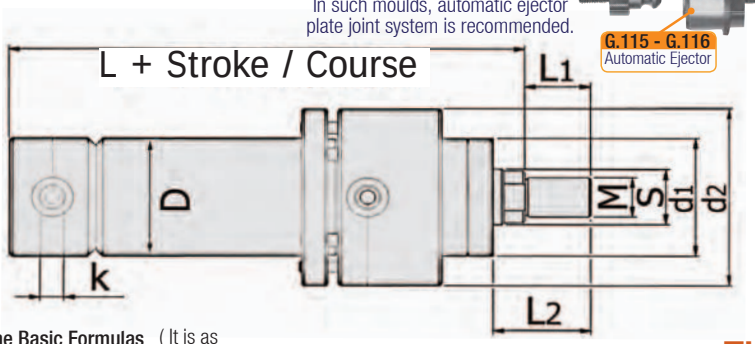
Hydraulic Cylinders for moulds such as Waste Water Pipes, PVC Pipes.

Hydraulic Ccylinders: They are in Standard "THS" Types or as per request, are in special shapes and dimensions. In Plastic Injection Waste Water / Contaminated Water PVC pipes moulds, they are used in formation of core systems. The energy requirement of system is obtained from system by connecting plastic injection machine to hydraulic system. As per request, the motions over fixed limit can be obtained by connecting piston rod to system. **Working System:** It is hydraulic oil, Maximum Working Pressure: 160 Bar. **Motion Type:** Double action **Sealing:** It is provided with Polyurethane + NBR. **Working Temperature:** It is between - 20 / + 80º. **Stroke Error:** ± 0.3 mm. **Cylinder:** It is honed with cold drawn / rolled ST - 52. **Piston:** Diameter Tolerance is grinded with H8 RA ≥ 2 Micron and coated with hard chrome. As per request, auxiliary Equipment (Connections, hoses and so on) can be supplied.

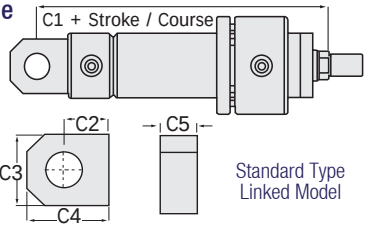
In such moulds, automatic ejector plate joint system is recommended.



G.115 - G.116 Automatic Ejector

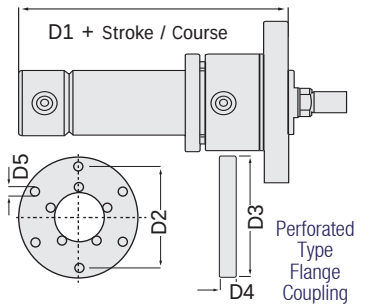


THSE HYDRAULIC CYLINDER



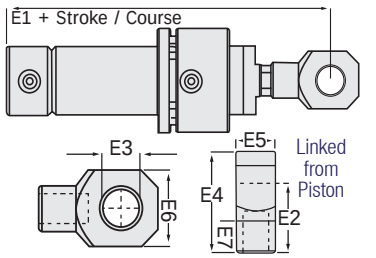
Standard Type Linked Model

THSF HYDRAULIC CYLINDER



Perforated Type Flange Coupling

THSM HYDRAULIC CYCLINDER



Linked from Piston

Other dimensions are in the order table

In Order: Product code and diameter be specified should

Some Basic Formulas In Application (It is as advisory)

Dimension	Formula	Unit
Force (Newton)	F	N
Lenght	s	m
Speed (Stroke)	v	m / s
Pressure	p	bar
Area (Piston)	A	m2
Volume	V	m3
Mass Flow Rate	Q	m3 / s
Efficiency	ή	-
Performance	P	kW

INJECTION MOULD HYDRAULIC CYLINDERS THS

Order	D	k	M	S	d1	d2	L	L1	L2
THS. 40	50	1/4	M16 x 1.5	22	50	80	122	22	35
THS. 50	60	1/4	M20 x 1.5	28	60	95	148	31	46
THS. 63	75	3/8	M27 x 2.0	36	70	125	161	39	55
THS. 80	95	3/8	M33 x 2.0	45	85	130	180	47	65
THS. 100	115	1/2	M42 x 2.0	56	109	160	187	60	80
THS. 125	145	1/2	M48 x 2.0	70	130	195	212	67	90

Linked Hydraulic Cylinders

Ø	40	50	63	80	100	125
C1	192	224	248	280	307	349
C2	30	30	40	45	63	70
C3	50	55	70	80	113	130
C4	40	50	60	70	100	120
C5	20	25	30	35	45	60
D1	145	175	188	2213	224	251
D2	107	126	145	165	200	235
D3	130	150	175	200	240	280
D4	16	20	20	26	30	32
D5	11	11	14	18	22	22
E1	212	249	278	317	259	399
E2	50	55	70	82	115	120
E4	20	25	32	40	50	60
E5	70	80	104	119	165	180
E6	40	50	60	80	100	120
E7	20	25	29	29	50	50

Cylinder Force:

$F\,(N) = p\,(bar) \times A\,(cm^2) \times 10$

A = Effective Piston Area

Required Mass Flow Rate:

$Q\,(lt/dk) = A\,(cm^2) \times v\left(\frac{m}{s}\right) \times 6$

Repulsion and Return Speed:

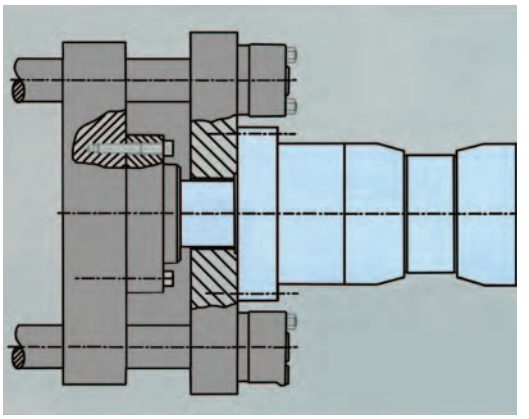
$$v\left(\frac{m}{s}\right) = \frac{Q\,(lt/dk)}{A\,(cm^2)} \times \frac{1}{6}$$

Q = Mass Flow Rate

Required Pump Capacity:

$$P\,(kW) = \frac{Q\,(lt/dk) \times p\,(bar)}{\eta} \times \frac{1}{600}$$

η = Pump Efficiency





Section Injection Mould

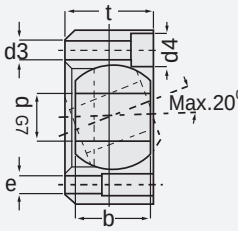


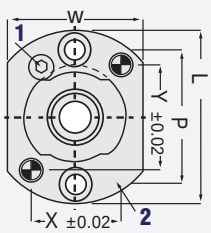
G.136

ANGULAR SPHERICAL BUSH

Guide Bush Transmitting Angle Motion

It offers easy installation for desired inclined pin design in great moulds. Angle adjustment can be done between 0º and 20º. Working temperature is 170º. The illustration in technical drawing has been prepared according to the way of work. The right one is drawing symmetry of way of work. Locking units shown with 1 and 2 is valid for d > 16'.





Working mechanism should be ordered as
G.136 Right - **G.136L** Left.

ANGULAR SPHERICAL BUSH G.136

Order	d	L	w	t	b
G136.08	**8**	44	28	17	14
G136.10	**10**	46	30	20	16
G136.12	**12**	50	32	22	18
G136.16	**16**	58	45	29	25
G136.20	**20**	65	50	33	28
G136.25	**25**	78	57	38	33
G136.30	**30**	86	65	43	37
G136.35	**35**	98	72	49	40
G136.40	**40**	106	77	53	44
G136.45	**45**	118	85	57	48

p	e	x	y	d3	d4	M
32	5	20	28	6	10	-
34	5	22	28	6	10	-
36	6	22	30	7	11	-
45	6	30	35	7	11	M8
52	6	35	40	7	11	M8
62	8	40	50	9	15	M8
70	8	48	55	9	15	M8
78	8	52	60	11	18	M10
84	8	55	65	11	18	M10
96	8	59	72	11	18	M10

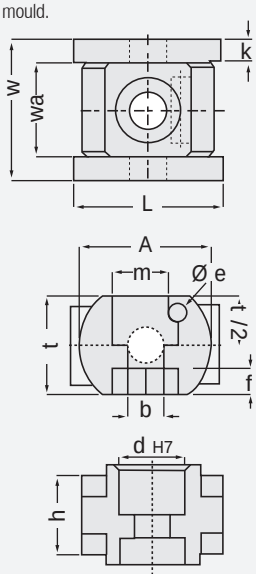


G.135

INCLINED INNER UNIT

Mountable to the Mould (Ejector Plate)

Slide part (Self Lubricating) is mounted by processing to ejector plate of mould.



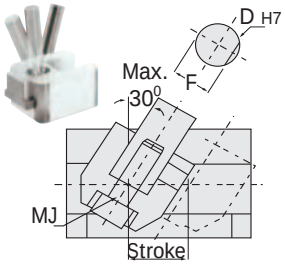
Self Lubrication System in inclined ejector pin unit, is greased up to 30º in unit

Material: 1.0503 (C.45)
Bronze and On Providing Graphite Pores:

INCLINED INNER UNIT G.135

Order	d	w	L	wa	k
G135.08	**8**	24	25	12	6
G135.10	**10**	28	32	14	7
G135.12	**12**	31	40	17	7
G135.16	**16**	36	45	21	7.5
G135.20	**20**	43	45	28	7.5
G135.25	**25**	48	50	33	7.5
G135.30	**30**	55	60	38	8.5
G135.35	**35**	64	70	44	10
G135.40	**40**	72	80	50	11

h	A	t	f	m	b	e
13	20	16	5	7.5	5	3
17	20	16	4	8.5	6	3
20	25	20	5	10	7	4
24	30	24	6	13	9	6
24	40	30	8	17	11	6
26	45	35	9.5	22	14	6
30	50	38	9	27	14	6
34	55	40	10	31	14	8
38	60	43	11.5	36	18	8

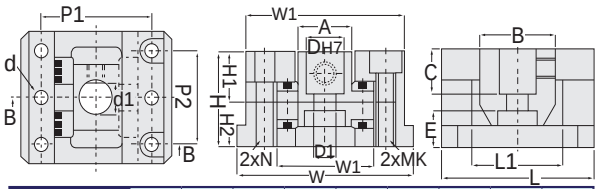




FIXED, INCLINED EJECTOR PIN UNIT G.133

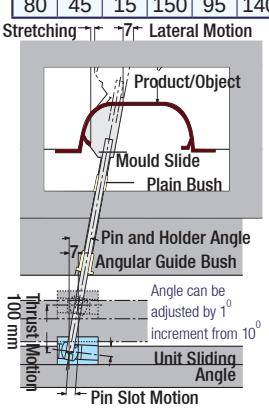
It moves the inclined/angle pin systems in the desired angle

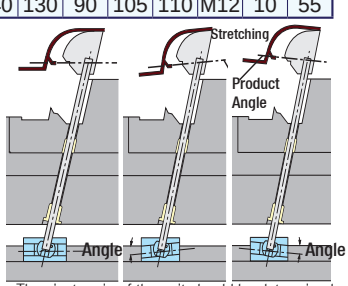
With this unit, processing in mould and mounting costs are very low, processing and mounting costs and system installation are economic and easy and also it provides important contribution to production period, the product separating from moulds with this unit is more economical compared with similar systems. The heat resistance of unit in mould is up to 300º (With Graphite bearing system), the unit can be lubricated itself, the working angle of ejector pin can be inclined up to 10º-20º-30º, can be connected to ejector plates via retaining pins and bolts in its mounting, according to specified pin length, the position of intermediate block can be positioned, make this adjustment when intermediate centre block and pin are inserted and removed easily. For the precise bottom support/bedding of unit, the block product coded G. 147 in Page 240 can be used.



Order	D	d1	D1	A	B	C	E	F	MJ
G.133.08	**8**	7	4.5	11	20	8	10	7	M4
G.133.10	**10**	7	5.5	15	25	10	12.5	9	M5
G.133.12	**12**	10	7	17	25	12	15	11	M6
G.133.16	**16**	12	9	22	30	16	15	14.5	M8
G.133.20	**20**	14	11	26	40	20	16	18	M10
G.133.25	**25**	16	14	32	45	25	17	22.5	M12
G.133.30	**30**	18	14	38	50	30	17	27	M12
G.133.35	**35**	20	14	45	60	35	18	32	M12
G.133.40	**40**	25	18	55	70	40	19	36	M16
G.133.45	**45**	30	18	60	80	45	24	40	M16

H	H1	H2	L	L1	W	W1	W2	P1	P2	MK	N	Strok
22	12.5	5	32	20	33	30	19	24	20	M3	3	10
27	15.5	5	45	25	45	40	25	32	30	M4	4	18
32	18	7	50	30	57	51	31	39	35	M6	6	20
36	20	8	65	40	65	58	38	46	40	M6	6	25
42	23	11	80	50	80	72	44	56	55	M8	8	30
50	28	15	90	55	93	85	52	66	65	M10	10	35
55	30	15	100	60	101	93	60	74	70	M10	10	40
62	35	15	120	75	120	110	70	85	80	M12	10	45
70	40	15	135	85	130	120	80	95	90	M12	10	50
80	45	15	150	95	140	130	90	105	110	M12	10	55





The ejector pin of the unit should be determined according to the angle of the product in mould.



Gaining of Cutting Machine to Mould Industry is provided by GÜVENAL GROUP.

PIN CUTTING AND GRINDING MACHINES PKM.1 Order

Ø 1 - 24 mm Cylindrical Part, work piece for length adjusting

Positioning the Work Piece and Safety **Precise Length Cutting and Grinding**

Stone Diameter Capacity	From Ø 1 mm to 24 mm
Length Capacity	Roughly, 320 - 800 mm ± 0.10
Standard Length Adjustment, Precise Cutting	60 - 320 mm ± 0.01
Short Cutting (With optional bus bar)	40 - 320 mm ± 0.01
Grinding Cutting, Wheel Cycle / Speed	2800 m / Min.
Engine cycle / Speed	3600 RPM
Motor	220 / 280 F. 50 Hz. 0.75 Kv.
Cutting Wheel (Order PKM 2 **)**	125 x 1 or 1.5 mm
Grinding Wheel (Order PKM 3 **)**	EKR / D100
Stone Correction Diamond (Order PKM 4 **)**	0.50 Carat
Machine Dimensions	430 x 360 x 500 mm
Weight	109 Kg.

It provides rapid precise cutting with length adjustment repeatedly. Besides the cutting process, it runs the face grinding process simultaneously.

In mould production plants, it is used for cutting all your parts (Many cylindrical parts such as Ejector Pin / Pipe Ejector / Runner / Punch Posts / Bolts or Small Square - Sheet Bar Parts).

CUTTING AND GRINDING PROCESS



By pushing the side control arm forward, the material to be cut is placed into the slot and Length Adjustment: The desired dimension is selected on the scale, the precision control is made by micrometer. Machine is activated, Transparent Plexiglass Cover on Machine has a safety switch, Machine does not work without closing the cover...



When movable control arm on the side of the cutting machine is in upward position, the work piece is cut in cutting stone slowly and in a controlled manner, when it is in lower position, the face grinding of cut work piece is done and by pushing control arm forward again, work piece is taken from the slot. Precision Scaled Adjustment Mechanism belonging to all working parts on machine are available.

Ejector Pins / Punchesthat belong to our Company are cut and face grinded precisely.





Easy Rapid Practical

Work Piece Support Thrust

Grinding, Stone Correction Diamond Adjustment Scale

Cover Safety Switch

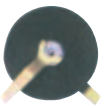
Work Piece Placement Seating Area Clamp



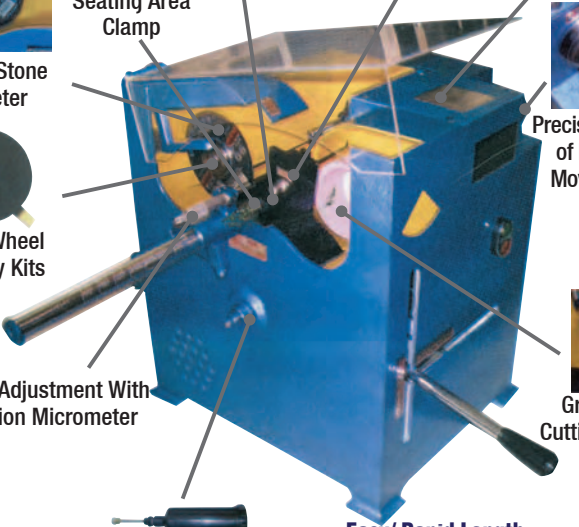
Cutting Stone Diameter

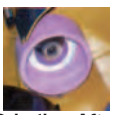


Precision Whetting of Dish Stone Movable Scale



Cutting Wheel Assembly Kits





Grinding After Cutting Dish Stone

Length Adjustment With Precision Micrometer



System Lubricant Grease Nipple

Easy/ Rapid Length Adjustment & Cutting in Precision Cutting

It Provides Recycling of Refused Material



COUNTERSUNK EJECTOR PIN DIN 1530 - D

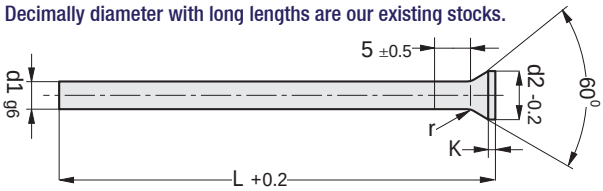
HBI

Plastic Injection Mould Ejector Pins

Material: 1.2516 WS **Head Hardness :** 45 ± 2 HRC **Casing Hardness :** 60 ± 2 HRC

Max Heat Resistance : 220^0 **Tension Resistance:** 1300 N / mm^2

Decimally diameter with long lengths are our existing stocks.



d1	L	d2	k
9.0	100 125 160 200 250	11	1.0
9.5	100 125 160 200	12	1.0
10	100 125 160 200 250 315	12	1.0
10.5	100 125 160 200	13	1.0
11	100 125 160 200 250	13	1.0
12	100 125 160 200 250 315	14	1.0
13	100 125 160 200 250	15	1.0
14	100 125 160 200 250 315	16	1.5
16	100 125 160 200 250 315	18	1.5

d1	L	d2	k
5.4	100 125 160	6.5	0.5
5.5	100 125 160 200 250 315	7.0	0.5
5.6	100 125 160	7.0	0.5
5.7	100 125 160	7.0	0.5
5.8	100 125 160	7.0	0.5
5.9	100 125 160	7.0	0.5
6.0	100 125 160 200 250 315	8.0	0.5
6.5	100 125 160 200 250	9.0	1.0
7.0	100 125 160 200 250 315	9.0	1.0
7.5	100 125 160 200	10	1.0
8.0	100 125 160 200 250 315	10	1.0
8.5	100 125 160 200 250	11	1.0

d1	L	d2	k
3.9	100 125 160	5.0	0.5
4.0	100 125 160 200 250 315	5.5	0.5
4.1	100 125 160	5.5	0.5
4.2	100 125 160	5.5	0.5
4.3	100 125 160	5.5	0.5
4.4	100 125 160	5.5	0.5
4.5	100 125 160 200 250 315	6.0	0.5
4.6	100 125 160	6.0	0.5
4.7	100 125 160	6.0	0.5
4.8	100 125 160	6.0	0.5
4.9	100 125 160	6.0	0.5
5.0	100 125 160 200 250 315	6.5	0.5
5.1	100 125 160	6.5	0.5
5.2	100 125 160	6.5	0.5
5.3	100 125 160	6.5	0.5

d1	L	d2	k
2.9	100 125 160	4.0	0.5
3.0	100 125 160 200 250 315	4.5	0.5
3.1	100 125 160	4.5	0.5
3.2	100 125 160	4.5	0.5
3.3	100 125 160	4.5	0.5
3.4	100 125 160	4.5	0.5
3.5	100 125 160 200 250 315	5.0	0.5
3.6	100 125 160	5.0	0.5
3.7	100 125 160	5.0	0.5
3.8	100 125 160	5.0	0.5

d1	L	d2	k
2.0	100 125 160 200 250 315	3.0	0.5
2.1	100 125 160	3.2	0.5
2.2	100 125 160	3.2	0.5
2.3	100 125 160	3.5	0.5
2.4	100 125 160	3.5	0.5
2.5	100 125 160 200 250 315	3.5	0.5
2.6	100 125 160	4.0	0.5
2.7	100 125 160	4.0	0.5
2.8	100 125 160	4.0	0.5

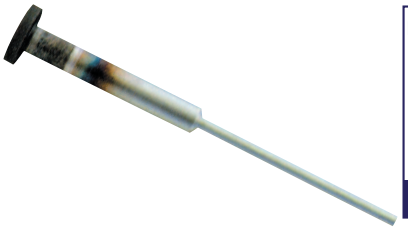
d1	L	d2	k
1.0	100 125 160 200	1.8	0.5
1.1	100 125 160	1.8	0.5
1.2	100 125 160	2.0	0.5
1.3	100 125 160	2.0	0.5
1.4	100 125 160	2.2	0.5
1.5	100 125 160 200	2.2	0.5
1.6	100 125 160	2.5	0.5
1.7	100 125 160	2.5	0.5
1.8	100 125 160	2.8	0.5
1.9	100 125 160	2.8	0.5

Order : **HBI** d1 x L

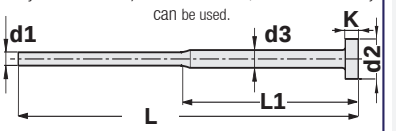
Reliable Label

Section Injection Mould





For your orders in special dimensions, technical drawings can be used.



As per request/ Special Order Definition

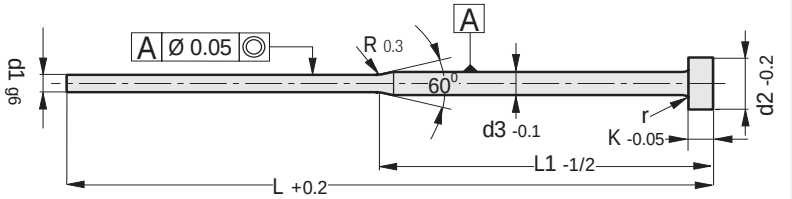
CYLINDRICAL HEAD, EJECTOR PIN, STEPPED

DIN ISO 8694 **SBK**

Type : AH

Material: 1.2516 WS **Head Hardness:** 45 ± 2 HRC **Casing Hardness:** 60 ± 2 HRC

Max. Heat Resistance : 220^0 **Tension Resistance :** 1300 N / mm^2



d1	L	L1	d3	d2	k
0.8	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			
1.0	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			
	200				
1.1	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			
1.2	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			
1.3	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			

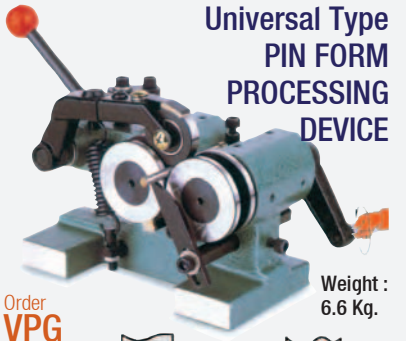
d1	L	L1	d3	d2	k
1.4	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			
1.5	63	25	3	6	3
	80	35			
	100	50			
	125				
	150				
	160	75			
	200				
1.6	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				
1.7	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				
1.8	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				

d1	L	L1	d3	d2	k
2.0	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				
2.2	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				
2.5	100	50	3	6	3
	125				
	150				
	160	75			
	200				
2.6	100	50	3	6	3
	125				
	150				
	160	75			
	200				
2.7	100	50	3	6	3
	125				
	150				
	160	75			
	200				
2.8	100	50	3	6	3
	125				
	150				
	160	75			
	200				

For your special order, pls. fill in the technical drawing details.

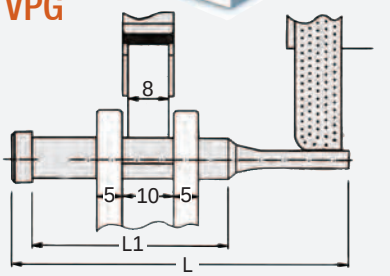
Order : **SBK.AH** d1xd3xL1xL

Universal Type PIN FORM PROCESSING DEVICE



Weight : 6.6 Kg.

Order **VPG**



Working System:
Grinding, Bench Manual System Device

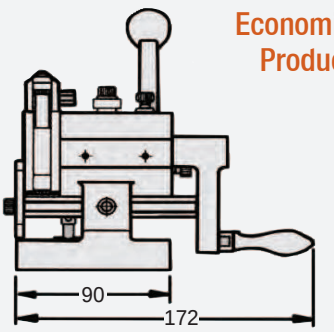
* It is used in cylindrical or stepped form grinding operations of ejector pin - perforator or EDM Work Piece on surface honing workbench.

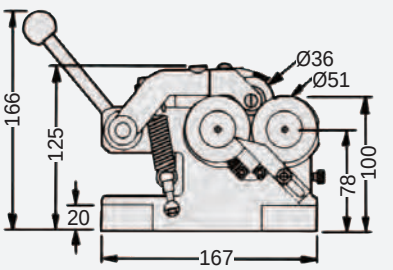
Pin Capacity : ..... 1.5 mm x 25 mm

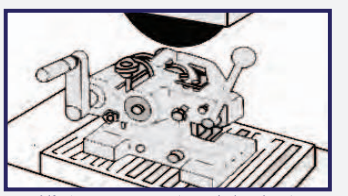
* Pin: When it is secured between precision wheels, the center of work is determined automatically.
* Thanks to Rigid Fastening System, the grinding distance from **5 mm to 35 mm** can be obtained.

d1 = 35 mm, after it can be stretched.

Economic Product







Lift depressor arm, place pin into its slot.
Tight depressor arm screw, grind manually.



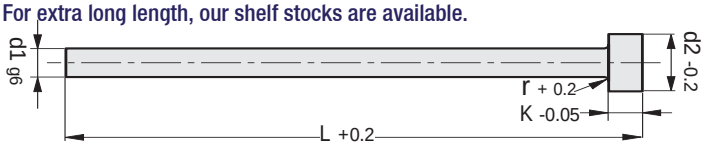
CYLINDRICAL HEAD EJECTOR PIN DIN ISO 6751 TYPE: AH SBİ

Plastic Injection Mould Economic - Heat Ejector Pins

Material: 1.2516 **Head Hardness:** 45 ± 2 HRC **Casing Hardness:** 60 ± 2 HRC

Max. Heat Resistance : 220^0 Tension Resistance : 1300 N / mm^2

For extra long length, our shelf stocks are available.



d1	L	d2	k
12	100 125 160 200 250 315 400 500 630 800 1000	18	7.0
13	160 200 250 315	20	7.0
14	100 125 160 200 250 315 400 500 630 800 1000	22	7.0
16	100 125 160 200 250 315 400 500 630 800 1000	22	7.0
18	100 125 160 200 250 315 400 500 630 800 1000	24	7.0
20	100 125 160 200 250 315 400 500 630 800 1000	26	8.0
25	100 125 160 200 250 315 400 500 630 800 1000	32	10

d1	L	d2	k
7.5	100 125 160 200 250 315 400 500	12	5.0
8.0	100 125 160 200 250 315 400 500 630 800 1000	14	5.0
8.5	100 125 160 200 250 315 400 500 630	14	5.0
9.0	100 125 160 200 250 315 400 500 630 800	14	5.0
10	100 125 160 200 250 315 400 500 630 800 1000	16	5.0
10.5	100 125 160 200	16	5.0
11	100 125 160 200 250 315 400 500 630	16	5.0

d1	L	d2	k
5.5	100 125 160 200 250 315 400 500	10	3.0
6.0	100 125 160 200 250 315 400 500 630 800 1000	12	5.0
6.5	100 125 160 200 250 315 400 500 630	12	5.0
7.0	100 125 160 200 250 315 400 500 630 1000	12	5.0

d1	L	d2	k
3.5	250 315 400 500 630	7.0	3.0
4.0	100 125 160 200 250 315 400 500 630 800 1000	8.0	3.0
4.5	100 125 160 200 250 315 400 500	8.0	3.0
5.0	100 125 160 200 250 315 400 500 630 800 1000	10	3.0

d1	L	d2	k
1.0	100 125 160	2.5	1.2
1.5	100 125 160 200	3.0	1.5
2.0	100 125 160 200 250 315 400 500	4.0	2.0
2.5	100 125 160 200 250 315 400 500	5.0	2.0
3.0	100 125 160 200 250 315 400 500 630	6.0	3.0
3.5	100 125 160 200	7.0	3.0

Order : **SBI-AH** d1 x L



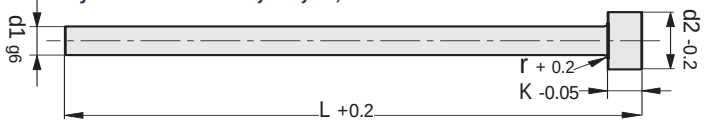
CYLINDRICAL HEAD EJECTOR PIN DIN ISO 6751 TYPE : A SBI

Plastic / Metal Injection Economic - Heat Resistant Ejector Pins

Material: 1.2344 (Hot Work Steel) Head Hardness: 45 ± 5 HRC **Casing Hardness:** 44 HRC

Max. Heat Resistance : 500 - 550^0 Tension Resistance **:** 1450 N / mm^2

Decimally diameter with long lengths, Our available stocks.



d1	L	d2	k
1.0	100	2.5	1.2
	125		
	160		
1.5	100	3.0	1.5
	125		
	160		
	200		
1.8	100	3.0	1.5
	160		
2.0	100	4.0	2.0
	125		
	160		
	200		
	250		
	315		
2.2	100	4.0	2.0
	160		
2.5	100	5.0	2.0
	125		
	160		
	200		
	250		
	315		
3.0	100	6.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
3.2	100	6.0	3.0
	160		
3.5	100	7.0	3.0
	125		

d1	L	d2	k
3.5	160	7.0	3.0
	200		
	250		
	315		
	400		
4.0	100	8.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
4.2	100	8.0	3.0
	160		
4.5	100	8.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
5.0	100	10	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		

d1	L	d2	k
5.5	100	10	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
6.0	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
6.5	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
7.0	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		

d1	L	d2	k
7.5	100	12	5.0
	125		
	160		
	200		
	250		
	315		
8.0	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
8.5	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
9.0	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
10	100	16	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
10.5	100	16	5.0
	125		
	160		
	200		
11	100	16	5.0
	125		
	160		
	200		
	250		
	315		
	400		

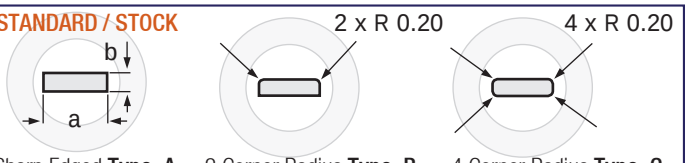
d1	L	d2	k
12	100	18	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
14	100	22	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
16	100	22	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
18	100	24	7.0
	125		
	160		
	200		
	250		
20	100	26	8.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
25	100	32	10
	125		
	160		
	200		
	250		
	315		
	400		
	500		

Ejector Pins in Special Diameters-Dimensions of Different Materials can be Produced as per Request.



Order : **SBI.A** d1 x L

STANDARD / STOCK

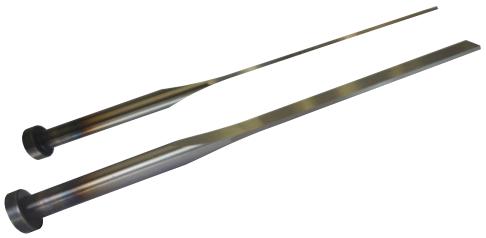


Sharp Edged **Type. A** 2 Corner Radius **Type. B** 4 Corner Radius **Type. C**

AS PER REQUEST



Corner Radius Diversification of Sheet Bar Belonging to Sheet Bar Ejector

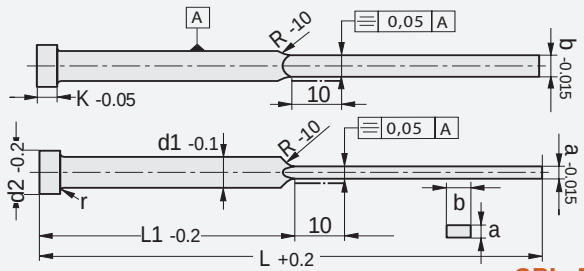


As per request; CYLINDRICAL HEAD SHEET BAR EJECTOR PIN

ISO 8693 (DIN 1530 F) **TYPE : A-B-C** **SPL**

Plastic / Metal Inj. Mould HEAT RESISTANT S. BAR EJECTOR SPL.A

Material: 1.2344 (Hot Work Steel) Max. Heat Resistance: 500 - 550°



Plastic / Metal Inj. Mould HIGH TEMPERATURE S. BAR EJECTOR SPL.A

Our standard shelf stocks are created from **Type A** (Sharp Edged).
Type B (2 Corner Radius /**Type C** (4 Corner Radius) are as per request.
As per request, your orders can be dimensioned by Technical Drawing Details.

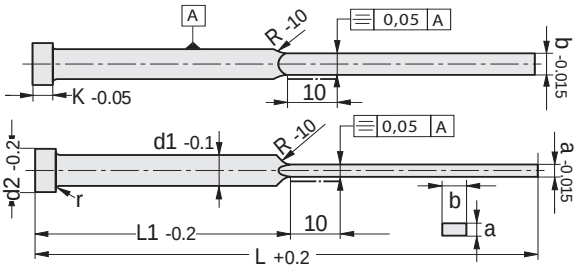
a	b	d1	L	L1
1.5	4.5	5.0	100	50
			125	60
			160	80
			200	100
1.5	5.5	6.0	100	50
			125	60
			160	80
			200	100
1.5	7.5	8.0	125	60
			160	80
			200	100
			250	125
1.5	9.5	10	160	80
			200	100
			250	125
2.0	5.5	6.0	100	50
			125	60
			160	80
			200	100
2.0	7.5	8.0	160	80
			200	100
			250	125
2.0	9.5	10	200	100
			250	125
			315	160
2.0	11.5	12	200	100
			250	125
			315	160
2.5	11.5	12	200	100
			250	125
			315	160

a	b	d1	L	L1
0.8	3.5	4.0	80	40
			100	50
			125	60
1.0	4.5	5.0	80	40
			100	50
			125	60
			160	80
1.0	5.5	6.0	80	40
			100	50
			125	60
			160	80
1.2	3.5	4.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	4.5	5.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	5.5	6.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	7.5	8.0	80	40
			100	50
			125	60
			160	80
			200	100

Order : **SPL.A** Standard Type A **a x b x d1 x L**
(Special Type B / Type C)

Plastic Inj. Mould HARDENED SHEET BAR EJECTOR SPL.AH

Material: 1.2516 (Hardened) Max. Heat Resistance: 220°



Plastic Inj. Mould HARDENED S. BAR EJECTOR SPL.AH

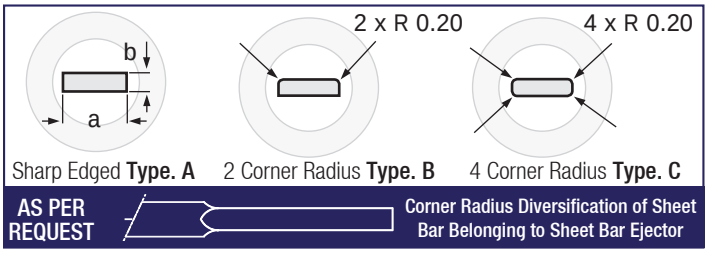
Our standard shelf stocks are created from **Type A** (Sharp Edged).
Type B (2 Corner Radius /**Type C** (4 Corner Radius) are as per request.
As per request, your orders can be dimensioned by Technical Drawing Details.

a	b	d1	L	L1
1.5	4.5	5.0	100	50
			125	60
			160	80
			200	100
1.5	5.5	6.0	100	50
			125	60
			160	80
			200	100
1.5	7.5	8.0	125	60
			160	80
			200	100
			250	125
1.5	9.5	10	160	80
			200	100
			250	125
2.0	5.5	6.0	100	50
			125	60
			160	80
			200	100
2.0	7.5	8.0	160	80
			200	100
			250	125
2.0	9.5	10	200	100
			250	125
			315	160
2.0	11.5	12	200	100
			250	125
			315	160
2.5	11.5	12	200	100
			250	125
			315	160

a	b	d1	L	L1
0.8	3.5	4.0	80	40
			100	50
			125	60
1.0	4.5	5.0	80	40
			100	50
			125	60
			160	80
1.0	5.5	6.0	80	40
			100	50
			125	60
			160	80
1.2	3.5	4.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	4.5	5.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	5.5	6.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	7.5	8.0	80	40
			100	50
			125	60
			160	80
			200	100

Order : **SPL.AH** Standard Type A **a x b x d1 x L**



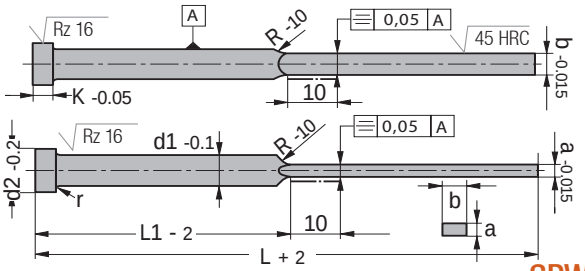


Per request; CYLINDRICAL HEAD (Oxidation) SHEET BAR EJECTOR PIN

DIN ISO 8693 TYPE : A-B-C SPW

Plastic / Metal Inj. Mould HIGH TEMPERATURE S. BAR EJECTOR SPW

Material: 1.2343 (Nitrite- Oxidation) Heat Resistance: 650 / 1400°



Metal Inj. Mould HIGH TEMPERATURE (Oxidation) S. BAR EJECTOR SPW

Our standard shelf stocks are created from **Type A** (Sharp Edged).
Type B (2 Corner Radius /**Type C** (4 Corner Radius) are as per request.

As per request, your orders can be dimensioned by Technical Drawing Details.

a	b	d1	L	L1
0.8	3.5	4.0	80	40
			100	50
			125	60
1.0	4.5	5.0	80	40
			100	50
			125	60
			160	80
1.0	5.5	6.0	80	40
			100	50
			125	60
			160	80
1.2	3.5	4.0	80	40
			100	50
			125	60
			160	80
1.2	4.5	5.0	80	40
			100	50
			125	60
			160	80
1.2	5.5	6.0	80	40
			100	50
			125	60
			160	80
1.2	7.5	8.0	80	40
			100	50
			125	60
			160	80
1.5	4.5	5.0	100	50
			125	60
			160	80
			200	100

a	b	d1	L	L1
1.5	5.5	6.0	100	50
			125	60
			160	80
			200	100
1.5	7.5	8.0	125	60
			160	80
			200	100
			250	125
1.5	9.5	10	160	80
			200	100
			250	125
2.0	5.5	6.0	100	50
			125	60
			160	80
			200	100
2.0	7.5	8.0	160	80
			200	100
			250	125
			315	160
2.0	9.5	10	200	100
			250	125
			315	160
			400	200
2.0	11.5	12	200	100
			250	125
			315	160
			400	200
2.5	11.5	12	200	100
			250	125
			315	160
			400	200



Ejector Pin lubricating grease is provided operation at high temperature as 1400°C.

AWF 1400

METAL INJECTION MOULD INNER USE

High Temperature Lubricating Grease Such as Ejector Pins / Core Systems

It consists of AVF 1400 well refined mineral oils and EP additives providing lubricity as film strip between other mould parts and mould parts that are not affected from high temperature of ejector systems, core systems in working mould in high temperature such as metal injection. Thanks to solid lubricants and additives, it has comfortable operation. (No load operation, high heat insulation and it provides resistance up to 1400°, it is in film strip position of surfaces among their parts, even at very high temperature, it prevents sticking together. It is produced from vegetable oils and is not harmful to the health.

Advantage of Using AWF 1400 Lubricating Grease:

* It is resistant against oxidation and friction.
* It is resistant to corrosion and abrasion.
* It is silicium and white. (Don't make any contamination on mould)
* It is resistant against water and humidity. (There is no corrosion on water proof mould).
* It is easy to use, (in small packages with end sponge) and clean. The mould parts are not contaminated with reasons such as lubricating, abrasion, also it is presented to market as 520 gr. spray grease.
* Due to dust atmosphere as casting moulds, the user's hands are not painted black. It is a very good protector.
* It does not cause any reaction on surfaces.



Order	
AWF 10	10 Kg. (In can) packing
AWF 05	5 Kg. (In can) packing
AWF 01	1 Kg. (In metal can) packing



Order
AWF 04
520 gr. / ml. In Spray Grease Packing



Order
AWF 03
40gr. / ml. Mini Tube With End Sponge

Order : **SPW. AV**
Standard Type A **a x b x d1 x L**

d1	L	d2	k	r
12	500 630 800 1000	18	7.0	0.8
12.5	100 125 315 500 630	18	7.0	0.8
13	100 125 160 200 250 315 400	18	7.0	0.8
14	100 125 160 200 250 315 400 500 630 800 1000	22	7.0	0.8
16	100 125 160 200 250 315 400 500 630 800 1000	22	7.0	0.8
18	100 125 160 200 250 315 400 500	24	7.0	0.8
20	125 160 200 250 315 400 500 630 800 1000	26	8.0	1.0
25	160 250 315 400 630 800	32	10	1.0

d1	L	d2	k	r
8	250 315 400 500 630 800 1000	14	5.0	0.5
8.5	100 125 160 200 250 315 400 500 630	14	5.0	0.5
9	100 125 160 200 250 315 400	14	5.0	0.5
9.5	100 125 160 200 250 315	14	5.0	0.5
10	100 125 160 200 250 315 400 500 630 800 1000	16	5.0	0.5
10.5	100 125 160 200 250 315 400	16	5.0	0.5
11	100 125 160 200 250 315 400	16	5.0	0.5
12	100 125 160 200 250 315 400	18	7.0	0.8



Its Ejector pin, Lubricating Grease are provided working at high temperature up to1400^{0}C

Plasma Nitrite Covered oxidation

CYLINDRICAL HEAD EJECTOR PIN(Oxidation) TYPE : AV03 SBM

Especially: In Metal Injection Moulds, High Heat Resistance, Black

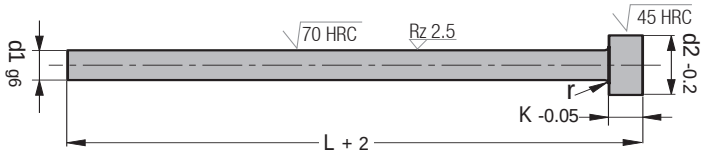
Material: 1.2343 (Hot work steel) Head Hardness : 45 ± 5 HRC **Casing Hardness :** 44 HRC

Casing is Grinded and Covered with Plasma Nitrite and Oxidation Hardness : 70 HRC.

AV03 The Ejector Pins; When they are used with AWF 1400 Lubricating Grease, is reached to 1400^0 Heat Resistance. Max. Heat Resistance : 650^0 (Without lubricating grease, dry) 1400^0

Tension Resistance : 1450 N / mm^2

Especially : It is Plasma /Nitrite - Oxidation Coated (it is highly qualified compared with similar products.)

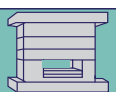


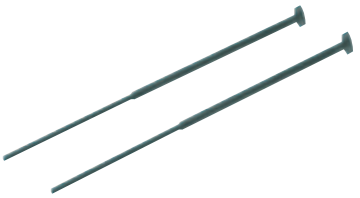
d1	L	d2	k	r
6	100 125 160 200 250 315 400 500 630 800	12	5.0	0.5
6.5	100 125 160 200 250 315 400	12	5.0	0.5
7.0	100 125 160 200 250 315 400 500 630	12	5.0	0.5
7.5	100 125 160 200 250 315 400 500	12	5.0	0.5
8.0	100 125 160 200	14	5.0	0.5

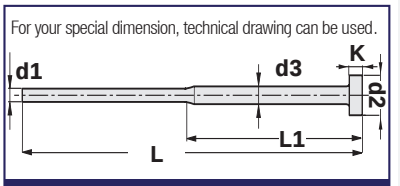
d1	L	d2	k	r
4	100 125 160 200 250 315 400 500 630	8	3.0	0.3
4.5	100 125 160 200 250 315 400 500 630	8	3.0	0.3
5.0	100 125 160 200 250 315 400 500 630 800	10	3.0	0.3
5.5	100 125 160 200 250 315 400 500	10	3.0	0.3

d1	L	d2	k	r
1.5	100 125 160 200	3	2.0	0.2
2.0	100 125 160 200 250 315 400	4	2.0	0.2
2.5	100 125 160 200 250 315 400	5	2.0	0.3
3.0	100 125 160 200 250 315 400 500 630	6	3.0	0.3
3.5	100 125 160 200 250 315 400 630	7	3.0	0.3

Order :
SBM.AV03
d1 x L







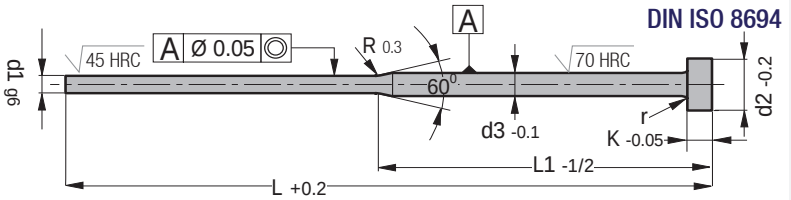
As per request/ Special Order Definition

CYLINDRICAL HEAD - STEPPED (Oxidation) EJECTOR PIN Type : AW SBW

Material : 1.2343 (Hot Work Steel) **Head Hardness :** 45 ± 5 HRC **Casing Hardness :** 44 HRC

AV03 Ejector Pins ; When they are used with AWF 1400 Lubricating Grease, it is reached to 1400^0 Heat Resistance.

DIN ISO 8694

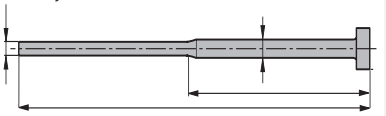


d1	L	L1	d3	d2	k	r
0.8	100	50	2	4	2	0.2
	125	50				
	160	75				
0.9	100	50	2	4	2	0.2
	125	50				
	160	75				
1.0	100	50	2	4	2	0.2
	125	50				
	160	75				
	200	75				
1.1	100	50	2	4	2	0.2
	125	50				
	160	75				
1.2	100	50	2	4	2	0.2
	125	50				
	160	75				
1.3	100	50	2	4	2	0.2
	125	50				
	160	75				

d1	L	L1	d3	d2	k	r
1.4	100	50	2	4	2	0.2
	125	50				
	160	75				
1.5	100	50	3	6	3	0.3
	125	50				
	160	75				
	200	75				
2.0	100	50	3	6	3	0.3
	125	50				
	160	75				
	200	75				
2.5	100	50	3	6	3	0.3
	125	50				
	160	75				
	200	75				

The production will be done as per request. (They are not available at our stocks)

For your special orders, pls. fill technical drawing details...





Cylindrical Head THREADED PIN SBD

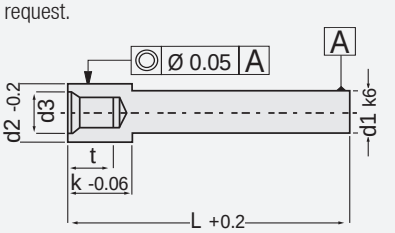
Mould Inner (Ejector Plate - Cores) Usage

DIN 1530 - A / ISO 6751

It has pin mounting feature without dismantling parts. **Material :** 1.2344 it is Grinded and Hardened.

Tension Resistance : 1400 N mm^2

Our special production is available as per request.



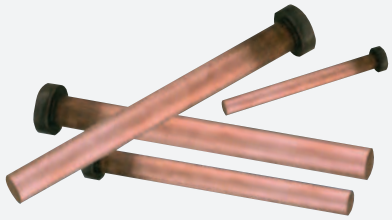
Cylindrical Head Threaded PIN SBD

d1	L	d3	t	k	d2
3	63	M4	5	10	6
	125				
4	63	M5	7	12	8
	125				
5	80	M6	9	14	9
	160				
6	80	M6	9	14	10
	160				
8	80	M6	10	16	13
	160				
10	100	M10	12	18	15
	200				
12	100	M12	14	22	18
	200				
14	100	M12	14	22	20
	200				

Order : SBW.AV d1 x d3 x L1 x L
Limited Stocks

Reliable Label

Order : SBD d1 x L x d3
Limited Stocks



Cylindrical Head COPPER ALLOY EJECTOR PIN SPP

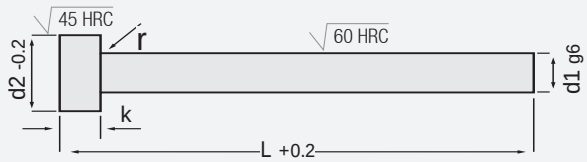
High Heat Conductivity, Ejector Pin **DIN ISO 6751** **Type : AV 07**

Copper Alloy Ejector Pin: It is for moulds that are produced with added copper/Cbn (Nickel Bornite) into material during production and have high temperature. The cooling for the desired area of mould is provided very quickly without deviating the targeted area, due to thermal optimisation, very high quality product is obtained from moulds under optimum temperature. Also, due to thermal optimisation again, production time per part is shortened as 30%. By changing according to the material, the heat conductivity is 6 times higher than standard pin. There is no need to use pin oil for copper ejector pins, even after cooling, it does not lose its conductivity, does not become deformated, it is weldable, solderable, burnishable. However, the upper surfaces of plated products can not be processed in turning or milling machine.

Material: CBN Chemical - Nickel- Bornite Alloy **Limited Stocks**

Hardness : 45- 50 HRC (71 Micron Plated) **Surface Roughness**

Heat Resistance : 400^0 (1 Hour) - 300^0 (5 Hour) Ra <0.8 Micron

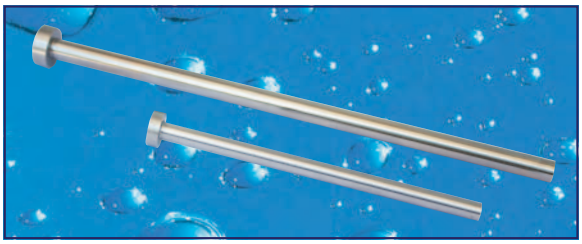


Cylindrical Head COPPER ALLOY EJECTOR PIN SPP

d1	L	d2	k	r
2.0	100 160	4	2	0.2
2.5	100 160	5	2	0.3
3.0	100 160 250	6	3	0.3
3.5	100 160	7	3	0.3
4.0	100 160 250	8	3	0.3
4.5	100 160	8	3	0.3
5.0	100 160 250	10	3	0.3
6.0	100 160 250 315	12	5	0.5

d1	L	d2	k	r
7.0	100 160 250	12	5	0.5
8.0	100 160 250 315	14	5	0.5
10	100 160 250 315 400	16	5	0.5
12	100 160 250 315 400	18	7	0.8
14	160 250 400	22	7	0.8
16	160 250 400 500	22	7	0.8

Order : **SPP.AV07** d1 x L



Cylindrical Head STAINLESS EJECTOR PIN SPI

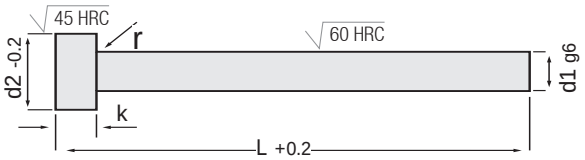
It is compatible with Medicine and Food Industry Standards **DIN ISO 6751**

Stainless Steel : The ejector pins has been produced to avoid corrosion problems. They are anti magnetic products resistant to corrosion and acids for production at severe climate conditions in Chemistry / Medicine and Food Industry, also in hygienic places.

Material : 1.4125 NIROSTA (Stainless Steel)

Casing Hardness : 60 ± 2 HRC **Head Hardness :** 35 ± 2 HRC

Heat Resistance : 180^0 **Limited Stocks**



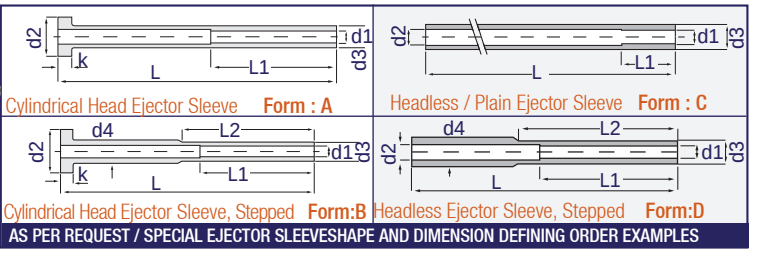
Cylindrical Head STAINLESS EJECTOR PIN SPI

d1	L	d2	k	r
4.5	100 160 200 250	8	2	0.3
5.0	100 160 200 250	10	2	0.3
5.5	100 160 200 250	10	2	0.3
6.0	100 160 200 250	12	5	0.5
8.0	100 160 200 250	14	5	0.5

d1	L	d2	k	r
2.0	100 160 200 250	4	2	0.2
2.5	100 160 200 250	5	2	0.3
3.0	100 160 200 250	6	2	0.3
3.5	100 160 200 250	7	2	0.3
4.0	100 160 200 250	8	2	0.3

Order : **SPI.INOX** d1 x L

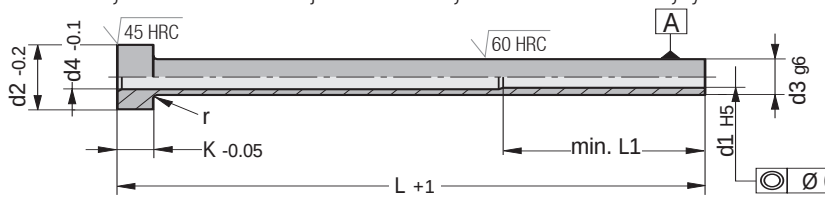




AS PER REQUEST / SPECIAL EJECTOR SLEEVESHAPE AND DIMENSION DEFINING ORDER EXAMPLES

CYLINDRICAL HEAD HEAT RESISTANT EJECTOR SLEEVE DIN ISO 8405 TYPE : A SMB

Heat Resistance for Injection Moulds (1.2344 Hot Work Steel) Ejector Sleeve, especially for Metal Injection Moulds; Rear Part of Inner Hole is grinded in 30 - 45 mm Ejector Pin Working Tolerance and drilled roughly with drill to rearward (until the cap)



Material : 1.2344 Hot Work
Head Hardness : 45 ± 2 HRC
Casing Hardness : 60 ± 2 HRC
Max. Heat Resistance : 500 - 550^0
Tension Resistance: 1450 N / mm^2

STANDARD TYPE

CYLINDRICAL HEAD HEAT RESISTANT EJECTOR SLEEVE (They are available in decimal dimensions.) SMB

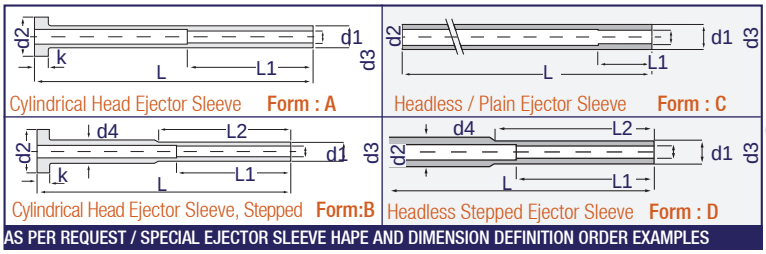
d3	L	d1	L1	d4	d2	k	r
4	75	2.0	35	2.3	8	3	0.3
	100						
	125						
	150						
5	75	2.5	35	3.0	10	3	0.3
	100						
	125						
	150						
5	75	3.0	45	3.3	10	3	0.3
	100						
	125						
	150						
	160						
	175						
	200						
	250						
6	75	3.5	45	4.0	12	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						

d3	L	d1	L1	d4	d2	k	r
6	75	4.0	45	4.3	12	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
8	75	4.2	45	5.3	14	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
8	75	5.0	45	5.3	14	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						

d3	L	d1	L1	d4	d2	k	r
10	75	6	45	6.3	16	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
12	75	8	45	8.3	20	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
14	75	10	50	10.3	22	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
16	75	12	50	12.3	22	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						

Order : **SMB.A** d1 x d3 x L

Reliable Label
GTH

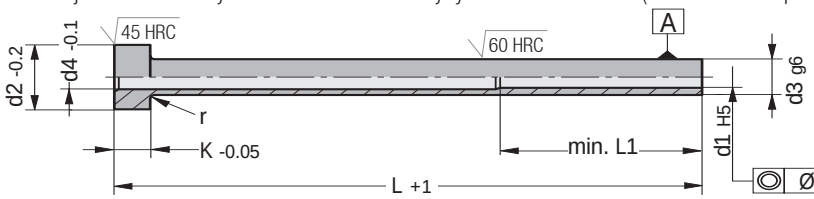


AS PER REQUEST / SPECIAL EJECTOR SLEEVE HAPE AND DIMENSION DEFINITION ORDER EXAMPLES



CYLINDRICAL HEAD HARDENED EJECTOR SLEEVE DIN ISO 8405 TYPE : AH SPB

Hardened for Plastic Injection Moulds (1.2516 WS), Ejector Sleeve, Especially for Plastic Moulds; Rear Part of Inner Hole is grinded in 30 - 45 mm Ejector Pin Working Tolerance and drilled roughly with drill to rearward (until the bonnet part).



Material : 1.2516 WS
Head Hardness : 45 ± 2 HRC
Casing Hardness : 60 ± 2 HRC
Max. Heat Resistance : 220^0
Tension Resistance: 1300 N / mm^2

STANDARD TYPE

CYLINDRICAL HEAD HARDENED EJECTOR SLEEVE (Extra long length are available at our.)

d3	L	d1	L1	d4	d2	k	r
12	75	8	45	8.3	20	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

d3	L	d1	L1	d4	d2	k	r
6	75	4.0	45	4.3	12	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

d3	L	d1	L1	d4	d2	k	r
4	75	2.0	35	2.3	8	3	0.3
	100						
	125						
	150						
	160						
	175						
	200						
	250						

d3	L	d1	L1	d4	d2	k	r
5	75	2.5	35	3.0	10	3	0.3
	100						
	125						
	150						
	160						
	175						
	200						
	250						

d3	L	d1	L1	d4	d2	k	r
14	75	10	50	10.3	22	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

d3	L	d1	L1	d4	d2	k	r
8	75	5.0	45	5.3	14	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

d3	L	d1	L1	d4	d2	k	r
5	75	3.0	45	3.3	10	3	0.3
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						

d3	L	d1	L1	d4	d2	k	r
16	75	12	50	12.3	22	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

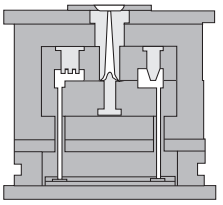
Order : **SPB.AH** d1 x d3 x L

d3	L	d1	L1	d4	d2	k	r
10	75	6	45	6.3	16	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

d3	L	d1	L1	d4	d2	k	r
6	75	3.5	45	4.0	12	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						

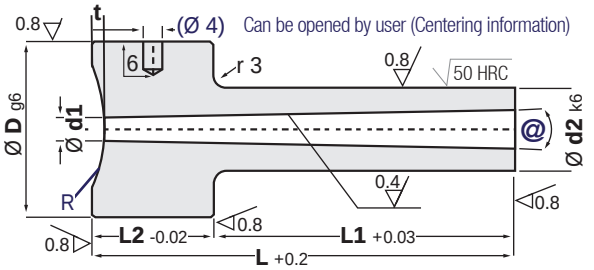
Reliable Label





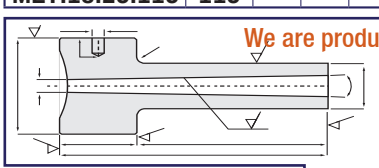
METAL INJECTION MOULDS, RUNNERS MEY

High Heat Resistant, Standard Hot Work Steel Runners / Standard Type



Material: 1.2344 **Hardness:** 60 HRC **Heat Resistance:** 500^0 **Angle:** 5.8 mm @ 3^0

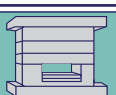
Order	L	d2	d1	D	R	t	L2	L1
MEY.12.20.55	55							35
MEY.12.20.65	65	12	5.8	20	15.5	3	20	45
MEY.12.20.75	75		3^0					55
MEY.12.25.55	55							30
MEY.12.25.65	65							40
MEY.12.25.75	75							50
MEY.12.25.85	85	12	5.8	28	15.5	3	25	60
MEY.12.25.95	95							70
MEY.12.25.105	105		3^0					80
MEY.12.25.115	115							90
MEY.14.25.55	55							30
MEY.14.25.65	65							40
MEY.14.25.75	75							50
MEY.14.25.85	85	14	5.8	28	15.5	3	25	60
MEY.14.25.95	95							70
MEY.14.25.105	105		3^0					80
MEY.14.25.115	115							90
MEY.16.25.55	55							30
MEY.16.25.65	65							40
MEY.16.25.75	75							50
MEY.16.25.85	85	16	5.8	28	15.5	3	25	60
MEY.16.25.95	95							70
MEY.16.25.105	105		3^0					80
MEY.16.25.115	115							90
MEY.18.25.55	55							30
MEY.18.25.65	65							40
MEY.18.25.75	75							50
MEY.18.25.85	85	18	5.8	28	15.5	3	25	60
MEY.18.25.95	95							70
MEY.18.25.105	105		3^0					80
MEY.18.25.115	115							90

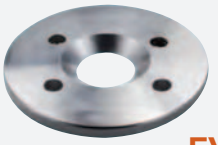


We are producing special runner.



As per request / Standard Type Special Order Definition

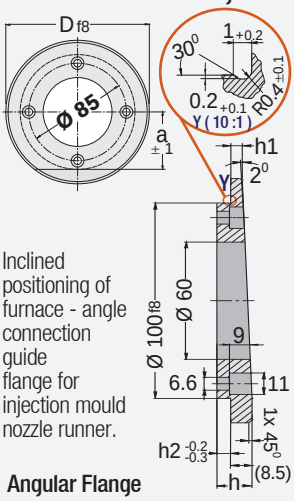




EYF

INCLINED SURFACE HOLE POSITIONING FLANGE

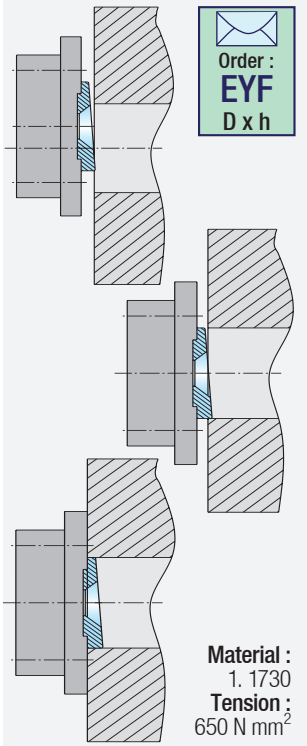
Inclined Plate Guide Flange



Inclined positioning of furnace - angle connection guide flange for injection mould nozzle runner.

Angular Flange

D	h	h1	h2	a
125	14	4.6	5.5	50
	20		11.5	
	22		13	



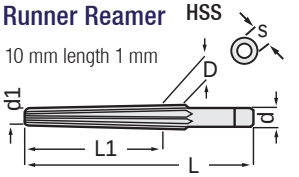
Order : EYF D x h

Material : 1. 1730
Tension : 650 N mm^2



KYR

1:10 Conical, Special Runner Reamer HSS



In reaming of conical growing cutting edge hand reamer, conical or stepped pre processed continuous holes.

d1	D	d	L	L1	S
4	10	10	100	70	8
9	16	12.5	120	80	10
14	24	20	160	110	16
20	32	25	200	140	20

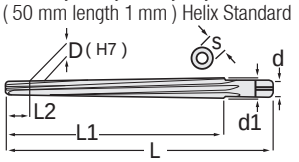
Order : KYR (1:10 Conical) d1 x D x L



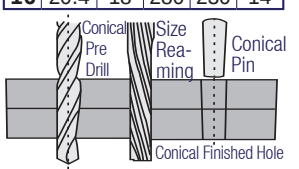
KPR

1:50 Conical Pin Hole Reamer DIN 9 HSS

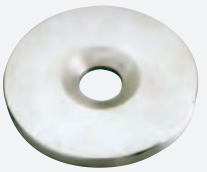
Hand Reamer (With Conical Drill Bit) For Conical Pins compatible with conical growing cutting edge (50 mm length 1 mm) Helix Standard

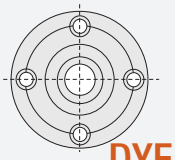


D	d1	d	L	L1	S
3	4.06	4	80	58	3.15
4	5.26	5	93	68	4
5	6.36	6.3	100	73	5
6	8.0	8	135	105	6.3
8	10.8	10	180	145	8
10	13.4	12.5	215	175	10
12	16	14	255	210	11.2
14	18	14	255	210	11.2
16	20.4	18	280	230	14



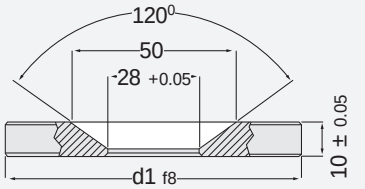
Order : KPR D x L





RUNNER POSITION, FLANGE DYF

Material: CK 45 Work Tool Steel (Grinded)



Order	d1
DYF.60	60
DYF.70	70
DYF.80	80
DYF.90	90
DYF.100	100

Order	d1
DYF.125	125
DYF.150	150
DYF.175	175
DYF.200	200

Note: Flange Connecting Holes are opened as per request (Subject to Price).

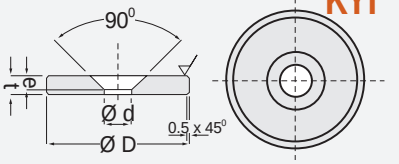


Connection Holes
Special, As per Request



RUNNER POSITIONING FLANGE KYF

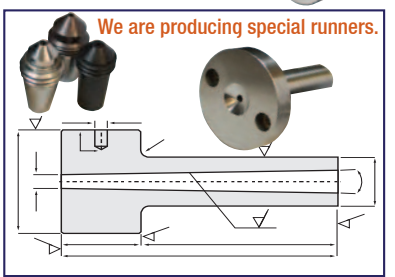
Material : CK 45 Work Tool Steel

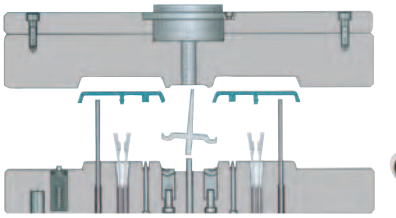


Order	Ø D	Ø d	t	e
KYF.60	60	28	15	7
KYF.80	80	28	15	7
KYF.125	125	28	20	10
KYF.150	150	28	20	10

Note: Flange Connecting Holes are opened as per request (Subject to Price).



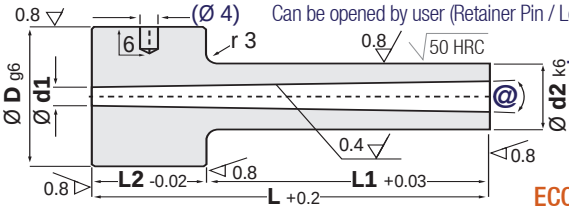






PLASTIC MOULDS, INJECTION RUNNERS DIN 16752 EYM

Injection Runner Nozzle: The length selection is presented in very wide range in our stocks.



Material : 1.2826

Two Different Options

d1 3.3 : @ 1.5⁰
(Standard Angle)

d1 4.3 : @ 2⁰
(Wide Angle)

ECONOMICAL PRICES

L	d2	d1	D	L2	L1
50	12	4.3 2⁰	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125					105
135					115
150					130
50	14	4.3 2⁰	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125					105
135					115
150					130
200					180
50	16	4.3 2⁰	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125					105
135					115
150					130
200					180
50	18	4.3 2⁰	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125					105
135					115
150					130
200					180



For injection cold runner diverter valve, pls. refer to page 230.

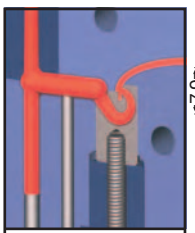
EYM
Order : d2 x L x d1

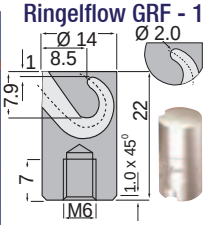
L	d2	d1	D	L2	L1
50	12	3.3 1.5⁰	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125					105
135					115
150					130
50	14	3.3 1.5⁰	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125					105
135					115
150					130
200					180
50	16	3.3 1.5⁰	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125					105
135					115
150					130
200					180
50	18	33 1.5⁰	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125					105
135					115
150					130
200					180

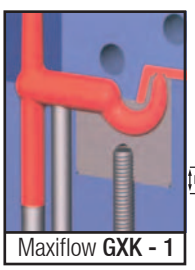


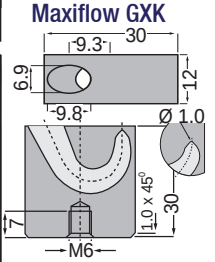
TUNNEL / CURVED DIVERTER RUNNER SYSTEMS

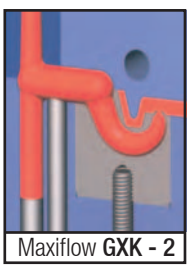
* Being Long Life, Clean Runner Tracks
* Filling of each eyes balancedly.
* Very low abrasion at runner area
* 60 HRC - RA : 08 - 1.3 Surface Quality
* Safe Fluency, One Piece Design

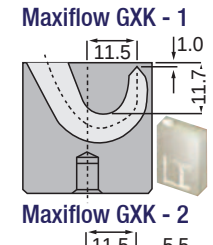

Ringelflow **GRF - 1**

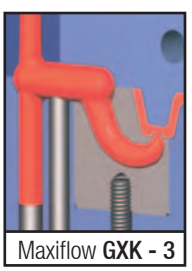


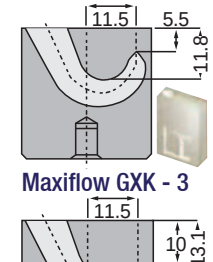

Maxiflow **GXK - 1**




Maxiflow **GXK - 2**




Maxiflow **GXK - 3**





Section Injection Mould

Special Size Used Diversification

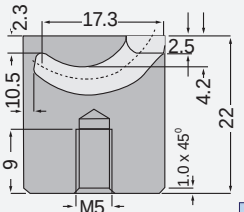


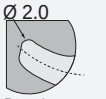


KONTURFLOW RUNNER GTK

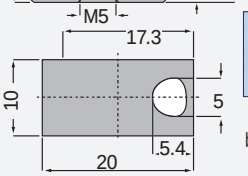
Processable Upper Surface, Curved S. Runners.

GTK Runners Mostly for geometric structure as curved surface parts, can be used in injection mould cold runner systems. Including 50% glass fiber, all thermoplastic filling material, blasting diameter can be created up to 1.7 mm in tunnel runner systems.





Blasting diameter can be created up to 1.7 mm.





Upper surface can be processed up to 3 mm.

Order Form : GTK 10 x 22

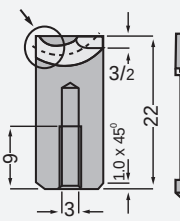


MINIFLOW RUNNER GTM

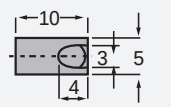
They are compatible with small thin walled parts.

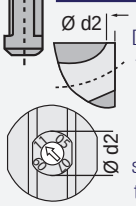
GTM Runners: By creating hidden runner in injection runner systems, runner diameter is optional from 0.8 mm to 2.14 mm, it does not have a head part and it is in 10 x 5 dimension.

Blasting Diameter: d2 Between 0.5 mm and 1.1 mm



Order	d2
GTM1005	0.5
GTM1007	0.7
GTM1009	0.9
GTM1011	1.1





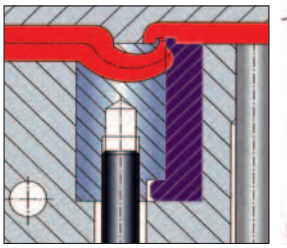
Stamp Size

Due to that there is no protrusion at blasting point, it is suitable for thin walled moulds.



VISCOSITY CONTINUATION BLOCK

Flat Plain Progress

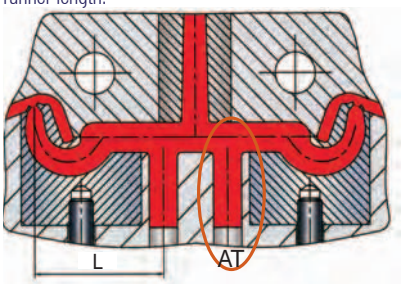




To reduce loss of raw white flow that is injected or to minimise sliding, an auxiliary block is added in front of tunnel runner. For various Processing methods of cove on block at EDM (Erosion Machines), pls. refer the 'CAD' files at **www.exaflow.com**

The block dimensions are depended on selected tunnel runner length.

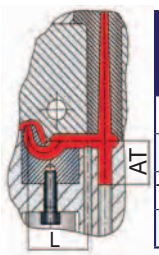




"AT" RUNNER DISTANCES

Distance Between Runner and Blasting Point

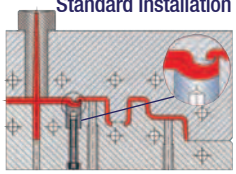
AT : According to the plastic raw white and tunnel runner type to be used, the distance dimension that should be given between cold runner center and blasting point is given at the following table.



Plastic Raw White Groups	Mini Runner **GTM**
PE -PP -PA vs.	17-20
ABS -ASA vs.	22-27
TPU -TPE -TPA vs.	15-20
PA +GF, POM vs.	25-30

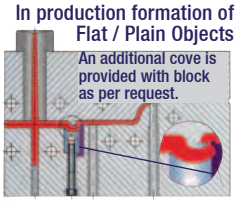
GTR / GTE Ø 10 mm	GTR / GTE Ø 12 mm	GTR / GTE Ø 14 mm	Konturflow **GTK**
20 - 25	22 - 27	24 - 30	30 - 35
25 - 30	27 - 32	30 - 35	33 - 38
15 - 25	17 - 27	20 - 30	25 - 35
30 - 35	32 - 37	35 - 40	40 - 45

Tunnel Runner Systems Standard Installation



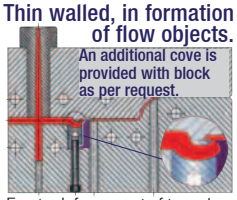
System providing viscosity control to front mould cavity next to cold runner.

In production formation of Flat / Plain Objects



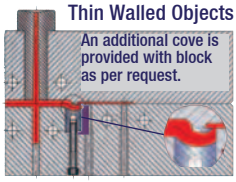
To reduce pressure loss, viscosity is provided by minimise sliding.

Thin walled, in formation of flow objects.



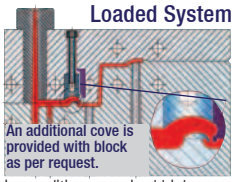
Front reinforcement of tunnel runner end has been closed with cove / block at separating line.

Mini Tunnel Runner Thin Walled Objects



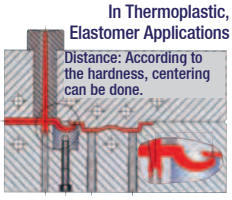
It will be formed on a line with cold runner, application in 0.5 - 1.2 mm thin walled parts.

Cold Nozzle Side Loaded System



In conditions required high viscosity, tunnel Runner is screwed to mould inlet.

In Thermoplastic, Elastomer Applications

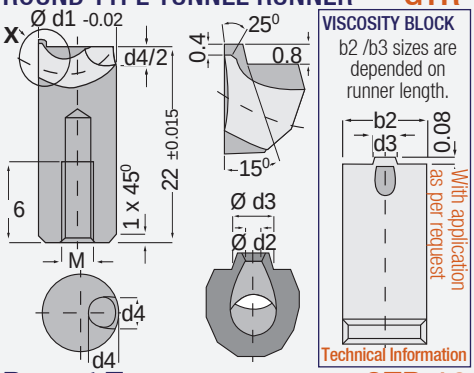


Cold runner Span Length should be reduced inwards, Elastomer Plastics.

In mounting: Tunnel Runners are secured with retaining pin against loosening. However, mostly they are secured with bolts.



ROUND TYPE TUNNEL RUNNER GTR



Round Type (Standard Flow) GTR 10

d1	d2	d3	d4	M	Viscosity - Gram		
					Easy	Smooth	Hard
10	0.8	2.1	4	4	8	7	5
	1.0	2.3			14	12	9
	1.2	2.5			20	16	10
	1.4	2.7			30	23	15
	1.6	2.9			40	30	20

Thermoplastic Raw White (Including %50 Glass Fiber)

Order Form : GTR 10. d2

Round Type (Standard Flow) GTR 12

d1	d2	d3	d4	M	Viscosity - Gram		
					Easy	Smooth	Hard
12	0.8	2.1	5	5	8	7	5
	1.0	2.3			14	12	9
	1.2	2.5			20	16	10
	1.4	2.7			30	23	15
	1.6	2.9			40	30	20
	1.8	3.1			54	40	27
	2.0	3.3			68	52	34

Order Form : GTR 12. d2

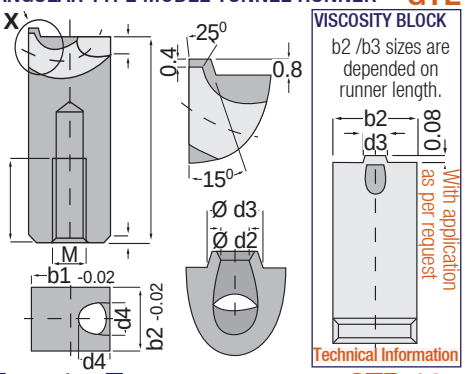
Round Type (Standard Flow) GTR 14

d1	d2	d3	d4	M	Viscosity - Gram		
					Easy	Smooth	Hard
14	1.2	2.5	6	6	20	16	10
	1.4	2.7			30	23	15
	1.6	2.9			40	30	20
	1.8	3.1			54	40	27
	2.0	3.3			68	52	34
	2.2	3.5			85	65	43
	2.4	3.7			100	80	50

Order Form : GTR 14. d2



ANGULAR TYPE MODEL TUNNEL RUNNER GTE



Angular Type (Standard Flow) GTR 10

b1	b2	d2	d3	d4	M	Viscosity - Gram		
						Easy	Smooth	Hard
10	8	0.8	2.1	4	4	8	7	5
		1.0	2.3			14	12	9
		1.2	2.5			20	16	10
		1.4	2.7			30	23	15
		1.6	2.9			40	30	20

Thermoplastic Raw White (Including %50 Glass Fiber)

Order Form : GTE 10. d2

Angular Type (Standard Flow) GTR 12

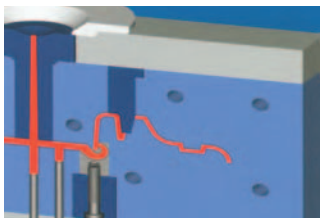
b1	b2	d2	d3	d4	M	Viscosity - Gram		
						Easy	Smooth	Hard
12	10	0.8	2.1	5	5	8	7	5
		1.0	2.3			14	12	9
		1.2	2.5			20	16	10
		1.4	2.7			30	23	15
		1.6	2.9			40	30	20
		1.8	3.1			54	40	27
		2.0	3.3			68	52	34

Order Form : GTR 12. d2

Angular Type (Standard Flow) GTR 14

b1	b2	d2	d3	d4	M	Viscosity - Gram		
						Easy	Smooth	Hard
14	12	1.2	2.5	6	6	20	16	10
		1.4	2.7			30	23	15
		1.6	2.9			40	30	20
		1.8	3.1			54	40	27
		2.0	3.3			68	52	34
		2.2	3.5			85	65	43
		2.4	3.7			100	80	50

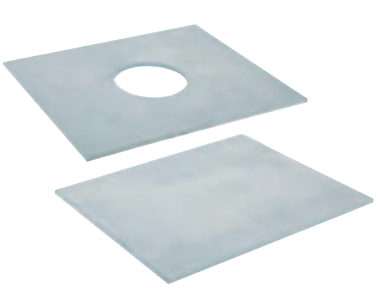
Order Form : GTR 14. d2

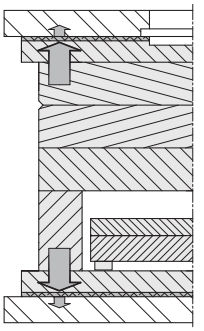












HEAT INSULATION PLATES IYP

Impact and Heat Insulation Processes of Press and Injection Moulds

To avoid heat dissipation in injection moulds, they are preferred in order to avoid Heat Dissipation / Loss among mould plates or between machine connection block plate and mould upper plates, especially in moulds produced with thermoplastic and thermoset raw material.

Heat Insulation Plates : 260^{0}C Heat Resistant P.T.F.E (Teflon Sheet). **Plates; It does not contain asbestos, it is not affected from impacts water, friction and electricity and is resistant 1800 TONE Pressure per centimeter.** Insulation plates also raise the display standards of moulds used.

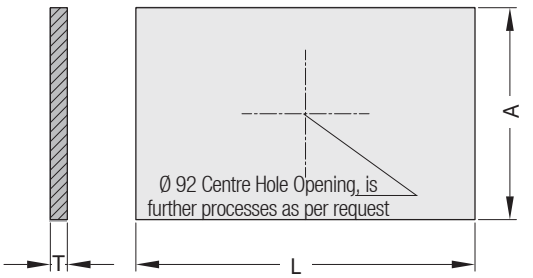
Compression Stresss : At... 100^{0}C.....188 N / mm^2
At... 200^{0}C.....126 N / mm^2
At... 260^{0}C.....118 N / mm^2

Thermal Conductivity : 218^{0}C..... 3.0 x 10^{-3} W /mK

Humidity Rate : .....0.06 %

Combustion Resistance according to UL 94 : .....94 V -0

It is for hot runner moulds.



HEAT /INSULATION and PULSE PLATES IYP

Order	A	L	T
IYP.1515.6	152	152	6
IYP.1520.6	152	192	6
IYP.1525.6	152	242	6
IYP.2020.6	192	192	6
IYP.2025.6	192	242	6
IYP.2030.6	192	292	6
IYP.2035.6	192	342	6
IYP.2525.6	242	242	6
IYP.2530.6	242	292	6
IYP.2535.6	242	342	6
IYP.2540.6	242	392	6
IYP.2550.6	242	492	6
IYP.3030.6	292	292	6
IYP.3035.6	292	342	6
IYP.3040.6	292	392	6
IYP.3045.6	292	442	6
IYP.3050.6	292	492	6
IYP.3055.6	292	542	6

Order	A	L	T
IYP.3535.6	342	342	6
IYP.3540.6	342	392	6
IYP.3545.6	342	442	6
IYP.3550.6	342	492	6
IYP.3560.6	342	592	6
IYP.4040.10	342	392	10
IYP.4045.10	342	442	10
IYP.4050.10	392	492	10
IYP.4060.10	392	592	10
IYP.4545.10	442	442	10
IYP.4550.10	442	492	10
IYP.4560.10	442	592	10
IYP.4570.10	442	692	10
IYP.4580.10	442	792	10
IYP.5050.10	492	492	10
IYP.5055.10	492	542	10
IYP.5060.10	492	592	10
IYP.5070.10	492	692	10
IYP.5080.10	492	792	10

Our products in the desired dimensions and in 4 and 8 mm thicknesses are available.



HEAT CONTROL /MEASURING K TYPE THERMOMETER

As a set with 2 pieces Probe in Protection Bag TP

This device is designed to use with Portable (Battery Operated) 3 1/2 Digital Screen External K Type Thermocouple or Contact Probe. It has two heat sensors. (Thin Type Thermocouple or Contact Probe)

Measurement Range: -50º C and 1300º C / 2000º F / 223 K - 2000 K

Resolution: 1º C or 1º F,01º C or 01º F,1K

Accuracy: It has been determined as one year, Operating Temperature over 18º C - 28º C (64º F - 82º F) and does not contained thermocouple and probe errors.

Heat Rate: For 01 Run Accuracy Specification ºC, From ºC' to 18ºC and 28º C - 50º C (32º F - 64º F and 82º F - 122º F)

Ingress Protection: At "60 V" or "24 V" rms Ac, Max. Input Voltage

Reading Rate: 2.5 Run Per Second

Input Connectors: 1 Piece Thermocouple (Thin Type)
1 Piece Contact Probe With Extension Cable

Ambient Operating Range: 0º C - 50º C

Storage Temperature: -20º C / 60º C Relative Humidity %0 - 80 (0º-35º)

Digital Screen Protector: 3 1/2 Crystal Display LCD Max.1999 Reading

Energy Unit: Standard 9 V (Cell) Battery **Dimensions:** Length:162 mm **Width:** 76 mm **Thickness:** 38.5 mm **Weight:** 210 gr.

OPERATION INSTRUCTION

To Select Temperature Scale, the option is specified with ^{0}C / ^{0}F / K keys on unit. When thermometer is opened, it is shown the last heat values when the thermometer closed last. Pls. use keys to change it.

Thermometer: It allows two types of resolutions. High Resolution 0.1 ^{0}C or 0.1 ^{0}F - Low Resolution 1 ^{0}C or 0.1 ^{0}F

Battery Replacement : When the screen shows the İ sign, 9 V Battery should be changed.

1 - Remove device cover and Air Temperature Contact Probe.

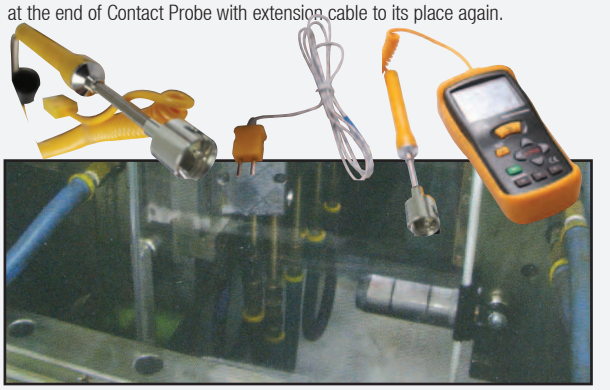
2 - Remove screws of battery box behind the device, insert battery, then close the cover and mount it again.

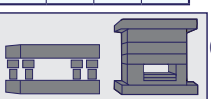
Safety Information :

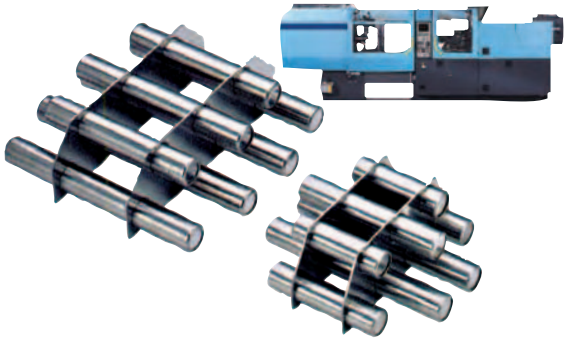
WARNING ! To avoid the electric shock, if the voltage exceeds 24 V AC OR 60 V DC on measurement surfaces, don't use the device.

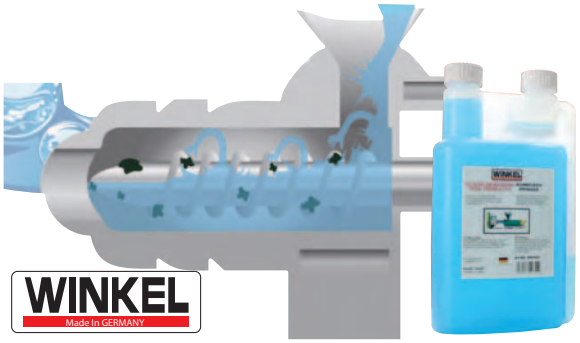
* To avoid damage and burning, making heat measurement in Micro Wave and so on ovens, due to repeated sharp tension, can be broke Thermocouples ends.

* To prolong end' s life, avoid the sharpness at the ends, especially at the ends of corrector. When the measurement is finished, pls. insert rubber guard that is at the end of Contact Probe with extension cable to its place again.







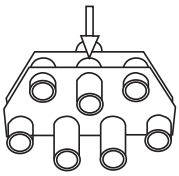


SCREENER MAGNETIC SEPARATOR EGM

Keeps Unwanted Metal Particles in raw material.

Especially in your plastic mould machines, the unwanted metal particles mixing to raw material, damages the extruder of injection machine. This is for screening process at the bottom of fluid raw material. Stainless Magnetic Rods and Cylindrical Magnetic Rods are excellently powerful in keeping metal particles, can be used also in liquids due to that they are compatible with fluidity compliance of raw material.
Example: Electro Diving Erosion (EDM)
also keep the metal particles in liquid chamber.





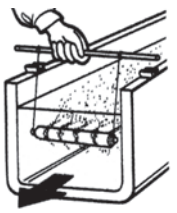
Magnetic Separator is the cheapest insurance of Plastic Injection Machines.

SCREENER MAGNETIC SEPARATOR EGM

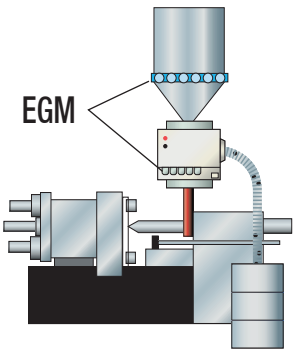
Order	Product Dimension	Weight
EGM 20C	**Width:** 170 **Length:** 180 **Height :**75	2.70 Kg.
EGM 25C	**Width:** 220 **Length:** 230 **Height :**75	4.00 Kg.

Heat Resistance : 60°C

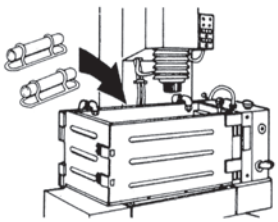
It is for feeding tunnel of plastic injection machines.
Magnetic Separator ; Especially, it is a processing industry application area of granule or crushing materials.
Magnetic Separator ; It is inserted to raw white feeding tunnel of injection machine. It is equipped with very powerful Neodymium (Nd Fe B) magnets and materials are from stainless steel, also can capture very thin metal particles. When magnetic separator is used, the extruder life of injection machine is prolonged considerably. The main advantage of magnetic magnet is its demagnetization opportunity. The cleaning of metal particles on stainless rods can be done rapidly and comfortably. According to dimension of feeding tunnel, the product selection can be done.



* In plastic injection machine applications



* Application in EDM Erosion Machine



PLASTIC INJECTION OVEN CLEANSER

Plastic Injection Oven Cleaner for Colour change, Economic

Extruder Drainage Cleaning; It is a liquid corrosion preventative and cleanser for plastic processing machines. By sticking to raw material due to additives inside it, the liquid cleans auger metal of extruder thoroughly and protects against corrosion due to inhibitors exhausting during combustion. Thanks to its fluidity, it leaks to then whole area in oven and it protects everywhere that corrosion may occur, the material is similar to foam, it expands and the pressure increases in plastic granule and extruder occurs by expanding limited volume in T Extruder auger metal, thanks to this feature of cleanser, all previous melt plastic granule raw material at the end of oven or inside of duct are sprayed outside with a few times of pressure.



Usage: A unique product for cleaning the previous black colour related and hard polymers from inside of oven. Under all circumstances, the processing is not abrasive and does not include any solvent. Especially, it is effective in raw material such as ABS, PA, PET, PS, PMMA, PC, SAM, PVC, EVA, PU, TR, PBT, PPO, PP, PE etc. and is used at the temperatures between 120ºC and 320ºC with extrusion. For sufficient cleaning of appliances, it is mixed with approximate %1 WINKEL Plastic Injection Oven Cleaner according to its inhibition and cylinder volume unit and 1 /10 Granule. By foaming at the extruder, it is sprayed outside. (It is Scaled Packing.)

Ultra Powerful & Economic & Compatible Hot Runner





Material Consumption in Raw Material and Colour Change	
WINKEL Liquid Mixed	**Experience - 1:** Normal Runner a b **Main Cleaning A :** 3 Kg. Raw White + 1 /2 Scale (Cover) WINKEL **Final Cleaning B :** 2 Kg. Raw White Spraying
Traditional Oven Cleaning	40 Kg. Sprayed Material Consumption
WINKEL Liquid Mixed	**Experience - 1:** Normal Runner a b **Main Cleaning A :** 4 Kg. Raw White + 2 /3 Scale (Cover) WINKEL **Final Cleaning B :** 3 Kg. Raw White Spraying
Traditional Oven Cleaning	With, 75 Kg. Sprayed Raw material, the experience is completed.
This experiences are data made in injection machine with 50 mm auger diameter.	

Order : 800655
1- Liter



INNER MOULD APPLICATION MECHANICAL PLIERS

Machine & Mould, Heavy and Hard Work Hot Objects Holding Kits



LONG FLAT ENDED NEEDLE PLIER RUK 1300

In Deep Zones of Long and Thin Chuck Mould or Product Holding Operation in Hot Stamped Moulds, Also during Repair /Maintenance, In Places that can be difficult to reach.

Order	Length	Housing	Handle
RUK1300	300 mm	Vanadium Steel	PVC - Insulated



LONG CURVE ENDED NEEDLE PLIER RUK 1345

In Deep Zones of Long and Thin Chuck Mould or Product Holding Operation in Hot Stamped Moulds, Also during Repair /Maintenance, In Places that can be difficult to reach

Order	Length	Housing	Handle
RUK1345	300 mm	Vanadium Steel	PVC - Insulated



LONG ROUND ENDED NEEDLE PLIER RUK 0360

In Deep Zones of Long and Thin Chuck Mould or Product Holding Operation in Hot Stamped Moulds, Also during Repair /Maintenance, In Places that can be difficult to reach

Order	Length	Housing	Handle
RUK0360	300 mm	Vanadium Steel	PVC - Insulated



LONG COMBINATION PLIER RUK 2345

In Deep Zones of Long and Thin Jaw Mould or Product Holding Operation in Hot Stamped Moulds, Also during Repair /Maintenance, In Places that can be difficult to reach

Order	Length	Housing	Handle
RUK0360	300 mm	Vanadium Steel	PVC - Insulated

* For other hand tools, pls. request our Güvenal 2014 (Page 296/9) Volume 2. Catalogue.



UNIVERSAL TYPE UTILITY KNIVES

This Knives that are economic and high quality products with single blade and breakable blade types, have wide variety of usage area and different presentation options, should be used very carefully.



W 2169 | MB 5203 | T 21600 | T 21609

Order	Product Definition
W 2169	Wert: Plastic Handle, Breakable Blade -100x 18
MB 5203	Wert: Small Type, Breakable Blade, Economic
T 21600	Wert: Metal Casing, Nonskid Handle, Robust
T 21609.B	Spare (Breakable Blade) Ends10 Pieces 100x18
T 21610.K	Spare (Breakable Blade) Ends, 10 Pieces 80 x 9



PCAM 1555 | W 2163 | MB 52207 | W 2161-8

Order	Product Definition
PCAM 1555	Deburring Scalpel (Plastic Handle) 155 mm
PCAM 36	Deburring Spare Blade End Length: 36mm
W2163	Deburring Scalpel (Metal Type) 160 mm
MB 52207	Utility Knife Angular cutting - With Spare Blade
W 2161	Utility Knife Metal Structure 100 x 18 / 88 gr.
W 2168	Utility Knife Metal Structure 80 x 90/ 60 gr.



FAST OPENING | COTTER TYPE | STILSON TYPE | HEAVY TYPE

Order	Product Definition
0510210	Hook: Fast Opening Pipe Wrench 10" - 14"
2201 10	İzeltaş: Cotter Pipe Wrench 325-430-585
2100 10	İzeltaş: Stilson Pipe Wrench 300-450-600
2110 10	İzeltaş: Heavy Type Pipe Wrench 300-450-600



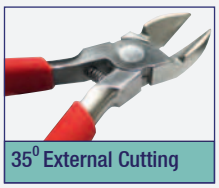


PLASTIC RUNNER CUTTING 90⁰ ANGULAR CHISEL 1231

The product is for cutting stainless material and Plastic / Lead. The ergonomic handle of product does not have any insulation against electricity.

Order	Length	Housing	Handle	Orifice Form
1231	150 mm	External	Foam PVC	90⁰





PLASTIC RUNNER CUTTING 35⁰ ANGULAR CHISEL 1233

The product is for cutting stainless material and Plastic / Lead. The ergonomic handle of product has not any insulation against electricity.

Order	Length	Housing	Handle	Orifice Form
1233	150 mm	External	Foam PVC	35⁰



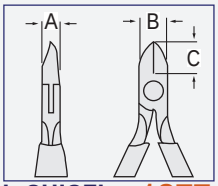


ELECTRICIAN CHISEL 2323

A long and thin product has stainless material and nonskid PVC Plastic Handle with Ergonomic hold of product has not any insulation against electricity.

Order	Length	Housing	Handle	Cutting
2323	120 mm	Internal	Nonskid PVC	0.65 mm



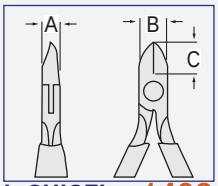


ELECTRICIAN SPRING DIAGONAL CHISEL 1377

A long and thin product has stainless material and nonskid PVC Plastic Handle with Ergonomic hold and is used for cutting 0.65 mm wires such as Plastic /Cable/copper.

Order	Length	A mm	B mm	C mm	Head	Cutting
1377	130 mm	5	9	12	Oval Type	0.65 mm





ELECTRICIAN SPRING DIAGONAL CHISEL 1406

A long and thin product has stainless material and nonskid PVC Plastic Handle with Ergonomic hold and is used for cutting 0.65 mm wires such as Plastic /Cable/copper.

Order	Length	A mm	B mm	C mm	Head	Cutting
1406	130 mm	7.5	13	16	Oval Type	0.65 mm



Plain Surface, 25ºC Blade Angle Cutting - 18mm Blade Length 4 mm Cutting Capacity - 190mm Heat Controlled Runner Cutting Shear





HEAT CONROLLED RUNNER CUTTING SHEARS HT180

It can be performed applications for cutting injection runners and other plastic materials, hard and thick plastic materials that are hard to cut with special cutting shears by without cracking - breaking - and by heating (Heat Controlled) clean cutting surface.

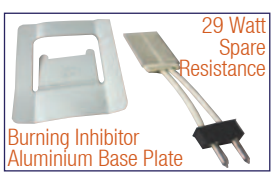
Especially: In cutting operations of Plastic Materials of Engineering (Headlamp etc.) for precise / rapid and quality surfaces. The cutting shear is used with Heat Setting Device / Rheostat Desired Adjustable Heats in a controlled manner, cutting shear is also with spare resistance and aluminium plate burning inhibitor base plate.

Order	Length	Housing	Cutting	Capacity
HT180	190 mm	With Heat Unit	25⁰ / Straight Length : 23 mm	4.0 mm



Cambered Surface, 16ºC Blade Angle Cutting - 23 mm Blade Length 7mm Cutting Capacity - 190mm Heat Controlled Runner Cutting Shear





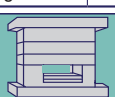
HEAT CONTROLLED RUNNER CUTTING SHEARS HT200

It can perform applications for cutting injection runners and other plastic materials, hard and thick plastic materials that are hard to cut with special cutting shears by without cracking - breaking - and by heating (Heat Controlled) clean cutting surface.

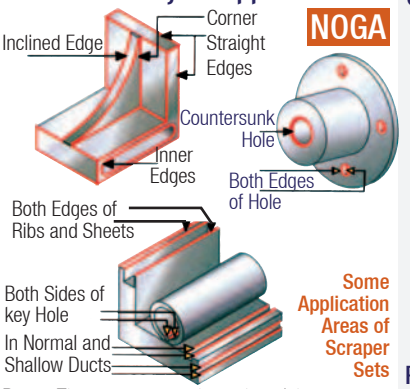
Especially: In cutting operations of Plastic Materials of Engineering (Headlamp etc.) for precise / rapid and quality surfaces. The cutting shear is used with Heat Setting Device / Rheostat Desired Adjustable Heats in a controlled manner, cutting shear is also with spare resistance and aluminium plate burning inhibitor base plate.

Order	Length	Housing	Cutting	Capacity
HT200	190 mm	With Heating Unit	16⁰ / Camber Length:23 mm	7.0 mm

GTH Mould Equipments
Present Special Solution...



SCRAPER Usage & Application



NOGA

Some Application Areas of Scraper Sets

Burrs: They are unwanted metal particles remained at the edge of work piece after machining process. For safety and quality production, these particles should be cleaned. Material Removal on bench is both long term and is hard to make balanced process. Hence, it will take more time, also surface roughness is important. All of this can not be economical.

NOGA DEBURRING SETS: With two component plastic handle and cutting blades (extended telescopic) and have withdrawal spring for opening and closing handle locks. 3 Pieces Spare Cutting Blades are stored in rear covered chamber.



NOGA GRIP HOLDER (3 Different Model)

- **NG-1** Ø **3.2** mm For All "S" Scraper Ends
- **NG-2** Ø **2.6** mm For All "N" Scraper Ends
- **NG-3** Ø **7.0** mm or All "T" Scraper Ends

Rasp Holders: Plier Holder in rotary position, Replaceable Ends (With Drill Chuck) Holding Handle. It is adapted to part contour automatically. With options for the processing of very different materials, it is used for deburring of contours rationally. With the ergonomic difference from other holders, it is suitable for your hand. - For max. comfort of your hand- Hard and Soft - Light Robust Structure - Rapid Replacement of Scraper Ends and Holders. Spare stripper ends are in rear cover assembly.



Stripper Rasps (New Product)



T50 Triangle Stripper End: HSS Blades with "NG3" Holder.

T70 Triangle Stripper End: HSS Blades with "NG3" Holder.



EXTERNAL Blade End: External Rotating Countersunk Driver **Length :** 150 mm



EXTERNAL Blade End: Internal Rotating Countersunk Driver **Length :** 150 mm

SCRAPING SETS

NOGA



Economical Set

PROMOTIONAL SETS

Deburring : Steel, Aluminium, Plastic

S Promo Set - NG 8150
Content: Noga Grip 1 Holder
10 Piece **S10** Scraping Blade

Order : NG 8150

N Promo Set - NG 8100
Content: Noga Grip 2 Holder
10 Piece **N1** Scraping Blade

Order : NG 8000



Left and Right Brass Casting

TELE SETS

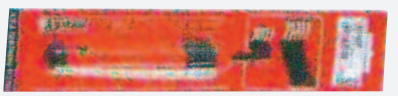
Deburring : Steel, Aluminium, Plastic, Brass and Casting

S Tele Set - NG 8350
Content: Noga Grip 3 Holder
S Holder, 5 Piece **S10**
5 Piece **S20** Scraping Blade

Order : NG 8350

N Tele Set - NG 8300
Content: Noga Grip 3 Holder
N Holder, 5 Piece **N1**
5 Piece **N2** Scraping Blade

Order : NG 8300



LIZA BURR SET Multi Purpose Set

Liza Burr Set - LB 1900
Content: UNI Holder, 5 Piece **S10** 5 Piece **N1** Scraper Ends

Order : LB 1900

PLASTIC EDGE OFFSET

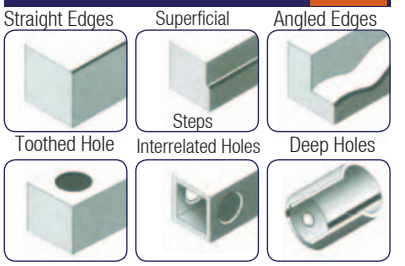
Economical Set - E02100
Content : E0 Holder+ S10 Green Stripper End (Aluminium) E0 Hold + S100 Blue Stripper End (Steel) E0 Holder + S150 Yellow Stripper End (Plastic)

Order : E02100



STRIPPER SETS

NOGA

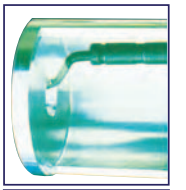


Deburring Scrapers: The stripper retainers have replaceable ends at rotary position and are adapted to work piece contour with handy, cutting edge automatically and they are excellent /quality brand hand tools in deburring different types of materials rationally.

MULTI PURPOSE SCRAPING SETS



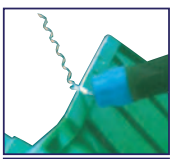
" Special Sets "
LIZA BURR LB 1000
N and S : Double Ended Stripper Ends for using with Stripper blades. Extension from 20 mm to 110 mm with **N** Scraper Blade. 20-94 mm with **S** Scraper.
Content: Plastic Handle, Telescopic Head with Pliers **N1** and **N2** Stripper.



Order : LB 1000



" Special Sets "
SOFT GRIP SG 1000
Ergonomic Holder, Two Holes are suitable for **S** and **N** Scraper.
Content: S 100 and **N10** Cobalt Alloy Scraper Blade with SG Holder.



Order : SG 1000



" Pen Type Pocket Rasp "
TEDDY BURR TB 1000
N1 Stripper End, 8 mm Hexagon Aluminium Retainer. It can hold all **N** Type (Diameter 2.6 mm) Stripper Ends. Stripper Ends can be changed easily, Pocket Attachable / Clip On.



Order : TB 1000

Light Duty Stripper End Short Type

Order	End Type	Application
BN 1010 40^0	N1	For steel, plastic aluminium
BN 2010 80^0 **L / R**	N2	Brass, Casting With Right-Left Hand
BN 2012 80^0 **L / R**	L/R N2 TİN	Stainless Steel With Right-Left Hand
BN 1310 45^0	N10 Cobaltous	Deburring of internal and external burrs
BN 3010 50^0	N3	In many materials Straight Edges
BN 6010 40^0	N6	In all plastic and hard materials

STRIPPER SETS

NOGA



NOGA BURR NG 1003 " Multi Purpose "

Content: NG 1 Holder With S10 - S20 - S35 Stripper Ends

NOGA BURR NG 1005

Content: NG 1 Holder With S 10 - S 20 - S 35 - S 101 and S 202 Stripper Ends

NOGA BURR NG 1000

Holds all S Type Stripper Ends (3.2 mm) Spare strippers are in rear cover.



Order : NG 1000 NG 1003 NG 1005



PLASTIC EDGE OFF E0 2000

Economical Set

Holds all **S** Scrapers.(3.2 mm) Replaceable Stripper Model,

Content: Plastic retainer and S 10 Stripper End



Order : E0 2000

Long Telescopic Stripper Set

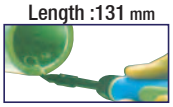


SUPER BURR NG 3003 Length :131 mm

Long With Retainer

Holds all **S** Strippers. Replaceable Stripper Model.

Content: Plastic Retainer and S 100 Stripper End



Order : NG 3003

Adjustable, Stripping/Correcting Stripper



ADJUSTABLE STIPPER SC 8000



With 12 mm Ratchet Ring, handle holding D50 D66 / D75/ D77 and T80 Scraper, is for scraping almost all materials. T80 Double Side end



Order : SC 8000

Heavy Duty Rasp Ends Long Type

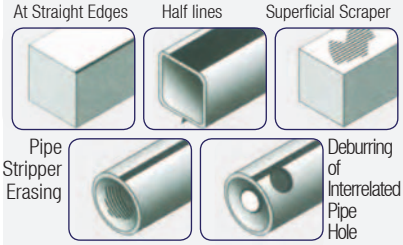
Order	End Type	Application
BS 1010 40° S10		For Steel, Plastic Aluminium
BS 2010 60° S20	L / R	Brass , Casting With Left, Right Hand
BS 2012 60° S20	L / R TIN	Stainless Steel With Left, Right Hand
BS 3010 40° S30		Deburring of internal and external burrs
BS 3510 55° S35	L / R	In many materials Straight Edges
BS 1018 45° S100	Cobalt	In all plastic and hard materials
BK 1010 40° S101		All Precise Edges (Finish)
BK 3010 45° S150		Small Holes up to 1.5 mm
BS 7001 - S70		Straight Edges
BS 6001 40° S60		Interrelated holes that are hard to reach

DEBURRING & STRIPPING

NOGA



At Straight Edges | Half lines | Superficial Scraper



Pipe Stripper Erasing

Deburring of Interrelated Pipe Hole

MINI SCRAPER SET



MINI STRIPPER NG 3700

It is an ideal set for mould and set producers. **D** Holder and **D50 / D66** Scrapers. The stripper is connected with 3mm fasteners.



Order : NG 3700

TRIANGLE STRIPPER SET

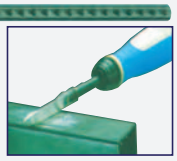


TRIANGLE STRIPPERS NG 3600

Holds T50 / T70 Strippers with **NG3** Plastic handle and **"T"** Retainer.

Length:131 mm

5 mm Inner Screwed



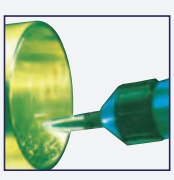
Order : NG 3600

HEAVY DUTY STRIPPERS



HEAVY - DUTY STRIPPER SC 1000

More durable heavy duty scraping processes, lockable to stripper retainer, can be used with T 80 / T120 triangle strippers.



Order : SC 1000

STRIPPER ENDS

Order	End Type	Dimension
BD 5010 60° D50		Dimension: 3.2 x 50 mm
BD 5501 60° D55	Carbide	Dimension : 3.2 x 50 mm
BD 6610 50° D66		Dimension : 3.2 x 48 mm
BD 7510 60° D75		Dimension : 3.2 x 75 mm
BD 7710 50° D77		Dimension : 3.2 x 73 mm
BT 5000 60° T50		Dimension : 3.2 x 51 mm
BT 7000 60° T70		Dimension : 4.2 x 57 mm
BT 8001 60° T80		Dimension : 2.5 x 80 mm
BT 3001 60°	T120	Double edged

DOUBLE EDGE STRIPPING

NOGA

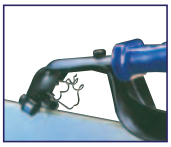


Double Angular Cutting



DOUBLE BURR DB 1000

It is for stripper plate sheets up to 12 mm. At the meantime, it cleans burrs of plates and it allows Hand Protector Shield and DB Retainer to rotate Stripper Ends easily. With 2 x N80 Diamonds Ends.



Order : DB 1000

Double Angular Cutting



NOGA V CUT NG 3200

It is for stripping sheets between 1 - 8 mm. **NG-3** Retainer, L Retainer Setting 4mm, Screwed Length 131 mm, it is used with **L3** Stripper Blade.



Order : NG 3200

Deburring of Slotting



KEYWAY BURR NG 3300

Deburring process from internal and external slottings, **Distance 2.4 mm** NG-3 Retainer - K Retainer and N80 K Stripper Blade



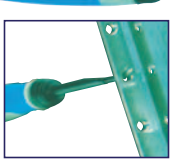
Order : NG 3300

For Stripping Interrelated Holes



INNER HOLE STRIPPER NG 3710

It is ideal to strip interrelated holes. It is ideal for NG 3 Retainer, D Pliers Retainer and D75/ D66/ D77 Stripper Blades.



Order : NG 3710

STRIPPER ENDS

Order	End Type	Range
BN 8010 55° N80	Diamond End Plaque	Between 0 - 12 mm Scraping
BN 7001 55° N70K	Diamond End Plaque	Between 1.2 - 8 mm Countersinking
BN 8110 55° N80K	Diamond End Plaque	Between 2.4- 11 mm Countersinking
BN 9009 55° N90K	Diamond End Plaque	Between 3 - 15 mm Countersinking
BL 3001 50° L3		Between 1 - 8 mm Countersinking
BL 4004 50° L4		Between 0 - 2.5 mm Countersinking
BC 3201 90° RD3.2		Between 0-3 mm Countersinking
BC 1001 90° TC		Max. 3 mm Countersinking

COUNTERSINKING SETS



NOGA

Countersunk Holes | Pipe Holes | Outer Shafts

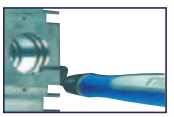


O -Ring Duct Cleaning, Stripping



O-RING BURR NG 1100

O-Ring Gasket, it is for inner duct cleaning and stripping and with NG1 Retainer and O-Ring Stripper Blade.



Order : NG 1100

Rotary Inner Countersunk Driver, Single Edged



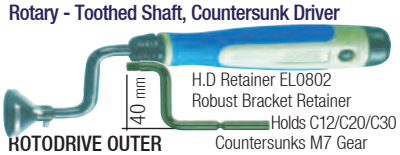
ROTODRİVE TOOLS NG 1200

The fastest way for bevel-ling by hand. Single Ended Countersunk provides smooth cutting. Content: NG1 Holder RD10.4 Countersunk Stripper



Order : NG 1200

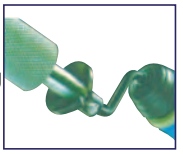
Rotary - Toothed Shaft, Countersunk Driver



H.D Retainer EL0802
Robust Bracket Retainer
Holds C12/C20/C30
Countersunks M7 Gear

ROTODRIVE OUTER COUNTERSUNK NG 1700

It takes bevels on rods and outer diameters of tubes. The fastest tool for bevelling outer dimaters of almost all materials. Content: NG1 Retainer, Bracket Retainer - EX 18 / 28 Stripper Blade

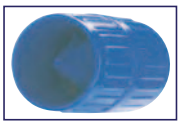


Order : NG 1700

Inner & Outer Edge Stripping (Single Product)

INNER - OUTER REAMER SP 8000

It strips inner and outer, corners of pipes / tubes. 3 Cutter Edge, Casting Housing Aluminium, Brass, Copper Range 4 -42 mm



Order : SP 8000

Order	End Type	Range
BO 1001 40^0	O - Ring	Between 1 - 3 mm Countersinking
BC 8301 90^0 RD8.3		Between 1 - 8.3 mm Countersinking
BC 1041 90^0 RD10.4		Between 1-10.4 mm Countersinking
BC 1651 90^0 RD16.5		Between 1-16.5 mm Countersinking
EX 2001 90^0 EX18		Between 4 - 18 mm Countersinking
EX 3011 90^0 EX28	H.D Rotor Drive M.7 with Holder	Between 8 - 28 mm Countersinking

Standard Set for Countersinking



COUNTERSINK

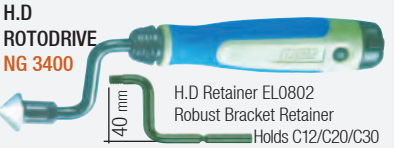
Usage for countersinking of deep holes and all countersunk processes. Content: NG - 3 Retainer C H Retainer and C20 Countersunk (20 mm)



Order : NG 3100

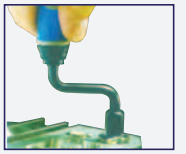
Bracket Retainer, Rotary-Rapid Countersinking

H.D ROTODRIVE NG 3400



H.D Retainer EL0802
Robust Bracket Retainer
Holds C12/C20/C30
Countersunks M7 Gear

It provides 40 mm extension for heavy duty stripper sets. Continuous axial rotation of countersink allows fast bevelling. Content: NG -3 Retainer / Bracket Retainer and C20 Countersunk, can be used in C12 / C30.



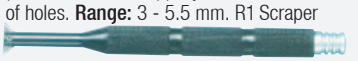
Order : NG 3400

Reversible Hole Front & Rear Precision Stripping



Mini REVERSIBLE Order No : RC 1000

It is a precision set for stripping front and rear sides of holes. **Range:** 3 - 5.5 mm. R1 Scraper



Medium REVERSIBLE Order No : RC 2000

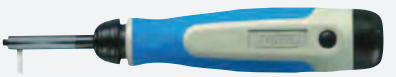
Range: 5 - 10 mm Steel holder and R2 Stripper End



Large REVERSIBLE Order No : RC 3000

Range: 10 - 22 mm Steel holder and R3 Stripper End

Stripping of Narrow Ducts Corners



NOGA -SLOT CLEANER NG 3210

It is used for scraping of narrow ducts corners from 3.5 mm. **Content:** NG3 Retainer, L Retainer and L5 Stripper, L7 Stripper is available to cut in 2 ways.



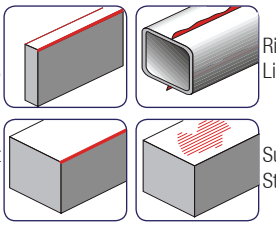
Order : NG 3210

Order	End Type	Range
BC 1211 90^0 C12		Between 1 - 12 mm Countersinking
BC 2011 90^0 C20		Between 3 - 20 mm Countersinking
BC 3011 90^0 C30		Between 3 - 30 mm Countersinking
BR 1001 90^0 R1		Between 3 - 5.5 mm Countersinking
BR 2001 90^0 R2		Between 5 - 10 mm Countersinking
BR 3001 90^0 R3		Between 10 - 22 mm Countersinking

CERAMIC STRIPPER



NOGA



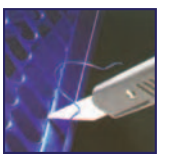
Thin Sheets | Rift Lines | Straight Edge | Superficial Stripping

A- Metal (Plastic Etc.) Ceramic Stripper



CONVEX CERA - CUT CR 2000

It is ideal for stripping and polishing surfaces of all plastic materials or soft metals. Replaceable Stripper End. Content: Cera - Cut Retainer and 25 ml. Convex Angular Stripper.



Order : CR 2000



Replacement of Stripper End; Remove Rear Retainer, insert cover to round hole and turn 90º, then pull the stripper end.

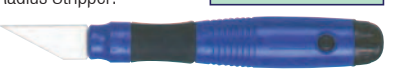


CONCAVE CERA - CUT CR 2300

It is ideal for stripping and deburring surfaces of all plastic materials or soft metals. Replaceable Stripper End. Content: Cera- Cut Retainer and 15 ml. Convex Radius Stripper.



Order : CR 2300



CERA - CUT CR 1100

It is ideal for stripping and deburring surfaces of all plastic materials or soft metals. It is long lasting and is thrown after use. Ergonomic handle is mounted to holder.



Order : CR 1100



Ceramic Double Burr DB 5000

It is ideal for deburring two edges of work piece simultaneously, the stripper is replaceable. **Range**: 1-11 **Content:** V Shaped Ceramic Stripper, is designed with hand protector ergonomically.



Order : DB 5000

Spare Stripper Blades (Material: Ceramic)

Convex End	Concave End	'V' Shaped
Order : **CR 2200**	Order: **CR 2500**	Order: **CR 5100**





GTH www.guvenal.net



NOGA SILVER KİT NG 9300

Quite Useful Kit :

Order No : **NG 9300**

Content:

* Noga Grip 3 Piece Retainer / 'S' Holder /Plastic Intermediate Countersunk Edge OFF Holder. 3.2 mm Roto Drive Countersunk / 10.4 mm Rotodrive Countersunk / 16.5 Rotodrive Countersunk / 18 mm Outer Rotor Drive

Stripper Ends: S10 / S20 and S30 **Packing Size :** 215 x 120 x 40 mm



NOGA BRONZE KIT NG 9200

Most Economical Set For All Users

Content :

Order No : **NG 9200**

* Noga Grip 3 Piece Retainer / 'N' Retainer / 'S' Retainer / 'C' Retainer +C20 / 'D' Retainer / +D50

Stripper Ends: N1 / N2 / S10 / S20 / S30 and S150 HSS Ends

Packing Size: 215 x 120 x 40 mm



NOGA GOLD SET NG 9400

Full Set for Professionals

Content:

Order No : **NG 9400**

* Noga Grip 3 Piece Retainer / Adjustable Stripper Plastic Edge OFF Retainer/ 'S' Retainer/ 'N' Retainer/ 'C' Retainer +C20/ 'D' Retainer +D50 'K' Retainer +N80K / Alien Key (1.5mm) / 10.4 Countersunk Bracket arm

Stripper Ends: N1 / N2 / S10 / S20 / S30 / S150 / D66

Packing Size: 270 x 230 x 50 mm

ECONOMICAL SETS



PROMO - 1 SET

Specifications:

* 1 Piece T-SD Plastic Housing
* 1 Piece DT-C Telescopic Retainer
* 10 Pieces C20 Stripper Ends

Order : RCP - 84059
Code : 13829



PROMO - 2 SET

Specifications:

* 1 Piece D-SD Plastic Housing
* 10 Pieces C20 Stripper Ends

Order : RCP - 84069
Code : 13830



UNIVERSAL KIT

Order :
RCP - 48034
Code :
13839

Specifications:

* 5 Pieces D-SD, T-SD, R-SD Plastic Retainer Housing
* 21 Pieces 3.2 mm Stripper Ends
* 2 Pieces C-30, C-121, C-100, C-15 / 1 Piece C60
* 5 Pieces Stripper Blade with "6 mm" Handle/2 Pieces R10 (S)/3 Pieces R15 (S10)
* 2 Pieces Stripper Blade SCR - 3 (75 mm) and SCR - 612
* 1 Piece V-2 and V-4 Blade with VT Telescopic Retainer
* 1 Piece KW Telescopic Retainer / KW - 16 Stripper Blade
* 1 Piece DTO Telescopic Retainer for 'C Type' Blades
* 1 Piece CS-20 Countersunk Stripper Set
* 1 Piece C-1 Ceramic Stripper Set

Multi Signum Spray

Specifications This spray carries out 5 functions collectively, protects metal against corrosion, removes rust, lubricates, cleans product and prevents recontamination. - It has heat resistance to 30°C / 100°C. Vanilla fragrant. WD-40 Equivalent, Economic

Usage It is used protecting and lubricating metals in mould industry for a short period. Also, it cleans corrosion on surfaces. It is water repellent. Used for cleaning metal parts.

Order No : Art. Nr. 416380



Ice Maker Spray (In tensions)

Specifications: The refrigerant spray, provides easy mounting possibility by shrinking metals and chains. It is used in finding and correcting failures in electrical areas. It penetrates the surface thoroughly.

Usage: It enables the dismantle by cooling parts in moulds expanded due to temperature. Also, it is a very good surface cleaner. Volatile and non-poisonous.

Order No : Art. Nr. 414080



WW 3000 Spray (Liquid Grease)

Specifications: It is a lubricant, resistant to high pressure, water, and 180°C temperature and corrosion. It has a high adhesion feature and it is dripless and non dropping. It has transparent colour and makes permanent lubrication.

Usage: It is a long term protection lubricant for moulds, ejector pins, cores and columns. Also it is used for assembly such as chain, apparatus etc. Can be also applied at press .

Order No : Art. Nr. 420080



Powerful Rust Remover Spray

Specifications: It is a dust remover with superior features and advanced technology. It has a very well penetration feature and it loosens tight bolts and nuts. Also, by penetrating even the thinnest places, it removes rust. Environment-friendly.

Usage: It is used for cleaning all moulds during their maintenance and mounting and removing rust from rusted bolts and surfaces. Also, it is corrosion inhibitor.

Order No : Art. Nr. 414480



Anti - Seize Ceramic Grease Spray

Specifications: It is mounting paste not containing metal and graphite and is a lubricant providing very good efficiency on ceramic structure and high heat resistant parts with its advanced technology. - It is resistant to 40°C/ 1400°C temperature, also 220 N/mm² pressure.

Usage: It is used as precision lubricant in all mould parts working in high temperature, metal injection and press moulds such as ejector pins - Column Bushes - Cores etc.

Order No : Art. Nr. 413980



Anti-Seize Copper Grease Spray

Specifications: It has very good adhesion on surfaces. It is resistant to -30ºC / 1200º temperature and 230 N /mm² pressures and also against rust and corrosion, it is copped based mounting paste. It prevents sticking of parts due to high temperature and is used in Quick Working Systems.

Usage: It is used as mounting spray on moulds, bolts, nozzles and oven joints of injection machines exposed to high temperature and pressure.

Order No : Art. Nr. 415080



Mould Protector Spray

Specifications: It creates long term robust protection layer on surfaces, it dries quickly. It protects against corrosion, rust and creates long term non aqueous dry protection layer. It protects in the form of white powder.

Usage: It is a long term concealer product used as protector for metal, ceramic, glass, plastic moulds, machines and pipe ducts B.

Order No : Art. Nr. 428880



Food Approved Lubricant Spray

Specifications: It is used for machines and equipments producing and contacting with food. Tasteless and odourless. It is approved by Food Grade LMBG. It is a white liquid grease and is used in mould related with food.

Usage: It is used for lubricating various components of food and bottling machine, milk, mineral water, beer factories, meat, vegetable, fruit, fish machines.

Order No : Art. Nr. 416480



Matt Black Spray Paint

Specifications: It is quick dry and good adhesive paint. It provides intensive protection against weather conditions and corrosion.

Usage: Used on machines, cars and motors in order to provide sportive appearance, also it is used on window texts and exhibition stands for decorative purposes. Also, it is used as mould exterior paint.

Order No : Art. Nr. 414880



Protective Wax Spray

Specification: It protects all metals, machines and equipments against corrosion. Provides rust formation. By creating a thin wax layer on surface, it prevents air contact of product. It is resistant against water and salty water vapour. Ideal protector in pneumatic formwork.

Usage: It provides protection in long distance moving of moulds, especially transporting of vessels against corrosion. Also, it is suitable for long-term Machine and Tool Storage.

Order No : Art. Nr. 418289



Rubber & Plastic Care Spray

Specifications: It is used to clean rubber, plastic and PVC surfaces from oil, coal dust, nicotine and other dirts. It provides cleaning and maintenance at all rubber and plastic gaskets, also bumper and car cockpits.

Usage: It is used on all kinds rubber and plastics. It does not cause any reaction with product, protects shapes, does not discolor, cleans thoroughly.

Order No : Art. Nr. 413280



Part Cleaning Spray

Specifications: It cleanses oil, dirt and resins at all metals rapidly and without leaving a trace. Especially, for mould polishing / cleaning works, application on mould surfaces, it cleanses all dirts, oils, chemicals from surface to down / outward thoroughly with its volatility.

Usage: It is used at mould polishing works intensively. It removes traces when the mould stamp is finished, it is used on mould and metal al parts of machines cleaning.

Order No : Art. Nr. 415280



WD -40 5 Function Spray

Specifications: The worldwide proven multi function oil is odourless. It is effective in areas like Rust Remover - Cleanser - Lubricant - Corrosion Protector - Contact Spray. 3 Different Types.
400 - 200 ml. - 440 ml. Spray Lubrication. 5 Function General Workshop Usage

Order No : WD40-402 200 ml.
WD40-404 400 ml.



Varnish Spray (Protector)

Specifications: By creating a transparent layer on all plastic, dyed metal and dyed surfaces, it provides long term protection against dust, dirt and corrosion on surfaces. It is resistant to salty water.

Usage: It is used for mechanical maintenance and Repair Works and also is used on wood surfaces as varnish.

Order No : Art. Nr. 411780



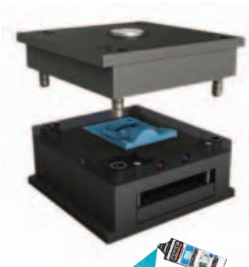
Hand Cleansing Creme

Specifications: It does not contain alkali or solvents and consists of components which are non prejudicial dermatologically . The processed fine grainy materials in the product, provide cleaning and protection on hand pores thoroughly. It is extremely effective on all rusty, painted and adhesive dirts.

Order No :
310804 - 500 ml. Can
318806 - 3 lt. Packing
310809 - 30 lt. Barrel









WINPLAST MOULD PROTECTOR

Rust and Corrosion Inhibitor, Protecting Flexible Plastic Elastic Surface Coating Spray Paint provides flexible, non-porous and easy coating. It is quick dryed and thanks to its blue colour, it is detected immediately on mould and metal parts. In mould and metal industry, it is for surface corrosion protection.**Order :** 400 ml. **Art No : 418880**



Economic Mould Release



WINKEL Silicone Spray

MACHINE & MOULD MOUNTING SPRAY

In plastic injection machines, it helps to release products from mould. 2 Different Presentations:
Silicone Spray: It creates oil covered slippery surfaces
Siliconless Oilless Spray: It creates spotless slippery surfaces. Use on surfaces to be painted.

Order	Product Definition
411580	WINKEL Silicone Spray
417480	WINKEL Oil-free Silicone
K.2000	Economic Silicone Spray
K.1000	Economic Oil-free Silicone



WINKEL REPAIR PASTE

Winkel Mix: It is used for repairing unsuccessful drills, eyelet spaces, all cracks on metals and wood and plastic, mechanical work can be done in a short time. The parts can be grinded, milled, drilled, painted. It is a product resistant up to 300ºC temperature.
Winkel Mix - Waser: It has similar specifications to the other sealant and is a model used against water. Especially, it can be applied on pipe and metal cracks.

Order	Product Definition
200016	WINKEL Mix 56 gr.
200017	WINKEL Mix - Waser



It is for Hot Runner Moulds.

UNIVERSAL FLUID GASKET

HYLOMAR Fluid Gasket that is a permanent sealing product, is a leader in the product area providing 100% sealing to all industry Leaders companies for a long time.

Especially, in hot runner moulds: The parts to be repaired with suitable operation should be cleaned and oil-free. Sanding improves holding quality.
Usage: Cut the edge and squeeze Winmet. The mixture is adjusted automatically. Mix material until receiving an even colour, apply to the parts with scraper kit. After 30 minutes, mechanical work can be performed. Full curing is realized after 24 hours. Should not be worked under 5ºC.
After completion of the work: Close the cartridge with its cover again.

Technical Detail Information!

Colour ..... Blue
Density (25ºC) ..... 1,12 g / cm3
Chemical Element.....63 - 67 Polyurethane
Resolvent.....33 - 37 %
Mixture Acetone / Ethylacetate
Minimum Heat Resistance..... - 500C
Maximum Heat Resistance..... 250 / 3000C
Maximum Crack Filling..... 0.10 / 0.15 mm
Delivery Status.....In 80 ml. tube as paste
Usage: After ventilating solvent (approximately 10 minutes), the mounting can begin. It is resistant to oils, grease fuels, water and other chemicals. Its usage is easy, non drying, thus when desired to open the sealed system, it does not cause any difficulty.



Order : **HYLOMAR M**



HOT RUNNER CLEANING SYT

It provides cleaning on hot runner moulds, runner/nozzle systems by heating frozen raw material.

While beginning application, the selected compatible (runner nozzle) copper end is connected to the heat gun end with mounting ring in appropriate manner. Thanks to flexible hose of heat gun, it has ergonomic usage.





Nozzle Ends Related to Unit (With compatible selection)

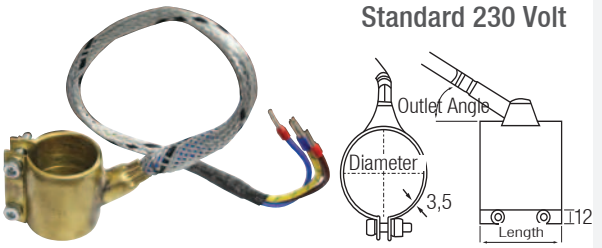
Technical Detail Information!

Voltage ..... 220 / 230 V
Power..... 100 W min. - 200 W max.
Weight..... 250 gr.
Cable Distance ..... 2.5 Meter
Max. Nozzle Heat 350ºC
12 Second heating time / Waiting 48 Second
It is suitable for all plastic raw materials.

Application:

During the process, 12 seconds after pressing the trigger of the Heat Gun, the coppered end reaches to the required Temperature (350ºC) to open the plugged area, while gun is working, don' t pull the trigger continuously. After pulling the trigger for 12 Seconds (ON), wait for 48 Seconds (OFF) by removing your hand from the trigger. This process cycle can be repeated in accordance with specified time values. It can be extended according to the hard plastic materials. Coppered Ends can be worn out in time, they should be changed at suitable intervals. **Important:** When the process is completed, the energy source should definitely be cut and also the product should not be left in a place with fire risk.
The cleaning of the product is very easy, don't remove melt plastic from copper end, the cleaning process should be done after the plastic is cooled, otherwise there is a breaking risk for the nozzle.

Order : **SYT**



HOT RUNNER, CLAMP END RESISTANCE KR

With its economical prices, excellent insulation, outlets reinforced for long use, inner sleeve rolling it is excellent. The fittings are stainless bolts.

As per request, it can be produced as Thermocouple

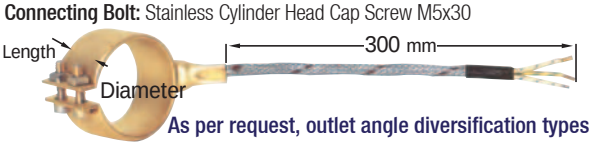
Standard 300 mm cable is used, it can be extended as per request also, as per request special production can be made.

Power : 5 W/cm² - 230 V

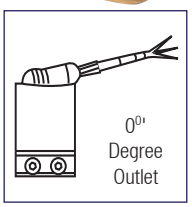
Sleeve material: Copper, Tin Alloy - Cr-Ni in yellow.

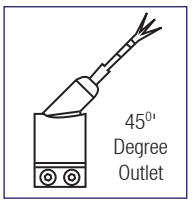
Energy Cable: Pure Nickel 300mm length, glass fiber glass fireproof cable outside, external Armour 304 Stainless Steel Mesh Tie.

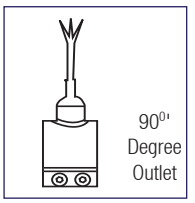
Connecting Bolt: Stainless Cylinder Head Cap Screw M5x30



As per request, outlet angle diversification types

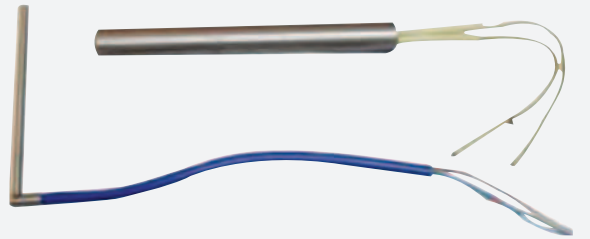






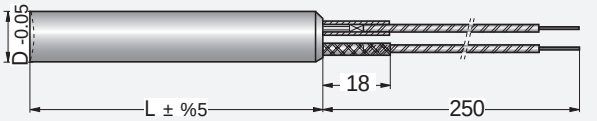
HOT RUNNER, CLAMP END RESISTANCE KR

Dia.	Length	Watt
25	30	120
30	25	120
	30	140
	35	165
	40	185
35	25	135
	30	165
	35	190
	40	220
	45	235
40	25	155
	30	190
	35	220
	40	250
	45	280
42	25	165
	30	200
	35	230
	40	265
45	25	175
	30	210
	35	250
45	40	280
	45	320
	50	350
50	25	195
	30	235
	35	275
	40	315
	50	390
55	25	215
	30	260
	35	300
	40	345
	50	430
60	25	235
	30	280
	35	330
	40	375
	50	470
	60	565
65	25	255
	35	355
	50	510
70	25	270
	30	330
	35	385
	40	440
	50	550
	60	660
75	30	355
	40	470
	50	590
	60	705
80	25	310
	30	375
	35	440
	40	500
	50	630
	60	750
100	25	390
	30	470
	35	550
	40	630
	50	785
	60	940



CARTRIDGE RESISTANCE (Plain/Thermocouple) FR

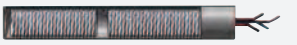
The cartridge resistors produced with advanced technology, provide a good performance in difficult use conditions in short distances and small areas due to its high watt. By insulating resistance wire wrapping on ceramic stone in equal and common pitch ranges with high resistant magnesium oxide powder, is created at a very close point to the stainless steel. The thickness of insulation between resistance wire and stainless steel pipe provides excellent heat transmission.



Thermocouple Resistance Diversification (Selection as per request)



Type 1: Thermocouple junction point is not grounded to resistance body and is located at the bottom washer of resistance tube.



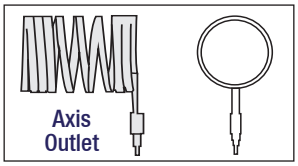
Type 2: Thermocouple junction point is not grounded to resistance body and is located at the center of resistance tube.

L	40	50	60	80	100	130	160	200	250	300	400
D	WATT (230 V)										
6.5 -0.02 -0.04	80 100 125 160 200	125 160 200 250 315	125 160 200 250 315	160 200 250 315	200 250 315 400	250 315 400 500	250 315 400 500	-	-	-	-
8.0 -0.03 -0.05	125 160 200	125 160 200 250	160 200 250 315	200 250 315 400	200 250 315 400	250 315 400 500	250 315 400 500	-	-	-	-
10 -0.03 -0.06	125 160 200 250 315	160 200 250 315 400 500	160 200 250 315 400 500	200 250 315 400 500 630	250 315 400 500 630 800	315 400 500 630 800 1000	400 500 630 800 1000	-	-	-	-
12.5 -0.04 -0.07	160 200 250 315	160 200 250 315 400	200 250 315 400 500	200 250 315 400 500 630	315 400 500 630 800 1000	315 400 500 630 800 1000	400 500 630 800 1000 1250	500 630 800 1000 1250 1600	630 800 1000 1250 1600 2000	630 800 1000 1250 1600 2000	-
16 -0.05 -0.08	-	200 250 315 400	200 250 315 400 500	250 315 400 500 630 800	315 400 500 630 800 1000	400 500 630 800 1000 1250	500 630 800 1000 1250 1600	630 800 1000 1250 1600 2000	630 800 1000 1250 1600 2000	800 1000 1250 1600 2000 2500	800 1000 1250 1600 2000 2500
20 -0.06 -0.10	-	-	-	400 500 630	400 500 630	500 630 800 1000	630 800 1000 1250	800 1000 1250 1600	1000 1250 1600 2000	1000 1250 1600 2000	1250 1600 2000 2500

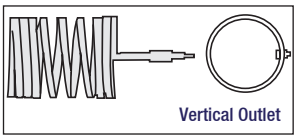
* As per request, the desired type thermocouple can be produced in dimensions in red.
* The slot that cartridge resistance will be inserted should be even and smooth.
* The suitable temperature control should be done to prolong resistance life.
* The resistance should be sit on slot kindly.
* 90º Rotational Types is produced with an order.

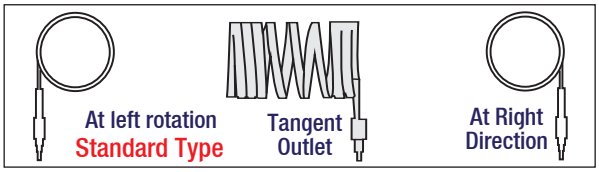
Order : FR D x L x Watt

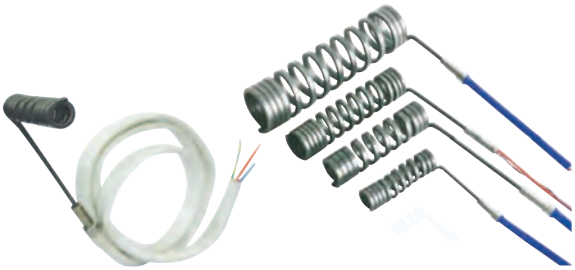
Order : KR Diameter x Length



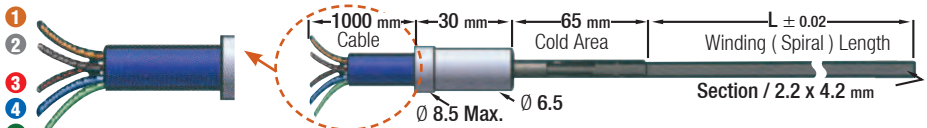
Selection as per request, OUTLET TYPES

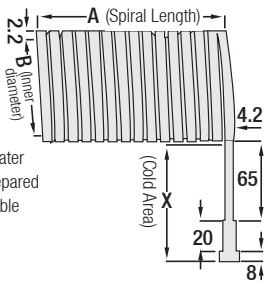






HOT RUNNER, SPIRAL RESISTANCE SR





Energy Cable Definition (1000 mm)

1 - Orange Colour (Thick) Phase
2 - Grey Colour (Thick) Neutral
3 - Red Colour (Thin) + Thermocouple
4 - Blue Colour (Thin) - Thermocouple
5 - Green Colour (Thick) Grounding

Spiral Resistances of Nozzle Used In Hot Runner System:
In Spiral Resistances, Spiral Section is from 321 Quality Stainless Steel Material and Heater Wires inside the pipe is from 8020 Chrome Nickel (Cr-Ni 8020), energy cables are prepared and delivered by winding as per request with pure nickel conductive, export fireproof cable resistant to 400ºC, Teflon Coated Insulation.
Our production as per request is available in standard series too.

STANDARD "WATT" VALUES CORRESPONDING TO OPEN / WINDING LENGTH (L)

Watt (W)	200	225	250	290	350	400	470	620	690	850	950	1100	1200
Winding (L) Length (mm)	250	280	335	385	460	520	600	760	900	1100	1200	1400	1550

STANDARD SPIRAL RESISTANCES

Heated (Spiral) Area /A Length and Watt Values (Watt / W)

Spiral (A)	20	40	60	80	100	120	140	160	180	200	220	240	260
İç çap (B)	Heated Area (Spiral) Heat Watt / W Values												
10 mm	-	200	250	350	350	350	400	470	470	620	-	-	-
12 mm	-	225	290	400	400	400	470	620	620	620	-	-	-
12.5 mm (1/2")	-	225	290	400	400	400	470	620	620	690	-	-	-
14 mm	-	250	350	400	400	470	620	620	690	690	-	-	-
15 mm	-	250	400	470	470	620	620	620	690	-	-	-	-
16 mm (5/8")	-	250	400	470	470	620	620	690	690	-	-	-	-
18 mm	-	290	400	620	620	620	690	690	-	-	-	-	-
19 mm (3/4")	-	290	470	620	620	620	690	850	950	950	1100	1200	1200
20 mm	-	290	470	620	620	690	690	850	950	1100	1100	1200	1200
22 mm (7/8")	200	350	620	690	690	690	850	950	1100	1100	1200	1200	-
24 mm	200	400	620	690	690	850	950	950	1100	1200	1200	1200	-
25 mm (1")	225	400	620	690	690	850	950	1100	1100	1200	1200	-	-
28 mm	225	470	690	850	850	950	1100	1200	1200	1200	-	-	-
30 mm	250	470	690	950	950	1100	1200	1200	1200	-	-	-	-
32 mm (1 1/4")	250	470	690	950	950	1100	1200	-	-	-	-	-	-
35 mm	290	620	690	950	950	1100	1200	-	-	-	-	-	-
38 mm (1 1/2")	290	620	850	1100	1100	1200	-	-	-	-	-	-	-
40 mm	290	620	850	1100	1100	1200	-	-	-	-	-	-	-
42 mm	350	620	950	1200	1200	1200	-	-	-	-	-	-	-
45 mm	350	690	950	1200	1200	1200	-	-	-	-	-	-	-
48 mm	400	690	1100	1200	-	-	-	-	-	-	-	-	-
50 mm (2")	400	690	1100	1200	-	-	-	-	-	-	-	-	-

Standard Series; It is produced up to 2200 Watt and has 1000 mm cable. Standard "J" Type Thermocouple is used in our products.
As per request, (N Type and K Type) Thermocouple Spiral Resistance can be produced for precision works.
Special Tight Resistance; For your order, as winding formula;
Inner Diameter x "P" (3.14) x Thread No =....

RESISTANCE LENGTH DETECTION

Cold Area Including 65 mm

Min. Wrapping Diameter	Ø 8 mm
230 Volt	2.2 x 4.2 mm Ø 3.3 x 3 x 3 mm
200 Watt	315 mm
225 Watt	345 mm
250 Watt	400 mm
290 Watt	450 mm
330 Watt	-
350 Watt	525 mm
400 Watt	585 mm
470 Watt	665 mm
550 Watt	-
620 Watt	825 mm
690 Watt	965 mm
700 Watt	-
800 Watt	-
850 Watt	1165 mm
950 Watt	1265 mm
1000 Watt	-
1100 Watt	1465 mm
1200 Watt	1615 mm
1400 Watt	-
1600 Watt	-
1800 Watt	-
2000 Watt	-
2200 Watt	-

Order SR B (Inner Dia) X A (Length) X Outlet- (Left) Raw Material (Granule) ?

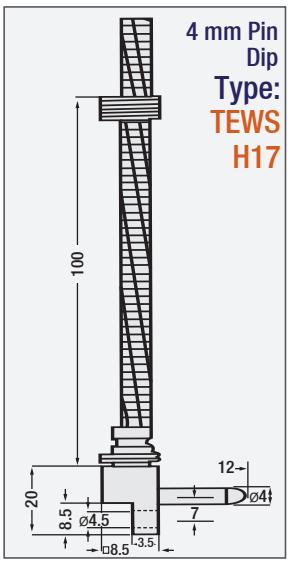
For Correct Resistance Selection; Pls. complete system with used plastic granule raw material information and by requesting information from our technical staff (**0212 671 09 10**)..!

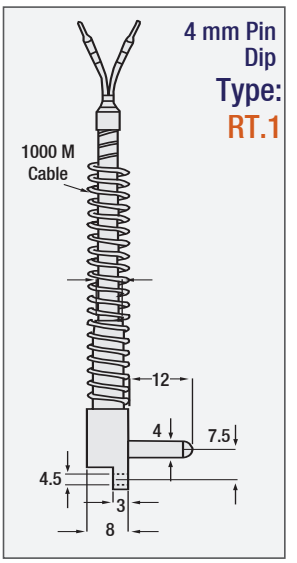


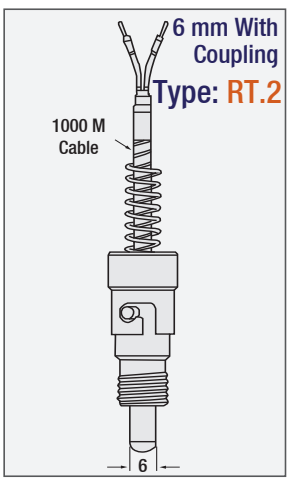
MANIFOLD SYSTEM, THERMOCOUPLES RT

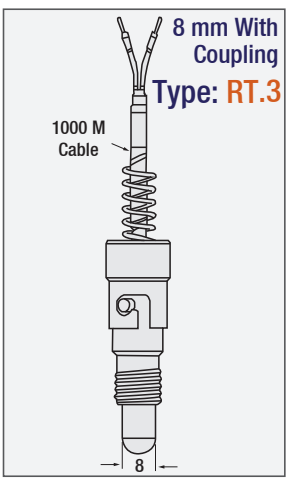
The Thermocouples ("**J**" Type) FE-constent combination makes measurement as minivolt from contact surface, sends values to the screen. Thus, it maintains heat measurement. The Cables are insulated with glass fiber coating. Thermocouples are the first element of the temperature measurement sensors from - 200ºC to +800ºC . Thermocouples are produced in various types as "K Type" - "J Type" and "PT100". "J Type" Standard Type that we produce are shown below. Except these, we produce thermocoupl according to the different special type sample.

MANIFOLD SYSTEM, THERMOCOUPLE TYPES



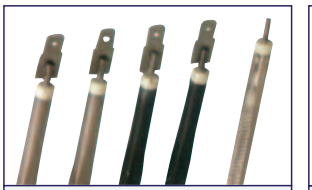




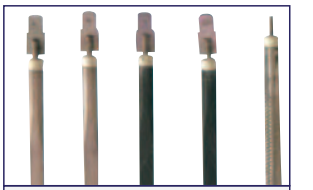


Order : RT. Type





Circular Section Flexible Resistance
Ø 5 - 6.5 - 8.5 - 10 - 12 - 16 - 21



Square Section Flexible Resistance
□ 4.5 x 4.5 - 6 x 6 - 8 x 8 mm

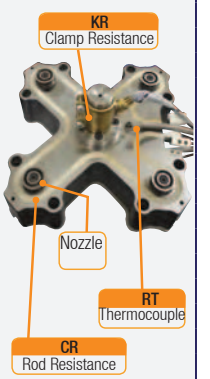
FLEXIBLE ELASTIC ROD RESISTANCES CR

It can be produced up to 4.400 mm length and in the form desired by customer. In heating of liquid and air stream, especially is used as resistance to manifold channels (by closing with resin), it can be mounted to hexagon flange. It is presented in two different types; **1** - In round structure **2**- In Square type To provide insulation inside of 304 Quality Stainless Pipe (Cr-Ni 8020), inside of stainless heater wire resistance and between pipe (Cr-Ni) and wire, magnesium powder is used, energy cables are from pure nickel and covered by fire proof glass fiber cable. For selection as per request, refer to the table. **RESISTANCE DIAMETERS:** Ø 5 - 6.25 - 6.4 - 7 - 8 - 8.5 - 10 - 10.2 - 11 - 12

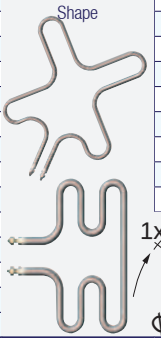
FLEXIBLE ELASTIC ROD STANDARD RESISTANCE CR

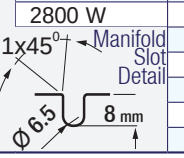
Section	□ 4.5 x 4.5 mm Ø 5.0 mm±0.10	□ 6 x 6 mm±0.05 Ø 5.0 mm±0.10	□ 8 x 8 mm±0.05 Ø 8.5 mm±0.15
Type	BASE filex	BASE filex	BASE filex
Mini. Radius that can be curved.	Radius Up to **12** mm	Radius Up to **15** mm	Radius Up to **20** mm
Cold Area	25 mm±5	30 mm±5	40 mm±5
Order / Length	WATT (230 Volt 'ta)		Standard Types
250 mm	200 W	-	
300 mm	250 W	-	
350 mm	300 W	550 W	
400 mm	350 W	650 W	
450 mm	400 W	750 W	
500 mm	450 W	800 W	
550 mm	500 W	900 W	
600 mm	550 W	1000 W	
650 mm	600 W	1100 W	
700 mm	650 W	1200 W	
750 mm	700 W	1300 W	
800 mm	750 W	1350 W	
850 mm	800 W	1450 W	
900 mm	850 W	1550 W	
950 mm	900 W	1650 W	
1000 mm	950 W	1750 W	
1050 mm	1000 W	1850 W	
1100 mm		1950 W	2.500 W
1150 mm		2000 W	-
1200 mm		2100 W	2.700 W
1250 mm		2200 W	-
1300 mm		2300 W	2.900 W
1350 mm		2400 W	-
1400 mm		2500 W	3100 W
1450 mm		2600 W	-
1500 mm		2700 W	3300 W
1550 mm		2800 W	-
1600 mm			3500 W
1700 mm			3700 W
1800 mm			3900 W
1900 mm			4100 W
2000 mm			4300 W

Manifold Assembly Example



Bendable Type According to Manifold Shape





INDUSTRIAL TYPES PLUGS AND SOCKETS

16 CONTACT 16 Amper Plugs and Sockets



Core Socket : 16 Contact
Order No : EBM16CP



Core Plug : 16 Contact
Order No : EBM16CF



Extension Plug: 16 Contact
Order No : EBM16PU



Extension Plug 16 Contact
Order No : EBM16FU



Wall Plug: 16 Contact
Order No : Single Entry **EBM16FD14**
Double Entry **EBM16FD24**

Usage Area: Generally, it is used as wall plug in 6 or 8 Manifolds, hot runner systems or wall plug or heat control devices.

10 CONTACT 16 Ampere Plugs and Sockets



Core Socket : 10 Contact
Order No : EBM10CP



Core Plug : 10 Contact
Order No : EBM10CF



Extension Plug: 10 Contact
Order No : EBM10PU



Extension Plug : 10 Contact
Order No : EBM10FU



Wall Plug : 10 Contact
Order No : Single Entry **EBM10FD14**
Double Entry **EBM10FD24**

Usage Area: Generally, it is used as wall plug in 4 Manifolds, hot runner systems or wall plug or heat control devices.
Order Description : EBM10FD24
EB: Industrial Plug or Socket **M:** Metal Casing **10**: Contact **FD**: Wall Plug **2**: Double Entry **4** :Latch

5 CONTACT 10 Ampere Plugs and Sockets



Core Socket: 5 Contact
Order No : EBM05CP



Core Plug : 5 Contact
Order No : EBM05CF



Extension Plug: 5 Contact
Order No : EBM05PU



Extension Plug: 5 Contact
Order No : EBM05FU



Ratchet Socket: 5 Contact
Order No : EBM05PM

Usage Area: It is used as machine plug or extension plug or socket in one-eyed main runner nozzles or one-eyed hot runner control devices.
Order Description : EBM05PM
EB: Industrial Plug or Socket **M:** Metal Casing **05:** Contact **P:** Socket **M:** Latch

48 CONTACT 16 Ampere Plugs and Sockets



Core Socket : 48 Contact (1-24) & (25-48)
Order No : EBM48CP



Core Plug : 48 Contact (1-24) & (25-48)
Order No : EBM48CF



Extension Plug 48 Contact
Order No : EBM48PU



Extension Plug: 48 Contact
Order No : EBM48FU



Wall Plug : 48 Contact
Order No : EBM32FD44

32 CONTACT 16 Ampere Plugs and Sockets



Core Socket : 32 Contact (1-16) & (17-32)
Order No : EBM32CP



Core Plug : 32 Contact (1-16) & (17-32)
Order No : EBM32CF



Extension Plug: 32 Contact
Order No : EBM32PU



Extension Plug: 32 Contact
Order No : EBM32FU



Wall Plug : 32 Contact
Order No : EBM32FD44

24 CONTACT 16 Ampere Plugs and Sockets



Core Socket : 24 Contact
Order No : EBM24CP



Core Plug : 24 Contact
Order No : EBM24CF



Extension Plug: 24 Contact
Order No : EBM24PU



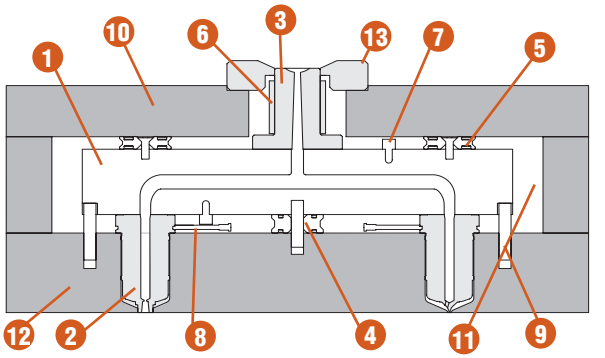
Extension Plug: 24 Contact
Order No : EBM24FU



Wall Plug : 24 Contact
Order No : Single Entry **EBM24FD14**
Double Entry **EBM24FD24**



HOT RUNNER MANIFOLD EQUIPMENTS



1- Hot Runner Manifold
2- Hot Runner Nozzle
3- Angus
4- Thrust Disc
5- Locking Disc
6- Angus Clamp
7- Thermocouple
8- Hot Runner Nozzle Resistance
9- Locating Pin
10-Top Cover Plate
11- Manifold Pool
12- Nozzle Plate
13 -Locating Flange

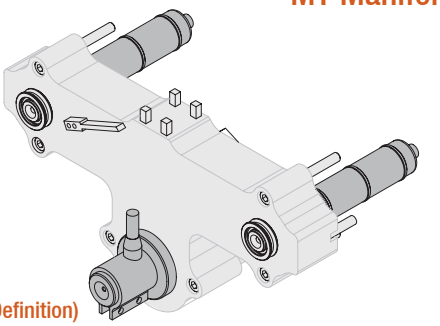
HOT RUNNER SYSTEM: It is the continuation and extension of machine injection group and independently a system in mould, its design and Engineering requires special Knowledge and Experience. The system equipments are relevant to each other from bonnet to heels.

Hot Runner Systems are manifold, hot runner nozzle resistance and thermocouple in base. The element contacting with products directly and effecting the result is hot runner nozzle. To give desired performance by hot runner nozzle, the production of all equipment should be correct. It works as a casing in manifold system. Also, it is an important element that collects and distributes material. The system is heated via resistances placed on it. The elements that keep the resistance temperature in specified range and measure the temperature are thermocouples. The thermocouples that detect the temperature decrease, allow resistances to work by triggering electric energy.

ANGUS; is the first element that provides the start of distribution of melt raw white into manifold. To reach melt raw material into manifold with the same pressure and temperature, **Clamp Resistance** is inserted around Angus.

Manifold SYSTEM FOR MULTI-EYED MOULDS

MT Manifold



Order Form (Definition)

MT XX KA CX CY

- Axis Range in X
- Axis Range in Y
- Number of Used Nozzle
- Dia. of Used Nozzle
- Manifold Model

Other Equipments with Important Roles in System:

Thrust Disc - Locking Disc - Bolts and Locating Pins.

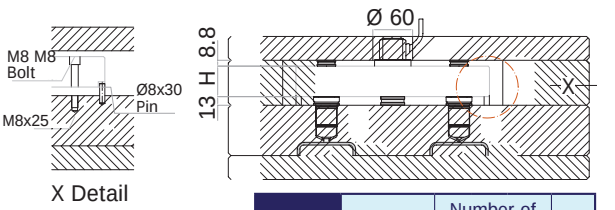
They are used to mount system to mould in the most correct way. Another Section that is effective in working of hot runner systems continuously and seamlessly are mould plates and manifold pools. As well as system and labour, also precision processing of the mould should be in the desired values.

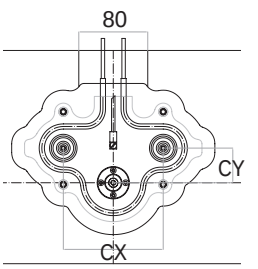
Hot Runner Products: BELONGS TO TURKISH PRODUCTION SECTOR.

In our large mould production industry, our national capital continues to service status and we present Spare Parts - Service - Demo - Maintenance Guarantee. In selection and installation of all these systems, we will help together with our technical team. In addition, we will continue its follow up. We believe that all products which we present in continuation of faith to known GÜVENAL GROUP A.Ş. services will gain continuity in your mould with appropriate manner.

With economical presentations...



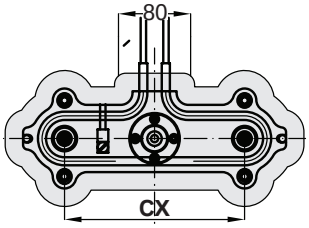


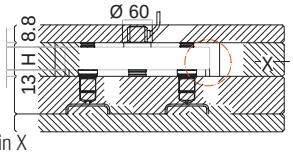


Manifold Model	Requested Nozzle Diameter	Number of Manifold Eye Number of Nozzle To be used			Inter Axis
MT	Ø 18	2	4	8	CX* XY
	Ø 22				
	Ø 25				
	Ø 32				
	Ø 40				

" H Height": It is calculated according to the material type, weight and number of nozzle used in manifold.



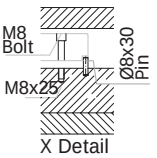




Order Form (Definition)

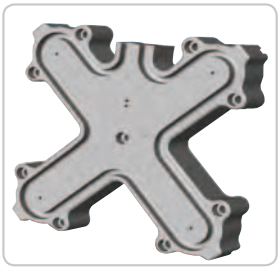
MI XX KA C/C X

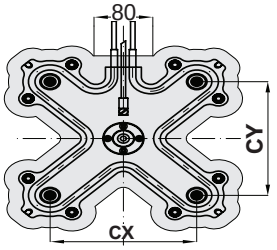
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model

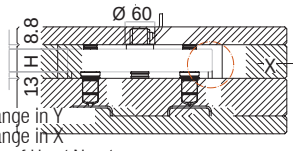


Order	MI - XX.. - KA.. - C/CX
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	02 - 04 - 08 - 16 Pieces

" H Height": It is calculated according to material type, weight and number of nozzles used in manifold.



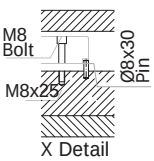




Order Form (Definition)

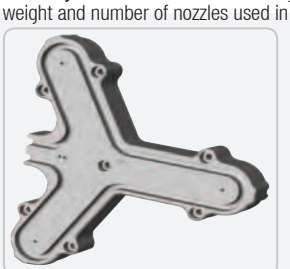
MX XX KA CX CY

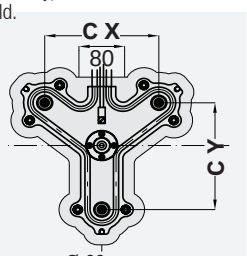
- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model

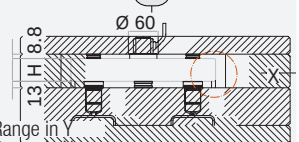


Order	MX- XX- KA- CX- CY
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	04 - 08 - 16 Pieces

" H Height": It is calculated according to material type, weight and number of nozzles used in manifold.



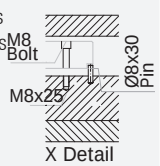




Order Form (Definition)

MY XX KA CX CY

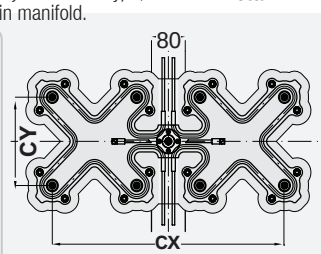
- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model

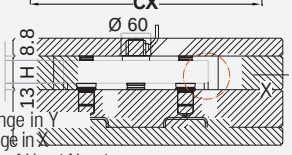


Order	MY- XX- KA- CX- CY
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	03 - 06 - 12 Pieces

" H Height": It is calculated according to material type, weight and number of nozzles used in manifold.



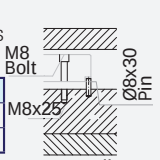




Order Form (Definition)

MXX XX KA CX CY

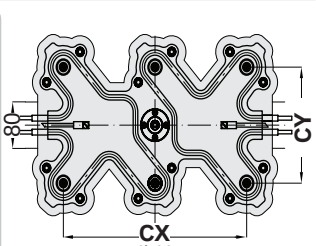
- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model

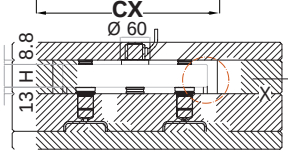


Order	MXX- XX- KA- CX- CY
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	08 - 16 - 32 Pieces

" H Height": It is calculated according to material type, weight and number of nozzles used in manifold.



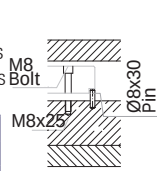




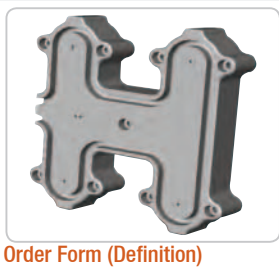
Order Form (Definition)

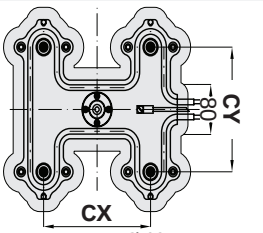
MYY XX KA CX CY

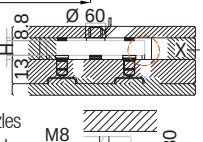
- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model



Order	MYY- XX- KA- CX- CY
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	08 - 16 - 32 Pieces



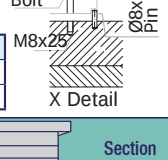




Order Form (Definition)

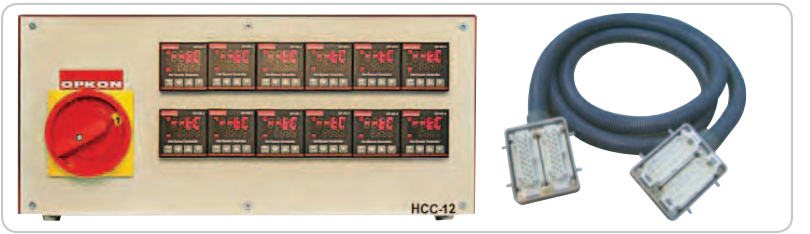
MH XX KA CX CY

- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model



Order	MH- XX- KA- CX- CY
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	08 - 16 - 32 Pieces

" H Height": It is calculated according to material type, weight and number of nozzles used in manifold.





HOT RUNNER UNITS: HEAT CONTROL DEVICES

HCC Model Hot Runner Control Modules, have been produced from Microprocessor-Based Devices specially designed for hot runners.

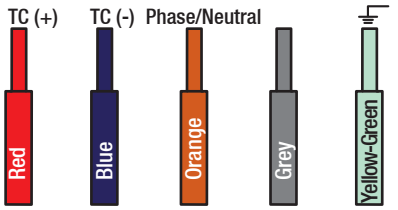
Specifications of Heat Control Devices:

* 1.0 Degree * PID Control System
* Working System Increases Resistance Mode up to 8 times with Soft Start Mode
* Standby Mode: (Stanby) Provides savings from electricity.
* Working without Thermocouple
* Compatible with "J " Type Thermocouple
* 0-600 Degree Operation Scale
* Structure Not Requiring Calibration (Ability to Restore Factory Calibration Settings to avoid sliding)
* Automatic Parameter Settings in all circumstances with Autotune feature
* Warning Alarm Output for Upper and Lower Values
* 25A Solid State RELAY (SSR) per Channel
* Siemens 10A Rapid Fuse per Channel
* With Standard 3 Meter Patch Cord
* 4 Meter Power Cable - With 5 unit feeder plug
* Stranded and specially alloyed Thermocouple Cable in Cable Line (FeConst)
* Easy Service / Change Opportunity with Pluggable Feature (Optional).

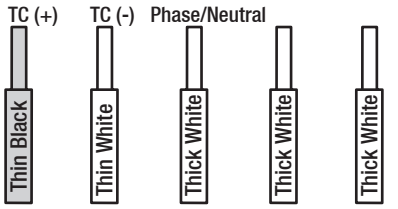
CABLE SELECTION AND IT S IMPORTANCE

In hot runner system, without considering cable status between hot runner and device and without checking it, it controls temperature in hot runner moulds. The device and cables used here are very important in terms of mould, the colours that are used are also important . Should be inserted to the device by considering these colours.

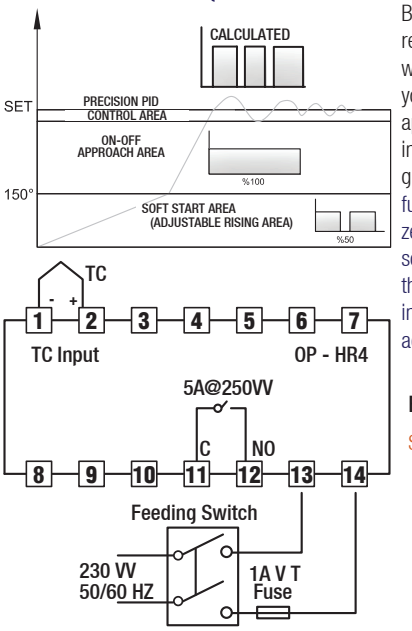
Cable Resistance Connection of Nozzles



Manifold Cable Resistance Connection



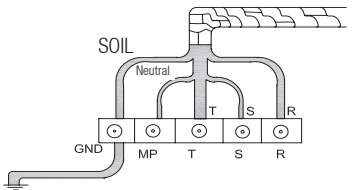
Heat Control Technique



Warnings:

Things to do before operation ;

Before Connecting the Hot Runner Mold Control Module, make sure that your mains is grounded and your mould is connected to grounded line of mains. Electrical leakage that may occur in resistance of mould due to ungrounded line can pose a risk to human life. Also, these leakage will damage the resistance and thermocouple. The occuring leakages can be misread of temperature value or damage the device by transferring via thermocouple cable.



Attention!!

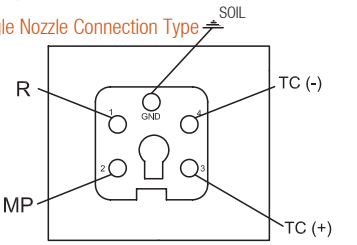
Neutral (N) and Ground (GND) is different than each other. Due to current switching from neutral line, pls. don' use this line for grounding. In order not to pose risk for human health and to operate your device normally, the ground end at power cable absolutely should be connected to **actual ground line** in your mains.

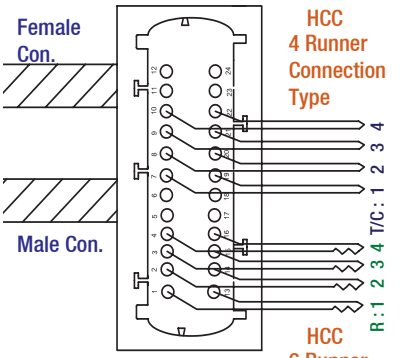
Heat Control Devices Operation Procedure

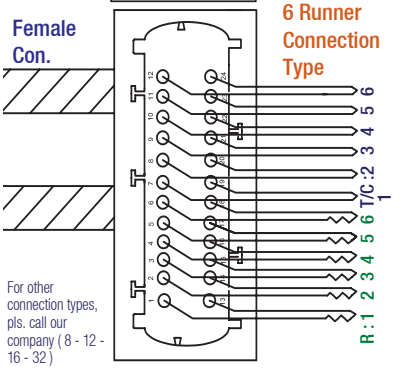
Before operating, make connection of resistance and thermocouple in accordance with gang socket connection diagram given to you. After ensuring that socket connection is applied in accordance with the diagram, insert interconnection cables, gang sockets. Before giving energy to control module, switch rear fuses to off position, switch Pacco Switch to zero position, plug power plug into appropriate socket, open the fuses in order, make sure that the temperature in eyes opened its fuses is increased. By entering Program menu, you can adjust the desired temperature values.

Example: CABLE PLUG CONNECTION SERIE

Single Nozzle Connection Type







For other connection types, pls. call our company (8 - 12 - 16 - 32)

Injection Machine and Runner Problems and Solutions

Injection Problems		Solution Follow Up			
P.01	Very Fragile Parts	M1/E6	E6	E8	M2
		M1 E3	M3	E4 E6	-
P.02	Faulty Stamp	E9 E6	E11 K1	E1 K4/K5	E3 K7
P.03	Gap Air Bubble	E4 E2 E6 K1	E11 K5 E10	E5 E3 K5 K7	E3 E6 K5
P.04	Burning	E6 / E7 M3 / K5	E2 E8	E4/M3 K5/K6	K7 K8
P.05	Distortion	K3 K4/ K5 K2	M5 E11 K6/E6	E11 E3 E4 K8/K5	E3 E4 E5
P.06	Joint Trace	M1 / K7 E1 K1 / E6	E1/E3 E6/M1 K7	E3/E11 K6/K4 K7	K8
P.07	Deposition	E9 K5	E5/E3 K6	E11 M6	K2/E6 K8
P.08	Parts is sticking jamming to mould.	K3 E5 K9	K9 E4 E5 M6/K8	E11 K8	E4 M6
P.09	Surface appearance Damaged	M1 K1 K7	E11 K4 K5	E6 K6	E3 E4
P.10	Colour/ Material are not nonhom-geneous	E6	E8	E10	E12
P.11	Burrs	E2 E6	E13 M4M6	E4 E5	K8
P.12	Jetting	E2 K5	E7 K6	K1 K8	E6
P.13	Interrelated on surface	E1 K4 K5	E6	K1	M5

(K) Possible MOULD Problems:

K1- Increase the mould temperature.
K2- Reduce mould temperature.
K3- Control mould waterways and cooling balance
K5- Control inlet diameter of your runner.
K6- Control/ Change inlet place of your runner.
K7- Control gas exhaust channel.
K8- Review/Change your mould design.
K9- Review your extractor design.

(E) Injection Machine Problems

E1- Increase injection speed/pressure.
E2- Decrease injection speed/pressure.
E3- Increase ironing speed/pressure.
E4- Decrease ironing speed/pressure.
E5- Adjust ironing time correctly.
E6- Adjust area/melt temperature correctly.
E7- Control that nozzle heater is connected its temperature.
E8- Control compatibility of your part to the injection machine grammage.
E9- Control padding/good receiving rate.
E10- Control rear pressure/compression receiving rate.
E11- Control transition distance and point from injection to ironing.

Some General Information Related Plastic Raw Material

Table A Raw Material Type (Fixed Coefficients)	Symbol	Coefficient for Closing Power ton / cm²	Viscosity Fluidity Rate	Specific Gravity in melting temperature	Specific Gravity in room temperature
General Purpose Polystyrene	GPPS	0.155-0.31	1	0.886 - 0.901	1.04 - 1.09
General Purpose Polystyrene (Thinner walled than 1mm)	GPPS	0.465-0.62	1	0.886 - 0.901	1.04 - 1.09
Strength polystyrene (Antishock)	HIPS	0.155-0.31	1	0.895 - 0.917	1.14 - 1.20
Strength polystyrene (Antishock) (Thinner than 1mm)	HIPS	0.388-0.543	1	0.895 - 0.917	1.14 - 1.20
Acrylonitrile butadiene styrene	ABS	0.388-0.62	1.3 - 1.5	0.895 - 0.908	1.01 - 1.08
Acrylonitrile styrene	AS (SAN)	0.388-0.465	1.3 - 1.5	0.907 - 0.917	1.06 - 1.10
Acrylonitrile styrene (Long Flow Path)	AS (SAN)	0.465-0.62	1.3 - 1.5	0.907 - 0.917	1.06 - 1.10
Low Density Polyethylene	LDPE	0.155-0.31	1.0 - 1.3	0.730 - 0.740	0.89 - 0.93
High Density Polyethylene	HDPE	0.233-0.388	1.0 - 1.3	0.752 - 0.772	0.94 - 0.98
High Density Polyethylene (Long Flow Path)	HDPE	0.388-0.543	1.0 - 1.3	0.752 - 0.772	0.94 - 0.98
Polypropylene (Homo/Copolymer)	PP	0.233-0.388	1.0 - 1.2	0.712 - 0.737	0.85 - 0.92
Polypropylene (Homo/Copolymer) (Long Flow Path)	PP	0.388-0.543	1.0 - 1.2	0.712 - 0.737	0.85 - 0.92
Soft Polyvinyl Chloride	PPVC	0.233-0.388	2	1.050 - 1.389	1.19 - 1.35
Hard Polyvinyl Chloride	UPVC	0.31-0.465	2	1.134 - 1.219	1.38 - 1.41
Nylon (Polyamide) 6 ve 66	PA6,PA66	0.62-0.775	1.2 - 1.4	0.958 - 0.995	1.12 - 1.16
Polymethyl Methacrylate (Acrilic)	PMMA	0.31-0.62	1.5 - 1.7	0.996 - 1.012	1.16 - 1.20
Polycarbonate	PC	0.465-0.775	1.7 - 2.0	1.018 - 1.037	1.20 - 1.22
Polyoxymethylene (polyacetal) (Homo / Copolymer)	POM	0.465-0.775	1.2 - 1.4	1.187 - 1.214	1.41 - 1.43
Polyethylene Terefaltalet (Amorphous)	PET	0.31-0.388	17 - 2.0	1.129 - 1.172	1.29 - 1.41
Polyethylene Terefaltalet (Crystalline)	PET	0.62-0.93	1.7 - 2.0	1.129 - 1.172	1.29 - 1.41
Polybutadiene Terefaltalet	PBT	0.465-0.62	1.7 - 2.0	1.102 - 1.113	1.30 - 1.38
Cellulose Acetate	CA	0.155-0.31	1.3 - 1.5	1.074 - 1.104	1.25 - 1.35

Choosing machine in right mould closing power

Mould Closing Power: In order to avoid opening of mould during injection of melt plastic raw material into mould and to create burrs at final product, it is a maximum power that clamp past can apply. Minimum closing power calculation required for machine to produce product in plastic injection machine changes according to the various parameters, as well as it can be calculated with a Few Different methods .

Most Practic Method: Required Machine Closing Power Practic Calculation x Cavity Projection Area fixed coefficient of used raw material (Table A)

Cavity Projection Area: It is the largest vertical projection area seen when looked cavity from injection side.
Coefficient: You can find multiplier coefficients of raw material in Table A that are used commonly.
Example: A glass having 40 mm radius will be produced. The thinnest wall thickness of glass is 0.6 mm. Pls. find closing power required for this glass production.
Field of circle being base of Glass:
(Pi=3.1416) x **r ²** (Square of radius) = **50cm²**
Therefore, when projection area (50cm²) is multiplied with GPPS Coefficient (0.62) from Table.2, is seen that the minimum closing power of plastic injection machine for this glass production is 31 Tons.

(M) Production, Raw Material/Material Problems

M1-Make sure that you dried the material correctly.
M2- Check that the crushing rate is correct.
M3- Check that the MB Carrier and its rate are correct.
M4- Decrease material fluidity.
M5- Increase material fluidity.
M6- Check material type/selection.
E12- Check goods receiving period.
E13- Increase opening power.

Thermoplastic Raw Materials Melting & Drawing Rates

ISO Symbol		Melting Temperature Range °C	Drawing Drawing Rate %
Amorphous Thermoplastics	ABS	170 - 200	0.4 - 0.7
	PS	130 - 160	0.3 - 0.6
	SB	130 - 160	0.3 - 0.6
	SAN	140 - 170	0.4 - 0.6
	CA	130 - 170	0.3 - 0.7
	CAB	130 - 170	0.3 - 0.7
	CP	130 - 170	0.3 - 0.7
	PC	220 - 260	0.5 - 0.8
	PMMA	150 - 180	0.4 - 0.8
	PPO	240 - 270	0.5 - 0.8
	PVC	130 - 160	0.4 - 0.8
Crystalline Thermoplastics	PE	~ 110	1 - 3
	PE	~ 130	1.5 - 4
	PP	~ 165	1 - 2.5
	PA66	~ 255	1.2 - 2.5
	PA6	~ 220	0.8 - 2
	PA610	~ 220	0.8 - 2
	POM	~ 175	1.5 - 3.5
	POM	~ 165	1.5 - 3.5
	PBTP	~ 225	1.2 - 2.8
	PETP	~ 255	1.2 - 2
	FEP	~ 270	3.5 - 5
	ETFE	~ 270	3.5 - 5

In order to avoid surface quality problems on stamped parts, drying the raw material before injection is priority according to test form. Drought stamp is required.

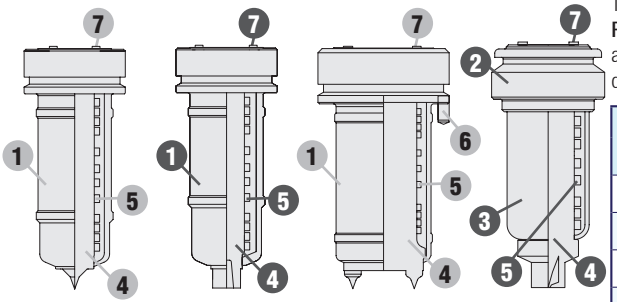


Hot Runner Nozzle Equipment:

Hot runner nozzles are consisted from the following equipments, all of them have a separate task in system, sleeves are provided bedding of nozzle and avoiding of its motion. Resistances are made heating task to provide stamping of fluid material without problem. Sealing gasket, is to avoid flowing of plastic raw material out, that is passed between manifold and nozzle with high pressure. Nozzle types should be selected by determining according to the raw material and grammage and considering mould conditions.

HOT RUNNER NOZZLE EQUIPMENTS

1- SLEEVE **2-** NOZZLE HEAD **3-** NOZZLE OUTER SHEATH **4-** NOZZLE
5- NOZZLE SPIRAL RESISTANCE **6-** NOZZLE LOCATING PIN
7- SEALING GASKET



SELECTION OF HOT RUNNER NOZZLE

The success of hot runner application depends on many factors. Using suitable raw material / polymer, making good part and mould design and selecting the right injection machine are critic factors, besides these, the location of runner inlet on part and selection of inlet type are essential in the same manner. During part design, while deciding runner inlet location, filling the part in balance and pressure resistance created by runner inlet should be considered. When deciding the runner inlet location, right selection among various hot runner types should be done. While deciding runner inlet type, then runner inlet length, first the compatibility of plastic material to this inlet type should be considered.

Nozzle Ends are the elements having direct contact with the product and effecting the result in the hot runner systems.

Thus, the selection of nozzle end;

*** Technical Drawing of the part or its data/weight**
*** Raw Material to be used / Colour Change**
*** Distances between cavities** (In X and Y Axises)
*** Is injection point on cavity?**
Or on runner? (Related information)
*** N. of Mould Eye * Location of Cooling System**
*** Melting Temperature of Material/ Raw Material**

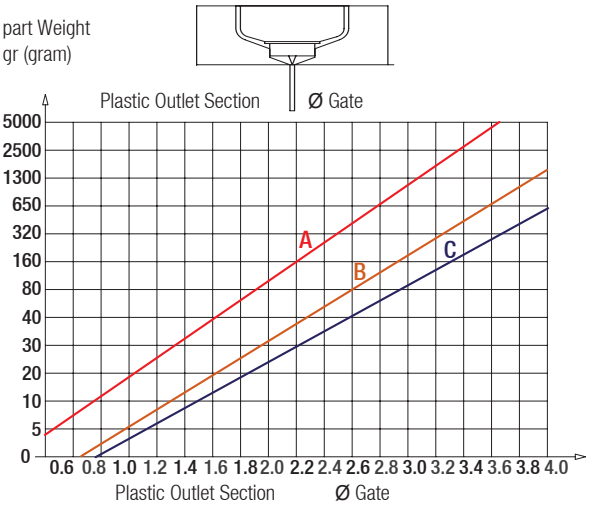
Order Placing Informationy

should be selected according to the afore mentioned criteria, in the event that these data are provided, performance expected from nozzle ends will be achieved.



PLASTIC OUTLET SECTION DETERMINATION SCHEME

GATE DIAMETER/ Melt Plastic Raw Material Outlet Section Determination



A	Low Density Plastics	PE	PP	PS	TPU	i20	HDPE
B	Medium Density Plastics	SAN	ABS	POM	PA	TPE	
C	Medium Density Plastics	PES	PC	PMMA	PPS	PPRC	

Selection of Hot Runner Nozzle Dia. According to the Part Weight:

The following table is prepared for our customers for information purposes. **Real Working Conditions:** can be differed depending on part volume, average wall thickness, process injection speed, machine capacity and gate diameter.

Nozzle Diameter	Raw Material Flow Character			Product Wall Thickness	
	A	B	C	≤2 mm	≥2 mm
Ø 18	~25 gr.	~15 gr.	~12 gr.	~12 gr.	~25gr.
Ø 22	~60 gr.	~40 gr.	~25 gr.	~25 gr.	~60 gr.
Ø 25	~200 gr.	~100 gr.	~60 gr.	~60 gr.	~200gr.
Ø 32	~800 gr.	~500 gr.	~300 gr.	~ 300 gr.	~800gr.
Ø 40	~2000gr.	~1200gr.	~800 gr.	~ 800 gr.	~2000gr.

A Group Raw Materials: PP - PE - PS - SB
B Group Raw Materials: ABS - SAN - POM - PMMA - PA - PBT - PET
C Group Raw Materials: PC - PPS - PES - TPE - PUR - PC - ABS

Feature in Usage of Hot Runner Mould:

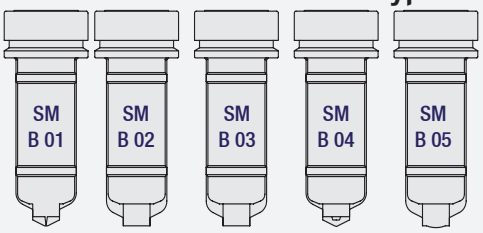
Even cost of cold tunnel mould is more higher than cold runner mould, in the long term hot tunnel moulds provide economy in part costs as well as it idealizes part quality.

Advantages of Hot Runner Systems:

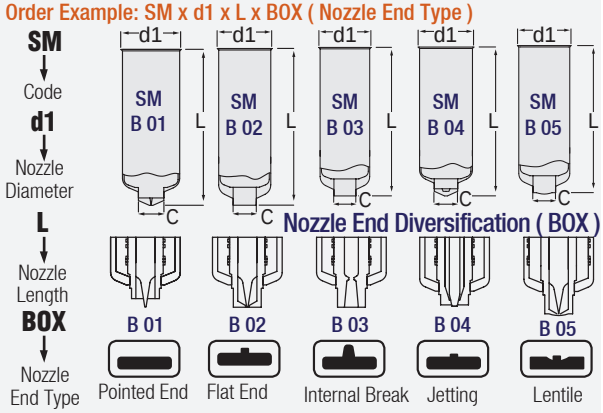
* Also, provides saving from created labour. Any of process (Such as runner cleaning, storage/ crushing etc.) are not done.
* Short Injection Cycle Period (Runner Tree that is not created)
* Mould is worked full automatically - Mould efficiency is high. (Short Cycle Period without Runner)
* Provides savings from material/ raw material (In hot runner system, there are no missing material in runner.)
* Provides saving at machine capacity. (Hot Runner Moulds can be used in all injection moulds/ There is no machine limitation.
* Excellence in part quality (Due to making moulding with low pressures, internal stresses of moulded parts is very lower than hot runner mould, however heater element should be hot runner system control.

Standard Nozzle B SERIE Types





Order Example: SM x d1 x L x BOX (Nozzle End Type)



In the order; slot detail will be presented with technical drawing.

Code	d1	L	C	BOX	Resistance Watt
SM...	22	46	8	Plug In End Type Nozzle End Types: B01 B02 B03 B04 B05 According to the Selection In Order	200 - 225 Watt
SM...		56			225 - 250 Watt
SM...		66			200 - 225 Watt
SM...		76			225 - 250 Watt
SM...	25	46	10		250 - 290 - 350 W.
SM...		56			290 - 350 - 400 W.
SM...		66			225 - 250 Watt
SM...		76			250 - 290 - 350 W.
SM...		86			290 - 350 - 400 W.
SM...		96			350 - 400 - 470 W.
SM...	32	46	12		400 - 470 Watt
SM...		56			400 - 470 - 620 W.
SM...		66			250 - 290 Watt
SM...		76			290 - 350 Watt
SM...		86			350 - 400 Watt
SM...		96			400 - 470 Watt
SM...	40	46	14		400 - 470 - 620 W.
SM...		56			400- 470- 620- 690
SM...		66		B installation	290 - 350 Watt
SM...		76			350 - 400 - 470 W.
SM...		86			400 - 470 Watt
SM...		96			470 - 620 Watt

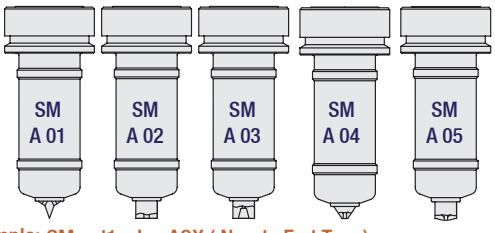
Attention !!! Technical information is absolutely essential in order.

Resistance Watts: It is changed according to material density.

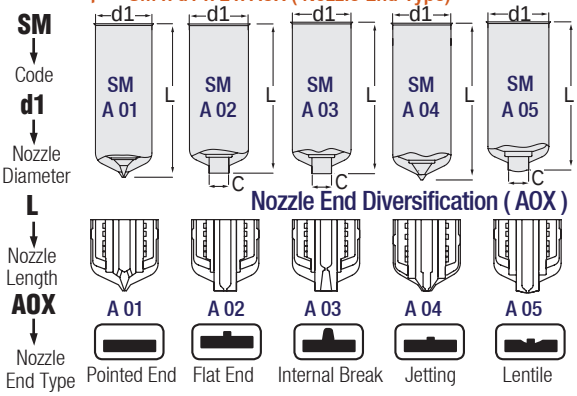
Gate Diameters: It will be determined in accordance with the order.

Standard Nozzle A SERIE Types





Order Example: SM x d1 x L x AOX (Nozzle End Type)



In the order; slot detail will be presented with technical drawing.

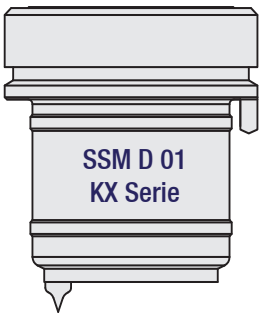
Code	d1	L	C	AOX	Resistance Watt
SM...	18	46	6	Plug In End Type Nozzle End Types: A01 A02 A03 A04 A05 According to the Selection In Order	200 - 225 Watt
SM...		56			225 - 250 Watt
SM...	22	46	7		200 - 225 Watt
SM...		56			225 - 250 Watt
SM...		66			250 - 290 - 350 W.
SM...		76			290 - 350 - 400 W.
SM...	25	46	8		225 - 250 Watt
SM...		56			250 - 290 - 350 W.
SM...		66			290 - 350 - 400 W.
SM...		76			350 - 400 - 470 W.
SM...		86			400 - 470 Watt
SM...		96			400 - 470 - 620 W.
SM...	32	46	10		250 - 290 Watt
SM...		56			290 - 350 Watt
SM...		66			350 - 400 Watt
SM...		76			400 - 470 Watt
SM...		86			400 - 470 - 620 W.
SM...		96			400- 470- 620- 690
SM...	40	46	14		290 - 350 Watt
SM...		56		A stable	350 - 400 - 470 W.
SM...		66			400 - 470 Watt
SM...		76			470 - 620 Watt
SM...		86			620 - 690 Watt
SM...		96			620 - 690 - 850 W.

Attention !!!

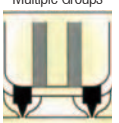
Resistance Watts: It is changed according to the material density.

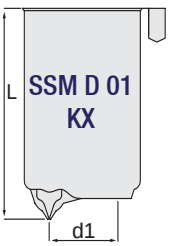
Standard MULTI NOZZLE D01 SERIE

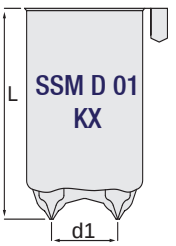


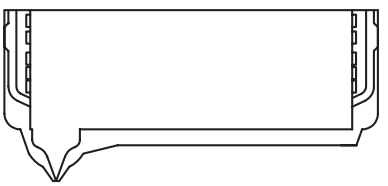




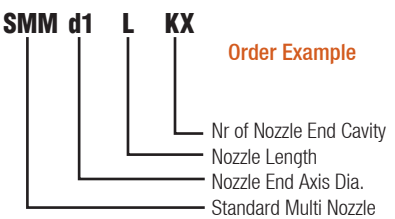






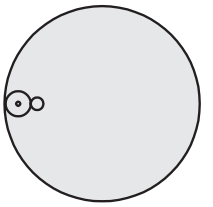




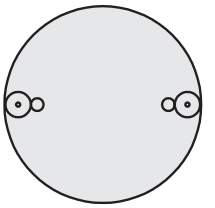


Multi Nozzle Series :

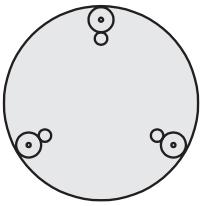
* It is not suitable for each material and weight
* While making selection, pls. request technical support...
* Resistance watts are changed according to material density.



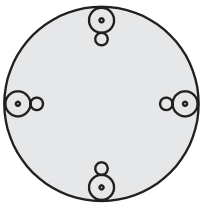
K1 - Single Pin



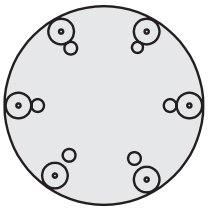
K2 - Two Pin



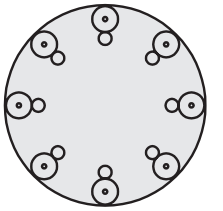
K3 - Three Pin



K4 - Four Pin



K6 - Six Pin



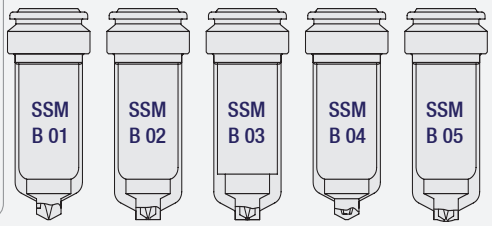
K8 - Eight Pin

Standard MULTI NOZZLE D01 SERIE

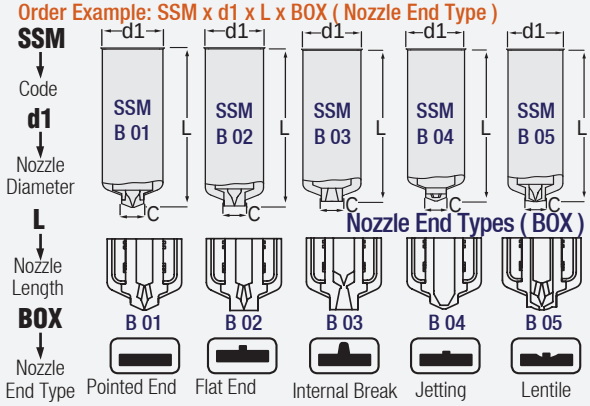
Code	d1	L	D01 - KX	Resistance Watt
SMM..	16	46	K1 - K2 - K3 - K4	225 - 250 - 290 Watt
SMM..		56	K1 - K2 - K3 - K4	225 - 250 - 290 Watt
SMM..		66	K1 - K2 - K3 - K4	350 - 400 - 470 Watt
SMM..		76	K1 - K2 - K3 - K4	400 - 470 - 620 Watt
SMM..		86	K1 - K2 - K3 - K4	470 - 620 - 690 Watt
SMM..		96	K1 - K2 - K3 - K4	470 - 620 - 690 Watt
SMM..	22	46	K1 - K2 - K3 - K4	250 -290 -350 -400 Watt
SMM..		56	K1 - K2 - K3 - K4	290 - 350 - 470 Watt
SMM..		66	K1 - K2 - K3 - K4	400 - 470 - 620 Watt
SMM..		76	K1 - K2 - K3 - K4	470 - 620 - 690 Watt
SMM..		86	K1 - K2 - K3 - K4	470 -620 -690 -850 Watt
SMM..		96	K1 - K2 - K3 - K4	620 -690 -850 -950 Watt
SMM..	28	46	K1 - K2 - K3 - K4 - K6	250 -290 -350 -400 Watt
SMM..		56	K1 - K2 - K3 - K4 - K6	350 - 400 - 470 Watt
SMM..		66	K1 - K2 - K3 - K4 - K6	400 - 470 - 620 Watt
SMM..		76	K1 - K2 - K3 - K4 - K6	470 - 620 - 690 Watt
SMM..		86	K1 - K2 - K3 - K4 - K6	620 -690 -850 -950 Watt
SMM..		96	K1 - K2 - K3 - K4 - K6	690 - 850 - 950 Watt
SMM..	34	46	K1 -K2 -K3 -K4 -K6 -K8	290 - 350 - 400 Watt
SMM..		56	K1 -K2 -K3 -K4 -K6 -K8	400 - 470 - 620 Watt
SMM..		66	K1 -K2 -K3 -K4 -K6 -K8	470 - 620 - 690 Watt
SMM..		76	K1 -K2 -K3 -K4 -K6 -K8	470 -620 -690 -850 Watt
SMM..		86	K1 -K2 -K3 -K4 -K6 -K8	620 -690 -850 -950 Watt
SMM..		96	K1 -K2 -K3 -K4 -K6 -K8	690-850 -950-1100 Watt

Standard Spinning Nozzle B SERIE





Order Example: SSM x d1 x L x BOX (Nozzle End Type)



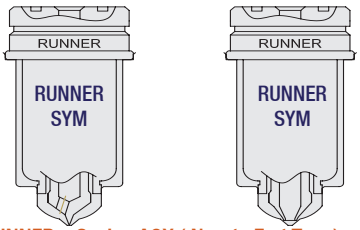
In order; will be presented with slot detail technical drawing.

Code	d1	L	C	BOX	Resistance Watt
SSM...	22	46	8	Plug-in Type Sleeve Spinning Economic Model Nozzle End Types: B01 B02 B03 B04 B05 According to Selection In Order M Spinning	225 Watt
SSM...		56			290 Watt
SSM...		66			290 Watt
SSM...		76			350 Watt
SSM...		86			350 Watt
SSM...		96			400 Watt
SSM...	25	46	10		250 Watt
SSM...		56			290 Watt
SSM...		66			350 Watt
SSM...		76			400 Watt
SSM...		86			400 Watt
SSM...		86			470 Watt
SSM...		96			470 Watt
SSM...	32	46	12		250 Watt
SSM...		56			350 Watt
SSM...		66			350 Watt
SSM...		76			400 Watt
SSM...		86			470 Watt
SSM...		96			470 Watt

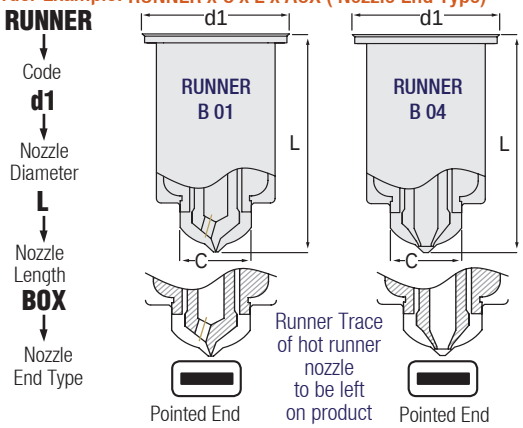
Attention !!! **Technical information is absolutely essential in order.**
Resistance Watts: It is changed according to material density.
Gate Diameters: It will be determined in accordance with the order.

RUNNER Spinning Nozzle A SERIE





Order Example: RUNNER x C x L x AOX (Nozzle End Type)

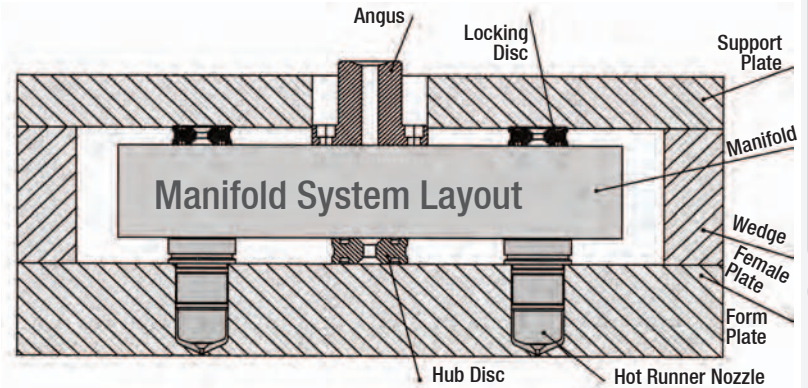


In order; will be presented with slot detail technical drawing.

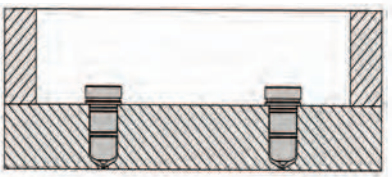
Code	d1	L	C	BOX	Resistance Watt
RUNNER	30	49	15	Plug-in Type Sleeve Spinning Multi Serie Systems Economic Model Nozzle End Types: B01 B04 According to Selection In Order M Spinning	250 Watt
RUNNER		59			290 Watt
RUNNER		69			350 Watt
RUNNER		79			400 Watt
RUNNER		89			400 Watt
RUNNER		99			470 Watt
RUNNER	32	49	17		250 Watt
RUNNER		59			290 Watt
RUNNER		69			350 Watt
RUNNER		79			400 Watt
RUNNER		89			470 Watt
RUNNER		99			470 Watt
RUNNER	34	49	19		290 Watt
RUNNER		59			350 Watt
RUNNER		69			400 Watt
RUNNER		79			470 Watt
RUNNER		89			470 Watt
RUNNER		99			620 Watt

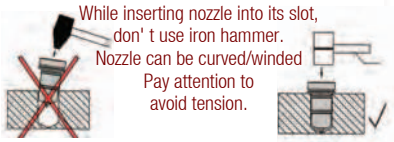
Attention !!!
Resistance Watts: It is changed according to the material density.

Recommended Assembly Process of Hot Runner Nozzles

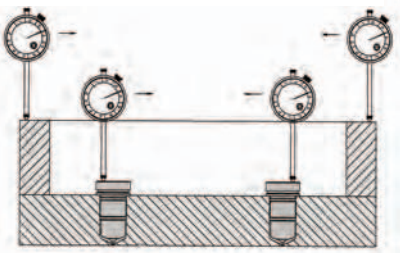


Mounting Examples of Hot Runner Nozzles

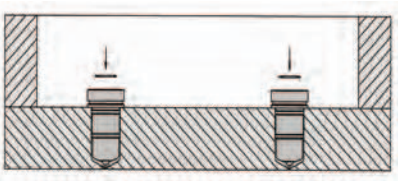




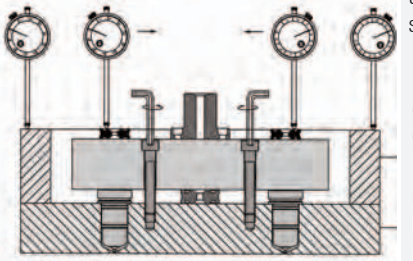
1 - Form Plate: Check that nozzle slot measurement are properly processed in accordance with given tolerance.
2 - Insert unsealed nozzle in its place with the help of gavel balancedly.



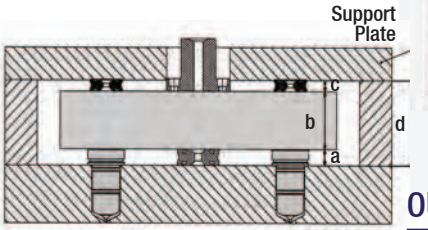
3 - Measure nozzle cap height with dial gauge and reset it.



4 - Insert copper sealing gasket on nozzles.



5 - Insert manifold and wedge/ bridge plate.
6- Tight manifold connection screw in order slowly and balancedly by controlling connection corners of manifold without distorting.



7- Mount support plate. For sealing, A + B +C > d can be made sealing at required area.

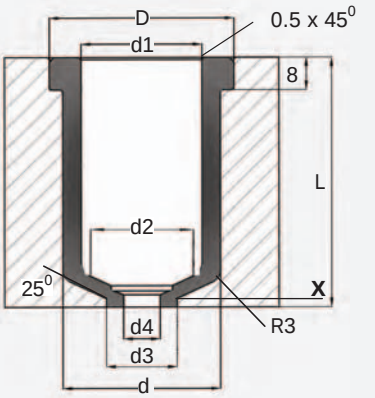




OUTER SLEEVE Serie : SB

It is a useful unit used when desired to change existing injection mould which is cold runner system to hot runner system or using in situations that the creation of water channel using extra cooling of nozzle in hot runner system should be required.

Meterial : 1.2344 **Hardness :** ± 52 HRC
Code: Y01 / Pointed End Nozzle Type
Code: Y02 / Pointed End Nozzle Type

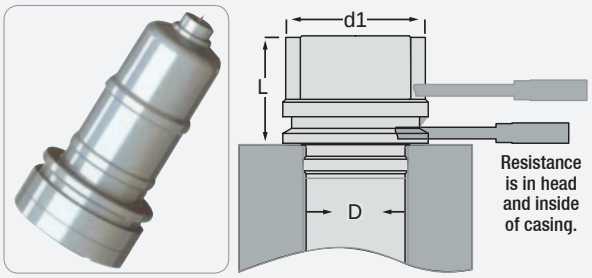


OUTER SLEEVE Serie : SB

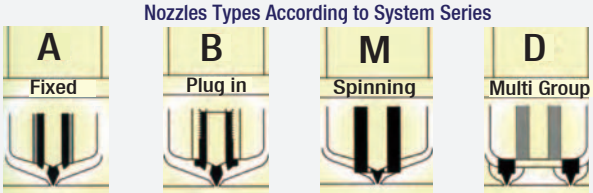
Order	d	d1	d2	d3	d4	D	L
SB25Y2	32	40	22	14	8	39	46
SB25Y1				18			56
SB32Y2	40	32	29	14	10	46	66
SB32Y1				18			76
SB40Y1	48	40	37	14	14	54	86
SB40Y2				18			96

In order : Pls. place an order with order code by selecting length (L) according to the determined diameter.
Data in Table is an document related to flat end sleeve structure.
When requesting pointed end outer sleeve; also gate end diameter should be added to order.
As per request: Our production is available for desired material and measurement is available.

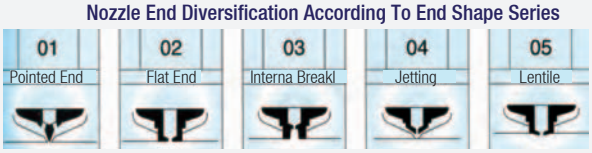
In Usage of Hot Runner Nozzles: Inlet MAIN RUNNER NOZZLES of Mould Serie: ASM



Nozzles Types According to System Series



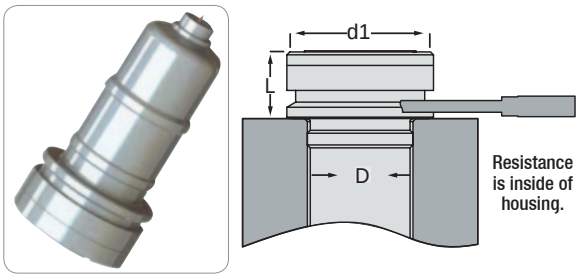
Nozzle End Diversification According To End Shape Series



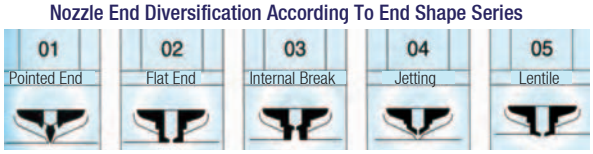
Main Runner Nozzles;
Head Resistance is added to Heat Resistance type engineering plastics (PC, PA, PBT, PET, PVC, PBBT) hot runner nozzles. Temperature control of the hot runner nozzle is provided with 2 Pieces Thermocouples. Head resistance nozzles are for SM -SMM (Multi Nozzle).

Hot Runner; Main Runner Nozzle For One Eye Mould — SM - SMM

Code	D	L	d1	d1
ASM 18	**Ø 18**	15 mm		Ø 25
ASM 22	**Ø 22**	15 mm		Ø 29
ASM 25	**Ø 25**	15 mm		Ø 32
ASM 32	**Ø 32**	15 mm		Ø 39
ASSM 22	**Ø 22**	15 mm		Ø 27
ASSM 25	**Ø 25**	15 mm		Ø 30
ASSM 32	**Ø 32**	15 mm		Ø 27



Nozzle End Diversification According To End Shape Series



Nozzles Types According to System Series

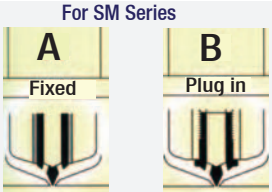


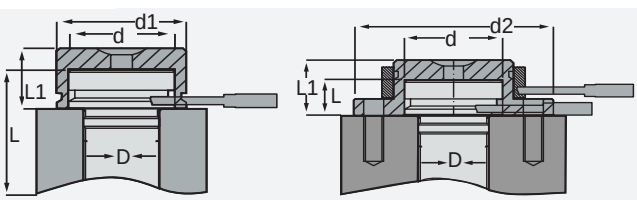
Main Runner Nozzles;
In general Plastic injection (PP,POM, ABS,PE,HDPE,PS etc.) applications, hot runner nozzles sealing gaskets are cancelled and head thickness measurement is increased. ASM Types Main Runner Nozzles are for SM and SSM Series.

Hot Runner; Main Runner Nozzle For One Eye Mould — SM - SSM

Code	D	L	d1
ASM 18	**Ø 18**	15 mm	Ø 25
ASM 22	**Ø 22**	15 mm	Ø 29
ASM 25	**Ø 25**	15 mm	Ø 32
ASM 32	**Ø 32**	15 mm	Ø 39
ASSM 22	**Ø 22**	15 mm	Ø 27
ASSM 25	**Ø 25**	15 mm	Ø 30
ASSM 32	**Ø 32**	15 mm	Ø 27

For SM Series



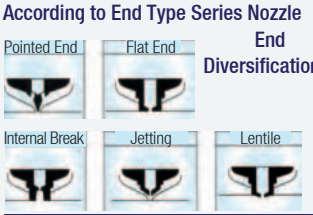




Main Runner Nozzles; Head Section Flanged and Plain Type Caps for hot runner nozzles. It is for using sealed standard hot runner nozzles as main runner nozzles in mould. For materials with high melting temperature, the resistance is added in order to not having cooling in used caps, main runner caps are only in SM Series.

Code	Type	D	L	d	d1	d2	L1	Resistance
SS 22 Z00	**Plain**	Ø 22	13 mm	Ø 29	Ø 39	Ø 65	19.8	-
SS 22 Z01	**Flanged**							150 Watt
SS 25 Z00	**Plain**	Ø 25	13 mm	Ø 32	Ø 39	Ø 65	19.8	-
SS 25 Z01	**Flanged**							175 Watt
SS 32 Z00	**Plain**	Ø 32	13 mm	Ø 39	Ø 46	Ø 72	19.8	-
SS 32 Z01	**Flanged**							225 Watt
SS 40 Z00	**Plain**	Ø 40	20 mm	Ø 49	Ø 56	Ø 72	26.8	-
SS 40 Z01	**Flanged**							290 Watt

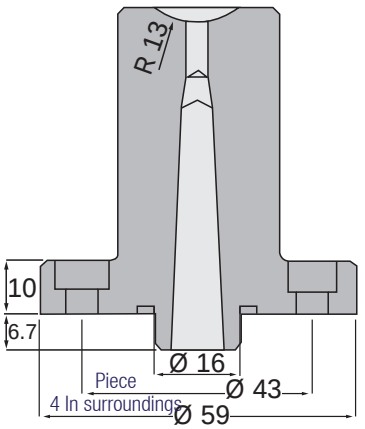
According to End Type Series Nozzle End Diversification



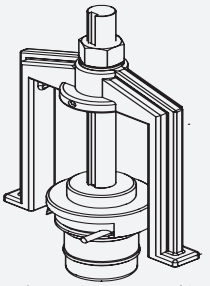


MANIFOLD ANGUS SERIE: SA

Unit providing the first connection from injection group to hot runner manifold system.



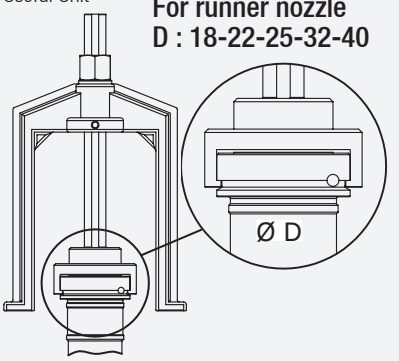
Order : SA 01 00 V02



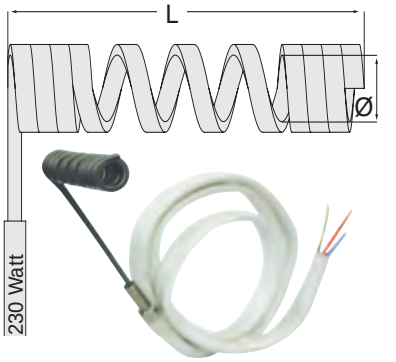
NOZZLE EXTRACTOR APPARATUS SERIE: MCA

In dismantle process of hot runner nozzles from mould plate, it is used in dismantle processes not to damage runner nozzles.
Useful Unit

For runner nozzle D : 18-22-25-32-40



Order : MCA 18



RUNNER NOZZLE RESISTANCES

They are heater resistance, used in nozzles that are used in hot runner moulds **for necessary information refer to page 273.**
Standard Series and Groups as per request.

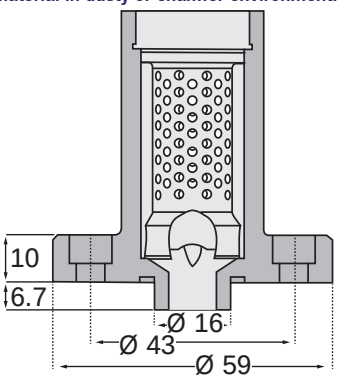
Resistance
200 Watt
225 Watt
250 Watt
290 Watt
350 Watt
400 Watt
470 Watt

Resistance
620 Watt
690 Watt
850 Watt
950 Watt
1100 Watt
1200 Watt



FILTERED ANGUS SERIE: SB

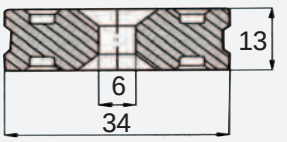
Unit providing the first connection from injection group to hot runner manifold system.
*** Unit avoiding blockages / damages due to raw material in dusty or chamfer environment.**



Order : SB 01 00 V02



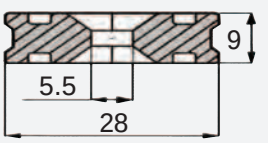
HUB DISC SERIE: SD02



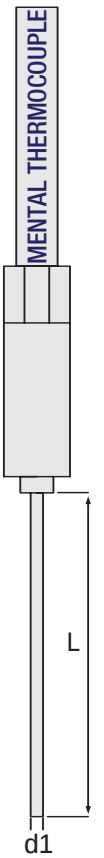
Order : SD02 00 V 01



LOCKING DISC SERIE: SD03



Order : SD03 00 V 02



GATE VALVE HOT RUNNER CONTROL THERMOCOUPLE SERIE: MT015

In Gate Valve System Hot Runner Nozzles, it is a thermocouple providing to make precision temperature from casing.

MENTAL THERMOCOUPLE

Order	d1	L
MT 015 80	Ø 1.5 mm	80
MT 015 100		100
MT 015 120		120



GATE VALVE Hot Runners

Short Cycle Times,
Super Runner Trace Quality
for High Quantity of Stamp



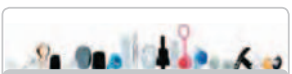
Medical Pharmaceutical Industry



In Packing with thin wall thickness



In locking cover systems



In Small Plastic Parts



In Engineering Plastics

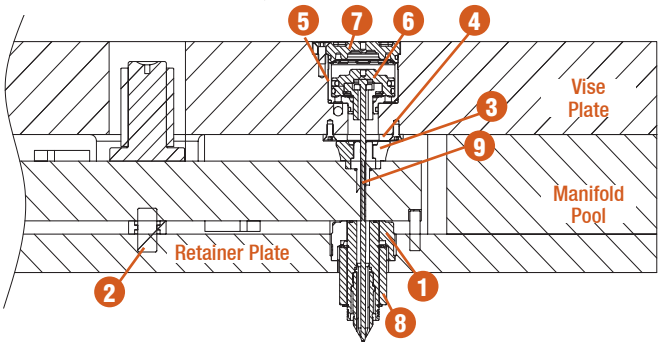


Cosmetics (Personal Care) Products

GATE VALVE Hot Runners

* Minimum pressure decrease
* Minimum Abrasion in long working hours
* Small Short Cycle Times
* Precision Temperature Settings
* Low Injection Pressures
* In Normal and Full Hard Injection and Thin Walled Products
* Cosmetic Appearance Runner Trace
* Common Usage Area for all Plastic Raw Material and Each Model from small to large

Manifold GATE VALVE Top Piston Hot Runners





Section View of Gate Valve Nozzle Group:

1- Gate Valve Hot Runner Nozzle
2- Manifold Locating Pin
3- Pin Bedding Element and Locking Disc
4- Locking Thrust Disc
5- Piston Jacket
6- Piston - Pin Group
7- Piston Cover
8- Hot Runner Nozzle Resistance and Thermocouple
9- Gate Valve Ejector Pin

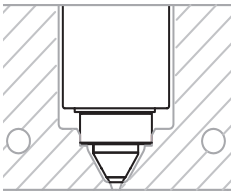
GATE VALVE HOT RUNNER

Top Reciprocating Serie: MVG-A

Gate Valve Hot Runner Nozzles: In difficult positions that normal hot runner applications are difficult, it is used in stamp applications of difficult objects, products, raw materials having thin wall thickness in cavity or Enginering Thermo plastics with injections that are hard.

Nozzle End Type Options in Gate Valve Hot Runner Systems:

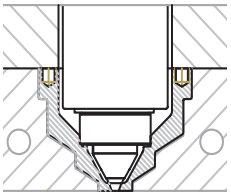
Gate Valve is changed with end type bushings in hot runner systems. Standard Large VG Hot Runner Nozzles are compatible with all bushings.



Gate Valve E-04

Standard End Type

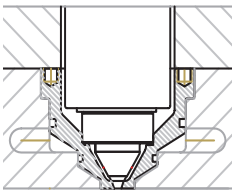
Ejector Pin cuts the goods in mould slot. The trace left on product is close to excellent cosmetically.



Bushing VG CB - Y02

Gate Valve Plain Bushing

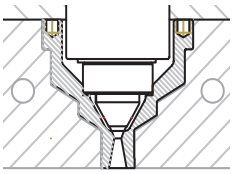
Plain Bushing: Ejector Pin cuts the goods on bushing surface. Processing of slot detail in mould is easier.



Bushing VG B - Y02

Gate Valve Air Channel Type

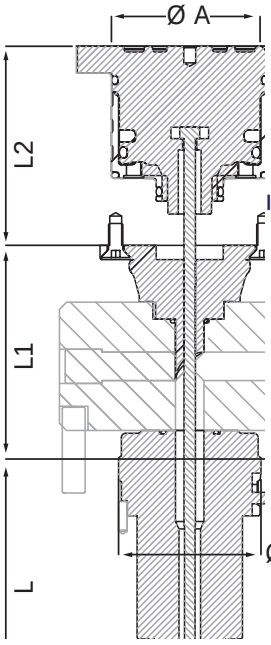
It is used when extra cooling is requested around cooled plain bushing nozzle. Usage in transparent, optic, cosmetic parts is required.



Bushing VG B - Y03

Gate Valve Internal Break

If injection in mould will be made to hot runner slot or to bring product near nozzle is difficult due to cavity, this product should be used. They leave a conical runner trace from the point that injected.



For companies requiring High Quality Injection Products

Economical Presentation. It is an absolute essential application with its Order Example

Top Reciprocating Gate Valve Hot Runner Systems MVG-A

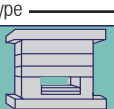
Code	D	L	C	L1	L2	A	ENJ
MVG-A	Ø 38	66 ~ 166mm	Ø 18	74.8 mm	60 mm	Ø 55	~150 gram
	Ø 50	80 ~ 280mm	Ø 25		60 mm	Ø 55	~300 gram
	Ø 60	100 ~	Ø 35		70 mm	Ø 80	~1000 gram
	Ø 70	120 ~	Ø 45		75 mm	Ø 100	1000~ gram

L1 Size: It can be changed according to the manifold thickness.
It is recommended to give your orders according to Order Example

MVG-A D L E04

- MVG-A: Manifold Gate Valve Top Reciprocating Nozzle
- D: Nozzle Diameter
- L: Nozzle Length
- E04: Nozzle End Type

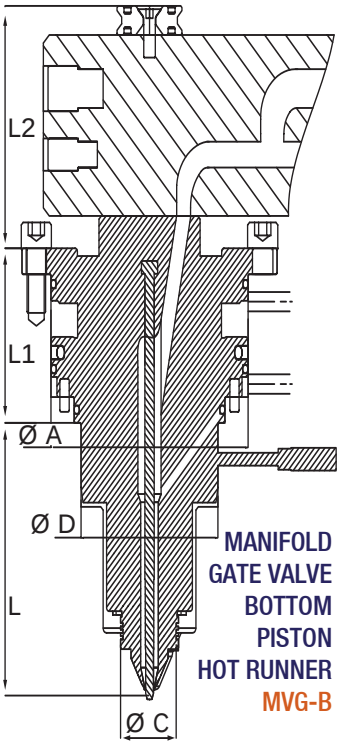
Page 287



Section Injection Mould

BOTTOM PISTON





MANIFOLD GATE VALVE BOTTOM PISTON HOT RUNNER MVG-B

Order Example

MVG-B D L E 04

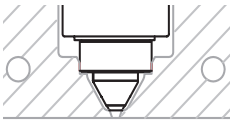
- MVG-B: Manifold Gate Valve Top Piston Nozzle
- D: Nozzle Dia.
- L: Nozzle Length
- E 04: Nozzle End Type

Bottom Piston Gate Valve Hot Runner Systems MVG-B

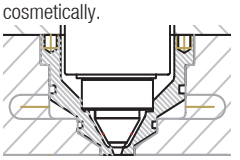
* L2 Size: It can be changed according to the manifold thickness.

Code	D	L	C	L1	L2	A	ENJ
MVG-B	Ø 56	66 ~ 166mm	Ø 18	50 mm	64.8 mm	Ø 80	~150 gram
	Ø 62	80 ~ 280mm	Ø 22	50 mm	64.8 mm	Ø 85	~300 gram
	Ø 72	100 ~	Ø 32	55 mm	64.8 mm	Ø 95	~1000 gram
	Ø 80	120 ~	Ø 42	55 mm	64.8 mm	Ø 105	1000~ gram

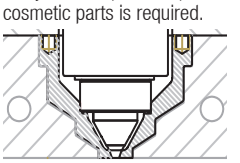
Nozzle End Type Options:
In Gate Valve Hot Runner Systems, end type is changed with bushings. Standard Large VG Hot Runner Nozzles are compatible with all kinds of bushings.



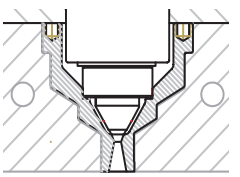
Gate Valve E-04
Standard End Type
Ejector Pin cuts the goods in mould slot. The trace left on product is close to excellent cosmetically.



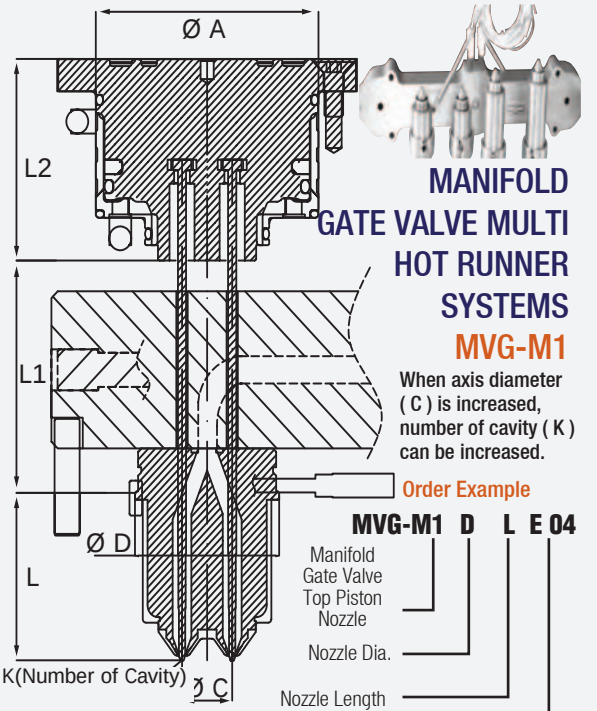
Bushing VG B - Y02
Gate Valve Water Channel Type
It is used when extra cooling is requested around cooled plain bushing nozzle. Usage in transparent, optic, cosmetic parts is required.



Bushing VG CB - Y02
Gate Valve Plain Bushing
Plain Bushing: Ejector Pin cuts the goods on bushing surface. Processing of slot detail in mould is easier.



Bushing VG B - Y03
Gate Valve Internal Break
If injection in mould will be made to hot runner channel or to bring product near nozzle is difficult due to cavity, this product should be used. They are left a conical runner trace from the point that injected.



MANIFOLD GATE VALVE MULTI HOT RUNNER SYSTEMS MVG-M1

When axis diameter (C) is increased, number of cavity (K) can be increased.

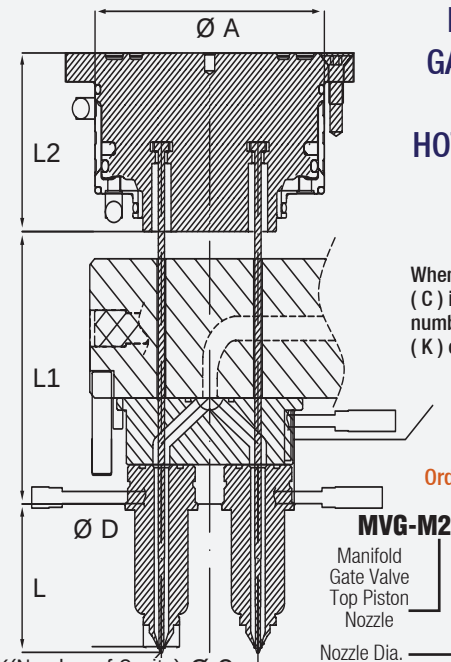
*L2 Size: It can be changed according to the manifold thickness.

Order Example

MVG-M1 D L E 04

- MVG-M1: Manifold Gate Valve Top Piston Nozzle
- D: Nozzle Dia.
- L: Nozzle Length
- E 04: Nozzle End Type

Code	Ø D	L	Ø C	K	L1	L2	Ø A
MVG-M1	46-70	49-109	16-40	2-8	67.8	50-55	72-96



MANIFOLD GATE VALVE MULTI HOT RUNNER SYSTEMS MVG-M2

When axis diameter (C) is increased, number of cavity (K) can be increased.

* L2 Size: It can be changed according to the manifold thickness.

Order Example

MVG-M2 D L E 04

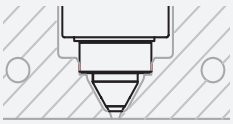
- MVG-M2: Manifold Gate Valve Top Piston Nozzle
- D: Nozzle Dia.
- L: Nozzle Length
- E 04: Nozzle End Type

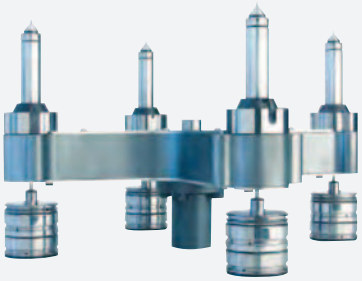
Code	Ø D	L	Ø C	K	L1	L2	Ø A
MVG-M2	15-32	49-109	40-80	2-8	89.8	55-65	95-135

It is recommended to give your orders according to Order Example.

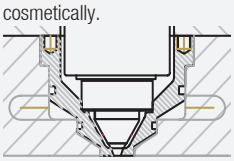


Nozzle End Type Options :
In Gate Valve Hot Runner Systems, end type is changed with bushings. Standard Large VG Hot Runner Nozzles are compatible with all kinds of bushings.

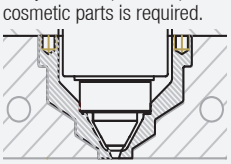




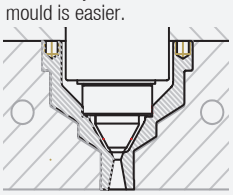
Gate Valve E-04
Standard End Type
Ejector Pin cuts the goods in mould slot. The trace left on product is close to excellent cosmetically.



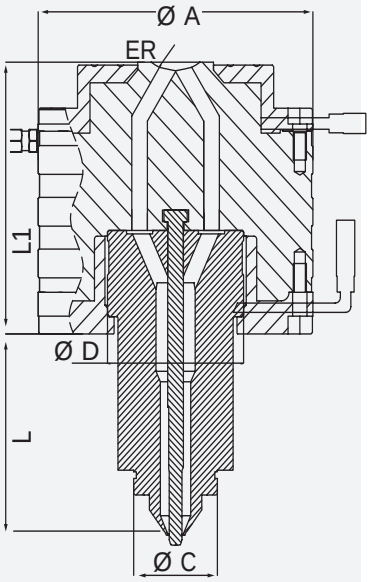
Bushing VG B - Y02
Gate Valve Water Channel
Type It is used when extra cooling is requested around cooled plain bushing nozzle. Usage in transparent, optic, cosmetic parts is required.



Bushing VG CB - Y02
Gate Valve Plain Bushing
Plain Bushing: Ejector Pin cuts the goods on bushing surface. Processing of slot detail in mould is easier.



Bushing VG B - Y03
Gate Valve Internal Break
If injection in mould will be made to hot runner channel or to bring product near nozzle is difficult due to cavity, this product should be used. They are left a conical runner trace from the point that injected.



SINGLE GATE VALVE MAIN RUNNER HOT RUNNER SYSTEMS SVG

Order Example.

SVG D L E 04

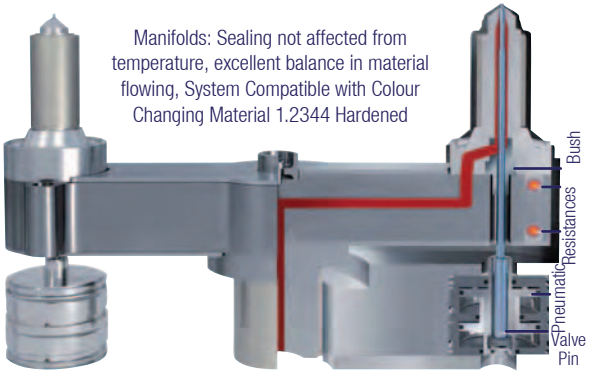
- SVG — Single Gate Valve
- D — Nozzle Dia.
- L — Nozzle Length
- E 04 — Nozzle End Type

Single Gate Valve - MAIN RUNNER Hot Runner Systems

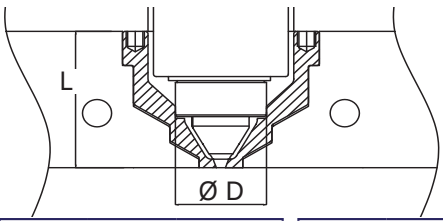
It is recommended to give your orders according to Order Example.

Code	D	L	C	L1	ER	A	ENJ
SVG	Ø 42	60 ~ 180mm	Ø 22	84 mm	15 mm	Ø 90	~300 gram
	Ø 52	70 ~	Ø 32	94 mm	15 mm	Ø 105	~1000 gram
	Ø 62	90 ~	Ø 42	104 mm	15 mm	Ø 120	1000~ gram

Manifolds: Sealing not affected from temperature, excellent balance in material flowing, System Compatible with Colour Changing Material 1.2344 Hardened



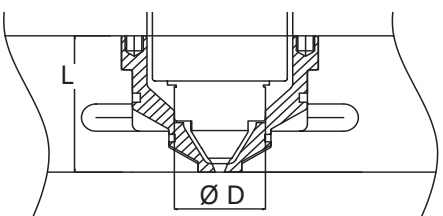
GATE VALVE BUSHING APPLICATIONS



GATE VALVE BUSHING VG B Y02

For MVG-A Nozzles		
Code	D	L
VG B Y02	Ø 18	40 mm
	Ø 25	
	Ø 35	
	Ø 45	

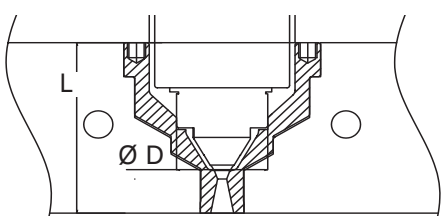
For MVG-A,SVG Nozzles		
Code	D	L
VG B Y02	Ø 18	40 mm
	Ø 22	
	Ø 32	
	Ø 42	



GATE VALVE WATER C. BUSHING VG CB Y02

For MVG-A Nozzles		
Code	D	L
VG CB Y02	Ø 18	40 mm
	Ø 25	
	Ø 35	
	Ø 45	

For MVG-A,SVG Nozzles		
Code	D	L
VG CB Y02	Ø 18	40 mm
	Ø 22	
	Ø 32	
	Ø 42	

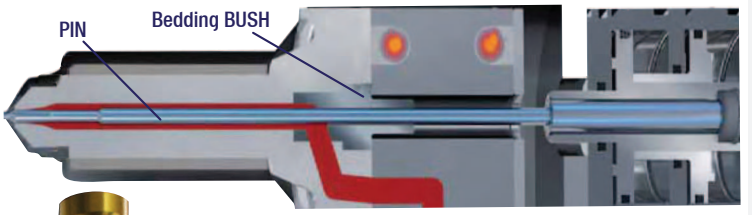


GATE VALVE INTERNAL BREAK BUSHING VG B Y03

For MVG-A Nozzles		
Code	D	L
VG B Y03	Ø 18	50 mm
	Ø 25	
	Ø 35	
	Ø 45	

For MVG-A,SVG Nozzles		
Code	D	L
VG B Y03	Ø 18	50 mm
	Ø 22	
	Ø 32	
	Ø 42	

In Gate Valve Hot Runner Systems, end type can be changed with bushings.

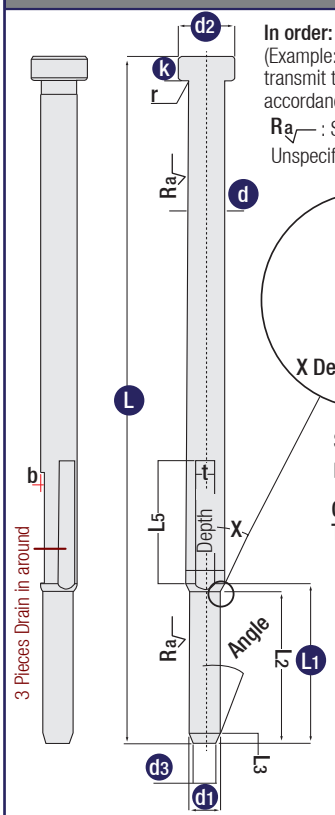


GATE VALVE PIN / BUSH (Production As per Request)

Gate Valve Pin: Mounting and demounting of valve pin are such as the side picture, they will be produced in desired material and sizes.
Gate Valve Pin Bush / Bushings: The seconds bedding bush (Gate Valve Pin Bush) in nozzle is to avoid expansion and bending of movable pin under load and heat, it can be changed by demounting.
As per request in order, technical drawing or sample is required.
The products will be produced in precision and faithfully.



ORDER EXAMPLE OF GATE VALVE PIN



In order: The dimensions specified (Example: L) on technical drawing, transmit to our company in accordance with information ..
Ra : Surface Roughness
Unspecified bevels are 45^0

Special bush is produced as per request.

Geometrical Production Tolerances:

PERPENDICULARITY	0.02	Axis
PARALLELISM	0.02	
CONCENTRICITY	0.02	Axis

Tolerance for tin pre plating can be -0.008, after plating it can be +0.01.
Specify Step Bevel Dimensions ..... !
Specify channel slotted processing measurement ..... !
Specify tin plating area and its length ..... !
Specify full size dimension and tolerance ..... !
Material: Specify material and hardness as HSS or 1.2344.....!
Specify quantity..... ! (For high quantities, pls. request special price)
Specify general tolerance values ± ..... !

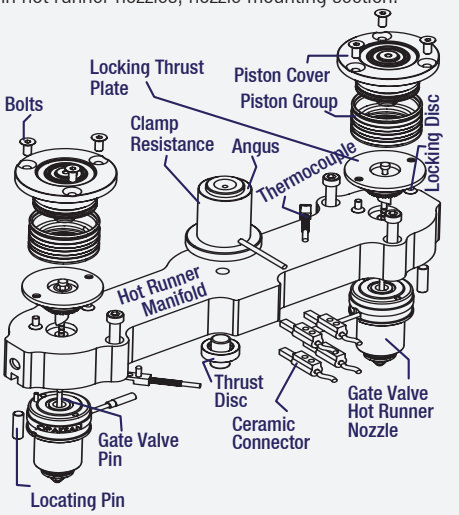
Special Notes: For precision production of Gate Valve Pin, sending the previous existing pin or bush sample offers good production.

In your orders: Pls. request an offer from our company in a way that given in example .... !

Gate Valve System MOUNTING

1. Step Mounting of Nozzles:

We recommend to make according to details in hot runner nozzles, nozzle mounting section.



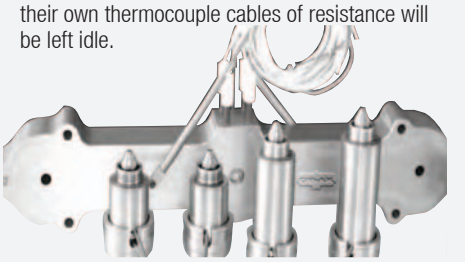
Mounting Sequence :

THRUST PLATE

* Insert nozzles into their slot in centering pin direction, put gaskets.
* Seat manifold into its axis with hub disc and locating pin and tight the bolts in a balanced way.
* At the upper side of manifold, Place pin bedding element and locking disc into their slots.

CLAMP PLATE

* Insert locking thrust disc.
* In manifold pool axis, place resistances around manifold without harming.
* Bring clamp plate on manifold pool and make its centering and tight the bolts.
* Place piston jacket into its slot.
* Insert piston pin group that is involved in product packing as mounted inside of piston jacket.
* Close piston cover and tight the bolts.
* Lay the mould in a way that nozzle ends can be seen, insert thermocouples and resistances in to their place and secure with retaining ring that given.
* Finally, you can make Hot - Letter - Group Mould Core Connection to the system that you mounted.
* While making plug connection, external thermo couple cables in hot runner nozzles will be used, their own thermocouple cables of resistance will be left idle.



RESISTIVE LINEER POTENTIOMETERS OPTIC MEASUREMENT SCALE

Lineer
(Rectilinear)
Rotary
(Sliding Arm)
Position
Metering
Scale



LPT
Lineer 33 Scale



LPH
Lineer 33 Scale



LPM
Lineer 33 Scale

Technical Specifications

Usage Area: Due to Easy Mounting Opportunity and being Economic, they are products with large usage area, are given output data as Potentiometric / mm. Mainly, they are used in **Plastic Injection Machines,** Marble Machines and **Hydraulic Presses.** At sliding models.

Usage Area: Thanks to its Top Sliding Structure, it provides mounting opportunity up to long measurement length. They are given output data as Potentiometric / mm. Mainly, they are used in **Plastic Injection Machines, Hydraulic Presses,** due to having IP 53 protection class. At sliding models.

Usage Area: Due to its articulated structure, also they can be used for angular motion measurement purpose, thanks to both side the articulated structure, they can measure the distance between two independent points. Mainly they are used in **Pipe/ Sheet Bending Machines and Packaging Machine.** At Sliding Model.

Model	**Order** No **: LPT x Length.mm**	**Order** No **: LPH x Length.mm**	**Order** No **: LPM x Length.mm**
Measuring Length	From 30 mm up to 125 mm (Selection according to the measure)	From 100 mm up to 1500 mm (Selection according to the measure)	From 50 mm up to 600 mm (Selection according to the measure)
Linearity	± % 0.05	± % 0.05	± % 0.05
Resistance	5 - 10 KOhm	5 - 10 KOhm	5 - 10 KOhm
Working Temperature	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C
Max. Speed	< 5 m/s	< 1.5 m/s	< 5 m/s
Mechanical Life	100.000.000 Cycle	100.000.000 Cycle	100.000.000 Cycle
Housing Material	Aluminium	Aluminium	Aluminium
Shaft Material	Stainless Steel	-	Stainless Steel
Supply Voltage	28V DC Max.	28V DC Max.	28V DC Max.
Electrical Connection	4 Pole Connection	4 Pole Connection	4 Pole Connection
Protection Class	IP 65	IP 40 & IP 53	IP 54
Connection	Mechanic	Mechanic	Mechanic
Housing Size	33 x 33 mm	33 x 33 mm	33 x 33 mm

Position Metering Scale: They are produced compatible with international measurement standards, by selecting top caliber/quality materials. Linearity controls are made punctiliously. These Scales are for reading lineer & rotary & sliding motions measurement controls. They are commonly used in all production machines and benches at machine industry, except the selected products involved in our catalogue, different types and models are also available.

Special Prices for Higher Quantities..

Page 291
Section Injection Mould

RESISTIVE LINEER POTENTIOMETERS OPTIC MEASUREMENT SCALE

Lineer
(Rectilinear)
Rotary
(Sliding Arm)
Position
Metering
Scales

Technical Specifications



SLPT Slim 18 Lineer Scale

Usage Area: Thanks to its small casing structure, it provides mounting facility in narrow areas. They are preferred in many automation applications and given output data as Potentiometric / mm. mainly, they are used in **Plastic Injection Machines, Textile Machines and Test Machines.** At sliding models.



SLPC Slim 18 Lineer Scale

Usage Area: Thanks to its Top Sliding Structure, it provides mounting opportunity up to long measurement length. They are given output data as Potentiometric / mm. Mainly, they are used in Marble Machines, **Pipe/Sheet bending Machines, Textile Machines.** At sliding models.



SLPS Slim 18 Lineer Scale

Usage Area: Thanks to Spring Return Structure, it can be used in special applications. They are given output data as Potentiometric. Mainly, they are used in **Plastic Injection Machines, Quality Control Machines and Textile Machines.** At sliding machines.

Model	Order No : SLPT x Length.mm	Order No : SLPC x Length.mm	Order No : SLPS x Length.mm
Measuring Length	From 10 mm up to 400 mm (Selection according to the measure)	From 10 mm up to 300 mm (Selection according to the measure)	From 10 mm up to 100 mm (Selection according to the measure)
Linearity	± % 0.05	± % 0.05	± % 0.05
Resistance	5 - 10 KOhm	5 - 10 KOhm	5 - 10 KOhm
Working Temperature	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C
Max. Speed	< 5 m/s	< 5 m/s	< 5 m/s
Mechanical Life	50.000.000 Cycle	50.000.000 Cycle	50.000.000 Cycle
Housing Material	Aluminium	Aluminium	Aluminium
Shaft Material	Stainless Steel	Stainless Steel	Stainless Steel
Supply Voltage	28V DC Max.	28V DC Max.	28V DC Max.
Electrical Connection	Cabled Standard 1 Metre	Cabled Standard 1 Metre	Cabled Standard 1 Metre
Protection Class	IP 53	IP 53	IP 53
Connection	Mechanic	Mechanic	Mechanic
Housing Size	18 x 18 mm	18 x 18 mm	18 x 18 mm

Special Prices for Higher Quantities..

Position Metering Scale: They are produced compatible with international measurement standards by selecting top caliber/quality materials. Linearity controls are made punctiliously. These Scales are for reading lineer & rotary & sliding motions measurement controls. They are commonly used in all production machines and benches at machine industry, except the selected products involved in our catalogue, different types and models are also available.

CONTACTLESS POSITION SENSORS / CORDED EXTENDER POTANTIOMETERS AND ENCODERS

Lineer
(Rectilinear)
Rotary
(Pivoting)
Position
Metering
Scales



MST
CONTACTLESS POSITION SENSOR

Usage Area: National Type Position Sensors work with Magnetostrictive Principle. Due to measuring as contactless, they long lived. They have high protection class. T**hey can be worked in water and oil.** Generally, they are used by inserting inside of piston. Sliding Type.





DWP
CORDED POTENTIOMETER

Usage Area: Corded Potentiometers are given potentiometric output in 1800 mm measurement length, they are preferred with its economic price and easy mounting opportunity in long measurement length. They are frequently used in Injection **Machines**. Rotary Type





DWE
CORDED ENCODER

Usage Area: Corded Encoders are preferred in industry in terms of their mounting facility in narrow areas. By means of steel cord wrapping around return spring roller, they are converted pals quantity producing as a result of turning of encoder connected into this mechanism into lineer distance.

Technical Specifications

Model	Order No : MST x Length	Model	Order No : DWP x Length	Model	Order No : DWP x Length
Measuring Length	From 10 mm up to 2000 mm (Selection according to the measure)	Measuring Length	1800 mm	Resolution	From 500 mm to 3500 mm
Resolution	16 BIT	Linearity	± 0.1 mm	Outlet Type	A, B, Z, or $A,\overline{A}$ $B,\overline{B}$ $Z,\overline{Z}$
Repeatability	< 0.05 mm	Resistance	5 -10 K	Channels	Pushpull - TTL - HTL
Outlet	0... 10V , 10...0 V	Working Temp.	- 20 / + 80 ^{0}C	Max. Speed	2 m/sec
Supply Voltage	24V DC ± %10	Max. Speed	< 1.5 m/s	Supply Voltage	5V DC 8V - 24V DC 5V - 24V DC
Max. Speed	< 10 m/s	Mechanical Life	5.000.000	Working Temp.	- 20 / + 80 ^{0}C
Max. Current Consumption	50 mA	Housing Material	ABS / Aluminium and Stainless Steel	Housing Material	ABS / Aluminium and Stainless Steel
Max. Outlet Values	10.5V	Shaft Material	-	Protection Class	IP 50
Inverse Voltage Protection	Yes	Supply Voltage	28V DC max.	Cable	2.5 mt. Standard
Electrical Connection	4 Pinned Hydraulic Type	Protection Class	IP 54	Shaft Dia.	-
Protection Class	IP 66	Housing Size	81 x 81 x 86 mm	Housing Size	81 x 81 x 86 mm

Special Prices for Higher Quantities..

Position Metering Scale: They are produced compatible with international measurement standards by selecting top caliber/quality materials. Linearity controls are made punctiliously. These Scales are for reading lineer & rotary & sliding motions measurement controls. They are commonly used in all production machines and benches at machine industry, except the selected products involved in our catalogue, different types and models are also available.

Lineer (Rectilinear) **Rotary** (Pivoting) **Position Metering Scales**	 Digital Reader As per Request  **PRI 50** **OPTIC 50 ENCODER** **Usage Area:** They are Economic sensors commonly used in industry and work with optical principle. The number of square wave given in a tour is called as PULSE. Various outlet types are available. The product having 50 mm casing diameter, are produced in 6-8 mm shaft diameter a standard. As standard, is packaged with L flange and Plastic Coupling. Rotary Model.	 Digital Reader As per Request  **PRI 50 SH** **OPTIC 50 ENCODER** (Semi Hole) Shaft **Usage Area:** They work with circular principle. The number of square wave given in a tour is called as PULSE. They are selling according to number of PULSE. The product having 50 mm casing diameter, are produced in 6-8 mm shaft diameter a standard. They are used in Packaging Machines, Elevator Machines, Hydraulic Presses. Rotary Model.	 Digital Reader As per Request  **PRI 58** **OPTIC 58 ENCODER** **Usage Area:** They are Economic sensors commonly used in industry and work with optical principle. The number of square wave given in a tour is called as PULSE. They are selling according to number of PULSE. Various outlet types are available. The product having 58 mm casing diameter, are produced in 6-8 mm shaft diameter a standard. Rotary Model.
Technical Specifications			
Model	**Order** No **: PRI 50 x** Pulse	**Order** No **:PRI 50 SH x** Pulse	**Order** No **: PRI 58 x** Pulse
Resolution (Number of Pulse)	100- 200- 300- 360- 400- 500 600- 720- 1000- 1024- 1800 2000- 2048- 2500- 3600 4000- 4096- 5000	100- 200- 300- 360- 400- 500 600- 720- 1000- 1024- 1800 2000- 2048- 2500- 3600 4000- 4096- 5000	100- 200- 300- 360- 400- 500 600- 720- 1000- 1024- 1800 2000- 2048- 2500- 3600 4000- 4096- 5000
Outlet Type	Pushpull - TTL - HTL	Pushpull - TTL - HTL	Pushpull - TTL - HTL
Channels (Outlet Direction)	A, B, Z, or $A,\overline{A}$ $B,\overline{B}$ $Z,\overline{Z}$	A, B, Z, or $A,\overline{A}$ $B,\overline{B}$ $Z,\overline{Z}$	A, B, Z, or $A,\overline{A}$ $B,\overline{B}$ $Z,\overline{Z}$
Max. Speed	4000 RPM	4000 RPM	4000 RPM
Supply Voltage	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC
Working Temperature	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C
Cable	2.5 (Standard) 5 Cable - 8 Cable	2.5 (Standard) 5 Cable - 8 Cable	2.5 (Standard) 5 Cable - 8 Cable
Protection Class	IP 54	IP 50	IP 50
Shaft / Hole Dia.	Ø 6 - Ø 8 mm	Ø 6 - Ø 8 mm	Ø 6 - Ø 8 - Ø 10 mm
Shaft Material	Stainless Steel	Stainless Steel	Stainless Steel
Housing Material	Aluminium	Aluminium	Aluminium
Housing Dia.	50 mm	50 mm	58 mm

Special Prices for Higher Quantities..

Position Metering Scale: They are produced compatible with international measurement standards by selecting top caliber/quality materials. Linearity controls are made punctiliously. These Scales are for reading lineer & rotary & sliding motions measurement controls. They are commonly used in all production machines and benches at machine industry, except the selected products involved in our catalogue, different types and models are also available.

Lineer (Rectilinear) **Rotary (Pivoting) Position Metering Scale**

Technical Specifications



Digital Reader As per Request

PRI 100 H
OPTIC 100 ENCODER
(Full Hole) Shaft

Usage Area : They are full hole shaft products with 100 mm casing dimeter worked with optical principle. The product with 100 mm casing diameter, are produced in 25,28,32,38 mm hole diameter as standard. With its hole shaft structure, they are ideal for use on rear of engine. They are used in **Elevator Machines** and many automation application. Rotary Model.



Digital Reader As per Request

MRI 50
OPTIC 50 ENCODER
(Magnetic) Shaft

Usage Area : MRI 50 Serie Magnetic Encoders are produced in 50 mm casing diameter, 6-8 shaft diameter and 2-1024 pulse range as standard. Due to working with magnetic principle, their protection class is high. Rotary Model.



Digital Reader As per Request

PRI 58 SH
OPTIC 58 ENCODER
(Semi Hole) Shaft

Usage: They are semi hole shaft products having 58 mm casing diameter and work with optical principle. The products with 58 mm casing diameter are produced in 6-8-10 mm hole diameter as standard. With its hole shaft structure, they are ideal for use on rear of engine. They are used in elevator machines and Hydraulic Presses. Rotary Model.

Model	Order No : PRI 100 H x Pulse	Order No : MRI 50 x Pulse	Order No : PRI 58 SH x Pulse
Resolution (Number of Pulse)	1024 Pulse / Circuit	2-4-8-16-25-32-40-50-64-80 100-125-128-160-200-250 254-400-500-512-1024	100-200-300-360-400-500 600-720-1000-1024-1800 2000-2048-2500-3600-4000
Outlet Type	Pushpull - TTL - HTL	Pushpull - TTL - HTL	Pushpull - TTL - HTL
Channels (Outlet Direction)	A, B, Z, or $A,\overline{A}$ $B,\overline{B}$ $Z,\overline{Z}$	A, B, Z, or $A,\overline{A}$ $B,\overline{B}$ $Z,\overline{Z}$	A, B, Z, or $A,\overline{A}$ $B,\overline{B}$ $Z,\overline{Z}$
Max. Speed	4000 RPM	4000 RPM	4000 RPM
Supply Voltage	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC
Working Temperature	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C
Cable	2.5 Meter (Standard)	2.5 Meter (Standard)	2.5 Meter (Standard)
Protection Class	IP 50	IP 50	IP 50
Shaft / Hole Dia.	Ø 25 - 28 - 35 - 38 mm	Ø 4 - Ø 6- Ø 8- Ø 10 mm	Ø 6 - Ø 8 - Ø 10 mm
Shaft Material	Stainless Steel	Stainless Steel	Stainless Steel
Housing Material	Aluminium	Aluminium	Aluminium
Housing Dia.	100 mm	50 mm	58 mm

Position Metering Scale: They are produced compatible with international measurement standards by selecting top caliber/quality materials. Linearity controls are made punctiliously. These Scales are for reading lineer & rotary & sliding motions measurement controls. They are commonly used in all production machines and benches at machine industry, except the selected products involved in our catalogue, different types and models are also available.

Special Prices for Higher Quantities..



Injection Mould COOLING SYSTEMS

Cooling of Mould : For providing suitable cooling, features of moulded material, material shape, mould structure and heat quantity to be transferred should be known. In cooling with water, cooling water channels should not be very close to mould surface. Otherwise, temperature changes can be caused thermal shocks on mould surface. Water channels should not be so far from moulded surface. Because, in this case, heat transfer should not be provided sufficiently.

Water Channels can be created far away 2 / 3 times of mould plate channel diameter.

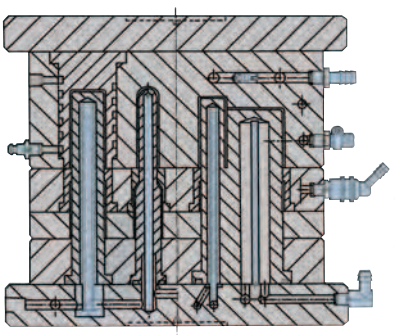
In arranging channels and creating of inlet and outlets, the balance providing circulation of water in certain pressure and speed. Water should be circulated in channels the way that transfering maximum heat. Water discharge should be provided to keep mould in certain temperature. There should not be any difference between inlet and outlet temperatures of cooling water. Cooling water, generally should be entered into mould as 20-250ºC and should be came out as 50 -55º.

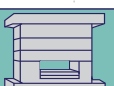
Effect of Cooling Water on Mould:

Injection Errors	Solutions
Drawing - Distortion-Sinking	Cooling period
Fragibility-Crackage - Shrinkage	Should be increased
Visible Ejector Traces	and
Tension Whitening	Mould Water
	Runner System
	Should be controlled

Automatic Sockets

Automatic sockets and bushes compatible with mould cooling systema and injection machines, are commonly used in plastic moulds cooling systems and metal injection moulds. To use in water - air and oil flowings, different types are available and when desired mounting/ demounting facilities on mould, automatic coupling sockets should be used . They can be worked up to 10 bar pressures and approximate 100ºC . For accurate and efficient cooling in mould cooling system not living any problem, to choose coupling /socket system to be most suitable to the temperature of your mould system and mounting area in the correct way is important, wide options related to this system are presented at following pages.



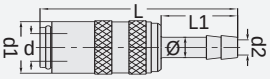




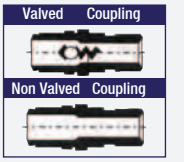


As per request Unclamped Hose Ended Coupling





Valved System: Provides controlled water flow, when coupling is removed, water flow is closed (Vaned)
Non Valved System: With free water flow, when bush is removed, circuit is open (Valveless).

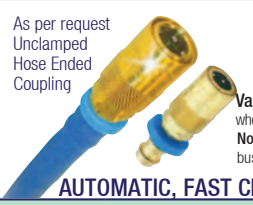


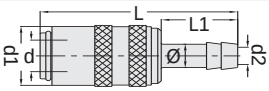
AUTOMATIC, FAST CLUTCH, SMALL SIZE EURO TYPE — Serie: W 560

Order (Valved - Non Valved .d x L)		Connection Measure Ø	Small Size				
Valved	Non Valved		d	L	d1	d2	L1
W 560 - HGV 06	W 560 - SG 06	6 mm 1/4"	9	46	17	4,5	17
W 560 - HGV 10	W 560 - SG 10	10 mm 3/8"				**6**	

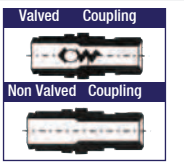


As per request Unclamped Hose Ended Coupling





Valved System: Provides controlled water flow, when coupling is removed, water flow is closed (Vaned)
Non Valved System: With free water flow, when bush is removed, circuit is open (Valveless).



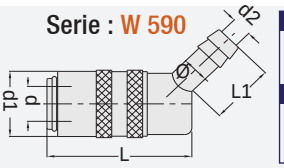
AUTOMATIC, FAST CLUTCH, STANDARD SIZE EURO TYPE

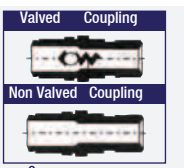
Order (Valved - Non Valved .d x L)		Connection Measure Ø	Standard Size				
Valved	Non Valved		d	L	d1	d2	L1
W 590 - HGV 10	W 590 - HG 10	10 mm 3/8"	13	60	23	8	23
W 590 - HGV 13	W 590 - HG 13	13 mm 1/2"				**10**	

EURO TYPE



As per request Unclamped Hose Ended Coupling





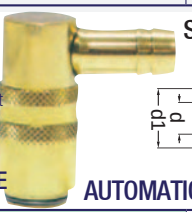
AUTOMATIC,FAST CLUTCH COUPLING, 45⁰ ANGLE

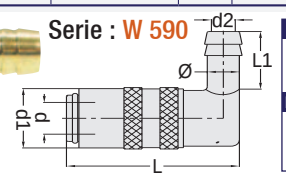
Order (Valved - Non Valved .d x L)		Connection Measure Ø	Standard Size				
Valved	Non Valved		d	L	d1	d2	L1
W 590 -HGV 1045	W 590 - HG 1045	10 mm 3/8"	13	51	23	8	23
W 590 -HGV 1345	W 590 - HG 1345	13 mm 1/2"				**10**	

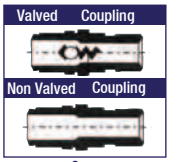


As per request Unclamped Hose Ended Coupling

EURO TYPE







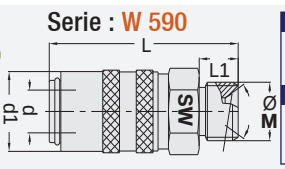
AUTOMATIC,FAST CLUTCH COUPLING, 90⁰ ANGLE

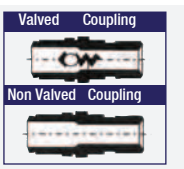
Order (Valved - Non Valved .d x L)		Connection Measure Ø	Standard Size				
Valved	Non Valved		d	L	d1	d2	L1
W 590 - HGV 1090	W 590 - HG 1090	10 mm 3/8"	13	51	23	8	17
W 590 - HGV 1390	W 590 - HG 1390	13 mm 1/2"				**9**	



Male Gear Type Bush is also procurement be altered



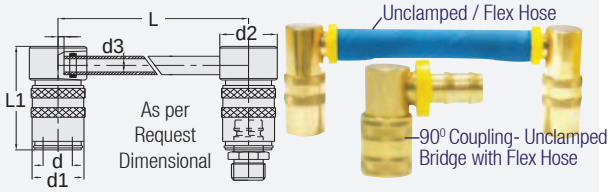




AUTOMATIC,FAST CLUTCH COUPLING, MALE GEAR EURO TYPE

Order (Valved - Non Valved .d x L)		Connection Measure M	Standard Size				
Valved	Non Valved		d	L	d1	L1	SW
W 590 - EGV 13	W 590 - EG 13	**G 1/4"**	13	52	23	11	21
W 590 - EGV 21	W 590 - EG 21	**G 1/2"**					

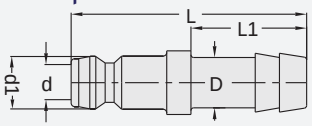
Except Automatic Fast Clutch Coupling **Standard Hose Connected (Clamped)** Types, also **Unclamped / Fast Flex Hose Connected** Automatic Fast Connected Coupling **Types** are available.



Automatic Fast Clutch DOUBLE BRIDGE EURO TYPE W590KG

Order No (d x L)	d	L	L1	d1	d2	d3
W590 - KG 125	13	125	53	23	26	10 13 Flex Hose
W590 - KG 250		250				
W590 - KG 500		500				

Automatic Fast Clutch BUSH / END Hose Input EURO TYPE W590HR

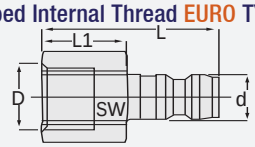




Order No : (d x L)	(Thread) D	d	L	L1	d1
W590 FR 10	10 - 3/8"	9	41	24	13
W590 FR 13	13 - 1/2"	9	45	28	13

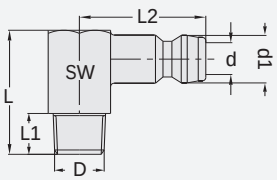
Automatic Fast Clutch BUSH / END Capped Internal Thread EURO TYPE

Serie : ORD





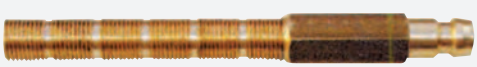
Order No : (d x L)	(Thread) D	d	L	L1	SW
ORD M10	M10 x 1.5	13	24	10	11
ORD M12	M12 x 1.75		27	13	14
ORD 1/8	G 1/8"		24	10	11
ORD 1/4	G 1/4"		33	13	14

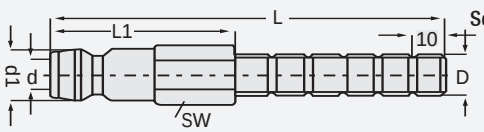




Automatic Fast Clutch BUSH / END 90⁰ ORTHOGONAL EURO TYPE

Order No (d x L)	(Thread) D	d	L	L1	L2	d1	SW
W590 ER 13-90	R 1/4"	9	34	12	25	13	15
W590 ER 14-90	M14 x 1.5						15
W590 ER 17-90	G 3/8"						17

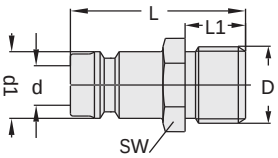




Serie : TO

Automatic Fast Clutch THREADED BATCH BUSH EURO TYPE

Order No (d x L)	(Thread) D	d	L	L1	d1	SW
T 060 BLM10100	M10 x 1	9	100	40	13	14
T 060 BLM14100	M14 x 1.5					17
T 060 BL 10300	G 1/4"					14



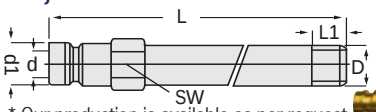
Standard Size

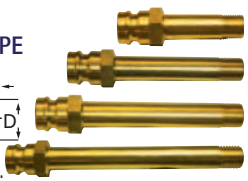


Automatic Fast Clutch BUSH / End EURO TYPE

	Order No : (d x L)	(Thread) D	d	L	L1	d1	SW
Small Type	W560 ER M10	M10 x 1	6	24	7	9	11
	W560 ER 10	G 1 x 8	6	24	7	9	11
	W560 ER 13	G 1/4"	6	26	9	9	14
Standard Type	W590 ER M10	M10 x 1	9	31	9	13.5	14
	ORE M10	M10 x 1.5	9	31	9	13.5	14
	ORE M12	M12 x 1.75	9	31	9	13.5	14
	W590 ER M14	M14 x 1.5	9	31	9	13.5	14
	W590 ER M16	M16 x 1.5	9	31	9	13.5	17
	ORE 1/8	G 1/8"	9	31	7	13.5	14
	ORE 1/4	G 1/4"	9	31	9	13.5	14
	W590 ER 17	G 3/8"	9	31	9	13.5	17
Large Type	W690 ER M24	M24x1.5	13	51	16	19	27
	W690 ER 21	G 1/2"	13	47	12	19	22
	W690 ER 26	G 3/4"	13	51	16	19	27

Automatic Fast Clutch BUSH / End Large Sizes EURO TYPE





* Our production is available as per request.

	Order No : (d x L)	(Thread) D	d	L	L1	d1	SW
Standard Type	ORE M10.060	M10 x 1.5	6	60	11.5	13	14
	ORE M10.080			80			
	ORE M10.100			100			
	ORE M10.120			120			
	ORE M10.150			150			
T090 BU150 (Non Thread)		FLAT Ø 14	9	150	-	13	15
Standard Type	ORE M12.060	M12 x 1.75	7	60	11.5	13	14
	ORE M12.080			80			
	ORE M12.100			100			
	ORE M12.120			120			
	ORE M12.150			150			
T090 BU300 (Non Thread)		FLAT Ø 14	9	300	-	13	15
Standard Type	ORE 1/8.060	G 1/8"	6	60	11.5	13	14
	ORE 1/8.080			80			
	ORE 1/8.100			100			
	ORE 1/8.120			120			
	ORE 1/8.150			150			
T090 BU450 (Non Thread)		FLAT Ø 14	9	450	-	13	15
Standard Type	ORE 1/4.060	G 1/4"	8	60	12.5	13	14
	ORE 1/4.080			80			
	ORE 1/4.100			100			
	ORE 1/4.120			120			
	ORE 1/4.150			150			
T090 BU500 (Non Thread)		FLAT Ø 14	9	500	-	13	15

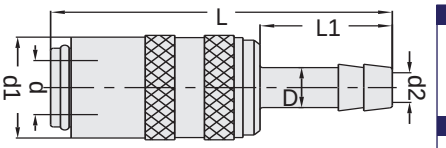
Material : Brass / Yellow Material
Max. Temperature: 100⁰C

* Bush, is supplied separately.

*** Flat Type - Large Size**

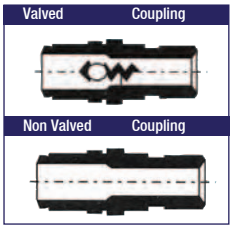
It is suitable for Large Injection Moulds.





Valved System : Provides controlled water flow, when coupling is removed, water flow is closed (Vaned).

Non Valved System : With free water flow, when bush is removed, circuit is open (Valveless).



Automatic Fast Clutch, HOSE INPUT COUPLING, Large Size EURO TYPE

Serie : W 690

Order (Valved - Non Valved d x L)		Connection Measure **D**	Standard Size				
Valved	Non Valved		**d**	**L**	d1	d2	L1
W 690 - HGV 19	W 690 - HG 19	19 mm 3/4"	19	90	31	13	32

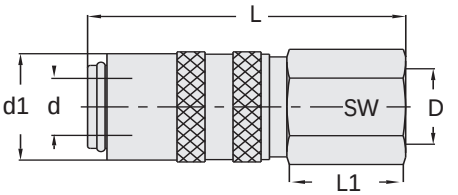
Note: For bush/ end interts, refer to Euro Type Automatic Fast Clutch at the next page...

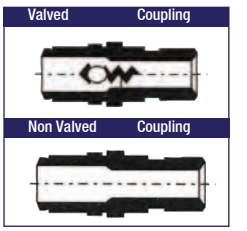
* Bush, is supplied separately.

*** Closed Female Toothed Large Size Type**

It is suitable for large injection moulds.

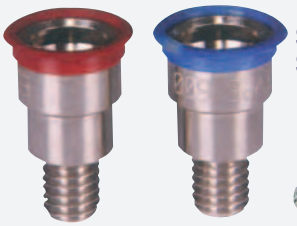






Automatic Fast Clutch, FEMALE COUPLING, Large Size Casing EURO TYPE

Order (Valved - Non Valved d x L)		Connection Measure Ø	Standard Size				
Valved	Non Valved		**d**	**L**	L1	d1	SW
W 690 - DGV 21	W 690 - DG 21	G 1/2"	19	70	14	31	30
W 690 - DGV 24	W 690 - DG 24	M24 x 1.5	19	72	16	31	30
W 690 - DGV 26	W 690 - DG 26	G 1/4"	19	72	16	31	30



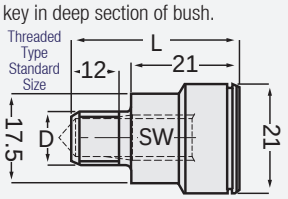
Standard Size

Long Size

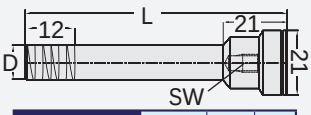
Material: Brass / Yellow Nickel Plated

AUTOMATIC, FAST CLUTCH COLOURED BUSH / END

In cases requiring continous and high pressure resistance, also desired mounting and demounting facility on mould, this system bushes can be used. The can be worked up to 13 Bar pressure and approximate 150^{0}C They are free flow. **Mounting :** For fast detection **BLUE** (Cold Circuit) and **RED** (Hot Circuit), female bush can be selected as per request. At mounting to mould, it is screwed to the threaded section water runner plate with alien key in deep section of bush.



Thread - Colour Definition Long Size Bush

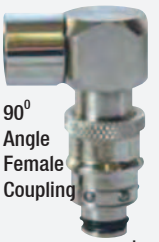


Order	D	L	SW
W600 ER10	R 1/8"	31	6
W600 ER13	R 1/4"	33	8
W600 ER17	R 3/8"		8
W600 M10	M10 x1.5		6
W600 M14	M14 x1.5		8

* In order, pls. specify colour as per request

Order	D	L	SW
W600 10.100	R 1/8"	100	6 Alien
W600 10.150		150	
W600 10.200		200	
W600 10.250		250	
W600 13.100	R 1/4"	100	8 Alien
W600 13.150		150	
W600 13.200		200	
W600 13.250		250	

AUTOMATIC, FAST CLUTCH COLOURED BUSHED LARGE / POWERFUL TYPE COUPLINGS



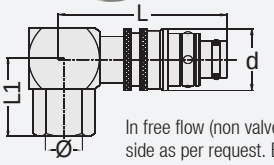
90^0 Angle Female Coupling

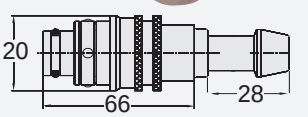
In fast / practical (one-handed) usages, hot oil connections, cold, hot water inlet and outlets, plastic moulds. **Especially : in metal injection zamak casting and aluminium injection cooling system, powerful and fast used.**

Never make corrosion



Flat Type Automatic Coupling





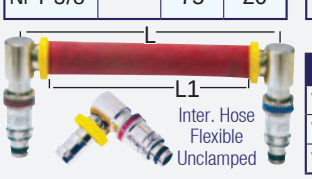
In free flow (non valved) system, the valve can be added at rear side as per request. Bush connections are at side section.

90^0 Angular Female Coupling W600 DG

Order	d	L	L1
BSP 1/4"	20	48.5	17
BSP 3/8"		75	20
NPT 1/4"		60	15
NPT 3/8"		75	20

Flat Type Coupling W600 HG

Order	Connection Ø
W600.8 HG06	6 mm -1/4"
W600.8 HG08	8 mm -5/16"
W600.8 HG10	10 mm -3/8"
W600.8 HG12	12 mm -15/32"
W600.8 HG13	13 mm -1/2"

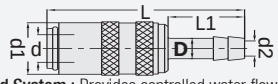


DUAL BRIDGE SYSTEM W600 UG

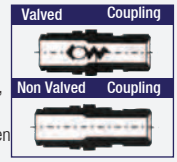
Order	L	L1
W600 UG 125	125	101
W600 UG 250	250	226
W600 UG 500	500	425



As per request, unclamped Hose Inlet Coupling



Valved System : Provides controlled water flow, when coupling is removed, water flow is closed (Vaned).
Non Valved System : With free water flow, when bush is removed, circuit is open (Valveless).



AUTOMATIC, FAST CLUTCH COUPLING, SMALL SIZE USA TYPE

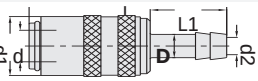
Serie : W 506

Order (**Valved** - Non Valved .d x L)		Connection Measure **D**	Small Size				
Valved	Non Valved		**d**	**L**	d1	d2	L1
W 506 - HGV 06	W 506 - SG 06	6 mm 1/4"	9	56	17	4,5	27
W 506 - HGV 10	W 506 - SG 10	10 mm 3/8"				**6**	

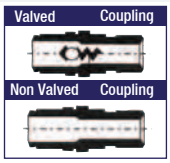


As per request, unclamped Hose Inlet Coupling

W 509



Valved System : Provides controlled water flow, when coupling is removed, water flow is closed (Vaned).
Non Valved System : With free water flow, when bush is removed, circuit is open (Valveless).



AUTOMATIC, FAST CLUTCH COUPLING, STANDARD SIZE USA TYPE

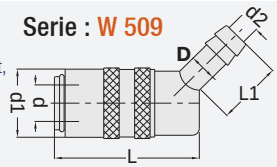
Order (**Valved** - Non Valved .d x L)		Connection Measure **D**	Standard Size				
Valved	Non Valved		**d**	**L**	d1	d2	L1
W 509 - HGV 10	W 509 - HG 10	10 mm 3/8"	13	68	23	8	29
W 509 - HGV 13	W 509 - HG 13	13 mm 1/2"				**10**	

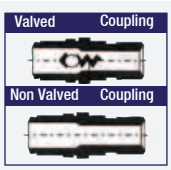
USA TYPE



Serie : W 509

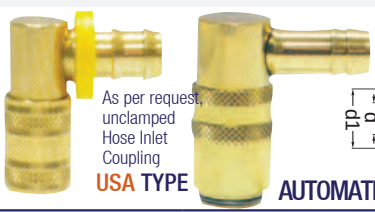
As per request, unclamped Hose Inlet Coupling





AUTOMATIC,FAST CLUTCH COUPLING, 45^0 ANGULAR

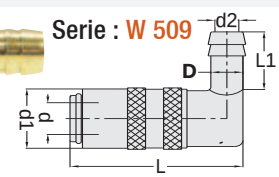
Order (**Valved** - Non Valved .d x L)		Connection Measure **D**	Standard Size				
Valved	Non Valved		**d**	**L**	d1	d2	L1
W 509 -HGV 1045	W 509 - HG 1045	10 mm 3/8"	13	38	23	8	29
W 509 -HGV 1345	W 509 - HG 1345	13 mm 1/2"				**10**	

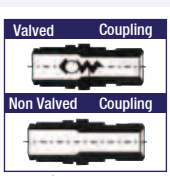


As per request, unclamped Hose Inlet Coupling

USA TYPE

Serie : W 509





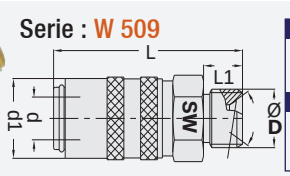
AUTOMATIC,FAST CLUTCH COUPLING, 90^{0}ANGULAR

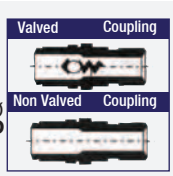
Order (**Valved** - Non Valved .d x L)		Connection Measure **D**	Standard Size				
Valved	Non Valved		**d**	**L**	d1	d2	L1
W 509 - HGV 1090	W 509 - HG 1090	10 mm 3/8"	13	39	23	8	29
W 509 - HGV 1390	W 509 - HG 1390	13 mm 1/2"				**10**	



Male type coupling will be supplied separately

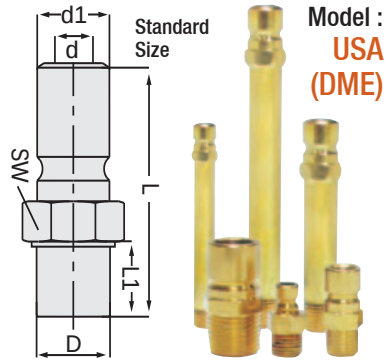
Serie : W 509





AUTOMATIC, FAST CLUTCH COUPLING, MALE THREAD USA TYPE

Order (**Valved** - Non Valved .d x L)		Connection Measure **D**	Standard Size				
Valved	Non Valved		**d**	**L**	d1	L1	SW
W 509 - EGV 13	W 509 - EG 13	**G 1/4"**	13	59	23	18	21
W 509 - EGV 21	W 509 - EG 21	**G 1/2"**					



Model : USA (DME)

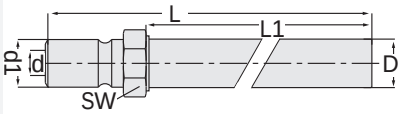
Automatic Fast Clutch BUSH / END

Model : USA — Small Size Bush

Order	**D**	d	L	L1	d1	SW
506 ER06	G 1/8"	6	24	7	9	11
506 ER08	G 1/4"	6	26	9	9	14
506 ER M10	10 x 1	6	24	7	9	11

Model : USA — Standard Size Bush

Order	**D**	d	L	L1	d1	SW
509 ER09	G 1/8"	6	31	7	13	13
509 ER13	G 1/4"	9		9		16
509 ER17	G 3/8"	13		13		19
509 ER21	G 1/2"	15		13		21
59 ER M10	10 x 1	6		9		14
59 ER M14	14 x1.5	13		13		16



Model : USA — Long Size Bush

Order	**D**	d	L	L1	d1	SW
509 EUR09 x (Length) L	G 1/8"	6	60	9	13	13
			80			
			100			
			150			
509 EUR13 x (Length) L	G 1/4"	8	60	13	13	16
			80			
			100			
			150			
			200			
509 EUR17 x (Length) L	G 3/8"	9	60	13	13	19
			80			
			100			
			150			
			200			

INNER CONNECTOR, SLEEVE

Inter Kit in Connection System **DSN**



Order	D	L	SW
DSN 01	M5	12	8
DSN 02	1/8"	22	14
DSN 03	1/4"	26	17
DSN 04	3/8"	26	22
DSN 05	1/2"	30	27

FEMALE -THREADED SCREWED, COUPLING

Hose Inlet Connected, Female Coupling **DHR**



Order	D	d1	L
DHR 01	1/8"	08	27
DHR 02	1/4"	09	30
DHR 03	1/4"	13	36
DHR 04	3/8"	13	36
DHR 05	1/2"	16	43

INTERMEDIATE JOINT- DOUBLE NIPPLE

Double Side Threaded, Complementary Coupling **ONE**



Order	D-d	L
ONE 01	1/8"-1/8"	21
ONE 02	1/8"-1/4"	23
ONE 03	1/4"-1/4"	23
ONE 04	1/4"-3/8"	23
ONE 05	1/4"-1/2"	29
ONE 06	3/8"-3/8"	23
ONE 07	3/8"-1/2"	29

REDUCTION CONVERTOR

Double Side / Internal and External Threaded Different Type **DEN**



Order	D-d	L
DEN 01	1/8"- M5	11
DEN 02	1/4"- M5	11
DEN 03	1/4"-1/8"	11
DEN 04	3/8"-1/8"	13
DEN 05	3/8"-1/4"	14
DEN 06	1/2"-1/4"	18
DEN 07	1/2"-3/8"	18

HOSE ATTACHING COUPLING

Segmented Hoses, Attachment Kit **HKE**

Single **HKE**

Triple **HKT**



Order	D	L
HKE 01	04 mm	50
HKE 02	06 mm	50
HKE 03	08 mm	50
HKE 04	09 mm	50
HKE 05	13 mm	60
HKE 06	16 mm	60
HKE 07	19 mm	60

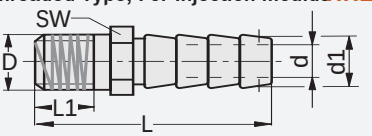


Section Injection Mould



Hose Inlet, Mould COUPLING/END

Threaded Type, For Injection Moulds **HRE**

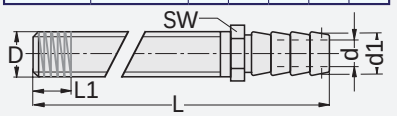


Material: Brass/Yellow **STANDARD TYPE**

Order	D	d	L	L1	d1	SW
HRE 08	M8 x 1.25	6	36	9	12	13
HRE 10	M10 x 1.5	6	36	9	12	13
HRE 12	M12 x 1.75	7	36	9	12	13
HRE 14	M14 x 2	8	40	9	12	14
HRE 16	M16 x 2	9	40	9	14	16
HRE 1/8	G 1/8"	6	36	10	12	13
HRE 1/4	G 1/4"	8	36	10	12	14

Material: Hard Plastic **HARD PLASTIC**

Order	D	d	L	L1	d1	SW
HRP 10	M10 x 1.5	6	36	9	12	13
HRP 12	M12 x 1.75	7	36	9	12	13



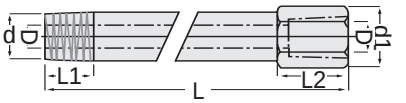
Material: Brass/Yellow **LONG SIZES**

Order	D	d	L	L1	d1	SW
HRU M08060	M8 x 1.25	6	60	9	12	13
HRU M08080			80			
HRU M08100			100			
HRU M08120			120			
HRU M08150			150			
HRU M10060	M10 x 1.5	6	60	9	12	13
HRU M10080			80			
HRU M10100			100			
HRU M10120			120			
HRU M10150			150			
HRU M12060	M12 x 1.75	7	60	9	12	13
HRU M12080			80			
HRU M12100			100			
HRU M12120			120			
HRU M12150			150			
HRU M1/8060	G 1/8"	6	60	10	12	13
HRU M1/8080			80			
HRU M1/8100			100			
HRU M1/8120			120			
HRU M1/8150			150			
HRU M1/4060	G 1/4"	8	60	10	12	14
HRU M1/4080			80			
HRU M1/4100			100			
HRU M1/4120			120			
HRU M1/4150			150			



Distance Extender (Long Size) COUPLING

Similar to Dual Side, Threaded Extender **ARU**

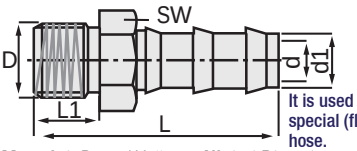


Order	D	d	L	L1	L2	d1
ARU 18060	G 1/8"	10	60	10	14	14
ARU 18080			80			
ARU 18100			100			
ARU 18150			150			
ARU 14060	G 1/4"	13	60	10	15	16
ARU 14080			80			
ARU 14100			100			
ARU 14150			150			



Unclamped End, Threaded Coupling **THR**

Unclamped Connection with Flexible Hose



It is used with special (flex) hose.

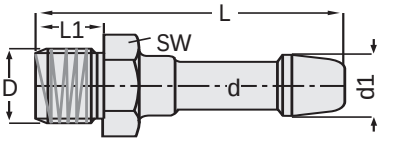
Material: Brass/ Yellow - **Nickel Plated**

Order	D	d	L	L1	d1	SW
THR 06	G 1/8"	4	43	8	6	14
THR 10		5.5			10	
THR 09	G 1/4"	6	46	11	9	17
THR 13		8			13	
THR 17	G 3/8"	9	52	12	13	19



Fast Connected End, COUPLING **HR**

Normal Hose, Fast Connected, Clamped Type



Material: Brass/ Yellow - **Nickel Plated**

Order	D	d	L	L1	d1	SW
HR 08	G 1/8"	5.5	43	8	08	14
HR 09	G 1/4"	6	46	11	9	17
HR 13	G 1/4"	8	51	11	13	17
HR 17	G 3/8"	9	52	12	13	17
HR 16	G 1/2"	11	54	14	16	23

SMALL BALL VALVE KKV



As per Request, Color Selection

Mini Ball Valve

Order	D	L
KKV 06	G 1/4"	38
KKV 10	G 3/8"	38
KKV 16	G 1/4"	45

Manuel Controlled Valve

* Button Type Mini Valve
* 1/4" Male Threaded Regulator **Order No :** 18652

Pls. Packaged O-RING SET



* **368 Piece Serie**
* **30 Different Size**

NBR Rubber resistance to oil and acids. 60 - 90 Hardness. Economic and you should be kept at your hand.

Content : Diameter from 3 mm up to 30 mm. Thickness 2-2.5-3-4

SEALING CHEMICALS

Liquid TEFLON and BAND - LIGUID WASHER



In Threaded Connections

Teflon Band 10 mt. x 13 mm
Order Code: : **GL.10321**

WINKEL Teflon Reinforced Bush Sealing Chemical
Order Code : **678511F50**

404 Liquid Washer:
300^0 Heat Resistance Sealing, Sealing Everywhere
Order Code : **SK404** (Red)
Order Code : **SM404** (Blue)

HOSE CLAMPS



Order	Capacity
HK 1016	10 x 16
HK 1319	13 x 19
HK 1623	16 x 23
HK 1825	18 x 25
HK 2032	20 x 32
HK 3251	32 x 51

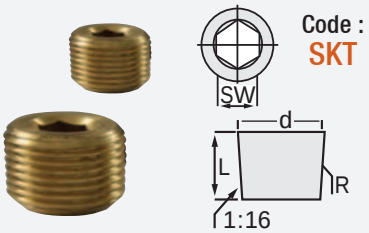
Stainless / Inox Material
Extra Quality Clamp
Capacity : 12 x 20
Order No : HKI 1220

INDUSTRIAL TYPE LIQUID HOSES



Polyamide: For **Polyurethane** water hoses in automatic systems

Order	In/Out Ø
HS06 1/4"	**d:**4 x **d1:**6
HS08 5/16"	**d:**5 x **d1:**8
HS10 3/8"	**d:**8 x 10
HS13 1/2"	10 x 12.5
HS16 5/8"	**d:**10 x 16
HS19 3/4"	**d:**13 x 19



Code : **SKT**

WATER RUNNER PLUG, CONICAL TYPE

Yellow Brass Material/ Blind Plug:

It is to plug on /to close unwanted water holes in injection moulds. **Mounting :** It is inserted according to the product diameter by threading.

WATER RUNNER PLUG, Yellow Material

Order	R	d	L	SW
SKT 18	**G 1/8"**	9.4	11.2	5
SKT 14	**G 1/4"**	12.8	12.5	7 ALIEN
SKT 38	**G 3/8"**	15.9	14.1	8
SKT 12	**G 1/2"**	20.5	17.8	10



Code : **CKT**

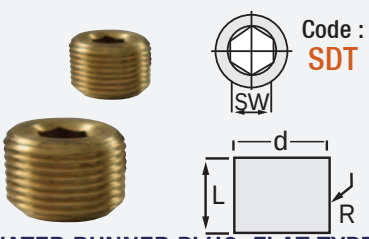
WATER RUNNER PLUG, CONICAL TYPE

Stainless Steel / Conical Type

It is to plug on / to close unwanted water holes in injection moulds.

Mounting: It is inserted according to the product diameter by threading.

Order	R	d	L	SW
CKT 18	**G 1/8"**	9.4	11.2	5
CKT 14	**G 1/4"**	12.8	12.5	7 ALIEN



Code : **SDT**

WATER RUNNER PLUG, FLAT TYPE

Yellow Brass Material/ Blind Plug

It is to plug on /to close unwanted water holes in injection moulds.

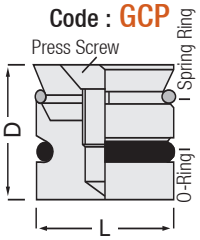
Mounting : It is inserted according to the product diameter by threading.

WATER PUNNER PLUG, Yellow Material

Order	R	d	L	SW
SDT 18	**G 1/8"**	9.4	11.2	5
SDT 14	**G 1/4"**	12.8	12.5	7 ALIEN
SDT 38	**G 3/8"**	15.9	14.1	8
SDT 12	**G 1/2"**	20.5	17.8	10



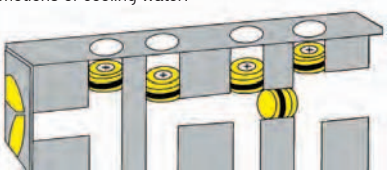
Code : **GCP**



WATER RUNNERS O-RING PLUG

Water Runners, Plugging and Routing

It is adjusted fixing plug in order to use canceling of unwanted holes in water runner system of injection moulds or to direct flow motions of cooling water.



Mounting Information : The channel diameter of water runners should be at least 01 mm greater than O-Ring plug. Any process (threading etc.) on channel mounting and any mechanical process on unit should not be done. O-Ring plug is never rusting, wall thickness of diameter on unit can be adjusted via O-Ring. The fixing on water runner can be done on holes from end to end or at any point.

Working Temperature Range : Between 10 and 250^{0}C
Pressure Capacity : Ø 6 - 8 mm = 16 Kg./ cm^2
Ø 10-12 mm = 18 Kg./cm^2 Ø 14-16mm = 25 Kg./cm^2

WATER RUNNERS O-RING PLUG

Order	D	L	Mounting Dia
GCP 06	Ø **6**	10	6.1 mm
GCP 08	Ø **8**	10	8.1 mm
GCP 10	Ø **10**	11	10.1 mm
GCP 12	Ø **12**	12	12.1 mm
GCP 14	Ø **14**	14	14.1 mm
GCP 16	Ø **16**	14	16.1 mm
GCP 20	Ø **20**	14	20.1 mm

* With Economical Price At Our Shelf Stocks



FLEXIBLE "Cooling Liquid" HOSE

Hard Plastic (Derlin) Flexible Liquid Transfer System

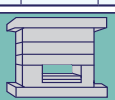
Even at narrow tolerance high pressures, it guarantees the directional stability. Definite resistance to all chemicals. Combine System with modular passing system as per request. Compatible with bench.

1/4"Operation Pressure: 6 Bar Flow Rate 15 lt./min.
3/8" Operation Pressure: 6 Bar Flow Rate 25 lt./min.



Order	Dia.	Length
PSE.14	1/4"	280 mm
PSE.18	3/8"	320 mm

Section Injection Mould



AUTOMATIC FAST CLUTCH

Metal Nut Proportional Nipple



Max. Heat : 100⁰

Order	Ø Hose
S2 0606	6 ~ 4 mm
S2 0808	8 ~ 6 mm
S2 1010	10 ~ 8 mm
S2 1212	12 ~ 9 mm
S2 1414	10 ~ 14 mm
S2 1616	12 ~ 16 mm

Metal, Nut Elbow Socket Male Threaded



Non Corrosive

Yellow Casting Nickel Plated

Order	Tooth	Hose
S4 1806	1/8"	6 ~ 4
S4 1406	1/4"	6 ~ 4
S4 1808	1/8"	8 ~ 6
S4 1408	1/4"	8 ~ 6
S4 1410	1/4"	10 ~ 8

Max. Heat:100⁰

Metal, Nut Socket



Order	Tooth	Hose
S1 1806	1/8"	6 ~ 4
S1 1406	1/4"	6 ~ 4
S1 1808	1/8"	8 ~ 6
S1 1408	1/4"	8 ~ 6
S1 1308	3/8"	8 ~ 6
S1 1410	1/4"	10 ~ 8
S1 3810	3/8"	10 ~ 8
S1 1210	1/2"	10 ~ 8

Non Corrosive

Metal Nut "T" Socket

Yellow Casting Nickel Plated



Max. Heat: 100⁰

Order	Hose
S3 0606	6 ~ 4
S30808	8 ~ 6
S3 1010	10 ~ 8
S3 1212	12 ~ 9

Plastic Automatic Clutch Socket

Material: Polyester
Max. Heat : 80⁰



Order	Tooth	Hose
P1 M608	M6	8 mm
P1 1804	1/8"	4 mm
P1 1806	1/8"	6 mm
P1 1406	1/4"	6 mm
P1 1408	1/4"	8 mm
P1 1410	1/4"	10 mm
P1 1412	1/4"	12 mm

Plastic Automatic NIPPLE

Order	Hose
P2 0404	4 mm
P2 0606	6 mm
P2 0808	8 mm
P2 1010	10 mm
P2 1212	12 mm

Material: Polyester
Max. Heat : 60⁰



HOSE FASTENERS

Metal Automatic Nipple Socket

Yellow Casting /Nickel Plated



Non Corrosive

Max. Heat: 100⁰

Order	Hose
M2 0404	4 mm
M2 0606	6 mm
M2 0808	8 mm
M2 1010	10 mm
M2 1212	12 mm

Metal Automatic Rotary Elbow

Max. Heat: 100⁰



Yellow Casting Nickel Plated

Order	Tooth	Hose
M4 1806	1/8"	6 mm
M4 1406	1/4"	6 mm
M4 1408	1/4"	8 mm
M4 1410	1/4"	10 mm
M4 1412	1/4"	12 mm

Metal, Automatic Coupling



Yellow Casting Nickel Plated

Order	Tooth	Hose
M1 M604	M6	4 mm
M1 1804	1/8"	4 mm
M1 1806	1/8"	6 mm
M1 1406	1/4"	6 mm
M1 1408	1/4"	8 mm
M1 1410	1/4"	10 mm
M1 1412	1/4"	12 mm
M1 3810	3/8"	10 mm

Metal Automatic "T" Socket



Yellow Casting Nickel Plated

Non Corrosive

Order	Hose
M3 0404	4 mm
M3 0606	6 mm
M3 0808	8 mm
M3 1010	10 mm
M3 1212	12 mm

Automatic Plastic Elbow



Material: Polyester
Max. Heat : 60⁰

Order	Hose
P5 0404	4 mm
P5 0606	6 mm
P5 0808	8 mm
P5 1010	10 mm
P5 1212	12 mm
P5 1616	16 mm

Automatic Plastic Reduction

Material: Polyester

Order	Hose
P8 0604	4 ~ 6
P8 0806	8 ~ 6
P8 1008	10 ~ 8
P8 1210	12 ~ 10

Max. Heat : 60⁰



FITTING GROUP

Plastic, Central Leg - Threaded "TE"

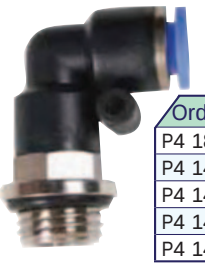


Max. Heat : 60⁰

Order	Tooth	Ø
P6 1806	1/8"	6
P6 1406	1/4"	6
P6 1408	1/4"	8
P6 1410	1/4"	10
P6 3810	3/8"	10
P6 1412	1/4"	12

Plastic, Threaded Rotary Elbow

Material: Polyester



Order	Tooth	Hose
P4 1806	1/8"	6 mm
P4 1406	1/4"	6 mm
P4 1408	1/4"	8 mm
P4 1410	1/4"	10 mm
P4 1412	1/4"	12 mm

Plastic Quintet Manifold

Material: Polyester



Order	Hose
M5 444	4/4/4/4/4
M5 555	5/5/5/5/5
M5 666	6/6/6/6/6
M5 888	8/8/8/8/8
M5 1010	10/10/10/10
M5 1212	12/12/12/12

Automatic Plastic 3 Input "T"

Material: Polyester



Max. Heat : 60⁰

Order	Hose
P3 0404	4 mm
P3 0606	6 mm
P3 0808	8 mm
P3 1010	10 mm
P3 1212	12 mm
P3 1616	16 mm

Automatic Plastic 3 Inlet Reducer

Material: Polyester



Max. Heat : 60⁰

Order	Hose
P1 668	6-6-8
P1 886	8-8-6
P1 108	8-8-10
P1 102	10-10-8
P1 212	10-10-12
P1 210	12-12-10

Plastic Dual " Y "



Order	Hose
P1 0404	4 / 4 ~ 4
P1 0604	6 / 6 ~ 6
P1 0808	8 / 8 ~ 8
P1 1010	10 /10~10
P1 1010	12 /12~12

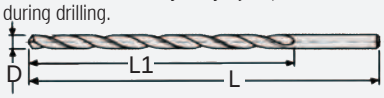
Automatic Clutch Sockets : They are essential elements of pneumatic and hydraulic systems in machine production. **Nowadays in Mould Industry :** This product is commonly used in connections of cooling systems in injection mould outer group. They are used at **Metal** Products, Metal Injection, **Plastic** Products and Plastic Moulds.



WATER RUNNER DRILLS

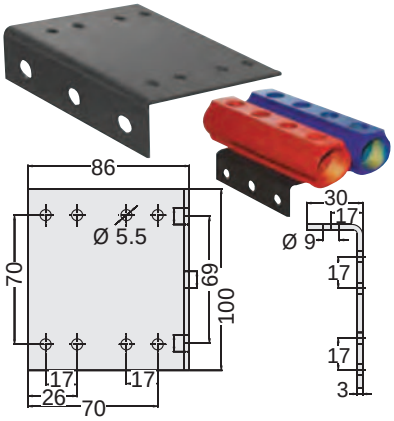
Very Long Drill Bit GT 100 Type

It is a long chip channel drill bit having great helix angle than normal. Especially, "10 XD" Perforation Process is provided on the deep surfaces. Due to its special helix structure, it works comfortably and does not squash into the middle strong steel and aluminium materials by carrying chip outside during drilling.

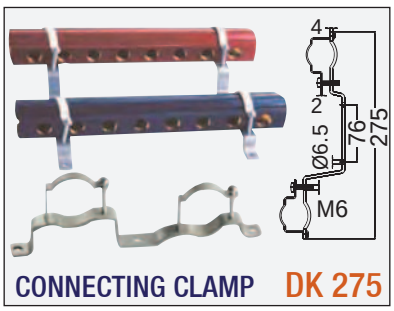


Water Runner Drills MG

Order No	Ø D	L	L1
MG1 035	3.5 mm	165 mm	115 mm
MG2 035		210 mm	145 mm
MG3 035		265 mm	180 mm
MG1 040	4 mm	175 mm	120 mm
MG2 040		220 mm	150 mm
MG3 040		280 mm	190 mm
MG1 050	5 mm	198 mm	135 mm
MG2 050		245 mm	170 mm
MG3 050		315 mm	210 mm
MG1 060	5.5 mm	205 mm	140 mm
MG2 060	6 mm	260 mm	180 mm
MG3 060		330 mm	225 mm
MG1 065	6.5 mm	215 mm	150 mm
MG2 065		275 mm	190 mm
MG3 065		350 mm	235 mm
MG1 070	7 mm	225 mm	155 mm
MG2 070	7.5 mm	290 mm	200 mm
MG3 070		370 mm	250 mm
MG1 080	8 mm	240 mm	165 mm
MG2 080	8.5 mm	305 mm	210 mm
MG3 080		390 mm	265 mm
MG1 090	9 mm	250 mm	175 mm
MG2 090	9.5 mm	320 mm	220 mm
MG3 090		410 mm	280 mm
MG1 100	10 mm	265 mm	185 mm
MG2 100	10.5 mm	340 mm	235 mm
MG3 100		430 mm	295 mm
MG1 110	11mm	280 mm	195 mm
MG2 110	11.5 mm	365 mm	250 mm
MG3 110		455 mm	310 mm
MG1 120	12mm	295 mm	205 mm
MG2 120	12.5 mm	375 mm	260 mm
MG3 120		480 mm	330 mm
MG1 130	13 mm	295 mm	205 mm
MG2 130		375 mm	260 mm
MG3 130		480 mm	330 mm



SKID PLATE DK 80.100



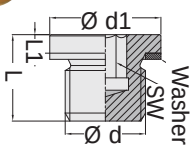
CONNECTING CLAMP DK 275





CAPPED PLUG

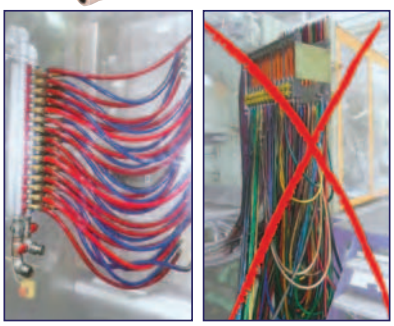
It is used as blind plug for closing unwanted holes.



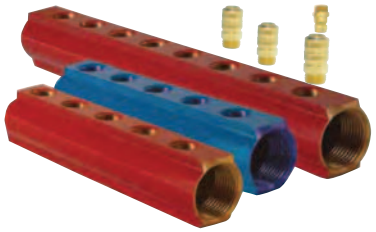
Order	d	L	L1	d1	SW
PPD 13	G 1/4"	15	3	18	6
PPD 17	G 3/8"	15	3	22	8
PPD 21	G 1/2"	18	4	24	10
PPD 26	G 3/4"	20	5	32	12
PPD 33	G 1"	21	5	39	17



Order: KVFM 13 G 1/4"
KVFM 21 G 1/2"
Ball Valve KVFM 26 G 3/4"
KVFM 33 G 1"



With distribution collector, undesired miscibility on machine and mould can be avoided.



DISTRIBUTION COLLECTORS DK

Distribution of Injection Mould Cooling Water, Inlet and Outlet Regulation System

They are produced in order to clear up disarrangement in inlet and outlet water runner systems at injection moulds cooling systems.

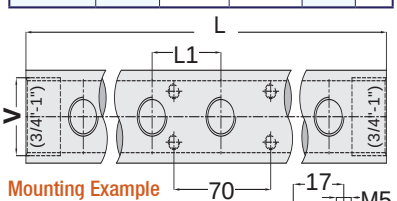
Material: Anodic Painted Aluminium

Distribution Collector 1/4" Serie : DK 14

Order No	N. of Socket	Socket Thread D	Valve Thread V	Leng. L	L1
DK 1404	4 Pcs.	1/4"	Inlet 1" Outlet 1"	150	30
DK 1405	5 Pcs.			180	
DK 1406	6 Pcs.			210	
DK 1408	8 Pcs.			270	
DK 1410	10 Pcs.			330	
DK 1412	12 Pcs.			390	

Distribution Collector 1/2" Serie : DK 12

Order No	N. of Socket	Socket Thread D	Valve Thread V	Leng. L	L1
DK 1204	4 Pcs.	1/2"	Inlet 1" Outlet 1"	165	35
DK 1205	5 Pcs.			200	
DK 1206	6 Pcs.			235	
DK 1208	8 Pcs.			305	
DK 1210	10 Pcs.			375	
DK 1212	12 Pcs.			445	



Mounting Example

At order: Pls. specify desired colour. As per request, Special Distribution collector production is available.

For Mounting Elements:

1- Pls. select thread measurement (1/4" - 1/2") of automatic fast connected coupling (Valved Type) and Male Threaded (W 590) to be used on distribution collectors and specify quantity.
2- Pls. specify type and diameter for main valve (V). (3/4" or 1") or type as per request.
3- Specify plug for tompion across valve (TK).
4- Select model for distribution connector connection.
5- As per request, hose diameter and lengths can be specified and also order can be completed with sealing products.

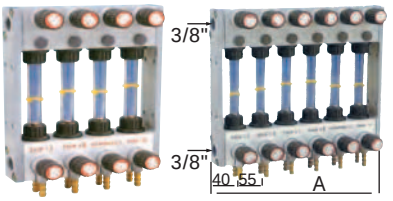


CIRCULATION REGULATOR ESR

It is used as flow indicator of mould cooling water in injection systems.

It is designed to control circulation flow and also to repeat settings regularly. Measurement scale of transparent tubes is monitored at desired level, accurate /safe flow is supplied with monitoring the deviation Position and On-Off buttons. Circulation regulators are domestic production and spare parts are available.

Inlet-Outlet distribution couplings of transparent tubes can be adjusted with Anodized/ Light Aluminium Casing and controlled system has been created with buttons.

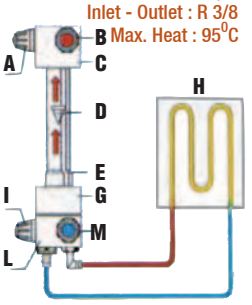


Circulation Regulators (Flow Indicators) :

As per request

they are supplied as group of 4-6-8-10-12'.

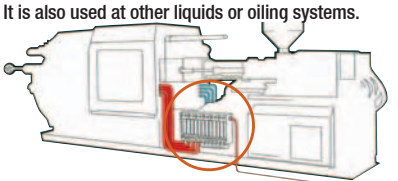
Flow Rate : 0-18 lpm
Inlet - Outlet : R 3/8
Max. Heat : 95°C

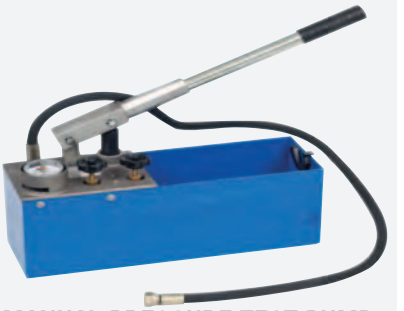


A : Control Valve
B : Water Outlet
C : Flow Manifold
D : Float
E : Calibrated Transparent Type
G : Receiver Section
H : Mould Distribution
I : Cut-off Valve
L : Supply Manifold
M : Water Inlet

Order No	N. of Tubes	Outlet Cycle	Size A
ESR. 04	4 '	Bush/ End	240
ESR. 06	6 '	R:1/4"	360
ESR. 08	8 '		480
ESR. 10	10 '	10 mm	600
ESR. 12	12 '	Hose	720

It is also used at other liquids or oiling systems.





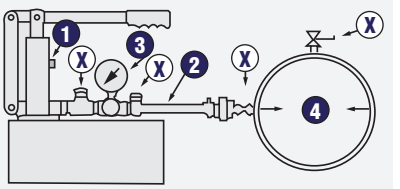
MANUAL PRESSURE TEST PUMP

Injection Mould Cooling System **Code :**
7 Bar: Water Runner Flow Testing Device **SSY**

Testing System with Manual Pressure Pump:

Complete the mounting of tie bar piston with screw and screwdriver involved in testing device that you purchased. Fill testing hose **(2)** with water (Air inside of hose should be drainaged.) Close valve / button**(1)** on the piston, connect testing hose mould runner system (Ensure that system is closed completely).

Fill the tank with water and run pump by pushing. Keep valve **(1)** button open, continue to pumping, when manometer pressures is reached to desired level, close valve numbered **1. No** If the pressure does not fall, test is positive. If the pressures falls, there is a leak in the test tube.



1- On-Off Valve/Button of System Testing Hose
2- Resistant to Pressure Manometer / Pressure
3- Indicator
4- Mould Water Runner Circuit
X- As per Request, Mini Ball Valve can be Added.

Order No	Working Pressure	Flow Rate
SSY.6	6.3 Mpa	25 ml / s.



CONSANTRATE DESCALER LIQUID

Order No : Art. Nr. 800598

Specifications : In order to avoid choking due to intense lime in machines and moulds running with water at places that urban water and well water are quite limy, 1 **kg. descaler is used in 10 Kg.** water (according to the lime status). It does not harm the system in moulds and machines (**Plastic/Copper**). **Usage Area :** It is used to solve lime under all circumstances or as additive to the water in all limy surfaces, it is a **Concentrate Product**.



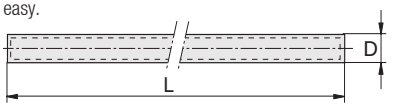
HEAT TRANSFER PIPE GH

Closed Circuit (Compressed Gas) Copper Pipe

Deep Male Core Cooling in Injection Mould:

The cooling system is formed by rising heat to the upper points via compressed gas in pipe expeditiously, **in Mounting** at least **70%** of conductor pipe remains inside the core, **30%** of mould should remain in mould water runner.

Advantages of System : It minimizes the number of defective final products during stamping resulting from shrinkage or cold deformation. Due to that, fast control of temperature is ensured, very high product precision is obtained. Thus, pore formation inside the product /object is avoided. During the injection, it ensures obtaining products in right colours. By ensuring to extend mould life more, it drags main costs down. Its application and mounting are very easy.

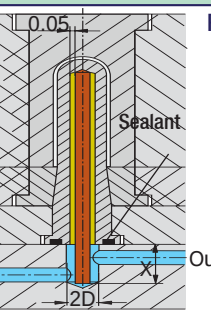


D	L
Ø 3	40
	60
	80
	100
	120
	150
Ø 4	40
	60
	80
	100
	120
	150
	185
	200

D	L
Ø 5	60
	80
	100
	120
	150
	200
Ø 6	60
	80
	100
	120
	150
	185
	200
	250

D	L
Ø 8	80
	100
	120
	150
	185
	200
	250
Ø 10	100
	120
	150
	185
	200
	220
	250
	300

Order : **GH** D x L — Sealant Winkel Mix



REPAIR PASTE

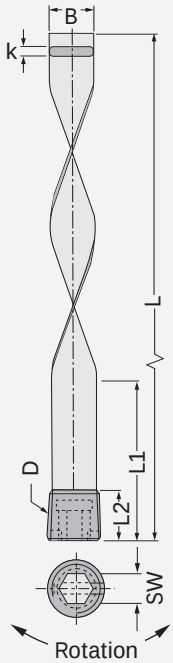


Winkel Mix Waser: :
It is a model used against water. Especially, it can be applied for pipe and metal cracks.

Order No :
200017 / 56 gr.

Mounting : * Mounting area of core slot of mould should be at least 0.01 - 0.2 mm larger than the conductor pipe diameter.***** Don' t forget to plug all cooling holes of conductor pipe remaining open after mounting.***** When area inside of conductor pipe cooling channel is extended, heat transmission is increased proportionally.





BDP	BSP
Flat Type	Spiral

DEEP COOLING SEPARATOR

Deep Male / Die Cooling Spiral & Sheet Bar

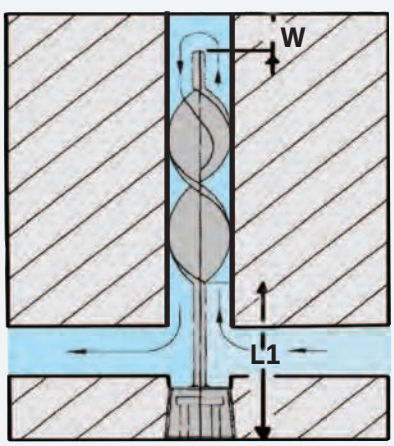
It is a deep male/die modular system for water flow system in injection moulds rapid water cooling process. It is processed from high quality yellow material in long size precision compatible with abrasion resistance and is resistant to high liquid pressure. Conical threaded rotary base strengthens water flow hole.

Spiral & Flat Type Separators

BDP BSP

B x k Sheet Bar	D NPT	L mm	L1 mm	L2 mm	W mm	SW Allen
8.5 x 16	1/8"	101	51	8	8.5	5
		203	102			
2.4 x 11.5	1/4"	127	51	10	11.5	7
		254	102			
2.4 x 11.5	3/8"	152	51	10	15	8
		300	102			
2.4 x 18.5	1/2"	203	102	10	18.5	10
		406	76			

Order : **BSP / BDP** D x L — Material : Yellow/ Brass

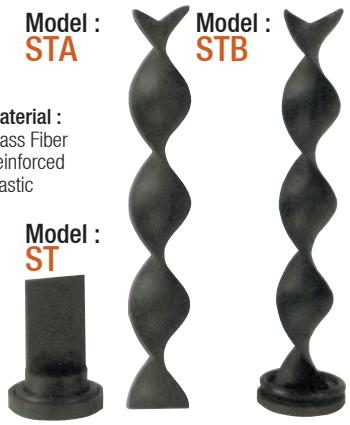


Model : **STA**

Model : **STB**

Material : Glass Fiber Reinforced Plastic

Model : **ST**





PLASTIC, SPIRAL / MODULER DEEP COOLING SEPARATOR

It provides effective flow opportunity by creating balanced turbulance in water flow hole.

The cooling water flows by following plastic spiral helixes (such as waterfall). Since spiral plastic material is glass fiber reinforced, it always remains cold, it never causes choking and corrosion in cooling channels, at different types according to the usage model of modular system spiral plastic (Refer to following section)

1- At technical drawing in figure ❶ and ❸ if cooling water flow is entering by striking at the entrance of spiral or to the close area, based or base reinforced model should be selected.

2- If cooling water flow is entered by striking at the medium or top section of spiral (or within required water runners), don't use based model, because; water flow continues its turbulent flow by exiting from the level it entered, at the systems in Figure ❷ , flat model is selected.

PLS. BASED SPIRAL

d	L	D	H
8	100	15	4
	200		
	300		
10	100	18	4
	200		
	300		
12	100	22	4
	200		
	300		
16	100	25	4
	200		
	300		
20	100	30	4
	200		
	300		
	400		
25	100	35	4
	200		
	300		
	400		

Order : STB d x L

STB Economic Shelf Stock



O -Ring

PLS.BASED SPIRAL

d	L	S	D
8	96	20	STC 8
	196		
	296		
10	96	20	STC 10
	196		
	296		
12	96	25	STC 12
	196		
	296		
16	96	25	STC 16
	196		
	296		
20	96	25	STC 20
	196		
	296		
	396		
25	96	25	STC 25
	196		
	296		
	396		

Order : STA d x L

STA Economic Shelf Stock



As per Request

ST GCP

PLUG

O -Ring

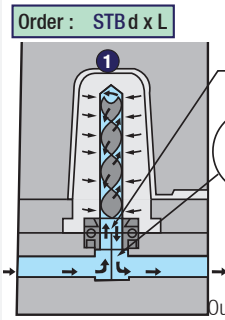
PLS. BASED SPIRAL

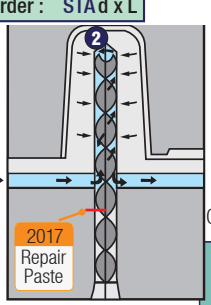
D	L	H	T
8	25	2	1.5
	30		1.5
	35		1.5
	40		
10	25	2.5	1.8
	30		1.8
	35		1.8
	40		
12	25	3	2.0
	30		2.0
	35		2.0
	40		
16	25	4	3.0
	30		3.0
	35		3.0
	40		
20	25	5	3.0
	30		3.0
	35		3.0
	40		
25	30	6	4.0
	35		4.0
	40		

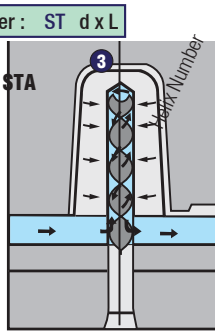
Order : ST d x L

ST Economic Shelf Stock









Economical Price in 2 Different Models



English User Guide

Pantograph Pen WHETTING MACHINE

HSS or Carbide / DIAMOND Pen / Rod & Perforator is precision whetting machine with quick simple operation and negative angular radius, also complex rapid cutting edge designed for whetting in desired form.

Technical Specifications:

Product	Capacity
Max. Pliers	5 Piece (4-6-8-10-12)
Grinding Dia.	Max. Dia. 2 - 25
Apex Angle	0° - 180°
Channel Angle	0° - 45°
Negative Angle	0° - 26°
Shaft / Cycle	3600 RPM
Grinding Wheel	HSS EKW 100 / Diamond U2 F
Motor	1 / 3 Hp 220V 50 / 60 Hz.
Machine Dimen.	45 x 40 x 35 cm
Package Dimen.	55 x 45 x 47 cm
Weight	45 Kg.

Standard Accessories:
Model U2 (Full Radius Whetting) Precision

* EKW D-100 HSS Whetting Wheel
* Stone Connecting Flange/Mounting Assembly
* Stone Correcting Flange
* Lighting Lamp
* Spare Drive Belt
* Locking Pin and Hand Tool Kit
* 5 Piece Pliers (4-6-8-10-12)

Standard Accessories:
Model U2 / E (Flat Type) Economic Model

* **It does not make radius whetting.**
* EKW D-100 HSS Whetting Wheel
* Stone Connecting Flange/Mounting Assembly
* Stone Correcting Flange
* Lighting Lamp
* Spare Drive Belt
* Locking Pin and Hand Tool Kit
* 5 Piece Pliers (4-6-8-10-12)
* **Drill Whetting Equipment**
* **Mill Whetting Equipment**
* **Lathe Tool Holder Whetting Equipment**

Product Campaign We give U2 - C Machine Desk as present...

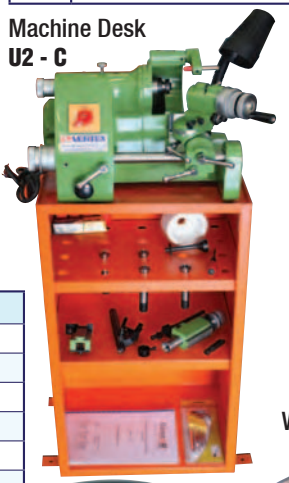
Pantograph Pen WHETTING MACHINE

Single edged mill blades are auxiliary grinding machines of general CNC /milling machine in fabricating of complex designed work piece, retouching precision surface, writing in thin characters, whetting of end /pen to be used at engraving machines.

Optional Accessories : (As per Request)

Code	Content
U2-C	Positioning Desk Suitable to Machine
U2-F	Diamond CBN Stone
U2-P	Ext. PLIERS (2-3-5-7-9-16-18-20-25)
U2-E	Mill Whetting Equipment
U2-T	Drill Whetting Equipment
U2-L	Lathe Tool Holder Whetting Equipment

Machine Desk
U2 - C





U2 - P
Whetting Pliers



U2 - F

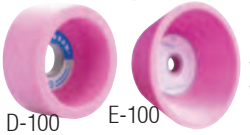


C 180

U2 - E Diamond Grind Stone



U2 - TDE
Stone Whetting Diamond



D-100 E-100

U2 - EKW
HSS Pen Whetting Wheels



U2 - T Drill Whetting



U2 - E
Mill Whetting Equipment



U2 - L
Lathe Tool Holder Whetting Equipment

Repair - Maintenance - Spare Part Service
English User Manual

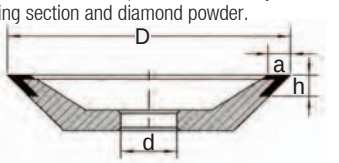
Order : Model U2
(Radius Grinding) Precision

Order : Model U2 / E
(Flat Type) Economic Model



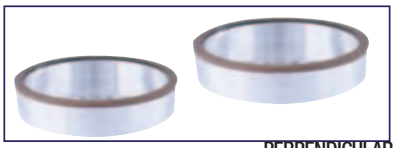
DIAMOND DISH WHEEL Conical Type

It is used for whetting of hard metal engraving pens or other hard tools.
Hard Aluminium compound main casing, resin cutting section and diamond powder.

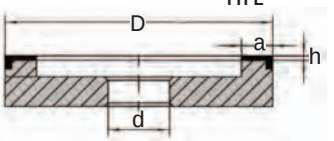


Diamond, Conical Type / CBN 75

Order	D	d	a	h
U2F.7553	Ø 75	20	5 mm	3 mm
U2F.10053	Ø 100	20	5 mm	3 mm
U2F.10063			6 mm	3 mm
U2F.10083			8 mm	3 mm
U2F.12553	Ø 125	32	5 mm	3 mm
U2F.15053	Ø 150	32	5 mm	3 mm

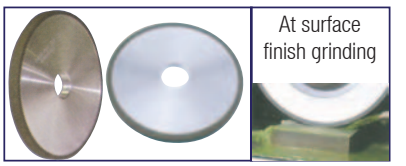


DIAMOND DISH WHEEL PERPENDICULAR TYPE

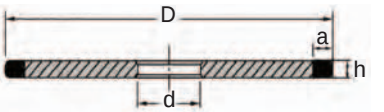


Diamond, Perpendicular Type / CBN 75

Order	D	d	a	h
C180.10053	Ø 100	20	5 mm	3 mm
C180.12553	Ø 125	20	5 mm	3 mm



DIAMOND DISH WHEEL DISC TYPE



Diamond, Disc/Wheel Type / CBN 75

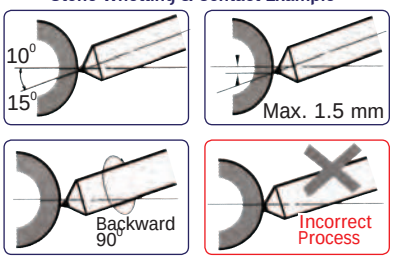
Order	D	d	a	h
C182.7563	75	20	6	3
C182.10084	100	20	8	4
C182.12584	125	32	8	4
C182.15084	150	32	8	4
C182.175104	175	32	10	4
C182.200104	200	32	10	4

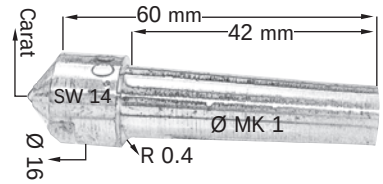


STONE WHETTING DIAMOND TDE

Single Point Contact Stone Whetting Diamond (as per request, multi point models are available) is for to correct and to form grind stone at whetting and cutting machines, it is used by mounting to equipment on grinding/cutting / whetting machines. Pls. pay attention to picture details for Precision Stone Whetting Process!

Stone Whetting & Contact Example





Standard (Economic) **Model : TDE**

Order	Diamond Carat	Grinding Wheel Dia.
TDE030	0.30	Ø 100
TDE050	0.50	Ø 200
TDE075	0.75	Ø 250
TDE100	1.0	Ø 300
TDE150	1.5	Ø 400
TDE200	2.0	Ø 500
TDE300	3.0	Ø 600

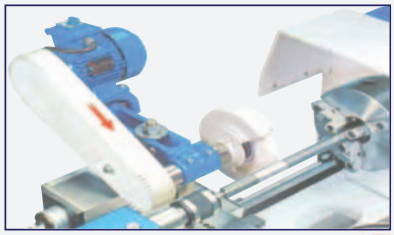
High Quality Stone Correcting **Model : TDA**

Order	Diamond Carat	Grinding Wheel Dia.
TDA030	0.30	Ø 100
TDA050	0.50	Ø 200
TDA075	0.75	Ø 250
TDA100	1.0	Ø 300
TDA150	1.5	Ø 400
TDA200	2.0	Ø 500
TDA300	3.0	Ø 600



Diamond Drill Line Pen ECK

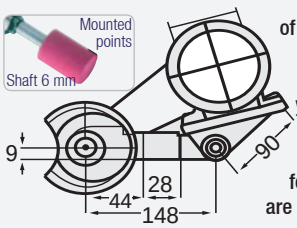
Diamond Drill Clip-On Pen to draw and to mark on metal plates at machine and mould productions, design processes. **Order No : ECK 13741**



Lathe Grinding, Surface / Hole ST

It is an excellent machine for inner hole grinding with easy to mount to the lathe workbench. During the inner hole works, it maintains many difficult processes, in addition to external grinding processes together. Also grinding process can be made on flat surfaces with 15/25% metal removing values at external grinding and operation opportunity up to 150 mm (up to 600 mm with additional equipment) and E 125 Dish Stone Connection to the stone connection on equipment. Its mounting is completed by inserting flange to the section involving Lathe Workbench Support/ Pen Holder, the flange axes of all lathe workbenches can be different, therefore flange axis intervals can be requested from our company.





Guaranty of domestic products is for two years and spare parts for service are available.

Support Grinding Machine Suitable to Dia. 175 Stone

Machine Technical Data	Order No : ST - 175 Grinding
Motor Power	0.5 HP 380 V ~ 50 Hz
Speed m /min.	2800 m /min.
Shaft / Wheel Size	175x20x20 (25/32)
Suitable Machine	1 and 1.5 Mt. Lathe

* Hole Grinding Equipment is with machine.

Support Grinding Machine Suitable to Dia. 175 Stone

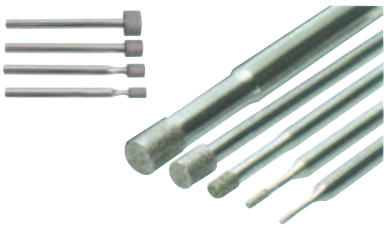
Machine Technical Data	Order No : ST - 201 Grinding
Motor Power	1 HP 380 V ~ 50 Hz
Speed m /min.	2800 m /min.
Shaft / Wheel Size	200x20x20 (25/32)
Suitable Machine	2 Meter Lathe

* Hole Grinding Equipment is with machine.

Support Grinding Machine Suitable to Dia. 202 Stone

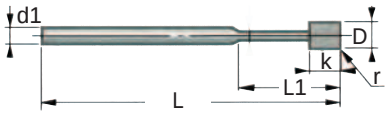
Machine Technical Data	Order No : ST - 202 Grinding
Motor Power	2 HP 380 V ~ 50 Hz
Speed m /min.	3000 m /min.
Shaft / Wheel Size	200x20x20 (25/32)
Suitable Machine	2 Meter and Over Lathe

* Hole Grinding Equipment is with machine.



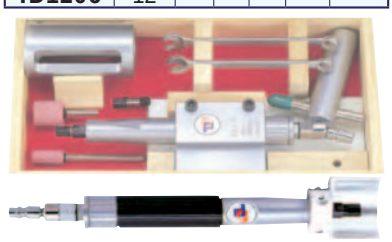
INNER HOLE DIAMOND MILLS ID

Diamond mills produced with electrolysis spraying method of diamond power make precision measure completion and surface finishing process inside holes. It is for polishing and levelling at (Ejector Sleeve etc.) works or all hard steel hole works, glass / ceramic / mould surfaces or inside of holes.



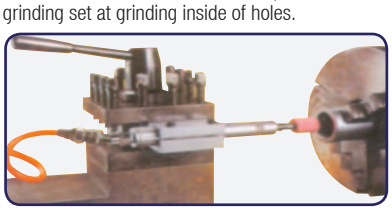
Inner Hole Polishing Diamond Mill

Order	D Ø	d1 Ø	k	L	L1 mm	Sand Grit
ID103	1.0	3	5	45	8	200
ID153	1.5				8	# 150
ID203	2.0				12	
ID253	2.5				15	
ID303	3.0					
ID403	4.0					
ID406	4.0	6	10	80	22	# 100
ID506	5.0					
ID606	6.0					
ID806	8.0					
ID1006	10					
ID1206	12					



HOLE Grinding PNEUMATIC KIT GP

Lathe workbench connected air fed precision grinding set at grinding inside of holes.



Standard Set Accessories / Kits

Order No : GP 8244 L (As per request, air inserts)

* 1 Piece Hole Grinding Machine (30.000 RPM)
* 2 Piece Hold Pliers : Ø 3 and 6 mm
* 4 Piece Hole Grinding Mounted Points
* Equipment mounting of machine to the bench
* Wrench Set for mounting
* Protective cover for machine - 1/4" Coupling



Steel Grinding WHEEL EKR

In cylindrical or Surface Grinding Machine:
All grinding processes, in fact, are surface grinding as well as with "surface grinding" term refers to grinding processes of flat surfaces. It is possible to collect surface grinding into three groups according to machine types.

1- Flat Wheel : They are used at vertical shaft, intermittent base surface grinding machines.

2- Flat Wheel : They are used at vertical shaft, rotary base surface grinding machines.

3- Cylinder -Dish and Ring Wheels : They are used at horizontal shaft surface grinding machines.

Flat Type.1
Rotating Speed: 35 m /s

For special size and quality demands, pls. call our company...

Flat Type Steel Grinding WHEELS

Order Specify Colour	Dimension Dia.xThicknessxHole	Sand
EKR.1752032	175 x 20 x 32	
EKR.1752051	175 x 20 x 51	
EKR.2000820	200 x 8 x 20	
EKR.2004016	200 x 40 x 16	
EKR.2002020	200 x 20 x 20	
EKR.2002032	200 x 20 x 32	# 36 K6V Coarse
EKR.2002051	200 x 20 x 51	
EKR.2002520	200 x 25 x 20	
EKR.2002532	200 x 25 x 32	
EKR.2002551	200 x 25 x 51	
EKR.2502576	250 x 25 x 76.2	# 46 K6V Medium
EKR.2503076	250 x 30 x 76.2	
EKR.2504076	250 x 40 x 76.2	
EKR.3002076	300 x 20 x 76.2	
EKR.3002576	300 x 25 x 76.2	# 60 K6V Fine
EKR.3003076	300 x 30 x 76.2	
EKR.3004076	300 x 40 x 76.2	
EKR.30040127	300 x 40 x 127	
EKR.35040127	350 x 40 x 127	
EKR.35050127	350 x 50 x 127	
EKR.40040127	400 x 40 x 127	

EKR (Pink Colour): Hard/ Medium Steel Grade
EKW (White Colour): High Hard Steels
SCG (Green Colour): Carbide / High Steels
NK (Grey Colour): General Purpose All Kinds of Steels



Flat Type.1
Rotating Speed: 35 m /s

Steel WHETTING WHEELS EKR

It is used at general or special purpose machines or grinding motors for all whetting processes.

Order	Dimension Dia.xThicknessxHole	Sand
EKR10025	100 x 25 x 20	# 36 Coarse
EKR12520	125 x 20 x 20	
EKR15020	150 x 20 x 20	
EKR15025	150 x 25 x 20	# 46 Medium
EKR17520	175 x 20 x 20	
EKR17525	175 x 25 x 20	
EKR20020	200 x 20 x 20	# 60 Fine
EKR20025	200 x 25 x 20	



Flat Type.1
Rotating Speed: 35 m /s

Steel WHETTING WHEELS NK

General Purpose Whetting Stones, Aluminium oxide abrasive are ideal on all kinds of steel.

Order	Dimension Dia.xThicknessxHole	Sand
NK15020	150 x 20 x 20	# 36 Coarse
NK15025	150 x 25 x 20	
NK17520	175 x 20 x 20	# 46 Medium
NK17525	175 x 25 x 20	
NK20020	200 x 20 x 20	
NK20025	200 x 25 x 20	



Flat Type.1
Rotating Speed: 35 m /s

Steel WHETTING WHEELS SCG

Generally, they are used as fixed or with lathe. Especially, they are for hard steels or carbide materials. It is Green Silicon Carbide Abrasive Content.

Order	Dimension Dia.xThicknessxHole	Sand
SCG15020	150 x 20 x 20	# 80 J5V Fine
SCG15025	150 x 25 x 20	
SCG17520	175 x 20 x 20	
SCG17525	175 x 25 x 20	
SCG20020	200 x 20 x 20	
SCG20025	200 x 25 x 20	



Whetting / Grinding Motors

Workshop Type General Purpose Grinding / Whetting Works

Machine Technical Data	Order No : QSM-150 Grinder	Order No : QSM-175 Grinder	Order No : QSM-200 Grinder
Motor Power	450 W / 230 V - 50 Hz	450 W/230 V-50 Hz	450 W/230 V-50 Hz
Speed m /min.	2850 m /min.	2850 m /min.	2850 m /min.
Shaft/ Wheel Size	Ø 20 / 150 x 20 / 25	175 x 20 x 20	200 x 20 x 20
Machine Dimension	210 x 410 x 295 mm	220 x 420 x 300	245 x 450 x 330
Weight	12 Kg.	14 Kg.	16 Kg.



Polishing Motor

Machine Technical Data	Order No : PSM - 250 Polishing
Motor Power	1.5 kW /400 V - 50Hz
Speed m /min.	2850 m /min.
Shaft/ Felt Size	Ø 25 / 250 x 25 / 32
Machine Dimension	250 x 63 x 350 mm
Weight	23 Kg.

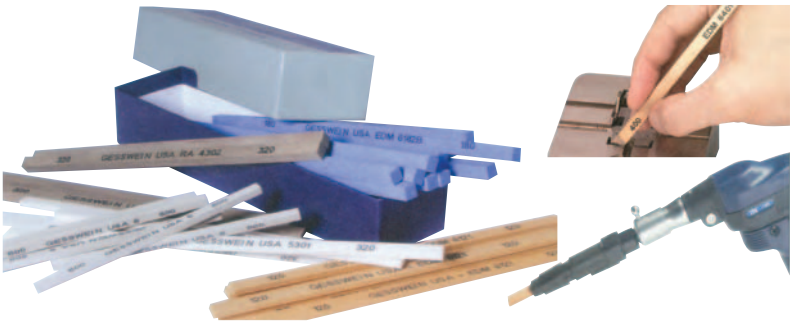


Whetting, Grinding Machine

Positioning Desk

Screwed Fixing Foot. 3 Rack Type Pool Top Section

Order BKM.3



Mould Polishing - Steel Surface Levelling POLISHING STONES EG

Surface Levelling - EDM (Electro Erosion) Polishing Stones are produced to make excellent levelling on coarse surfaces passing over hard shell on work piece surface. It takes the form of surface it works with by making fast cutting. Do not plunge in the corners, it works sensitively on figured surfaces, such polishing stones are suitable to work as manual or filing machine, sand rate/diversification, operation style and the selection of polishing stones according to the work piece surface and material position is important. Hard and complex, especially for deep areas, long size polishing stones can be selected, at flat and wide areas, short size polishing stones can be less fragile by avoiding skidding/ escaping. At handling, care to use holder. Different type holders at filing machines present extensive usage opportunity. For softer and clean polishing stone usage, you can use your polishing stones by steeping in low oil liquid (EDM Gas) etc. To use right graduation from coarse gas stone to fine one on application surface is important. Cleaning of operation area also has importance.

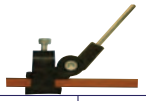
Polishing Stone Selection Table TYPE / DIMENSION / SAND / Operation Sequence

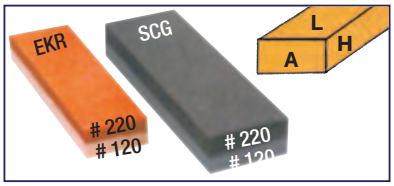
Type & Size Width x Length	Type & Size Width x Length	Type & Size Diameter x Length	Type & Size Width x Length	Sand	Process
Square	Rectangle	Round	Triangular	# 120	Levelling Process
4 x 4 x100	6 x 3 x150	Ø 6 x150	8 x 8 x150	# 150	
6 x 6 x150	13 x 3 x150	Ø 8 x150	10 x 10 x150	# 180	
8 x 8 x150	13 x 6 x150	Ø 10 x150	-	# 220	Pre Polishing
10 x 10 x150	-	Ø 12 x150	-	# 280	
				# 320	
				# 400	
				# 600	Last/Final Polishing
				# 800	
				# 1000	

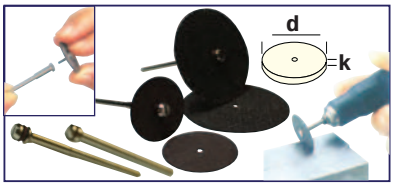
Order EG. TYPE / DIMENSION / SAND

Giving orders in specified form, especially Polishing Stone Related to General Use EDM (Erosion) Surface is suitable.

Polishing Stone Holders: Hand / Manual and Machine Holders

Product	Hand Run Holder				Machine Run Holder		Filing Machine Holder			
										
Capacity	6 x 3	13 x 3	4 - 6	8 - 10	13 x 3	13 x 6	AR 661	AR 667	AR 666	AR 662
Order	G.613		G.468		G.133					





Block COMBINE Polishing Stone BG

Large Surface Levelling and Chamfering /Deburring
SCG: Hard Steel / **EKR:** General Steel Work Pieces

Order	Measure / Dim. A x H x L
BG100	16 x 25 x 100
BG125	20 x 40 x 125
BG150	25 x 50 x 150
BG200	25 x 50 x 200

Cutting Disc Separate Stone KS

It is used in cutting processes of all metals including hard steel at rotary tool machines.

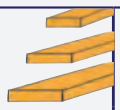
Order	Dimension d x k	Drill Chuck
KS25	25 x 0.65	Ø 2.35 mm
KS40	40 x 1.0	Ø 3.0 mm
KS60	60 x 1.5	



CERAMIC POLISHING STONE

Ceramic polishing stones prepared by pressing with resin binder spraying screened, gauged micron diamond particles on powerful fiber textured ceramic, polishing stones have the feature of resistance with flexible structure against breakage, it is an excellent running in kit as levelling kit at precision end points, corners, also narrow channels and angular/ feather spaces, especially mould surface applications. According to traditional similar kits, it is resistance to fast abrasion in shorter period. It provides advantage with fine kits at precision scale.

Selection Table :

Type / Sand		 Thickness : 1 mm	 Dia :3 mm
CSC	# 180		
CSO	# 250		
CSD	# 280		
CSN	# 360	**Dimension**	**Dia**
CSB	# 400	1 x 4 x100	Ø 3 x 100 mm
CSY	# 700	1 x 6 x100	
CSR	# 1200	1 x10x100	

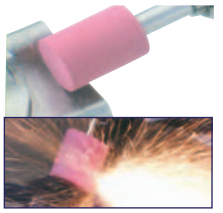
Order TYPE/SANDxDIMENSION

SELECTION TABLE











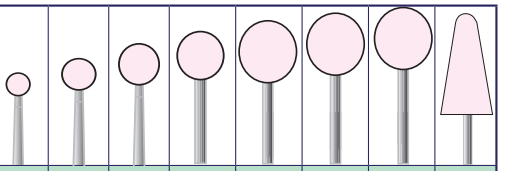
Pink, Mounted Levelling Points — Shaft 3 mm

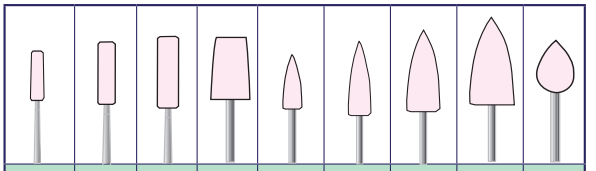
Imported Product

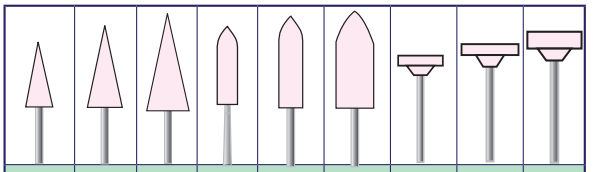
They are combine suitable to soft and hard surfaces.
With formation of aluminium oxide textured and ceramic binder in fast metal removal feature, the levelling points provide the desired performance on all kinds of surfaces, after process, it can be ready for polishing by cleaning off stone traces on surface and form surface with mounted polishing rubbers. There should be at least 10 mm connecting length at clamping plier. Work should be soft without pressing.
Speed = Speed and Max.= 50 m / sec. Calculation : $n = \frac{V\ (m/s) \times 60.000}{D\ (mm) \times 3.14}$

Mounted points can be selected from table.

Type Form A / R Shaft 3 mm								
Order	256A	308A	410A	510A	612A	816A	1016A	813R
D x L	2.5 x 6	3 x 8	4 x 10	5 x 10	6 x 12	8 x 16	10 x 16	8 x 13

Type Form B / R Shaft 3 mm								
Order	30B	40B	50B	60B	80B	100B	120B	1224R
D x L	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	12x24

								
308T	310T	412T	710T	412J	616J	816J	1016J	609S
3 x 8	3 x 10	4 x 12	7 x 10	4 x 12	6 x 16	8 x 16	10 x 16	6 x 9

								
612P	815P	1018P	412K	515K	816K	132E	133E	162E
6 x 12	8 x 15	10 x18	4 x 12	5 x 15	8 x 16	13 x 2	13 x 3	16 x 2



MANNESMAN 12 Shank Stone

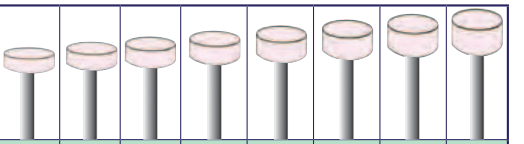
DEDECO Spiral Stone

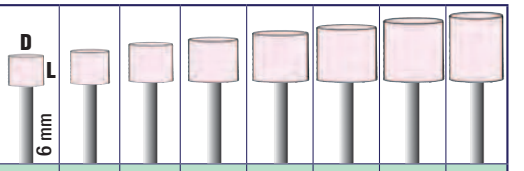


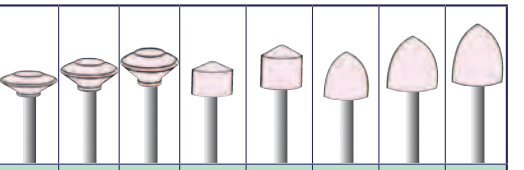
Extra Quality - Dedeco Mounted Points / Sets

Order	Product
DST03	DEDECO / USA Hard Metal /Maroon
DST04	General / Soft Blue / White Stone
92560	12 Pcs. Spiral Mounted Point Set

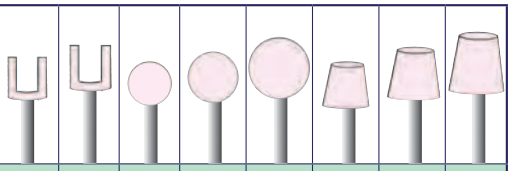
Pink, Mounted Levelling Points — Shaft 6 mm

Type Form A Shaft 6 mm								
Order	1608A	2008A	2016A	2510A	2520A	3220A	4025A	5030A
D x L	16 x 8	20 x 8	20 x16	25 x10	25 x20	32 x20	40 x25	50 x30

Type Form B Shaft 6 mm								
Order	1015B	1620B	2020B	2030B	2040B	2525B	2532B	3240B
D x L	10 x15	16 x20	20 x20	20 x30	20 x40	25 x25	25 x32	32 x40

Type Form C / F Shaft 6 mm								
Order	2508C	3208C	4010C	1220D	2035D	0816F	1320F	2032F
D x L	25 x 8	32 x 8	40 x10	12 x20	20 x35	8 x 16	13 x20	20 x32

Type Form E Shaft 6 mm								
Order	0816E	1230E	1640E	2030E	2040E	2525E	2540E	3240E
D x L	8 x 16	12 x30	16 x40	20 x30	20 x40	25 x25	25 x40	32 x40

Type Form G / H J Shaft 6 mm								
Order	2016G	2520G	10H	15H	20H	1225J	1632J	2040J
D x L	20 X16	25 x20	Ø 10	Ø 15	Ø 20	12 x25	16 x32	20 x40



Perforated DISC STONES

Due to being circular, mostly it is used at thread ranges, cutting set ends and mould/machine production.

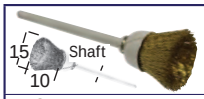
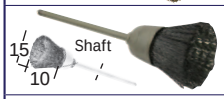
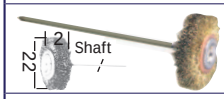
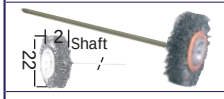
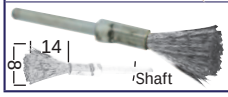
Order	Product
DP 2516	Dia. 25 x 1.6 mm #80 Sand - Soft Stone
DP 2532	Dia. 25 x 3.2 mm #80 Sand - Soft Stone
VM23	Screwed Drill Chuck 2.35 or 3 mm

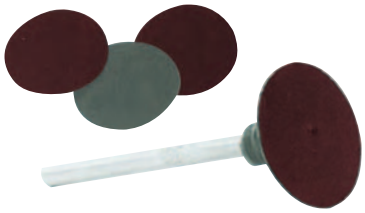


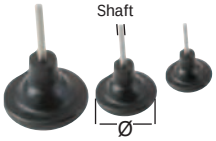


Metal WIRE, MOUNTED BRUSH

It solves injection residues, also it is very successful for cleaning deep burrs and EDM Erosion Traces (with 14 micron diamond paste) during polishing process. Pls. try it..!

	Conical Wire, Mounted Brush Yellow/ Brass Wire Shaft: 2.35 or 3 mm **Order : STF158**
	Conical Wire, Mounted Brush Yellow/ Brass Wire Shaft: 2.35 or 3 mm **Order : SMF158**
	Wire Disc, Mounted Brush Yellow/ Brass Wire Shaft: 2.35 or 3 mm **Order : STF222**
	Wire Disc, Mounted Brush Yellow/ Brass Wire Shaft: 2.35 or 3 mm **Order : SMF222**
	Pen, Wire Mounted Brush Inox / Metal Wire Shaft: 2.35 or 3 mm **Order : STF148**
	Pen, Wire Mounted Brush Inox / Metal Wire Shaft: 2.35 or 3 mm **Order : SMF148**







Adhesive Emery /Mounted Rubber

Angular grinder having adjustable speed makes levelling on larger surfaces and precision operations on contours thanks to flexibility of holder. **DZ**

Order	Ø Dia.	Emery	Rubber	Shaft
DZ 10	Ø 10		Ø 10	
DZ 18	Ø 18	# 080	Ø 18	
DZ 30	Ø 30	# 120	Ø 30	**3 mm**
DZ 45	Ø 45	# 220	Ø 45	
DZ 70	Ø 70	# 320	Ø 70	**6 mm**
DZ 80	Ø 80	# 400	Ø 80	
DZ 100	Ø 100		Ø 100	
DZ Set	5 + 5 Coarse / Fine Emery+ Holder			

* At order, pls. specify shaft measure and emery sand.



SPIRAL BAND Holder +Emery

SMALL SIZE **SET PACKING** **SHAFT 3 mm** **ML**

It is sold in cylindrical wound emery cloth and rubber holder package: 5 + 5 Thick / Thin Emery + Rubber Set. (10 Emery + Rubber)



SPIRAL BAND Set or As Unit

Set	Order	Rubber	Emery
5 Pieces Emery 120 Sand	**ML.04**	Ø 4	# 120
	ML.05	Ø 5	# 320
5 Pieces Emery 320 Sand	**ML.06**	Ø 6	# 400
	ML.08	Ø 8	# 600
1 Piece Rubber Holder	**ML.10**	Ø 10	# 1000

* As per request: Emery & Rubber are available as unit.



SPIRAL BAND Holder + Emery

LARGE SIZE **PIECE** **SHAFT 6 mm** **SBL / Z**

Cylindrical wound emery cloth and rubber holder, shaft 6 mm, for larger work pieces.

Order	Emery	Sand
SPZ.12	Ø 12 x 25	
SPZ.15	Ø 15 x 25	
SPZ.20	Ø 20 x 30	# 80
SPZ.25	Ø 25 x 30	# 120
SPZ.30	Ø 30 x 30	# 220
SPZ.40	Ø 40 x 30	
SPZ.50	Ø 50 x 30	
SPZ.60	Ø 60 x 35	

Order	Rubber	Shaft-Length
SPL.12	Ø 12	Ø 6 - 60
SPL.15	Ø 15	Ø 6 - 60
SPL.20	Ø 20	Ø 6 - 60
SPL.25	Ø 25	Ø 6 - 60
SPL.30	Ø 30	Ø 6 - 60
SPL.40	Ø 40	Ø 6 - 65
SPL.50	Ø 50	Ø 6 - 65
SPL.60	Ø 60	Ø 6 - 65

* As per request: Our production on emery (Fine sand) are available.

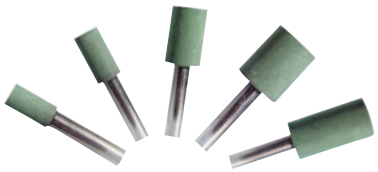


Mounted Polishing RUBBERS

Rubbered / Soft Type - Finish Polishing

Type Form RK Shaft 3 mm					
Order	**RK04**	**RK05**	**RK06**	**RK08**	**RK10**
D x L	4 x 13	5 x 15	6 x 17	8 x 20	10 x20

Type Form RB Shaft 6 mm					
Order	**RB15**	**RB20**	**RB25**	**RB30**	**RB35**
D x L	15 x25	20 x25	25 x25	30 x30	35 x35

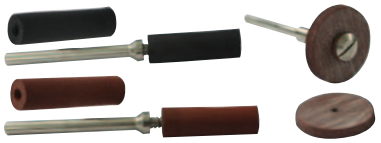


Mounted Polishing RUBBERS

Ceramic / Hard Type - Leveling Polishing

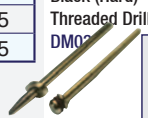
Type Form CK Shaft 3 mm					
Order	**CK04**	**CK05**	**CK06**	**CK08**	**CK10**
D x L	4 x 13	5 x 15	6 x 17	8 x 20	10 x20

Type Form CB Shaft 6 mm					
Order	**CB15**	**CB20**	**CB25**	**CB30**	**CB35**
D x L	15 x25	20 x25	25 x25	30 x30	35 x35



Pen / Disc Polishing Rubbers

Pen Rubber	Order	Disc Rubber	Order
Red (General)	: KK06	Red (General)	: DK06
Black (Hard)	: KS06	Black (Hard)	: DS06
Threaded Drill Chuck : DM03		Screwed Drill Chuck : VM03	





Cylindrical, Mounted Polishing Felt Shaft 3 mm

It is used at last/ final polishing with diamond compounds. Also, it can be applied with other polishers. Even it is used at very high cycles, it does not burn. Double fired flet is **imported product.** In application, avoid Extreme High Pressure..! In polishing: Diamond Compound is used by thinning.

Type Form AB Shaft 3 mm	D L 3 mm							
Order	0408A	0509A	0610A	0810A	1014A	1220A	1520A	2020A
D x L	4 x8	5 x 9	6 x 10	8 x 10	10 x 14	12 x 20	15 x 20	20 x 20

Type Form AB Shaft 3 mm								
Order	0408C	0509C	0610C	0810C	1013C	1214C	1220A	1218H
D x L	4 x8	5 x 9	6 x 10	8 x 10	10 x 14	12 x 20	15 x 20	20 x 20

0410J	0512J	0616J	0817J	1014J	1020J	1220J	1225J	1218T
4 x 10	5 x 12	6 x 16	8 x 17	10 x 14	10 x 20	12 x 20	12 x 25	12 x 18

08B	10B	12B	18B	1014R	1225R	2505L	2207L	2210L
Ø 8	Ø 10	Ø 12	Ø 18	10 x 14	12 x25	25 x 5	22 x 7	22 x10



Presentation as 10 Felt - Holder Set

Adhesive, Pooled / Disc Felt / Mounted Rubber Holder

Order	Disc Felt	Hole
Y18D	Ø 18 x 4 mm	7 mm
Y30D	Ø 30 x 4 mm	12
Y45D	Ø 45 x 4 mm	18

Order	Shank Holder	Shaft
DZ18	Ø 18 Rubber	Ø 3 mm
DZ30	Ø 30 Rubber	
DZ45	Ø 45 Rubber	



Cylindrical, Mounted Polishing Felts Shaft 6 mm

It is used as paste with diamond compounds at last / final polishing.

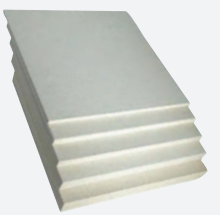
Type Form AC Shaft 6 mm	D L 6 mm						
Order	1520A	2020A	2025A	2530A	3040A	14B	20B
D x L	15 x 20	20 x 20	20 x 25	25 x 30	30 x 40	Ø 14	Ø 20

Type Form AC Shaft 6 mm							
Order	2110E	3015E	4020E	5030E	1520C	2025C	2530C
D x L	25 x 10	30 x 15	40 x 20	50 x 30	15 x 20	20 x 25	25 x 30

Type Form AC Shaft 6 mm							
Order	1018K	1220K	1525K	2025K	2530K	1530H	1030G
D x L	10 x 18	12 x 20	15 x 25	20 x 25	25 x 30	15 x 30	10 x 30







Flat-Mounted Polishing Felt

Usage with machines Shaft 3 mm

Could polishing, by moisturizing with diamond compound.

Order No	Product Dimension	Shaft Shank
S06D	6 x 6 x 25 mm	Ø 3 mm
S10D	10 x 10 x 35 mm	
S12D	12 x 12 x 45 mm	

Manual Run, Rod Felt

Usage with machines, Square Felt

At machines: It is used with plastic holder equipment (G.133).

Order No	Product Dimension
E06K	6 x 6 x 150 mm
E10K	10 x 10 x 150 mm
E12K	12 x 12 x 150 mm

Polishing Felt Plate

Cutting at set or equipment applications

As per request: It can be adhered to your set by cutting.

Order No	Product Dimension
P325	6 x 250 x 250 mm
P625	10 x 250 x 250 mm
P1025	12 x 250 x 250 mm





Polishing Kits: Wood Lappings

It is suitable to polish with wood sets at narrow and radius areas of moulds, areas unsuitable to use polishing stones or ceramic stones and desired clear levelling / brightness without disturbing the surface. Also, it is suitable for levelling of erosion traces and rough lines on surfaces.

Hard, Mounted Wood

Order	Dimension	Type
AC 06	6 x 6 x150	Square
AC 10	10x10 x150	
AC 12	12x12x150	
AC 03	6 x 3 x 150	Rectangle
AC 13	13 x 6 x 150	
AC 20	20 x 8 x 150	
ACS 6	6 x 150	Round
ACS 8	8 x 150	

Bars, Wood Felts

Order	Dimension
ASK 06	Ø 6 x 15 Cylinder
ASK 10	Ø 10 x 20 Cylinder
ASK 15	Ø 15 x 25 Cylinder
ASK 20	Ø 20 x 30 Cylinder
ASK Ø 10	Ø 10 Sphere

Wood polishing kits especially rods are especially used at manual or machine applications, mounted wood kits are used at machine applications. During application, pls. use moisturizer.





"PLEXIGLASS" Polishing Kits

It bec omes a precision diamond diamond riffler at application on surfaces of and and long surface applications, work pieces, diamond narrow paths ,compound long surface, especially application with plexiglas at narrow rod, pls try it! In use by machines, G.133 Holder is used.

Order	Dimension	Type
PC 06	6 x 6 150 mm Plexsi Glas	Square
PC 08	8 x 8 x 6 mm Plexsi Glas	
PC 13	13 x 6 x 150 mm Plexsi Glas	Rectangle
PC 19	19 x 8 x 850 mm Plexsi Glas	





Hair, Mounted Brushes for Diamond Compound

Hair brushes faciliating polishing process and not requiring extra kits form excellent surfaces with fine micron diamond pastes at final polishing.













Mould Polishing, DIAMOND COMPOUNDS SDP

Quality Diamond Powder, is in well screened precision micron scale.

It is highly concentrated -vegetable oil and polisher chemical mixture.

Economical price presented - At box packaged as 20 gr. injector.

Hard material mould cleans chips including EDM Erosion Traces by removing at difficult areas from levelling process to surface preparation/ polishing process. During work, compound can flake/dry on surfaces, in this case, add oil and water based moisturizers (compound thinner SDS.200 gr.) 1-2 Drops

Order No	Micron Value	Diamond Composition	Packing		Usage Area
SDP.01	0 / 1 µ	#60.000	20 Gr.	As per request, in 40 Gr. Packing.	Final Polishing Finish Specular Gloss
SDP.02	2 / 1 µ	#14.000	20 Gr.		
SDP.03	3 / 2 µ	#8.000	20 Gr.		
SDP.05	5 / 3 µ	#4.000	20 Gr.		
SDP.07	7 / 5 µ	#3.000	20 Gr.		Pre Polishing Precision Gloss
SDP.10	10 / 7 µ	#1.700	20 Gr.		
SDP.14	14 / 7 µ	#1.500	20 Gr.		
SDP.20	20 / 14 µ	# 1.100	20 Gr.		
SDP.28	28 / 20 µ	#800	20 Gr.		Fast Lapping Surface Preparation
SDP.40	40 / 28 µ	#550	20 Gr.		
SDP.60	60 / 40 µ	#500	20 Gr.		

Application: It should be applied generally in applications with felt and it should be applied as straight lines with circular motions and through to end finish on large burrs at surface, during work, cleaning is very important and it absolutely should be done at every stage. Right sequence from coarse micron to fine micron should be followed. Polishing kits for each micron paste should be specified and should be used only at that micron, absolutely don't mix with other micron pastes. For cleaning and washing mould surface, (WINKEL 415218) Cleanser Spray Product is economical and provides facility. As surface protector, our new product WINPLAST is excellent as flexible surface coating.

Diamond Paste Moisturizer

In application with diamond paste: It is used as 1+2 drop thinner at turbid positions and provide penetration of paste on the surface. In application with polishing stones, use excessively. It is presented in 200 Gr. packing, (as per request) also 5 Kg. packing is available.



Order SDS - 200

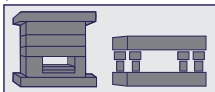
Usage: Diamond Compound / Polishing Stones



MARPOL - Metal Polish / Cleaning Compound

Precision metal work pieces lose their gloss in time and can be oxidized. In this case, Marpol metal polish cleans surfaces and purifies from rust and dirts without disturbing surface sensitivity, is a very good dirt remover, it does not remove burrs and only cleans and polishes, it is renewed.

Order MARPOL Metal Polish





U-Lap 106

ULTRASONIC FILING MACHINE

Especially, much faster for polishing of tie piece and Side Surfaces: 22.000 vibration/cycle per second, right angle should be seized during usage. It is an advanced technological product realizing all difficult works with stroke forward / backward motions and ultrasonic and precision applications with its max. 45 Watt Outlet Power.

Pls try it...! **Order:** U-Lap 106 **Unit:** Control box - Levelling arm - Diamond Riffler and Polishing Stone Kit - Armboard - Adjustment Kits **Power Supply:** AC 220 **Ultrasonic Power:** 45W,2 Level **Stroke Power:** 10 - 35 um **Vibration:** 15 - 25 kHZ **Harmony:** Automatic, Feed - Back System **Machine Dimensions:** 152 x 100 x 72 mm



ELECTRONIC LEVELING - POLISHING

STRONG - 204 / Rotary Tool 50.000 m/m - 50 Hz - 220 V

With electronic cycle adjusted control unit, it starts with micro motor rotary tool at desired speed. It can work faster and serially with foot switch, desk-top precision works can be done with practical and powerful electronic machine.

Economic Presentation. Unit: Cycle Adjusted Control Box - Micro Motor Rotary Tool - 3 mm Pliers - Wrench Set - 2 Pieces Spare Coal. **Order :** Strong - 204



DRAMER MULTI SET

Order : DRAMER 627

50 Pieces Rotary Instrumented Unit

Easy With Easily Changed Drill Chuck System, High Speed and Speed Adjusted (10.000 - 37.000 mm) Powerful Motor - Light and Easy Use Spiral Lock and Spiral Hanger (3.2 mm) - Drill Chuck - 18 Cutting Disc - Engine Stand - Emery Stones - Cylindrical Emeries - Mounted Points - Polishing Felts - Wire Brushes - Mini Milling and Drilling Ends etc. **Professional Brand: DRAMER**



ELECTRICAL SPIRAL MOTOR

Economic and Modular for Leveling and Polishing

Cycle adjustments of our domestic products spiral whip used electrical motors are done serially and sensitively with pedal system, powerful motors provide facilities to users at levelling and polishing. Rotary Spiral Spring in Spiral Whip is only for sets to be used with 2.35 - 3 - 4 mm pliers. However, in some cases, 6 mm Pliers also can be used softly without pressing. To avoid rising heat at long uses, to wait at short intervals can be required. Repairing of Spiral Motor/ Speed Pedal and Spiral Whip spare parts, is in interest of our company. To provide continuance of work in uses, spare whip can be kept.



ELECTRICAL MOTOR

Order	Product
BM22A	25.000 d/d Power:**125**Watt
BM23A	25.000 d/d Power:**200**Watt
BM26A	25.000 d/d Power:**275**Watt
BM24A	22.000 d/d Power:**500**Watt

MONOPHASE 220 - 230 V SPEED PEDAL

Motor Hanger Screwed Connection

Adjustable Length-Rotary Arm-Modular

M18A	Motor Hanger

Speed Pedal and Cable Connections of Spiral Whipped Motors are presented in packing. To use motor stably, we recommended to use motor hanger.



MOTOR / SPEED PEDAL

In addition, spares are available. Cable system is included.

Order	Product
BM...W	Foot Switch

At order: Specify current motor watt.



SPIRAL WHIP WITH TOOL PIECE

Suitable To Use With Electrical Motors

Spiral Whip front and rear rotary bearings are SKF Bearings, they work without balance and vibration. Repairing- spare parts- service is available at our company.

Order	Product
M19KK	Spiral Whip Length 965 cm
M19FTK	Ratchet Whip without Tool Piece
YP... Ø	Spare Pliers 2.35 - 3 - 4 - 6



ELECTRICAL FILING

Forward / Backward Motion: It is used with **0 - 6 mm** whip without tool piece.
Cycle: 10.000 cycle / min.
Holder Drill Chuck: 3.5 mm
Weight: 600 Gr.
Model: FPK - R Electrical Diprofil Branded Electrical Filing Machine is more powerful than similar models. It is provided to present 6.5 mm device connection opportunity.

DIPROFIL



ROTARY HEAD - TOOL PIECE

For Ratchet Type Whips without Tool Piece:
For 3 mm plier capacity / connection sets

Order	Product
M20KPT	Rotary Head - Tool Piece
DK 36	Rotary - 90⁰ Angular Tool Piece



CAMPAIGNED HOBBY SETS

Powerful 135 Watt Motor - 32.000 m/min Cycle Adjusted Leveling and Polishing Kits, 50 Piece Rotary Tool Set with Plastic Carrier Bag.



HOBBY LEVELLING / POLISHING SET

200 Pieces various drilling - cutting - whetting- grinding - polishing kits in wood box. **Products:** Mannesman / Germany branded.

Plier :2.35/3.0 Pneumatic, Precision-Rotary Machine



Standard Accessories



AG - 260: ROTARY SPIRAL
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AG-260	Mounted Point/Felt/Brush/Diamond Burr etc.		
Capacity	Speed m/m	Machine Dimensions	Weight
2.35 / 3	60.000	Ø 17 x 159 L	130 gr.

Plier : 3.0 mm Pneumatic, Precision-Rotary Machine



Standard Accessories



AG - 360: ROTARY SPIRAL
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AG-360	Mounted Point/Felt/Brush/Diamond Burr etc.		
Capacity	Speed m/m	Machine Dimensions	Weight
3.0 mm	60.000	Ø 20 x 160 L	140 gr.

Plier : 3 / 6 Pneumatic, Precision-Rotary Machine



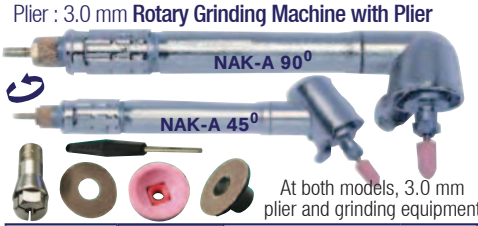
Standard Accessories



AG - 460: POWERFUL SPIRAL
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AG-460	Mounted Point/Felt/Brush/Diamond Burr etc.		
Capacity	Speed m/m	Machine Dimensions	Weight
3 - 6 mm	35.000	Ø 22 x 180 L	170 gr.

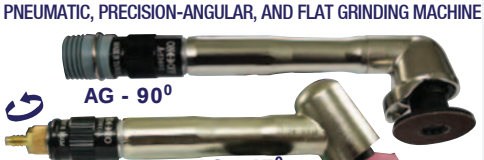
Plier : 3.0 mm Rotary Grinding Machine with Plier



At both models, 3.0 mm plier and grinding equipment

NAK-A 45⁰	NAK-A 90⁰	Mounted Point /Felt /Brush etc	
Capacity	Speed m/m	Machine Dimensions	Weight
3 / Ø 30	35.000 **NAK 45⁰** 18 x 160		190 gr.
3 / Ø 30	35.000 **NAK 90⁰** 18 x 155		185 gr.

PNEUMATIC, PRECISION-ANGULAR, AND FLAT GRINDING MACHINE



Standard Accessories



AG 45⁰ - AG 90⁰
At both models, Grinding Equipments

AG - 45⁰	AG - 90⁰	Grinding Stone /Emery Disc	
Capacity	Speed m/m	Machine Dimensions	Weight
Ø 30	23.500 **AG 45⁰** Ø 17 x 153		180 gr.
Ø 30	23.500 **AG 90⁰** Ø 17 x 140		170 gr.

SPARES



1 - 3 mm
Ceramic Stone Holder

Order	Set
AR - 664 1 mm AR - 665 3 mm Ceramic Polishing Stone Holder	AR - 030 AR - 070 SAR - 070 AR - 300 AR - 991 Optional



Dia. 3.0 mm
Ceramic Stone Holder

Order	Set
AR - 662 Circular Ceramic Stone Holder 3 x 100	AR - 030 AR - 070 SAR - 070 - - Optional



6.3 x 13 mm
Polishing Stone/ Felt Holder

Order	Set
AR - 666 6.3 x 13 AR - 667 3.2 x 13 Gas Stone Holder	AR - 030 AR - 070 AR - 300 SAR - 070 AR - 991 Optional



Grinding Wheel /Emery Disc

Order	Set
AGC -01 AGS -01 AGP -01 Ø 30 mm	NAK - A 45 NAK - A 90 AG - 45 AG - 90 Optional



Dia. 2.35 - 3 and 6 mm
Pneumatic Tool Holder Plier

Order	Set
AG - 672 Dia. 2.35 AG - 673 Dia. 3 mm AG - 676 Dia. 6 mm Plier	AG - 260 AG - 360 AG - 460 NAK 45⁰ NAK 90⁰ Optional

Stroke: 0.30 Precision Pneumatic Filing Machine



Standard Accessories



AR-030: SHORT STROKE
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AR-030	Ceramic Stone / Diamond Riffler/ Flat Felt		
Stroke	Speed m/m	Machine Dimensions	Weight
0.30 mm	40.000	Ø 28 x 200 L	200 gr.

Stroke: 0.70 Precision Pneumatic Filing Machine



Standard Accessories



AR-070: LONG STROKE
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AR-070	Ceramic Stone / Diamond Riffler/ Flat Felt		
Stroke	Speed m/m	Machine Dimensions	Weight
0.70 mm	35.000	Ø 28 x 200 L	200 gr.

Stroke: 3.0 Precision Pneumatic Filing Machine



Standard Accessories



AR-300: EXTRA LONG STROKE
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AR-300	Polishing Stone/Ceramic Stone/Diamond Riffler		
Stroke	Speed m/m	Machine Dimensions	Weight
3.0 mm	10.000	Ø 23 x 200 L	250 gr.

Stroke: 7.0 Precision Pneumatic Filing Machine



Standard Accessories



SAR 070: VERTICAL MOTION
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

SAR-070	Polishing Stone/Ceramic Stone/Diamond Riffler		
Stroke	Speed m/m	Machine Dimensions	Weight
0.70 mm	15.000	Ø 18 x 180 L	250 gr.

Stroke: 0.6 Handle Type Precision Filing Machine



Standard Accessories



AR 991: HANDLE MODEL
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AR - 991	Polishing Stone/Ceramic S/ Diamond Riffler/Felt		
Stroke	Speed m/m	Machine Dimensions	Weight
0.60 mm	4500	Ø 30x140x206	660 gr.

Reliable Label



HARD METAL (DIAMOND) MILLS

Complete Hard Metal, 3 and 6 mm Moulder Type Levelling and Deburring Mills

Kits not polluting environment (Dusty Emery process etc.) is used at works such as large size (6 mm) tool levelling, precision points (opening runner etc.) inside of small size (3 mm) tool mould , also deburring processes.

While working : Cutting chip flow direction with protective cover is required, to avoid splashing of burr, face protector shield or protective glasses should be used.

Cutting kits : The length inside of plier should be kept moderately (Shaft should be 3/1)

Working Speeds : Should be according to processing experience and materials. At electrical or pneumatic rotary machines and generally deburring processes generally using hand power and rotary speed, mounting and use should be made carefully and should comply with the recommended speed. Our options compared to similar products, have longer life and more variety, creating usage advantages. In addition, kits are available for levelling of welding bent and welding place. (At circular channels and bevelling processes, smoothing of mouth of pipe, chamfering of mouth of pipes, propeller channel, EDM copper processes and so on.) At harder materials, slow speeds can reach to higher speeds for small complex processes, during usage continuous motion and light pressure can be applied. At application lower than required speed and pressing higher, abrasion can occur at the mouth of mill, very high temperatures should be prevented. (This case affects the connection solder of head.) "U" shaped mill kits, shaves as chips during cutting, it should be handled carefully.

Important Safety Instructions!!!

Wear ear protector !

Face Protector Shield should be used.

Wear non skid gloves.

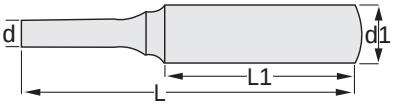
Definitely wear protective glasses.

Pls. comply with working speed instructions.

Note: To prevent choking of threads while processing quite difficult materials, using cutting oil, grease, gas oil and chalk is recommended.

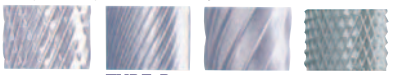
Moulder Mill, Order Information:

Technical Drawing Example



Dimensioning information at the order table

As per request: Cutting Geometries



TYPE A **TYPE B** **TYPE C** **TYPE D**

Type A : With its cross cut geometry, it is ideal for high coarse metal removing at cast iron steel > 60 HRC, Stainless Steel, Nickel-Based Alloys and Titanium Alloys.

Type B : To obtain smooth surface and high coarse metal removing, it is suitable at cast iron steel > 60 HRC, Stainless Steel, Nickel-Based Alloys and Titanium Alloys.

Type C : It is suitable to use at coarse processing of light metals, plastics, non-Ferrous Metals, aluminium, intermediate grade steel and cast iron.

Type D : Precision Milling Attitude creates shorter chips. Thanks to excessive impact resistance, it has high contact angle. It is suitable to use coarse processes of cast iron steel > 55 HRC, Stainless Steel, Nickel-Based Alloys and Titanium Alloys with high metal removing.

Cutting Speed According to Material Groups

Material	Application	Cutting Speed
Steels up to 38 HRC. Without heat treatment	Coarse Processing Fine Processing	450-600 m/min. 500-600 m/min.
Steels up to 38 HRC. With heat treatment	Coarse Processing Fine Processing	250-300 m/min. 350-450 m/min.
Stainless, (Inox) Austenitic - Fernitic	Coarse Processing Fine Processing	250-350 m/min. 350-450 m/min.
Non-Ferrous Metals Aluminium, Brass	Coarse Processing Fine Processing	250-350 m/min. 350-450 m/min.
Cast Iron Heat Treated, Grey	Coarse Processing Fine Processing	450-600 m/min. 500-600 m/min.

Recommended Cutting Speed /Cycle (m /min.)

Tool Dia.	250	300	350	400	500
	Cycle (RPM)				
2 mm	40.000	48.000	56.000	64.000	80.000
3 mm	27.000	32.000	37.000	42.000	53.000
4 mm	20.000	24.000	28.000	32.000	40.000
6 mm	13.000	16.000	19.000	21.000	27.000
8 mm	10.000	12.000	14.000	16.000	20.000
10	8.000	10.000	11.000	13.000	16.000
12	7.000	8.000	9.000	11.000	13.000
16	5.000	6.000	7.000	8.000	10.000
20	4.000	5.000	6.000	6.000	8.000

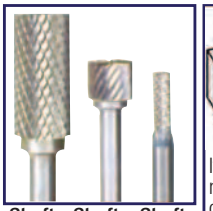
Application Examples:

It is for * Deburring * Contouring * Peripherical and face milling * Narrow angular surface milling * Milling for weld preparation * Milling of weld surface.

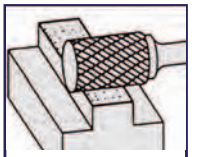
Advantages :

Provides high concentricity

* Smooth working performance.
* Delete chatter marks.
* Reduces tool/machine abrasion.
* Allows user to work more safely.
* Increases tool life and metal removing performances.



Shaft : 6 mm **Shaft : 4 mm** **Shaft : 3 mm**

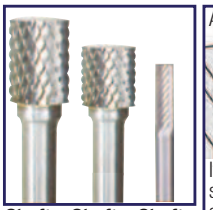


It removes impact resistant high burrs, creates high surface quality.

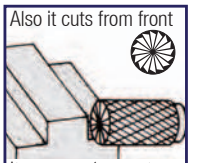
Tungsten, Diamond Carbide Mill

Cylindrical Mill According to Din 8033 Code : **SA**

Order	d	d1	L1	L	Type
SA.42(Type)	3	2.5	11	38	A
SA.43(Type)		3.0	14	38	
SA.14(Type)	6	5.0	16	50	B
SA.1 (Type)		6.0	16	50	C
SA.3 (Type)		9.5	19	63	D
SA.5 (Type)		12.7	25	69	



Shaft : 6 mm **Shaft : 6 mm** **Shaft : 3 mm**



Also it cuts from front

It removes burrs at side and inner surfaces, creates high surface quality.

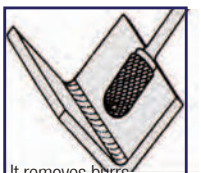
Tungsten, Diamond Carbide Mill

Head Cutter Cylindrical Mill Code : **SB**

Order	d	d1	L1	L	Type
SB.42(Type)	3	2.5	11	38	A
SB.43(Type)		3.0	14	38	
SB.14(Type)	6	5.0	16	50	B
SB.1 (Type)		6.0	16	50	C
SB.3 (Type)		9.5	19	63	D
SB.5 (Type)		12.7	25	69	



Shaft : 6 mm **Shaft : 4 mm** **Shaft : 3 mm**



It removes burrs at side and inner surfaces, creates high surface quality.

Tungsten, Diamond Carbide Mill

Head Cutter Cylindrical Mill Code : **SC**

Order	d	d1	L1	L	Type
SC.42(Type)	3	3.0	14	38	A
SC.42ML2		3.0	14	50	
SC.14(Type)	6	5.0	16	50	B
SC.1 (Type)		6.0	16	50	C
SC.3 (Type)		9.5	19	63	D
SC.5 (Type)		12.7	25	69	



Shaft : 6 mm | Shaft : 4 mm | Shaft : 3 mm



It creates smooth surfaces, ball shaped combination for round ended surfaces.

Tungsten, Diamond Carbide Mill

Ball Shaped Carbide Mills Code : **SD**

Order	d	d1	L1	L	Type
SD.41 (Type)	3	2.5	2.3	38	A
SD.42 (Type)		3.0	2.5	38	
SD.14 (Type)	6	5.0	4.0	50	B
SD.1 (Type)		6.0	5.0	50	C
SD.2 (Type)		8.0	6.4	50	D
SD.3 (Type)		9.5	8.0	52	



Shaft : 6 mm | Shaft : 3 mm

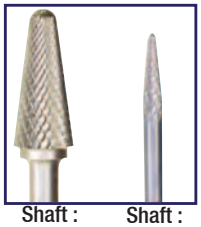


For improving narrow, long corners and at thin narrow/ threaded channels.

Tungsten, Diamond Carbide Mill

Conical Pointed End Mill Code : **SG**

Order	d	d1	L1	L	Type
SG.41 (Type)	3	3.0	6.0	38	A
SG.43 (Type)		3.0	9.5	38	
SG.1 (Type)	6	6.0	16	50	B
SG.2 (Type)		8	19	63	C
SG.5 (Type)		12.7	25	69	D
SG.6 (Type)		16	25	69	



Shaft : 6 mm | Shaft : 3 mm



With hole chamfers, on surfaces of radius precision figures.

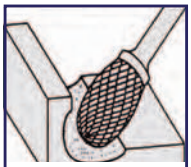
Tungsten, Diamond Carbide Mill

Flattened Ended, Wood Type Code : **SL**

Order	d	d1	L1	L	Type
SL.41 (Type)	3	3.0	9.5	38	A
SL.42 (Type)		3.0	12.7	38	
SL.1 (Type)	6	6.0	16	50	B
SL.2 (Type)		8	22	69	C
SL.4 (Type)		12.7	28	76	D
SL.6 (Type)		16	33	80	



Shaft : 6 mm | Shaft : 3 mm



Processing inside of round & pipe type holes and etc.

Tungsten, Diamond Carbide Mill

Flame Shaped Mill Code : **SE**

Order	d	d1	L1	L	Type
SE.41 (Type)	3	3.0	5.5	38	A
SE.41ML		3.0	5.5	50	
SE.1 (Type)	6	6.0	9.5	50	B
SE.3 (Type)		9.5	16	60	C
SE.5 (Type)		12.7	22	66	D
SE.6 (Type)		16	25	69	



Shaft : 6 mm | Shaft : 3 mm



Processing bottom spaces of oval shaped figures and at round surfaces.

Tungsten, Diamond Carbide Mill

Oval Shaped Mill Code : **SH**

Order	d	d1	L1	L	Type
SH.41 (Type)	3	3.0	6.3	38	A
SH.41ML		3.0	6.3	50	
SH.1 (Type)	6	6.0	9.5	50	B
SH.2 (Type)		8.0	19	63	C
SH.5 (Type)		12.7	32	76	D
SH.6 (Type)		16	36	80	



Shaft : 6 mm | Shaft : 3 mm



Reverse conical type to work at hard-to-reach rear sides surfaces.

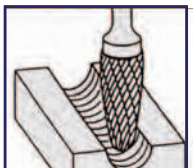
Tungsten, Diamond Carbide Mill

Head Cutting, Reverse Conical Mill Code : **SN**

Order	d	d1	L1	L	Type
SN.41 (Type)	3	2.5	3.0	38	A
SN.51 (Type)		6.3	6.0	44	
SN.1 (Type)	6	6.0	8.0	50	B
SN.4 (Type)		12.7	12.7	57	C
SN.6 (Type)		16	19	63	D
SN.7 (Type)		19	16	60	



Shaft : 6 mm | Shaft : 3 mm



Processing of corners, bottom of round figures and surfaces

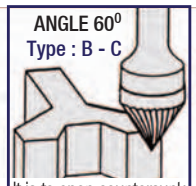
Tungsten, Diamond Carbide Mill

Radius End, Conical Carbide Mill Code : **SF**

Order	d	d1	L1	L	Type
SF.41 (Type)	3	3.0	6.0	38	A
SF.42 (Type)		3.0	12.7	38	
SF.1 (Type)	6	6.0	16	50	B
SF.3 (Type)		9.5	19	63	C
SF.4 (Type)		11	25	69	D
SF.6 (Type)		16	25	69	



Shaft : 6 mm | Shaft : 3 mm



It is to open countersunk and to chamfer with specific end angles.

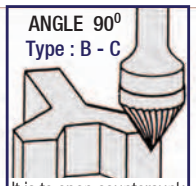
Tungsten, Diamond Carbide Mill

ANGLE 60⁰ Conical Moulder Type Mill Code :**SJ**

Order	d	d1	L1	L	Type
SJ.42 (Type)	3	3.0	2.5	38	A
SJ.1 (Type)	6	6.0	4.0	50	
SJ.3 (Type)		9.5	8.0	55	B
SJ.5 (Type)		12.7	11	58	C
SJ.6 (Type)		16	14.5	61	D
SJ.7 (Type)		19	17.5	65	



Shaft : 6 mm | Shaft : 3 mm



It is to open countersunk and to chamfer with specific end angles.

Tungsten, Diamond Carbide Mill

ANGLE 60⁰ Conical Moulder Type Mill Code :**SK**

Order	d	d1	L1	L	Type
SK.42 (Type)	3	3.0	1.5	38	A
SK.1 (Type)	6	6.0	3.0	50	B
SK.3 (Type)		9.5	4.7	52	C
SK.6 (Type)		16	8	57	D

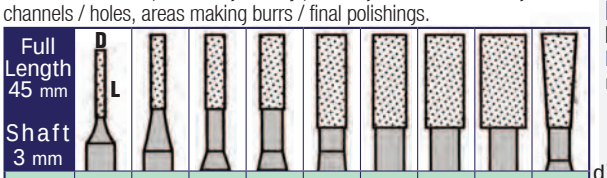




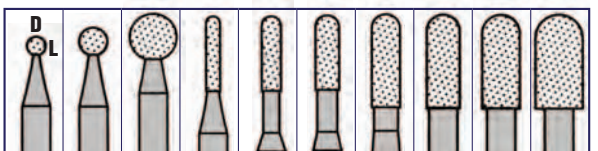
DIAMOND / CBN MILLS WITH Electrolysis Connector

Sharp, Super Hard Abrasive Mould Parts, Maximum Cutting

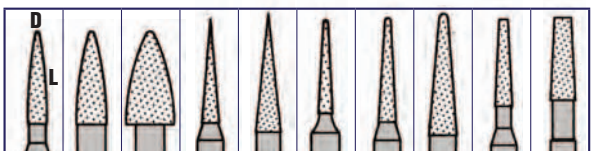
These abrasive particles created with well screened diamond and electrolysis connector come outside from connector by leaving wide chip spaces that prevents the rise of kits even at high metal removing ranges. It is used at mould processing, mostly polishing runners or levelling other channels / holes, areas making burrs / final polishings.



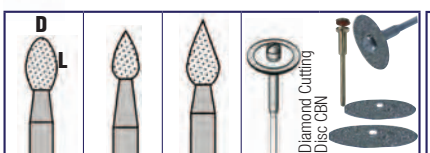
Order	10A	15A	20A	25A	30A	35A	40A	50A	30V
D x L	1x8	1.5x8	2x8	2.5x8	3x10	3.5x10	4x10	5x10	3x10



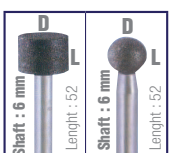
20B	30B	50B	15C	20C	25C	30C	35C	40C	50C
Ø 2	Ø 3	Ø 5	1.5x8	2 x 8	2.5x8	3x10	3.5x10	4x10	5x10



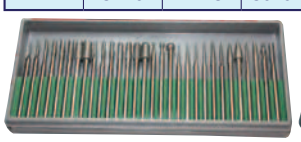
20F	30F	50F	20P	30P	15R	20R	30R	20T	30T
2x10	3x10	5x10	2x12	3x15	1.5x10	2x12	3x14	2x10	3x10



40Q	30S	40S	30D	Ø 18 Disc Ø 25 Disc 3-Chuck
4 x 7	3 x 6	4 x 8	30x0.5	



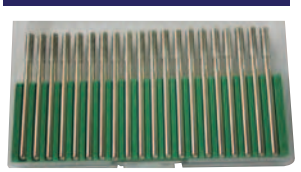
886L	86L
8 x 8	Ø 8



BMS 30 30 Pcs. Diamond CBN Set



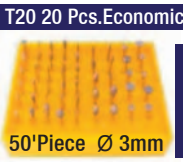
T30 30 Pcs. Economic CBN Set



BMS 30 20 Pcs. Diamond CBN Set



T20 20 Pcs.Economic CBN Set



C280-300
13739
Economic
CBN Set

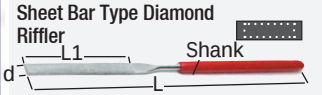


Diamond, Precision Riffler

In Tool Making Applications

Economic Riffles using with hand at mechanics requiring general sensitivity

Sheet Bar Type Diamond Riffler



Order	Shank	d x L1 x L
ELE-140	Ø4	5x 70 x140
ELE-160	Ø5	8x 50 x160
ELE-200	5.5	8x 70 x200

Half Round Diamond Riffler



Order	Shank	d x L1 x L
EYY-140	Ø4	5x 70 x140
EYY-160	Ø5	7x 50 x160
EYY-200	5.5	8x 70 x200

Round Diamond Riffler



Order	Shank	d x L1 x L
EYE-140	Ø4	Ø3x 70 x140
EYE-160	Ø5	Ø4x 50 x160
EYE-200	5.5	Ø4x 70 x200

Square Diamond Riffler



Order	Shank	d x L1 x L
DEE-140	Ø4	3.0x 70 x140
DEE-160	Ø5	3.6x 50 x160
DEE-200	5.5	3.6x 70 x200

Triangle Diamond Riffler



Order	Shank	d x L1 x L
UEE-140	Ø4	3.7x 70 x140
UEE-160	Ø5	5.0x 50 x160
UEE-200	5.5	5.0x 70 x200



Riffler Cleaning Brushes

Soft, Lined Brass Wired

Order	Products
1737	Beta File Brush
1738	4 Row Soft Brush
1739	Metal Hard Brush



Sheet Bar /Feather Diamond File

10 Pcs. Different Sandy Series

Order : TPF 10E



Retta Diamond Riffler Set

6 Pcs. Different Types, Standard Serie

Order : RKE 1005



Economic Diamond File Set

10 Pcs. Different Types, Standard Serie

Order : C 270 - 13710



Economic Diamond File Set

10 Pcs. Different Types, Thick and Long Serie

Order : C 270 - 13711



Economic Diamond Riffler Set

6 Pcs.Different Types, Files

One Sided	C 270 - 13726
Double Sided	C 270 - 13727

THICK TYPE DIAMOND RIFFLER

Sheet Bar Feathered/ Conical - Wide

In Tool Making Applications with Hand

a

3 Different Dimensional Model

b b Sand : # 100

Thick, Forging Shank-Non Skid, PVC Coated

Order	a	b (Angular)	Length
CF-503	6.1	0.60-2.40	L1 60 mm L 180 mm
CF-502	8.2	0.60-2.40	
CF-501	10.2	0.70-2.60	

THICK TYPE DIAMOND RIFFLER

Round - Wide Model, Hand Type

Thick, Forging Shank

Order	Shank	Dimension
IF 503	5 x 5	End Dia. :5.2 Length: 80 x 215

Half Round - Wide Model

Thick, Forging Shank

Order	Shank	Dimension
IF 502	11 x4	End : 9 x 4 Length: 80 x 215

Hand / Sheet Bar - Wide Model

Thick, Forging Shank

Order	Shank	Dimension
IF 501	11 x4	End : 11 x 4 Length: 80 x 215

Triangle - Wide Model, Hand Type

Thick, Forging Shank

Order	Shank	Dimension
IF 505	11 x4	End : 8 x 8 Length: 80 x 215

Square- Wide Model, Hand Type

Thick, Forging Shank

Order	Shank	Dimension
IF 504	6 x 6	End : 6 x 6 Length: 80 x 215

THICK & SHANK, Fitter

Type, Small Model Diamond Riffler

Ergonomic Shank

Order	Length	Width-Thickness
HX 4	100 4"	12.2 x 3.5 mm

Fitter Type, Large Model Riffler

Ergonomic Shank

Order	Length	Width-Thickness
HX 10	250 10"	18.5 x 4.5 mm



LARGE TYPE - DIAMOND FILE SET

5 P. Different Type Sheet Bar / Feather

Set Content: Sand : # 100 / # 200

Length: 180 - **Filing:** 70 - **Width:** 2.8 mm

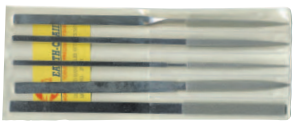
Length: 180 - **Filing:** 60 - **Width:** 2.5 mm

Length: 180 - **Filing:** 60 - **Width:** 2.5 mm

Length: 180 - **Filing:** 50 - **Width:** 2.0 mm

Length: 180 - **Filing:** 50 - **Width:** 2.2 mm

Order : CF 50



LARGE TYPE - DIAMOND FILE SET

5 P. Thick Type Sheet Bar, Forging Shank

Set Content: Sand : # 100

Length: 215 - **Filing:** 80 - **Width:** 5.2 mm

Length: 215 - **Filing:** 80 - **Width:** 9.0 mm

Length: 215 - **Filing:** 80 - **Width:** 11 mm

Length: 215 - **Filing:** 80 - **Width:** 8.0 mm

Length: 180 - **Filing:** 50 - **Width:** 2.2 mm

Order : IF 50



SHEET BAR / ANGULAR DIAMOND FILE SET

12' P. Large- Different Sand / Size

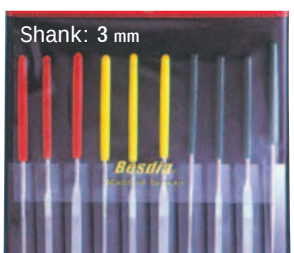
Set Content : Sand : # 150 # 200 # 400

12 Pcs. Sheet Bar

Angle Conical

4 Pcs. # 150 + **4 Pcs.** # 200 + **4 Pcs.** # 400

Order : CF 400



SHEET BAR / ANGLE - PVC SHANK, SET

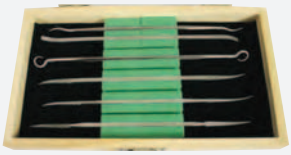
10 Pcs. - Shank 3 - Different Sand / Size

Red : # 200 Sand

Yellow : # 400 Sand

Green : # 600 Sand

Order : PTF 100



CURVED- DIAMOND FILE SET

6 Different Model Moulder Type

Oval, Sheet Bar, Hooked, Square, Triangle, Round

Order : BF 800



MOULDER TYPE, DIAMOND RIFFLER

7 Precision Different Model 10 Pieces

Sheet Bar Type : # 200 Sand 4 x 180 mm

Half Round : # 200 Sand 4 x 180 mm

Round Type : # 200 Sand 4 x 180 mm

Square Type : # 200 Sand 4 x 180 mm

Triangle Type : # 200 Sand 4 x 180 mm

Oval Type : # 200 Sand 4 x 180 mm

Sheet Bar : # 400 Sand 4 x 180 mm

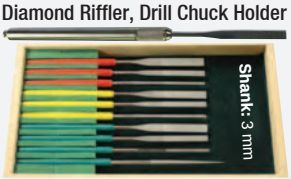
Sheet Bar : # 600 Sand 4 x 180 mm

Round : # 400 Sand 4 x 180 mm

Ladder Sheet Bar : # 200 Sand 4 x 180 mm

Order : PFL 100

Diamond Riffler, Drill Chuck Holder



MOULDER TYPE, DIAMOND RIFFLER SET

4 Different Model,10 Pieces -With Holder

Sheet Bar: 6 / 4 / 2 x 0.5 x130 mm # **200 Sand**

Sheet Bar: 6 / 4 / 2 x 0.5 x130 mm # **400 Sand**

Sheet Bar: 6 / 4 / 2 x 0.5 x130 mm # **600 Sand**

Round: 0.6 x 130 mm **# 600 Sand**

Order : PTF - 10T

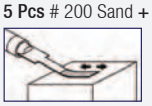
Diamond Riffler Drill Chuck Holder

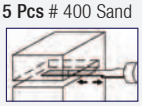


FLEXIBLE SHEET BAR DIAMOND RIFFLER SET

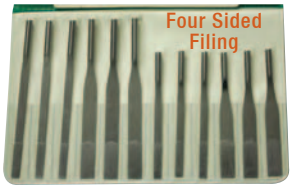
With Manual Holder or Machine

5 Pcs # 200 Sand + **5 Pcs** # 400 Sand





Order : FAS - 400



MACHINE; DIAMOND FILE SET

12 Pieces Sheet Bar Different Sand/Size

Shank: 3 mm

Angular / Conical Sheet Bar: Sand Fineness:

6 x 0.5 x 73 mm : 3 Pieces # 200 -400 -600

3.3 x 0.5 x 73 mm : 3 Pieces # 200 -400 -600

6 x 0.5 x 56 mm : 3 Pieces # 200 -400 -600

3.3 x 0.5 x 56 mm : 3 Pieces # 200 -400 -600

Order : MTF - 100



Four Sided Filing

MACHINE; DIAMOND RIFFLER SET

5 Pieces Different Size 3 mm Shank

Sheet Bar, Oval, Half Round, Square, Round

Shank: 3 mm

Length: 90 mm

Order : MPF - 10



Four Sided Filing

CURVED, MACHINE DIAMOND RIFFLER SET

5 Pieces Different Size 3 mm Shank

Sheet Bar, Triangle, Half Round, Square, Round

Shank: 3 mm

Length: 85 mm

Order : MBF - 60



BLOCK ABRASIVE CLEANER

Levelling - Polishing - Whetting on Surfaces by Removing Fine Chips

Block Size: 50 x 20 x 80 mm

Red : 36 Sand

Blue : 60 Sand

Black : 120 Sand

Brown : 240 Sand

Flex/Elastic Polishing Rubber Super Eraser

Order : KS... Sand





PRECISION NEEDLE RIFFLERS

In Tool Making Applications

It is ideal to work at smallest surfaces, volumes, profiles and angles, thanks to forging privana, can be used with or without shank.

Sheet Bar Type Needle File



Order	Shank	a x b	L	Processing
SLE 140	Ø	5.5 x 1.35	140	4 Side Operation
SLE 160	3	6.2 x 1.45	160	

Half Round Needle Riffler



Order	Shank	a x b	L	Processing
SYY 140	Ø	5.0 x 1.75	140	3 Side Operation
SYY 160	3	5.5 x 2.0	160	

Round Needle Riffler



Order	Shank	a(Conical)	L	Processing
SYE 140	Ø	1.1 x 2.8	140	All Side Operation
SYE 160	3	1.2 x 3.0	160	

Square Needle Riffler



Order	Shank	a(Conical)	L	Processing
SKE 140	Ø	1.3 x 2.5	140	4 Side Operation
SKE 160	3	1.4 x 2.7	160	

Triangle Needle Riffler



Order	Shank	a(Conical)	L	Processing
SUE 140	Ø	1.0 x 3.2	140	3 Side Operation
SUE 160	3	1.3 x 3.4	160	



File Cleaning Brush

Order	Product	Model
1737	Beta Riffler Brush	Soft
1738	4 Row Soft Brush	Brass Wire
1739	Metal Hard Brush	In line

LATHE FILES - Fitter Rifflers

Rectangular Riffler, Pirivana, 2 Side Cutting



Opposite direction of front and rear side cutting (Single) increases safety by forcing file to keep away from lathe chuck during lathe works.

Fine Thread: Precision Filing Turned Parts, Two Side Cutting, Two Side Non Cutting

Lathe Rifflers / Shaft Rifflers **Eye-San Brand**

Order	Size	Tooth	a	b	L
MTE 100	4"	Coarse Medium Fine, as per request	10	2.5	100
MTE 150	6"		16	3.0	150
MTE 200	8"		20	4.0	200
MTE 250	10"		25	5.0	250
MTE 300	12"		30	6.5	300

SQUARE Type - Fitter Rifflers

Square Rifflers, Pirivana, 3 Side Cutting



Coarse Tooth: Square file, conical, pirivana, four sided cutting

Medium Tooth: Filing of square shapes, deburring

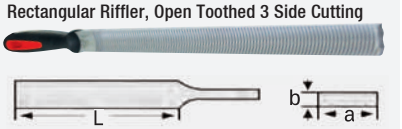
Fine Tooth: Precision filing, pre touch smoothing,

(Pls. specify thread at order) **Eye-San Brand**

Order	Size	Tooth	a	b	L
KTE 100	4"	Coarse Medium Fine as per request	6.3	4.0	100
KTE 150	6"		11	6.0	150
KTE 200	8"		14	8.0	200
KTE 250	10"		17	10	250
KTE 300	12"		20	12	300

Shank, Sheet Bar - ALUMINIUM RIFFLERS

Rectangular Riffler, Open Toothed 3 Side Cutting



Order	Size	Tooth	a	b	L
ALE 250	10"	Coarse	25	6.0	250
ALE 300	12"		30	6.5	300



ESD ESY Needle Riffler

PLASTIC - PLUG IN RIFFLER SHANKS

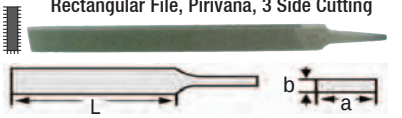
Ergonomic - Ideal Coating - Hard / Stable

Ergonomic - Ideal Coating - Hard / Stable Protects hands from sharp edges and corners, angular ring is prevented sliding of files. Make selection according to the file type and size.

Order	Type	Model	File Size
ESY 4 / 6			4" 6" 8" 10" 12"
ESY 08			
ESD 10			
ESD 12			
Needle Riffler	Ø	All Model Needle Rifflers	

SHEET BAR / HAND Type - Fitter Rifflers

Rectangular File, Pirivana, 3 Side Cutting



Coarse Tooth: Metal Removing, Deburring

Medium Tooth: General Surface Processing, Leveling

Fine Tooth: Precision Filing, pre touch smoothing

Sheet Bar (Pls. specify tooth at order) **Eye-San Brand**

Order	Size	Tooth	a	b	L
LHE 100	4"	Coarse Medium Fine as per request	10	2.5	100
LHE 150	6"		16	4.0	150
LHE 200	8"		20	5.0	200
LHE 250	10"		25	6.5	250
LHE 300	12"		30	7.0	300

HALF ROUND - Fitter Files

Herring bone riffler, Pirivana, 3 Side Cutting



Coarse Thread: Metal Removing, Deburring

Medium Thread: General Surface Processing, Circular Leveling

Fine Thread: Precision Filing, pre touch smoothing

H.Round (Pls. specify tooth at order) **Eye-San Brand**

Order	Size	Tooth	a	b	L
YYE 100	4"	Coarse Medium Fine, as per request	10	3.3	100
YYE 150	6"		16	5.0	150
YYE 200	8"		20	6.0	200
YYE 250	10"		25	7.0	250
YYE 300	12"		30	9.0	300

ROUND Type - Fitter Files

Round Type, Pirivana, 3 Side Cutting



Coarse Thread: Levelling inner radius, deburring

Medium Thread: General Surface Processing, Circular Leveling

Fine Thread: Precision Filing, pre touch smoothing

Round (Pls. specify tooth at order) **Eye-San Brand**

Order	Size	Tooth	a	b	L
YTE 100	4"	Coarse	Ø 4	4.0	100
YTE 150	6"	Medium	Ø 6	6.3	150
YTE 200	8"	Fine	Ø 8	8.0	200
YTE 250	10"	as per,	Ø10	10	250
YTE 300	12"	request	Ø12	13	300

TRIANGLE Type - Fitter Rifflers

Triangle Type, Pirivana, 3 Side Cutting



Coarse Tooth: Metal Removing, Deburring

Medium Tooth: General Surface Processing, Leveling

Fine Tooth: Precision Filing, pre touch smoothing

Sheet Bar (Pls. specify tooth at order) **Eye-San Brand**

Order	Size	Tooth	a	b	L
UTE 100	4"	Coarse	Ø 4	4.0	100
UTE 150	6"	Medium	Ø 6	6.3	150
UTE 200	8"	Fine,	Ø 8	8.0	200
UTE 250	10"	as per	Ø10	10	250
UTE 300	12"	request	Ø12	13	300

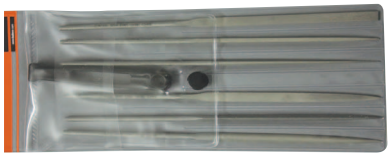
NEEDLE RIFFLER SETS



BAHCO - 12 Pcs Needle Riffler Set

12 Different Types 3 x 160 Needle Rifflers

Order : **BSE 12 -12 Pcs. Needle Riffles**

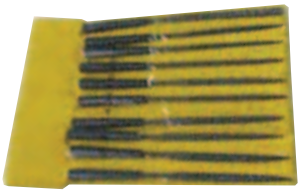


Triangle Round Square Sheet Bar H. Round

BAHCO - 6 Pcs. Needle Riffler Set

6 Different Types 3 x 160 Fitter Rifflers

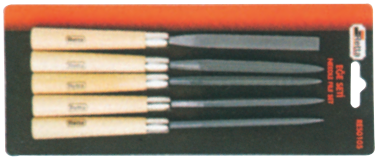
Order : **BSE 06 - 12 Pcs. Needle Riffler**



NEEDLE RIFFLER SET - 10 Pcs. Set

10Pcs. 3 x 140 Needle Riffler Different Model Presented

Order : **SE10 10 Pcs. Needle Riffler**



WOOD SHANK -5 Pics. NEEDLE RIFFLER SET

Triangle Round Square Sheet Bar H. Round

4 x 160 Different Type Needle Riffler 5 Pcs.

Order : **RESO 105**



Sheet Bar - Round - Square H. Round - Triangle - Knife Type

BETA / 6 Pcs. Needle Riffler Set

Professional, High Quality Riffler Set

Order : **1720 B**

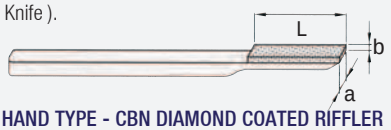




HAND TYPE-CBN DIAMOND COATED RIFFLER

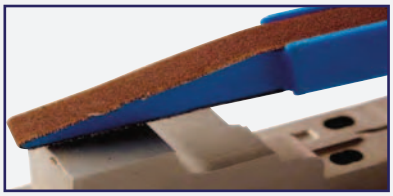
Levelling - Polishing - Whetting

CBN Binding Diamond Powder Loaded Equipment are used to obtain and polish precision smooth surfaces from burr lines and other surface defects without irritating. With non abrasive surfaces of tool, long working life it provides clean and smooth final surface. It is for more harder / heat treated work pieces. In addition; it is excellent for whetting of cutting tools (Scissor / Knife).



HAND TYPE - CBN DIAMOND COATED RIFFLER

Order	a x b x L	Sand	Holder
RSH 1	10 x 2 x 40	#200	Pls. Shank
RSH 2	5 x 2 x 40	#400	Steel Shank
RSH 3	5 x R2.5 x 40	#800	Steel Shank
RSH 4	10 x2 x30	#1200	Al. Shank





PEN TYPE - EMERY EQUIPMENT

Pratic, Manual Use - All Purpose, Economic

It is wedge shaped and from plastic layer based flexible plastic material, it provides opportunity to use each places of emery by pressing tension spring and turning emery belt. In addition; grinding belt,

Coarse Sand : # 180 and **Fine Sand :** # 320 can be purchased containing 10 pieces.

Holder Length : 310 mm **End :** 7 mm

Economic Product : It is suitable to use at areas that are hard to reach, with multi purpose usage area at hard works, it is most suitable equipment to use instead of file.

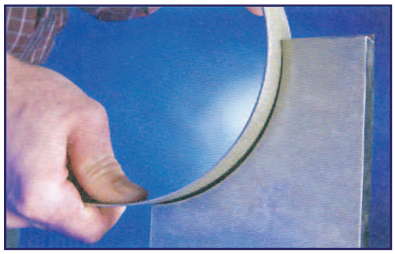
Kit: Alt ticks all the boxes at your workshops / home, car / boats.

Spring-Pls. Pen Equipment with Holding Emery

Order : **KZ 310**

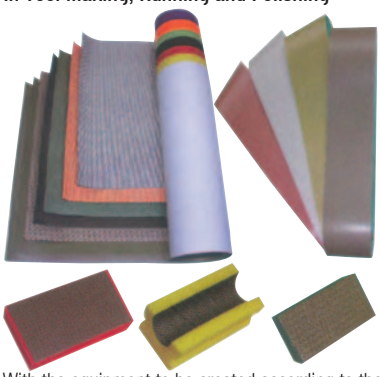
Spare Strip Emery 10 Pcs. Packing

Order : **ZK 155**



CBN DIAMOND COATED STRIP

In Tool Making, Running and Polishing



With the equipment to be created according to the work piece form that will be leveled or polished, a running in kit can be done by adhering on tool or using Double Sided

Adhesive Band. They are flexible plates that are saturated with intense diamond powder CBN system on flexible cloth. For polishing and running in, it is most economical and new product.

It is possible to use with equipment by cutting plates with scissors in desired size as per request . Especially it is created very good surface brightness and leveling on hard and watery steel. The application can be done on sheet plate by using self adhesive tape or can be worked in tape belt shape. In addition; emery equipment can be created by adhering on pad / wedge.

CBN DIAMOND COATED STRIPS

Sand Number	Colour Code	Metal Tie	Order 50x100	Order 100x100
# 120	Black	Nickel	512N	112X
# 200	Red	Nickel	520N	120X
# 400	Yellow	Nickel	540N	140X
# 600	White	Nickel	560N	160X
# 1000	Blue	Nickel	5100N	1100X
# 500	White	Resiny	550R	150R
# 1000	Blue	Resiny	5100R	1100R

Order Example :

50 x 100 mm Metal / Nickel Binding # 400 Sand (Yellow) Cloth Band CBN Diamond Strip

Order Code : 540 N **or**

100 x 100 mm Resin Binding, Clothed #1000 Sand (Blue) Cloth Band CBN Diamond Strip

Order Code: 1100 R





Conical Cartridge ROLL EMERY SET

It is created from spiral wrap abrasives

During grinding, tool is kept in its place with grooved conical holder. It is ideal for grinding at limited and narrow areas. When the outermost coated abrasive is worn down, non worn abrasive found in lower layers appears. With 3 mm special holder for tool replacement thanks to very well metal removing performance (cloth emery),

Application : Pls. always grind by using end instead of surface at places that are hard to reach, holes, weld cleaning, deburring. Pls. always use wound emeries in a way that adhesive side is facing the holder. During use, grinding oil protects the surface brightness and tool life. Wear protector glasses.

Safe cutting speed is max. 11 m/s.

Conical Roll Emery

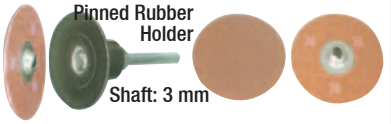
Order	Roll	Sand
RZ.06	6x38	# 80
RZ.10	10x38	
RZ.13	13x38	# 120
RZ.16	16x38	# 220
RZ.20	20x38	

Thread Drill Chuck: 3 mm

Order	Holder
TM 03	3 x 30
TM 06	6 x 60

Note : At conical roll emery orders, pls. specify sand selection.





Fast, Clip on Disc Emery & Holder

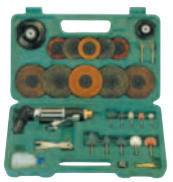
By turning metal threaded drill chuck and rubber pad bases binding to the center of clip on disc emery, it creates as excellent with retaning. The flexible base with vibrationless operation plunges on surface are avoided and presents fast disc replacement manually. They are used at rational grinding of surfaces, different contours, forming work piece / creating model.

Clip on Emery Disc

Order	Roll	Sand
KZD.38	Ø 38	# 36
KZD.51	Ø 51	# 80
KZD.76	Ø 76	#120

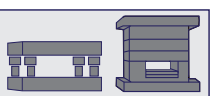
Pinned Holder Shaft: 6

Order	Rubber
KLT.63	6 x38
KLT.65	6 x51
KLT.67	6 x76

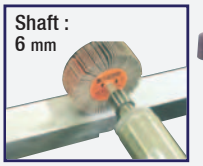


Fast, Clip On Set Pneumatic Machine 29 Pieces

Set Content : Pneumatic Grinding m. 90°
10 Pcs. Mounted Points (3 / 6)
5 Pcs. Disc Emery (51)
5 Pcs. Disc Emery (76)
2 Pcs Pinned Rubber Holder



Order : KZS 29 Set





6 mm SHANK - MOP EMERY

Axial, Slaty Emery, Array Set

In uses with suitable machines, surface gloss and tool protecting are provided with grinding oil.

In Application : Cutting speed as 15 -20 m / s is ideal. Precision grinding of circular surfaces provides ideal form to the work pieces contours. It is commonly used producing other tools and process equipment. During processing, it is recommended to use emery sand with coarse/fine settings instead of pressing more. Holder Shank Length, is 40 mm.

Pls. wear protective glasses, ear protector and gloves.

Order	Size - Shaft x Dia x Length	Sand
MZ**3**1515	Shank: 3.0 mm Ø 15 x 15	
MZ**3**2020	Shank : 3.0 mm Ø 20 x 20	
MZ**6**2015	Shank : 6.0 mm Ø 20 x 15	
MZ**6**2520	Shank : 6.0 mm Ø 25 x 20	# 40
MZ**6**3010	Shank : 6.0 mm Ø 30 x 15	# 80
MZ**6**3020	Shank : 6.0 mm Ø 30 x 20	#120
MZ**6**4015	Shank : 6.0 mm Ø 40 x 15	
MZ**6**4030	Shank : 6.0 mm Ø 40 x 30	#180
MZ**6**5020	Shank : 6.0 mm Ø 50 x 20	
MZ**6**5030	Shank : 6.0 mm Ø 50 x 30	#220
MZ**6**6020	Shank : 6.0 mm Ø 60 x 20	#320
MZ**6**6030	Shank : 6.0 mm Ø 60 x 40	
MZ**6**8020	Shank : 6.0 mm Ø 80 x 20	
MZ**6**8040	Shank : 6.0 mm Ø 80 x 40	



Holed Disc Emery

Polishing (polishing, varnishing) of parts that are hard to reach, pipe elbows, chamber bases (Concave and Surfaces, etc..) flexible supports, long life and high duty.

Order	Dia x Hole	Sand
DDZ.30	165 x 30	From # 40
DDZ.50	165 x 50	Up to # 400





Shank - Fibrous Fiber, Mop Emeries

Abrasive fiber material is created with multi circular array. Tight winding of the layers provide long service life. These sets are mostly used for surface improvement processes.

Shank Fiber Mop

Order	**Shank 6**
SEM.30	30 x30
SEM.40	40 x30
SEM.50	50 x30
SEM.60	60 x30
SEM.80	80 x30

Emery Fiber Mop

Order	**Shank 6**
ZEM.30	30 x30
ZEM.40	40 x30
ZEM.50	50 x30
ZEM.60	60 x30
ZEM.80	80 x30







Industrial WIRE MOUNTED BRUSHERS

Steel Wire / Inox Wire / Brass Wire

Shank - Pen Brush : When brush is turned, wires or fringes are opened. Even at places that are hard to reach, it is ideal for deburring, cleaning, rust removing.

Dish Wire Brush : It is for on-face applications in a way that all brush face is contacted to the work piece. It is for cleaning, rust removing and smoothing.

Disc Wire, Mounted Brush: At general purpose cleaning, rust removing, smoothing, scale removing, weld smoothing, abrasion or coating removing, deburring at cast irons.

Brass Wire Pen Brush

Order	ShankxDia
STF -17	**6** x 17
STF -25	**6** x 25
STF -30	**6** x 30

Steel Wire Pen Brush

Order	ShankxDia
CTF -17	**6** x 17
CTF -25	**6** x 25
CTF -30	**6** x 30

Brass Wire Dish Brush

Order	ShankxDia
SCF -50	**6** x 50
SCF -75	**6** x 75

Steel Wire Dish Brush

Order	ShankxDia
CCF -50	**6** x 50
CCF -75	**6** x 75

Brass Wire Disc Brush

Order	ShankxDia
DTF -40	**6** x 40
DTF -60	**6** x 60
DTF-100	**6** x 100

Steel Wire Disc Brush

Order	ShankxDia
CDF -40	**6** x 40
CDF -60	**6** x 60
CDF-100	**6** x 100



Industrial - Perforated - Wire BRUSHES

Steel Wire / Inox Wire / Brass Wire

Pls. operate always under the brush center at fixed machines (Lathes grinders etc.). Short fringe brushes are fore more aggressive brushing - Long fringe brushes are provided to obtain flexible surfaces. By changing brush rotation direction, self whetting effect can be improved. To avoid adhesing scattered particles to the work piece, general cleaning of work piece should be done after brushing. High rotation speeds are increase brush performance. Tool contact pressure should be kept lower. Pls. take care to provide work piece contact only with wire ends. **Pls. take care holder hole diameter.**

Steel Wire Circle Brush

Order	Ø x Hole
DFC.100	100 x20
DFC.150	150 x25
DFC.175	175 x25
DFC.200	200 x25

Yellow Wire Circle Brush

Order	Ø x Hole
DFS.100	100 x20
DFS.150	150 x25
DFS.175	175 x25
DFS.200	200 x25

Dish Brush-Screwed Connection-Yellow / Steel Wire

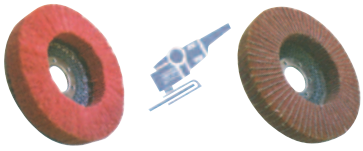
Order : CFC 65 (M14 x 2 Ø 65 mm) - Yellow / Steel
Order : CFC 80 (M14 x 2 Ø 80 mm) - Yellow / Steel



Perforated Fiber Cored Mop Emery

The structure of emery coated between fiber layers enables improved metal removing and is provided to obtain more softer surface.

Order	Dia. x Thickness x Hole
EZ16532	165 x 30 x 25
EZ16534	165 x 30 x 45
EZ16552	165 x 50 x 25
EZ16554	165 x 50 x 45



Fibrous Flap Disc Emery Fiber

Fibrous and Emery Flap Discs

At precision cleaning and grinding large surfaces, removing of colour change on surface resulting heat source, mounting of stainless steel and finishing works.

Order	Dia. x Hole
EDF.110	110 x 22 Fibrous Flap
EZF.110	110 x 22 Emery Fiber



Motor, Circular Fiber Mops

Order	Dia. x Thickness x Hole
DEM.165	165 x 30 x 25
DEM.200	200 x 30 x 25



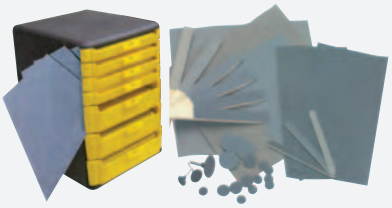
Wedged Fiber Mop and its Machine

Order	Dia. x Thickness x Hole
KDE.100	100 x 110 x 19
GSI14CE	BOSCH - 1400 W



Fibrous Fiber Plates (Usage by cutting)

Hole is created by cutting circular and can be used as one after the other. At grinding of channels and contours. **Order: EP 2328 COARSE or FINE and Dimension :** 230 - 280 mm Coarse or fine.



Coated Layer WATER EMERY

Layer Dim. : 230 x 280 mm. Latex Paper Plate is suitable to use at alloyed and unalloyed steels and non ferrous metals, extreme applications and general purpose usages.

Coarse Sand Surface Levelling / Smoothing

Sand	40	60	80	100	120
Size	Order (1 Layer) Sand Option				
230 x 280	SZ # 40	SZ # 60	SZ # 80	SZ # 100	SZ # 120

Medium Sand Surface Levelling / Forming

Sand	150	180	220	280	320
Size	Order (1 Layer) Sand Option				
230 x 280	SZ # 150	SZ # 180	SZ # 220	SZ # 280	SZ # 320

Fine Sand Final Surface Polishing Process

Sand	400	600	800	1000	1200
Size	Order (1 Layer) Sand Option				
230 x 280	SZ # 400	SZ # 600	SZ # 800	SZ 1000	SZ 1200

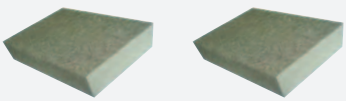




Spongebacked Water Emeries

Emery Width: 115 mm, Cutting as per request spongebacked emeries protect hands when used manually with its elasticity or can be used at vibrant / rotary machines, this product by laminating sponge at back of emery protects hand when used manually, and when used with machine plunges are avoided.

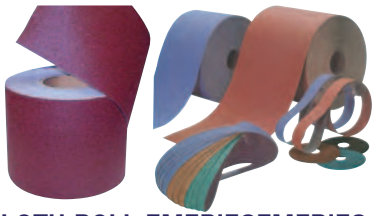
Sand	150	220	280	320	400
Size	Order (Acc. to 1 Mt.) Sand Option				
115 Cutting	SM # 150	SM # 220	SM # 280	SM # 320	SM # 400



Sponged - Hand Type Water Emery

Emery Size: 100 x 68 x 27 mm, Sponged Emery is flexible, sponged, soft and full elastic emery. Lower and upper sides as well as other sides of sponge are resin bonded with emery particles. It is used at all surfaces including curved and cambered surfaces. It is cleaned by shaking up and provides multi uses.

Sand	60	100	150	220	320
Size	Order (Acc. to Piece) Sand Option				
115 Cutting	EZ # 60	EZ # 100	EZ # 150	EZ # 220	EZ # 320



CLOTH ROLL EMERIESEMERIES

Cutting as per request, Flexible Cloth Emeries

It is suitable to grind all metal and material types manually. Tight Woven Soft Cloth, is two coat resinous with aluminium and oxide abrasives. To work with soft cloth emeries is easy by bending elastically, required roll lengths are cut as per request at varnishing and polishing processes, precision finishing of lathe pieces, mechanical works.

Coarse Sand Surface Levelling / Smoothing

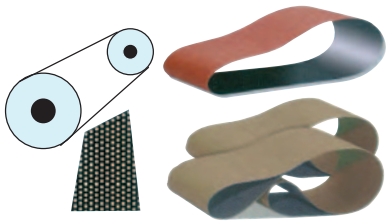
Sand	40	60	80	100	120
Order (Acc. to 1 Mt.) Sand Option					
Width 15 cm	BZ # 40	BZ # 60	BZ # 80	BZ # 100	BZ # 120

Medium Sand Surface Levelling / Forming

Sand	150	180	220	280	320
Order (Acc. to 1 Mt.) Sand Option					
Width 15 cm	BZ # 150	BZ # 180	BZ # 220	BZ # 280	BZ # 320

Fine Sand Final Surface Polishing Process

Sand	400	600	800
Order (Acc. to 1 Mt.) Sand Option			
Width 15 cm	BZ # 150	BZ # 180	BZ # 220



MACHINE, BAND EMERIES

According to the existing standard machines in market

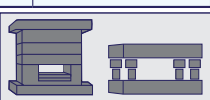
Using suitable grinding oil at different materials increases Abrasion Performance and Tool Life of tools produced from coated abrasives substantially. It has highly abrasive performance, high tension resistance and suitable flexibility, Perfect Particle Adhesion.

Order Information : Pls. specify width, length, material type, particle size (sand fineness) and machine type& brand to be used....!

MACHINE, BAND EMERIES

Order	Dimension /Measure	Sand
B610100	610 x 100 mm	# 60
B1250100	1250 x 100 mm	# 80
B150050	1500 x 50 mm	# 100
B175050	1750 x 50 mm	# 120
B200050	2000 x 50 mm	# 220
B200050	2000 x 50 mm	# 400
B300050	3000 x 50 mm	As per Request

www.guvenal.net



Circular Vibrant Emery



Order : **05010**

Continous Current : 220 W
Current : 1.0 Ah
Base Diameter : 123 mm Velcro Emery
Abrasive Emery : 125 mm
Vibration per Minute : 12.000 /min.
Net Weight : 1.2 Kg. Dust Bag / Disc

Circular Vibrant Emery Cycle Adjusted



Order : **06030**

Continous Current : 310 W **Current :** 1.4 Ah **Base Diameter :** 150 mm
Velcro Emery **Abrasive Emery :** 150 mm
Vibration per Minute : 4 Bin-10 Bin min.
Net Weight : 2.3 Kg. Dust Bag / Disc

Vibrant Sander Machine



Order : **B03710**

Continous Current : 190 W
Current : 0.9 Ah
Base Diameter : 93 x185 mm
Velcro Emery **Abrasive Emery :** 150 mm
Vibration per Minute : 11.000 min.
Net Weight : 1.5 Kg. Dust Bag/Emery

Electronic Polishing Machine



Order : **MX016160**
MAX - EXTRA

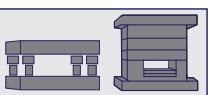
Continous Current : 1300 Watt
Diameter : 180 mm Disc Base
Abrasive Emery : 180 mm
Electronic Cycle : 1.000 - 3.800 m / m
Net Weight : 2.6 Kg. Polishing, Plush

Filing / Sanding



Order : **9032**

Current : 2.3 Ah
Continous Current : 500 Wat
Band Measures : 9 x 533 mm
Band Speed : 300 - 1700 m / min.
Max. Sanding, Depth : 110 mm
Net Weight : 1.5 Kg. Polishing, Plush





VELCRO DISC EMERIES

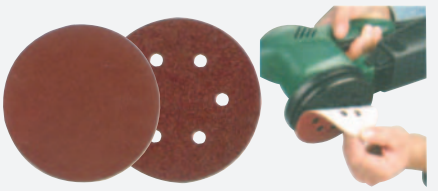
It consists from aluminium oxide coated polyamide cloth. Perforated and unperforated types are available. Back of emery is velcro and insert rapidly to the similar pads as serial replacement.

Perforated Type Ø 125 mm

Order	Sand
N- 33393	# 60
N- 33397	# 100
N- 33401	# 150
N- 33407	# 240
N- 33411	# 320
N- 33417	# 600

Perforated Type Ø 150 mm

Order	Sand
N- 33461	# 40
N- 33465	# 80
N- 33469	# 120
N- 33475	# 220
N- 33485	# 400
N- 33489	# 800



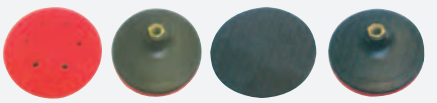
VELCRO DISC EMERIES

Flat Type / Disc Ø 115 mm

Order	Sand
N- 33501	# 40
N- 33505	# 80
N- 33509	# 120
N- 33515	# 220
N- 33521	# 320
N- 33525	# 400

Perforated Type Ø 150 mm

Order	Sand
N- 33663	# 60
N- 33667	# 100
N- 33671	# 150
N- 33677	# 240
N- 33681	# 320
N- 33683	# 360



VELCRO & ADHESIVE RUBBER DISC PAD

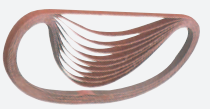
Fast Emery Replacement Discs, Screwed Type - ECONOMIC

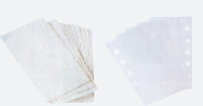
Velcro Disc /Pad

Order	Type
N-39051	115mm/ Flat
N-39065	150/Perfor.

Adhesive Flat Pad

Order	Type
N-39071	115mm/ Flat
N-39095	150/Perfor.





Band Emeries

For 9032 Electrical Machine

Decimal Packaged. Specify sand selection at order.

Band Emery Spares

Order	Size	Sand
A-34528	6 x533	# 60
A-34453	9 x533	80
A-34578	13 x533	100 120

Velcro Emeries

For B03710 Vibrant Machine

Decimal Packaged. Specify sand selection at order.

Velcro Emery Spares

Order	Size	Sand
A-31295	93 x185	# 60
P-01476	102x115	80
794 561-7	93 x228	100 120



POLISHING SETS

Accessories for Electronic Polishing Machine

8 and 9 Pieces SetContents



1 x Velcro Sponged Polishing
1 x Support Disc Adhesive Pad
1 x Support Disc Rubber Pad
1 x Synthetic Hairy Polishing Cap
1 x Synthetic Wool Polishing Cap
3 x Velcro Flat Emery
1 x Velcro Polishing Discs

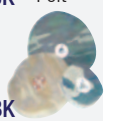
Polishing Polish
Order : PC





Polishing Sisa Felt
Order : PSK

Polishing Cloths



Order : PBK

Polishing SETS

Order	Product
N-3393	9 Pieces Set Acc. to Ø 115 mm
N-3395	9 Pieces Set Acc. to Ø 125 mm
N-3397	9 Pieces Set Acc. to Ø 150 mm
N-33999	9 Pieces Set Acc. to Ø 180 mm



DUST / FUME PROTECTIVE MASK

Order	Product
STM	Yellow Dust Protective Face Mask
VTM	Ventile White / Fume Protective

* Other Safety Equipment (Gloves, Work Shoes, Helmet, Ear Plugs), refet to Page 88.



CLEANING BRUSHES

Order	Product
TF-1	No.1 Brush
TF-2	No.2 Brush
TF-3	No.3 Brush
TKF1	Pen Brush
SPT1	Spacer Small
SPT2	Spacer Great



SWDT 207

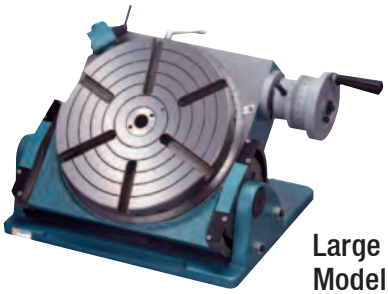
EFLD



T28 093

MINI FLASHLIGHT (Powerful Light)

Order	Product
T28 093	9 Led, 52 gr. 92 cm, Flashlight
SWDT 207	100 Lumen, Clip on Flashlight
EFLD	Pocket Type, Punctuation Light



Large Model

UNIVERSAL ANGULAR ROTARY TABLE

Inclined Type Vertical and Horizantal Angle Rotary Table

It provides reaching of work pieces at every position in levelling and polishing processes and it has capacity to bind work piece up to 300 mm of rotary table surface that can be worked on it. In addition, by binding lathe chuck (Up to Ø 250 mm) on plate, round / oval and complex corner figured works can be connected.

Mould Levelling and Polishing, Rotary Table

Order Model	Table Dia.	Bed Height	Vertical Height	Product Weight
VU - 300 (14951)	300 mm	185 mm	170 mm	99.5 kg.



Small Model

SMALL T. ANGULAR ROTARY TABLE

Inclined T. Vertical and Horizontal Angle Rotary Table

It is in similar positions with above product to use in levelling and polishing processes. Smaller type is also presented economically.

Mould Levelling and Polishing Rotary Table

Order Model	Table Dia.	Bearing Height	Table Width	Product Weight
VU - 100 (14948)	100 mm	117 mm	228 mm	13.5 kg.
VU - 200 (14950)	200 mm	177 mm	429 mm	46 kg.

Mini - Rotary / Angular Vacuumed Clamp

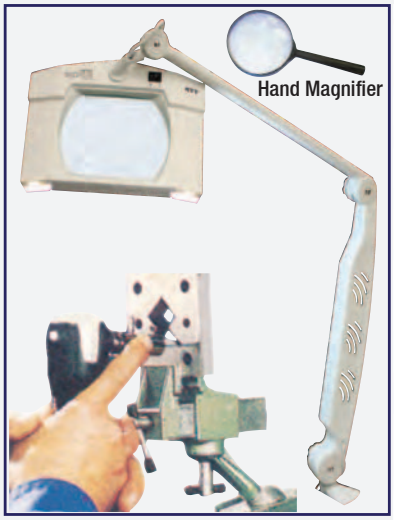


Vacuumed Fixing system claws, plastic protected360º rotary angular tipping, moving polishing and levelling at small work pieces.

Order No : RMM0201

Claw Width: 65 mm

Max. Mouth Opening :30 mm



3 x Lensatic Bench Lamp

For non reflected and smooth, illuminated work places, monitoring of object by two eyes as 3 D with lamp - magnifying glass lens, free running, spring mechanism, secured swivel arm.

Order : ZLA (Table Lamp)



Binocular, Head Magnifier

Adjustable band belts, ligth model - Foldable up - protects from reflected lights.

Order : HL09 (Head magnifier)



Pocket Magnifier

Light lens fixed magnifier, can be used as size 10 scales and thus measurement Loop. Scale **Segmentation 0.1 mm / Length : 15 mm** Aplanatic (Size 10) Non Aspheric (Size 4)

Order : 183303 (Mitutoyo)



Surface Control Mirror

Plastic framed mirror with holding shank is used to get images from areas that are hard to seem.

Order : B1714 (Beta)



Workman Goggles (Unnumbered)

Order : KG01 (Transparent Glasses)



PLASTIC DRAWER KIT STAND

Transparent Boxes, Open Use - Locker

The materials used in polishing process, absolutely should be stored separately. In order not to mix tools and to protect regularly, we are recommended our stand.

22 Box Use Drawer Stand

Order	Width xLength x Height
HOBBY 144	400 x 220 x 660

19 Box Use Drawer Stand

Order	Width xLength x Height
HOBBY 113	400 x 220 x 500



Sanitary Paper / Cloth Stand

Stand Dimension : 450 x 330 x 940 mm

Paper Towel : 1 Roll : 350 Mt. Width: 25 Cm
Fast Break : 15 Cm ECONOMIC

It is produced completely from cellulose and absorber. It is excellent for washing/ cleaning of solvents and cleaning of precision tools without leaving a trace. Does not leave feathers, not easily tearable, Practically Used Ready Stand.

Order	Product
P-350	Paper Towel 350 Mt. x 25 cm
P-1000	Stand and Towel(Together)



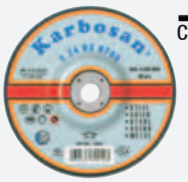
Curved Type
X 3

Combine - Grinding & Cutting

2 Processes With One Stone

Both grinding and cuttin processes can be done at the same time without changing stone. Max. 12.500 m / m

Order	Ø x Thickness x Hole
X3.12790	115 x 1.9 x 22
X3.12800	125 x 1.9 x 22
X3.12890	115 x 3.0 x 22

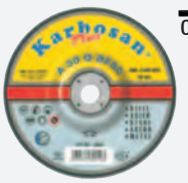


Curved Type
NK

GENERAL-GRINDING Stone

It is used at iron and steel metals.

Order	ØxThickness xHole	Cycle
10540	100 x 6.4 x16	15300
10550	115 x 6.4 x22	13300
10560	125 x 6.4 x22	12250
10570	180 x 6.4 x22	8500
10600	230 x 8 x 22	6650



Curved Type
NK

INOX GRINDING Stones

It is for hard steel and stainless.

Order	ØxThickness xHole	Cycle
10630	115 x 6.4 x22	13300
10640	125 x 6.4 x22	12250
10650	180 x 6.4 x22	8500
10660	180 x 8 x22	8500
10430	230 x 8 x22	6650



Curved Type
ZA

CAST- Grinding Stones

It is suitable for full cast resistant to Zircony Oxide abrasive.

Order	ØxThickness xHole	Cycle
10780	115 x 7 x 22	13300
10790	125 x 7 x 22	12250
10800	180 x 7 x 22	8500
10810	230 x 7 x 22	6650



Flat Type
NK

GENERAL - CUTTING Stones

General Purpose Steel / Cast

It is suitable for fixed cutting machine. At all metals and casts.

Order	Ø x Thickness x Hole
10840	300 x 3 x 25.4
10850	300 x 3 x 30
10860	350 x 2.5 x 25.4
10870	350 x 3.5 x 30



Flat Type
NK

General Purpose Cutting Stones

Suitable for al metal materials

All metals and cast materials

Order	ØxThickness xHole	Cycle
1020	115 x 2.5 x20	13300
1030	125 x 2.5 x20	12250
1040	180 x 3.0 x22	8500
1050	230 x 3.0 x22	8500

Thin Metals Cutting Stone

Thinline Fine Stone-General Steels

Order	ØxThickness xHole	Cycle
10440	100 x 1.0 x22	13300
10450	115 x 1.6 x22	13300
10460	125 x 1.0 x22	12250
10470	125 x 1.6 x22	12250
10480	180 x 1.9 x22	8500

For PIN CUTTING and Grinding





Flat Type
CUT & CUT

Fine / Steel, Cutting Stones

All Steels - INOX Materials

Order	ØxThickness xHole	Cycle
11500	115 x 1.0 x22	13300
10510	115 x 1.6 x22	13300
11520	125 x 1.0 x22	12250
11530	125 x 1.6 x22	12250



Flat Type
ALÜ.

ALUMINIUM - CUTTING Stones

Alloyed / Unalloyed Aluminiums

Order	ØxThickness xHole	Cycle
11100	180 x 3.0 x22	8500
11200	230 x 3.0 x22	8500
Thinline Fine Cutting Stone		
11030	115 x 1 x 22	13300
11060	125 x 1 x 22	12500
11070	125 x 1.6 x22	12500



Flat Type
INOX

STAINLESS - Cutting Stones

For Inox and Nickel Bazes Alloys

Order	ØxThickness xHole	Cycle
11190	115 x 2.5 x22	13300
10200	125 x 2.5 x22	12250
10210	180 x 3.0 x22	8500
10220	230 x 3.2 x22	6650



Flat Type
SC

Gray CAST- CUTTING STONE

Special comfortable cutting for all casts

Order	ØxThickness xHole	Cycle
11690	100 x 2.5 x16	15300
10280	125 x 2.5 x22	12250
10290	180 x 3.0 x22	8500
10300	230 x 3.0 x22	6650



Order :
JCO 355

JETCO
METAL CUTTING MACHINE

Economic with cutting stone

Power : 2.000 Watt / 8.7 Ampere
Speed : 3.800 cycle / min.
Stone Size : Ø 355 x 3.5 x 25.4 mm
Hub Shaft : (Stone Binding) : 25.4 mm
Machine Weight : 19 Kg.



Flat Type
NK
Middle Stone

GRINDING AND SPLIT Stone

Cutting / Splitting at Grinders

Order	ØxThicknessxHole
12300	150 x 2 x 20
12310	175 x 2 x 20
12320	190 x 2 x 28



EKR NK

SAW STONES

It is for whetting of disc and band saw.

Order	Ø x Thickness x Hole
13960	150 x 6 x 20 NK 60
13940	150 x 10 x20 NK 80
14180	175 x 8 x 20 EKR 60
14280	200 x 8 x20 EKR 60
14250	200 x10 x20 EKR 60
14350	250 x10 x25 EKR 60



Conical
EKR

DISH Grinding Stones

It is for multi purpose usages.

Whetting- Grinding of Machines Belonging to

Order	Dimension
14100	E - 50 Conical Stone
14110	E - 75 Conical Stone
14120	E - 100 Conical Stone
14130	E - 125 Conical Stone
14140	E - 150 Conical Stone



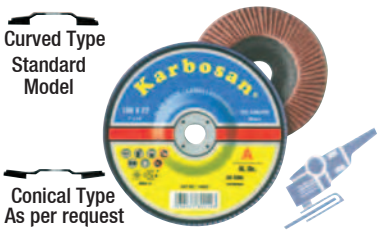
Flat
EKR

Flat DISH Grinding Stones

It is for multi purpose usages.

Whetting- Grinding of Machines Belonging to

Order	Dimension
14000	D - 50 Flat Stone
14010	D - 75 Flat Stone
14020	D - 100 Flat Stone
14030	D - 125 Flat Stone
14040	D - 150 Flat Stone

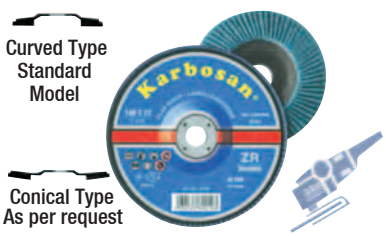


FLAP (Layered Emery) Discs

It shows a very good performance at aluminium oxide, A Type, General Purpose Coarse and Pre Levelling, Grinding Applications. In order to correct especially weld mistake areas that are hard to reach, it is for filler metal - steels - inox / stainless material surfaces. Max. Speed should be 50 m / s.

Pls. specify sand selection at order.

Order	Dimension	Sand
AFD100..Sand	Ø 100 x Hole 16	#40 #60 #80
AFD115..Sand	Ø 115 x Hole 22	
AFD125..Sand	Ø 125 x Hole 22	
AFD180..Sand	Ø 180 x Hole 22	

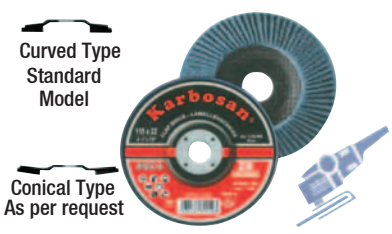


FLAP (Layered Emery) Discs

Zirconium, Aluminium Z Type Layered Emery provides high metal removing. It is for metal - aluminium hard steels - stainless materials. Does not heat up, long life. Max. speed 50 m / s.

Pls. specify sand selection at order.

Order	Dimension	Sand
ZR100..Sand	Ø 100 x Hole 16	#40 #60 #80
ZR115..Sand	Ø 115 x Hole 22	
ZR125..Sand	Ø 125 x Hole 22	
ZR180..Sand	Ø 180 x Hole 22	



FLAP (Layered Emery) Discs

It is ideal for small and medium work pieces with high performance, fast process created especially for INOX / Stainless Materials. Max. Sheed should be 50 m / s.

Pls. specify sand selection at order.

Order	Dimension
INOX 115.. Sand	Ø 180 x Hole 22
Sand Selection	# 40 - 60 - 80



FIBER / DISC EMERIES

It is for general steels and stainless materials produced with aluminium oxide abrasives. Max.speed should be 80 m /s. Does not heat up.

Order	Ø x Hole	Sand Fineness
SC 115..Sand	115 x 22	40-60-100 150-220 320-400
SC 125..Sand	125 x 22	
SC 180..Sand	180 x 22	



FIBER / DISC EMERIES

It is produced with silicon Carbide abrasives. It is suitable for non ferrous materials. Max. speed should be 80 m /s. Does not heat up.

Order	Ø x Hole	Sand Fineness
SC 115..Sand	115 x 22	40-60-100 150-220 320-400
SC 125..Sand	125 x 22	
SC 180..Sand	180 x 22	



FIBER / DISC EMERIES

It is produced with zirconium abrasives and for **General Product**, general steels - stainless - aluminium. Max. speed should be 80 m /s. Does not heat up.

Order	Ø x Hole	Sand Fineness
SC 115..Sand	115 x 22	40-60-100 150-220 320-400
SC 125..Sand	125 x 22	
SC 180..Sand	180 x 22	



PLASTIC (Emery Binding) DISC

It is used as base to connect disc emeries to the related machine.

Order	Product / Dimension
PD115P	115 x Hole 22 Metal
PD180P	180 x Hole 22 Metal

Electrical, ANGLE GRINDING

BOSCH



Order	Bosch - Angle Grinding
GWS 7-115	**115 mm 720 W 11.000 d/d**
GWS 12-125 CIE	**125 mm 1200 Watt** Adjustable Cycle 2800-11.000 d/d
GWS 11-125 CIE	**125 mm 1500 Watt** Adjustable Cycle 2800-11.000 d/d
GWS 21-180H	**180 mm 2100 W 8.500 d/d**
GWS 22-230H	**230 mm 2200 W 6.500 d/d**

Electrical, SANDING MACHINE



Capacity : Order
125 mm **GW5010**
150 mm **GW6010**
Continous Current : 440 Watt
Cycle : 4500 d /dak.
Current: 1.9 Ah
Weight : 1.1 Kg.

Electrical, MOULD GRINDING

Short Type



As per request
3 and 8 mm Pliers

Order	Mould Grinder
GGS 28 CE **BOSCH**	**650 Watt - 6 mm Pensli** Adjustable Cycle 12000-28.000 d/d
GD0602 Makita	**400 Watt - 6 mm Plier** Cycle 25.000 d / d

Electrical, MOULD GRINDING MACHINE

Long Type



As per request
3 and 8 mm Pliers

Order	Mould Grinder
GGS 28 LCE **BOSCH**	**650 Watt - 6 mm Plier** Adjustable Cycle 10000-28.000 d/d
GD0601 Makita	**400 Watt - 6 mm Plier** Cycle 25.000 d / d

Electrical, MOULD GRINDING MACHINE

Standard Type



As per request
3 and 8 mm Pliers

Order	Mould Grinder
GGS 8 CE **BOSCH**	**750 Watt - 6 mm Plier** Adjustable Cycle 2.500 - 8.000 d/d
GD0800C Makita	**750 Watt - 6 mm Plier** Adjustable Cycle 7.000-28.000 d/d



PNEUMATIC TOOLS

Order	Model
T18660	Wert : Diesel Gun
T18605	Wert : Sanding Gun
T18617	Wert : Paint Gun 1.4 mm



Entrapped Air Outlet Valve
Air Inlet : 1/4" 13 mm Hose

PNEUMATIC GREASE GUN

Order	Model
GP850N	Gison : 400cc. 5 Bar
T18611	Wert : 400cc. 5 Bar



AIR COMPRESSORS

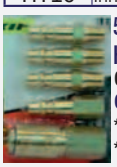
Order	Model
MT-200	MyTool :200 lt. Hooped
MT-100	MyTool :100 lt. Hooped
MT-050	MyTool :50 lt. Hooped



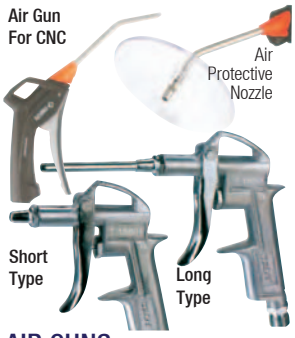
AIR HOSE

Polyurethane PU HoSE (Selling with meter)

Order	Model
HT06	Inner: 4 mm Outer: 6 PU
HT08	Inner: 5 mm Outer: 8 PU
HT10	Inner: 8 mm Outer: 10 PU
HT12	Inner: 10 mm Outer: 12.5 PU
HT16	Inner: 10 mm Outer: 16 PU



5 Pcs. Set Automatic Hose Nozzle Set
Order :
OS79901 - Gison
* 1 Pc Fast Binding
* 4 Pcs. Bush/ Male Female



AIR GUNS

Order	Model
T18601	Short Air Gun
T18603	10 cm Long Air Gun
T18606	22 cm Long Air Gun
ABG-3	CNC Air Gun



AIR CONDITIONER

Order	Model
T18624	1/4" - 2's Conditioner
Gas-11	Mini Lubricant
Gas-20	Mini - Oil & Water Filter
HSY-1	1 Kg. Conditioner Oil



AIR ACCESSORIES

Order	Model
RPT014	Air Regulator Cock
SPJ20	1/4" Single Hinged Bush
P3/6	3 - Pneumatic Tool Plier 6
GAS-7	Time Air Regulator



PNEUMATIC TOOL KIT 5 Pcs. Set

1 - Pneumatic Paint Gun
2 - Pneumatic Diesel Gun
3 - Air Gun
4 - Air gun manometer
5 - Spiral Hose 5 mt.
Order : OS 79 501 (OSCO)



ANGULAR : 90°

PNEUMATIC MOULDER GRINDER

Max. Cycle : 20.000 d / min.
Working Pressure : 6.3 Bar
Machine Length : 154 mm 90°
Machine Length : 178 mm 115°
Weight : 620 gr. 900 / 750 gr. 115°

Order	Model
824TA	Gison : 90° / 20.000 rpm
DG645	SAP : 115° / 18.000 rpm
P124	Osaka : 90° / 20.000 rpm



PNEUMATIC FLUSH CUTTER

Cutting Capacity : (Type Gison)
Iron :1 mm /Copper :1.6 mm Alm. 2mm
Cutting Capacity : (Type Osaka)
Iron :2.9 mm/Copper : 3.3 Alm. 3.3mm
Weight : (Gison -190) - Osaka 600 gr.

Order	Model
GP010	Gison : 1 x 1.6 mm
GP020	Gison : 2 x 2.6 mm
OPT1007	Osaka : 2.9 x 3.3 Cutting



Pneumatic METAL PLATE SHEAR

Cutting C. : Steel 1.2 mm Alu.1.6
Max. Cycle : Inner /2100 -Outer /2600 rpm
Length : Inner / 215 - Outer / 188 mm
Weight : Outer/1.33 Kg.-Inner/0.98Kg.

Order	Model
GP838C	Gison:For external cutting
GP838S	Gison:For internal cutting





PNEUMATIC MOULDER GRINDER

Plier Dia : 3 - 6 mm
Max. Cycle : 11.000 d / min
Air Pressure : 6.3 Bar
Machine Length : 168 mm
Machine Length : 280 / Long Type
Weight : 0.70 gr. **Long Type :** 0.80 gr.

Order	Model
W1854	Wert : Economic
824T	Gison : 25.000 RPM
DG-6	Sap : Long Type
DG-Y	Sap : 22.000 RPM
OPT121	Osaka : 22.000 Mini



MOULDER GRINDING SET

Set Content: : * 3 / 6 mm Plier
* 22.000 m / m Grinding Machine
* Shaft 3 mm 5 Pieces Spiral Stone
* Shaft 6 mm 5 Pieces Spiral Stone
* Air Connection Bush
* Wrench Set - Plastic Bag

Order	Model
824K	Gison : 10 Pieces Set
OPT-4	Osaka : Moulder Set



PNEUMATIC PRECISION GRINDING

Max. Cycle : 60.000 RPM (Micro Type)
Vibration Speed : 34.000 (Writing)
Machine Length : 132 Micro
Weight : 23 gr. Micro 24 gr.(Writing)

Order	Model
GP8243	Gison : Micro Type Precision
GP940	Gison : Diamond Type Writing



BALANCER

Pneumatic Tool Carrier

Order :
SB01C 1.5 mt. /1.5 - 3 Kg.
SB01F 1.5 mt. 3 - 5 Kg.
Hose Blancer : 8 mt.



PNEUMATIC DRILL MOTOR

Max. Cycle: 22.000 RPM Left / Right
Drill Chuck Capacity : 10 mm / 7
Machine Length : 205 mm
Hose Size : 6.5 mm
Weight : 920 gr. (Model - GP 340)

Order	Model
GP-330	Gison : 7 mm Drill
GP-340	Gison : 10 mm Drill
1047D	Bemato : 10 mm Drill



PNEUMATIC HANDHELD DRILL

Max. Cycle : 2400 RPM Left / Right
Drill Chuck Capacity : 10 mm / 13
Machine Length : 170 mm
Hose Size : 6.5 mm
Weight : 1100 gr.

Order	Model
GP835	Gison : 10 mm Drill
GP836	Gison : 13 mm Drill
V1045D	Bemato : 10 mm Drill
W-1852	Wert : 10 mm Drill



Capacity :
From 3'to 8 mm
Plier : 3 - 8 mm
Handheld Tapping Machine

PNEUMATIC TAPPING

Max. Cycle : 500 RPM Left / Right
Plier Capacity : 3 - 8 mm
Machine Length : 166 mm
Hose Size : 13 mm
Weight : OPC 1.8 Kg. - OPT 2.4 Kg
Pressure : 90 PSI **Torque :** 20 Nm.
Air Inlet : 3 / 8"

Order	Model
21808	OSAKA : 3 - 8 mm
P KC	OSAKA : 3 - 16 mm



PNEAUMATIC SCREWDRIVER
Flat Type

Max. Cycle : 1800 RPM Left / Right
Screw Dia : 2.2 / 4.2 mm
Machine Length : 180 mm
Screwing Torque : 0.2-1.5 Nm
Weight : 430 gr. (Model - OPC)

Order	Model
GP-867	Gison : 5-6 mm Caps.
GP-868	Gison : 6-8 mm Caps.
OPC	Osaka : Adjustable Type
W-1857	Wert : 5 mm Economic



PNEUMATIC SCREWDRIVER

Max. Cycle : 1800 RPM Left / Right
Screw Dia. : 3 / 6 mm
Machine Length : 178 mm
Screwing Torque : 45 - 115 Nm
Weight : 1100 gr. (Model - SAP)

Order	Model
GP-802	Gison : 90° Corner 5 - 6
SD - 6	Handle: 3-6 mm Handheld
1279 A	Bemato : Handheld 6
106	Max - Extra : Economic



Stepped
Torque Adjusted
Mini Lubricant
Air Connection
As per request,
Bit Holders

PNEUMATIC NUTRUNNER

Max. Cycle : 4500 RPM Left / Right
Set : 10 Pieces Die (9-27 mm)
Bit Holder Inlet Capacity : 3 / 4
Max. Torque : 68 Kg. m
Weight : 4.2 Kg. (Wert)

Order	Model
GW-15	Gison:1/2"Complete Set
1209 A	Bemato : 3/4" Gun
1855	Wert :1/2"Complete Set
1851	Wert : 3/4" Gun



PNEUMATIC NUTRUNNER
(Ratchet)

Max. Cycle : 150 d / min.
Set : 7 Pieces Bit Holders (10-19 mm)
Bit Holder Inlet Capacity : 1 / 2
Max. Torque : 7 Kg. m
Weight : 1.2 Kg. (Wert)

Order	Model
856 BK	Gison : 1/2" Ratchet Arm
1856	Wert : 1/2" Ratchet Arm
RW-3	Sap : 1/2" Ratchet Arm
IW-3A	Sap : 1/2" Nut Runner



PNEUMATIC SAW

Pulse Rate : 9000 bmp
Cutting Capacity : 1.6 mm
Pulse Length : 10 mm
Machine Length : 276 mm
Weight : 600 gr. (Gison)

Order	Model
848B	Gison : Pneumatic Saw
1053 D	Bemato : Pneumatic Saw
OPT313	Osaka : Pneumatic Saw



PNEUMATIC ANGLE GRINDING

Max. Cycle : 11.000 RPM
Grinding Stone : 125 mm (Gison:75)
Machine Length: 260 mm (Gison:190)
Cutting Capacity : Gison 3 mm
Weight : 0.92 Kg. (Gison)

Order	Model
847 N	Gison : Mini Fast Cutting
1237 A	Bemato : Grinder / 125



Spiral Air Hose

Order	Model
T18 607	5 x 8 Hose 7,5 Mt.
T18 615	5 x 8 Hose 15 Mt.



PNEUMATIC FILING MACHINE

Pulse Speed : 3700 bpm
Pulse Length : 10 mm
Machine Length : 174 mm
Working Pressure : 6.2 Atü
Weight : 1 Kg. (Model -Gison)

Order	Model
GP-948	Gison : Stroke 10 mm
OPT 315	Osak : Stroke 9 mm



PNEUMATIC SANDING MACHINE

Max. Cycle : 15.000 RPM
Emery Dia. : Disc Dia : 50 mm
Emery Dia. : Band 10 x 330
Machine Length : 152 mm Gison
Weight : 0.7 Kg (Gison)

Order	Model
823 A	Gison : 90° Disc Emery
822 A	Gison : Eccentric
1264 A	Bemato : Band 10 x 330



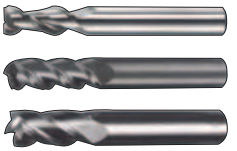
PNEUMATIC SURFACE EMERY

Max. Cycle : 12.000 RPM
Emery Dia. : Disc Dia : 125 / 150
Emery Dia. : Band 90 x 168
Eccentric Motion : 5 - 2.5 mm
Weight : 750 gr. (Gison)

Order	Model
303BS	Gison : 123 - Eccentric
1036D	Bemato : 150 mm Disc
1859	Wert : Vibrant Emery

During use, Pneumatic machines and tools should be used absolutely with conditioner unit that is in its installation or close to the machine and dry / oil air.







Shank Cutter GRINDING MACHINE EMG-413

HSS & Carbide / Diamond, 2-3-4 Edged Mill from 4 mm to 13 mm.

Don't throw dulled / corrupted, inactive mill kits, grind them for 5 minutes...Your kits is renewed by our machine having high quality comfortable use and fast operating practically. Grinding stones at grinder (Diamond Disc), HSS Mills or Diamond Mills (According to the diameter) is created with suitable edge selection (with changing plier cap) of 2 /3 /4 Edged Mills within 0.01 sensitivity tolerance. Spare grinding stones and pliers belonging to machine as well as all service training and English User Manual and Visual Video are available.



ACCESSORIES & GIFTS

- Machine Work Bench
- **ER Type (From 4 to 13) 10 Pieces Pliers.**
- SDC 300 Grinding Stone (Ø 4-5mm)
- **SDC 120 Grinding Stone (Ø 6-13mm)**
- 2 Pieces Pliers Installation System
- **Cable Connections (Fuse Slot)**
- English User Manual
- **Original / Visual Usage CD**

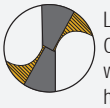
NEWEST DURABLE GUARANTEED PRODUCT



WE GIVE WORK BENCH AS A GIFT



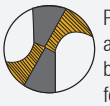
Standard Swarf Evacuation Forms



Large Grinding Formed (HSS/ Cobalt) diamond shank cutter with recommended method for hard steel work pieces.



Standard Grinding Formed Alloyed or Unalloyed steels, stainless steel etc. work pieces (Hss) for general steels



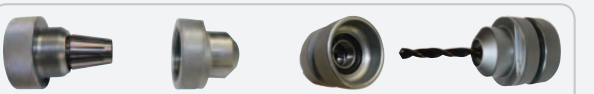
Precise grinding formed aluminium and alloys, copper, brass and non ferrous materials for soft work pieces.



DRILL GRINDING MACHINE EDG-213

Standard Drill Bit (From 2 mm up to 13 mm) Grinding

With our newest model drill grinding machine, your inactive and corrupted drills take their new position by grinding in 5 minutes without requiring expertise and become ready to use again. Our **EDG -213** Machine compared with similar models is quite professional and precision and is under the guaranty of our company. Repair - Maintenance - Spare Part - Service Location with our machine as well as English user manual and Visual CD are available. Precison angle settings, that are not available at other models, presents high quality at our machine doing grinding operations according to the work pieces.



Robust - Precision Pliers / Cap Group

ACCESSORIES & GIFTS

- Machine Work Bench
- **ER Type (From 2 up to 13) 12 Pieces Pliers**
- CBN 400 Drill Grinding Stone
- **Plier Slot / Installation Cover**
- Alien Key (4-5-6 mm)
- **Cable Connections (Fuse Slot)**
- English User Manual
- **Original / Visual Usage CD**

Technical Specification:

Grinding Diameter: Up to: Ø 2mm ~ Ø 13 mm
Edge Grinding Angle : 90^0 ~ 140^0
Adjustable Grinding Disc Stone : CBN 400 Diamond
Motor / Voltage: 1/3 Hp 250 W - AC 220 V
Speed : 5.500 R. P. M Weight: 8,5 Kg.



WE GIVE WORK BENCH AS A GIFT

BAND GRINDING MACHINE EB - 125

It is used at levelling and polishing process of all kinds of flat and profile materials. It works serially and economically at every stage until obtaining smoothest surface from coarsest burss at materials such as steel- water steel - iron- stainless steel- cast- yellow- wood- bakelite and plexiglass. Casing is single piece cast and working parts are produced from quality steel precisely. Manual parts are chrome plated. Equalization of rotary parts has been made.





Sanding Grinding Strips

Other particles, qualities and dimensions are delivered as per request.

Orders can be always given as unit.

Technical Specifications :

Band Size : 1250 x 100 mm
Emery sand, as per request
Motor Power : 1.1 KW 1.5 HP 2800 m/m
Approximate Weight : 70 Kg.

Order : **EB-125** Band Grinding Machine

BAND GRINDING MACHINE EB - 150

It is used for grinding and deburring of all kinds of metal surfaces. It has steel casing and 360º circular and axial motions, tension mechanism is threaded system and has feature to use various length emeries between 145-155 cm. Machine is produced from highest quality materials and equalization of rotary parts has been made.

When required, lower platform can be made as cast foot.



Technical Specifications :
Band Size :
1500 x 100
Emery Sand,
as per request
Motor Power :
1.1 KW 1.5 HP
2800 m/m
Approximate Weight :
60 Kg.

Order : **EB-150** Band Grinding Machine

BAND GRINDING MACHINE EB - 3

It is used for grinding and deburring of all kinds of metal surfaces. For grinding curved parts, both sided Empty Workspace is available. It is used at works such as serial grinding with various diameters and width contact discs, internal grinding, concave and convex grinding for special works excluding standard ones. This model machine, also has to use various dimensional bands opportunity.

Cast foot at image can be inserted as per request.



Technical Specifications :
Band Size :
2000 x 50 mm (65 mm)
Emery Sand, as per request
Motor Power :
1.1 KW 1.5 HP 2800 d/d
Approximate Weight : 75 Kg.

Order : **EB-3**

POLISHING MACHINE



Order :
PM ...Motor Power

Technical Specifications :
5.5/ 7.5/ 10.5 HP
1400 - 2800 d/d

Felts and Wedges as per Request



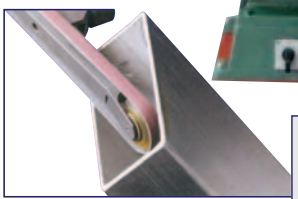
BAND GRINDING MACHINE PB - 200

It is used for grinding and deburring of all kinds of metal surfaces. For grinding curved parts, both sided Empty Workspace is available. It is used at works such as serial grinding with various diameters and width contact discs, internal grinding, concave and convex grinding for special works excluding standard ones. This model machine, also has the ability to use various dimensional bands. Machine is produced from highest quality materials and equalization of rotary parts has been made.

Cast foot is inserted as per request



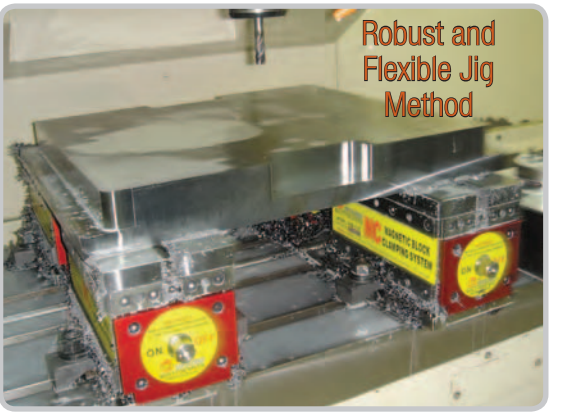
Technical Specifications :
Band Size : 2000 x (50-65-100 mm)
Emery Sand, as per request
Motor Power : 5.5 HP 1400/2800 m/m
Approximate Weight : 95 Kg.



Order : **PB - 200** Polishing Band Grinding Mac.

ECB SERIE (NEO. Dynamic) PERMANENT MAGNETIC JIG BLOCKS

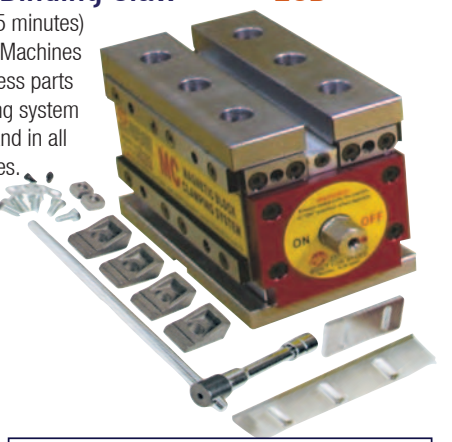




Self Magnetic BLOCKS "WORKING POWER " Work Piece Binding Claw

ECB

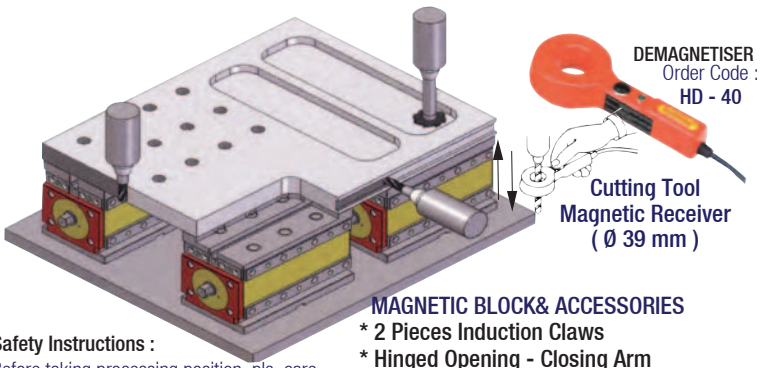
It is designed to bind work pieces practically and precisely as SAFELY and SERIALLY (on 5 minutes) at our (% 100) Clamp Harmonic CNC Horizontal Processing Benches or Universal Milling Machines in processing technology without requiring any power supply. Especially, it is ideal to process parts at mould production. While providing placement with balanced - easy adjustment in binding system according to the work pieces dimensions (multi uses), it offers processing as in all areas and in all directions (5 directional) on work pieces, also edge processing (single binding) opportunities. Magnetic block should be placed as effused from work pieces blocks on installation.



Processable, Induction Soft Claws According to Work Piece Form



Exchangeable; Surface Accuracy (Powder Paso) and surface can be revised with induction (Work Tool Steel) binding claws at each binding with claws. High claws are suitable for all intermediate processes (drilling / tapping / reaming and cutting), in addition these functional claws can be retted according to the model of parts to be processed or can be positioned by processing, exchanging the changeable claws economically is possible, by placing work pieces blinded on block as per request, large areas are provided and by putting plates one after the other, it saves time, side thrust claws on block are guided to the parts. **Magnetic Blocks are designed for medium and large work pieces and are not suitable for small work pieces.**



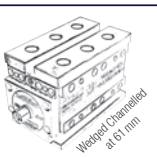
MAGNETIC BLOCK& ACCESSORIES

* 2 Pieces Induction Claws
* Hinged Opening - Closing Arm
* 4 Pieces Block Fishplate
* Side / Front / Rear Thrust Parallels
* Combined connection between two block
* English User Manual - Visual Video CD

Safety Instructions :

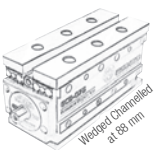
Before taking processing position, pls. care that on (ON - OFF) Switch is at ON position and the block is connected to machine plate. Magnetic Block is not suitable for materials not having metal sensitivity (Aliminium / Copper etc.).

! When magnetic block is in idle position, it should remain at (OFF) position, when faced with metal, it can be taken to ON position. Otherwise, it is defected.



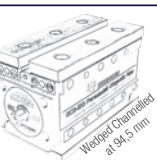
ECB -050

Hold Power : 500 Kgf / Pcs.
W. Piece Thick. : Such as15 mm
Sens. : $90^0 = 0.015$ / 100mm
X - Y = 0.01/100 mm
Dimension : Height : 78 mm
Length / Width 126 x 76 mm
Weight : 7 Kg.



ECB -075

Hold Power : 750 Kgf / Pcs.
W. Piece Thick. : Such as15 mm
Sens. : $90^0 = 0.015$ / 100mm
X - Y = 0.01/100 mm
Dimension : Height : 78 mm
Length / Width 174 x 76 mm
Weight : 9,5 Kg.



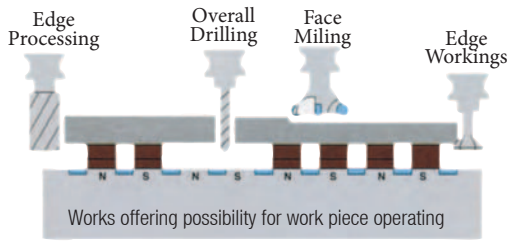
ECB -120

Hold Power : 1200 Kgf / Pcs.
W. Piece Thick. : Over 20 mm
Sens. : $90^0 = 0.015$ / 100mm
X - Y = 0.01/100 mm
Dimension : Height : 108 mm
Length / Width 188 x 108 mm
Weight : 18 Kg.



ECB -210

Hold Power : 2100 Kgf / Pcs.
W. Piece Thick. : Over 30 mm
Sens. : $90^0 = 0.015$ / 100mm
X - Y = 0.01/100 mm
Dimension : Height : 134 mm
Length / Width 234 x 133 mm
Weight : 36 Kg.



At Binding Work Piece Serie **Fast** Precision **Safe** Easy **Practical** New **System**

Magnetic Sensitive Poles, continue tightening without deforming.
Quite Practical System provides stylish appearance at your CNC bench.

ELECTROMAGNETIC Work Piece CONNECTING TABLE

Stylish, Aesthetic 100% Clamp Compatible, Stainless Flexible Electromagnetic Holder Surface Magnetic Face; (At 4 Pole Sizes) 1500 Kgf / 100 cm²





Electromagnetic Table : Sustainable Magnetic Fastest and Powerful Jig with pre load (Connection cables are available)
At CNC vertical processing counters or Universal milling machines finishes unidirectional processings in desired sensitivities at one time (single binding) with opportunity of 5 axial operations at work piece or at multi operations, it saves time with fastest binding advantage as remove-insert (Open-Close) feature at incredibly short duration. **! Safety Precaution: After pre loading process, close the cover absolutely.** Optional fish plates are presented with products with special offers. Other square / spring type fish plates provide flexible binding to the unflattened work pieces. With functional operations, "V" Bed Lugs (Round and prismatic) can be connected. For accuracy repeating on square lugs presented with magnetic table, powder cutting can be given and slots can be created according to the small work pieces. More than one table can be connected to the control unit, with magnetic power controls that no other similar products have, magnetic power controls are provided on your work pieces .

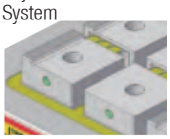


We Present With Gifts

Presentation/Gifts As Set:



Mobile, Magnetic Power Adjusted Hand Control System



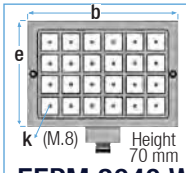
* Magnetic Tray, Amplifiers Available Connecting Terminals / Bolts



* Tool/ Work Bench Suitable to CNC Counters.

* Demo Disc Visual Processing

* English User Manual

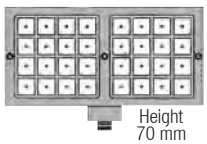


EEPM 3040 W
Width: 340 x Length: 430 mm
AC 380 / 440 V (Three-phase)
Pole / k : 24 Piece (Lug)

Presentation / Set
- Magnetic Table
- Control Unit
- Mobile Hand Unit
- Side Thrusts
- Connection Cables
- CNC Table/Locker
- 24 Pieces Lug
- Connecting Bolts
- English User M.
- Demo CD

EEPM 3040 W
1515
€ / Euro
Prices valid on the basis of FOB Turkey

2 Pcs. Magnetic Table EEPM 3040 W
2605
€ / Euro

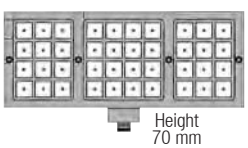


EEPM 4060 W
Width: 420 x Length: 590 mm
AC 380 / 440 V (Three Phase)
Pole / k : 48 Piece (Lug)

Presentation / Set
- Magnetic Table
- Control Unit
- Mobile Hand Unit
- Side Thrusts
- Connecting Cables
- CNC Table / Locker
- 48 Pieces Lug
- Connecting Bolts
- English User M.
- Demo CD

EEPM 4060 W
2495
€ / Euro
Prices valid on the basis of FOB Turkey

2 Pcs. Magnetic Table EEPM 4060 W
4569
€ / Euro



EEPM 40100 W
Width: 420 x Length: 990 mm
AC 380 / 440 V (Three Phase)
Pole / k : 84 Piece (Lug)

Presentation / Set
Magnetic Table
Control Unit
Mobile Hand Unit
Side Thrusts
Connecting Cables
CNC Cable / Locker
84 Pieces Lugs
Connecting Bolts
English User M.
Demo CD

EEPM 40100 W
3799
€ / Euro
Prices valid on the basis of FOB Turkey

2 Pcs. Magnetic Table EEPM 40100 W
6859
€ / Euro

Page 333

MANUAL FORKLIFT

Adjustable Fork Width **Load : 1000 Kg.**
Lifting : 1600 mm



Economic Product
Preferred
At Palletized Loading

* Lifting process is controlled by hand and lowering process is controlled by foot.
* It is produced from steel profile.
* It is robust and long life.
* Compact Design for standard size loads and narrow areas.

Order	Lifting	Capacity
NL - MS 10 - 16	1600 mm	1000 Kg.

Machine Length..... 1500 mm
Machine Height ..... 2100 mm
Machine Weight ..... 250 Kg.

MANUAL FORKLIFT

Adjustable Fork Width **Load : 1000 Kg.**
Lifting : 3000 mm



Max. Height
3000 mm
With Telescopic
Piston

* At loading in different sizes, with its adjustable feature, it provides stack loads with precision and soft performance without deforming loads.

Order	Lifting	Capacity
NL - MS 10 - 30	3000 mm	1000 Kg.

Machine Length..... 1500 mm
Machine Height..... 2060 mm
Machine Weight..... 370 Kg.

MANUAL FORKLIFT

Adjustable Fork Width **Load : 1500 Kg.**
Lifting : 1600 mm



Economic Product
For Palletized Loadings
And Mould/Plate
Handling

* Safe Pedal Braking System provides the foot safety of the operator thanks to its direction wheels. Provides easy maneuver, compact design and economy of space.

Order	Lifting	Capacity
NL - MS 15 - 16	1600 mm	1500 Kg.

Machine Length..... 1500 mm
Machine Height..... 2100 mm
Machine Weight ..... 260 Kg

MANUAL FORKLIFT

Adjustable Fork Width **Load : 2000 Kg.**
Lifting : 1600 mm



Economic Product
Preferred
At Palletized Loading

* Thanks to special designed balance foot, it is used for stacking and lifting of suitable size pallets. Also, it increases stability. Suitable design at mould workshops.

Order	Lifting	Capacity
NL - MS 10 - 16	1600 mm	2000 Kg.

Machine Length..... 1500 mm
Machine Height..... 2100 mm
Machine Weight ..... 285 Kg.

MANUAL FORKLIFT

Adjustable Fork Width **Load : 1000 Kg.**
Lifting : 2500 mm



Designed holding pallet in each position, Special Forks designed for low height and large pallets.
Adjustable width forks
Adjustable width support leg

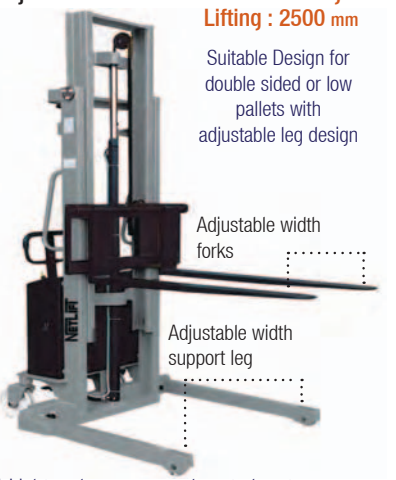
* Design holding pallet at each position.
* Special forks designed for low height large pallets.

Order	Lifting	Capacity
NL - MS 1025A	2500 mm	1000 Kg.

Machine Length..... 1500 mm
Machine Height..... 2100 mm
Fork Length.. ..... 915 mm
Min. Rotation Radius ..... 1650 mm
Load Center..... 600 mm
Machine Weight..... 285 Kg.

SEMI ELECTRICAL FORKLIFT

Adjustable Fork Width **Load : 1000 Kg.**
Lifting : 2500 mm



Suitable Design for double sided or low pallets with adjustable leg design
Adjustable width forks
Adjustable width support leg

* Light and easy, manual control system, powerful 1.6 KV Lifting Motor / precise lift, emergency button for safety, safe pedal leg protection safety at direction wheels.

Order	Lifting	Capacity
NL - DYC 1025A	2500 mm	1000 Kg.

Machine Length..... 1550 mm
Machine Height..... 1770 mm
Fork Length. ..... 915 mm
Out to Out Fork Width.....210 - 800 mm
Lifting Speed.....78 -150 mm / Sn.
Machine Weight..... 450 Kg.

SCISSOR PLATFORM

Lifting - Lowering - Hanling

Load Capacity : 500 Kg.
Lifting : 880 mm



Brake System
Pedal Fixing Wheeled

Hydraulic Lift System lifting load table with foot pedal. Hand pedal at handle lowering table in a controlled manner, folding arm.

Order	Lifting	Capacity
NL - TT 50	880 mm	500 Kg.

Table Dimension..... 815 x 500 x 50 mm
Min. Table Height..... 285 mm
Arm Height ..... 900 mm
Weight..... 81 Kg.

SCISSOR PLATFORM

Stair Scissor Trolley

Load Capacity : 750 Kg.
Lifting : 990 mm



Large Table Type
Short Scissor /Dynamic

Hydraulic Lift System lifting load table with foot pedal. Hand pedal at handle lowering table in a controlled manner, folding arm.

Order	Lifting	Capacity
NL - TT 75	990 mm	750 Kg.

Table Dimensions..... 1000 x 510 x 55 mm
Min. Table Height. ..... 420 mm
Arm Height ..... 990 mm
Weight..... 125 Kg.

SCISSOR PLATFORM

Double Scissor - High Lifting

Load Capacity : 800 Kg.
Lifting : 1500 mm



Double Scissor - Wide Table Area - High Lifting- Desired Positions- Folding Arm - Pedal Fixing Wheel Brake

Order	Lifting	Capacity
NL - TTD 80	1500 mm	800 Kg.

Table Dimensions ..... 1220 x 610 x 53 mm
Min. Table Height ..... 445 mm
Arm Height ..... 1015 mm
Weight..... 195 Kg.

SCISSOR PLATFORM

Lifting - Lowering - Handling
Extra Wide Table Product

Load Capacity : 500 Kg.
Lifting : 915 mm



Brake System
Pedal Fixing Wheeled

Hydraulic Lift System lifting load table with foot pedal. Hand pedal at handle lowering table in a controlled manner, folding arm.

Order	Lifting	Capacity
NL - TTX 50	915 mm	500 Kg.

Table Dimensions..... 1600 x 810 x 55 mm
Min. Table Height. ..... 290 mm
Arm Height ..... 975 mm
Weight..... 154 Kg.

SCISSOR PLATFORM

Lifting - Lowering - Handling
Extra Wide Table - High Lifting

Load Capacity : 1000 Kg.
Lifting : 1360 mm



Brake System
Pedal Fixing Wheeled

Hydraulic Lift System lifting load table with foot pedal. Hand pedal at handle lowering table in a controlled manner, folding arm.

Order	Lifting	Capacity
NL - TTX 100	1360 mm	1000 Kg.

Table Dimensions ..... 2035 x 750 x 55 mm
Min. Table Height..... 360 mm
Arm Height ..... 1000 mm
Weight..... 333 Kg.

SCISSOR PLATFORM

Double Scissor - High Lifting

Load Capacity : 350 Kg.
Lifting : 1300 mm



Double Scissor - Wide Table Area - High Lifting- Desired Positions- Folding Arm - Pedal Fixing Wheel Brake

Order	Lifting	Capacity
NL - TTD 80	1300 mm	350 Kg.

Table Dimensions..... 910 x 500 x 53 mm
Min. Table Height ..... 355 mm
Arm Height ..... 975 mm
Weight ..... 105 Kg.

Güvenal Group

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