

## Mould Components - Mould Manufacturing Equipments

# EXPERIENCE PRODUCES - THE SECTOR GAINS



Reliable Label



### 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 200 and 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 tools 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

SOME (Selected) Data Micron Value

(0.001mm) DIN ISO 286 PART / II

Hardness Conversion Table

## 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
h11	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
js5	+ 2.5	+ 3	+ 4	+ 4.5	+ 5.5	+ 6.5
js6	+ 4	+ 4.5	+ 5.5	+ 6.5	+ 8	+ 9.5
k6	+ 9 + 1	+ 10 + 1	+ 12 + 1	+ 15 + 2	+ 18 + 2	+ 21 + 2
m5	+ 9 + 4	+ 12 + 6	+ 15 + 7	+ 17 + 8	+ 20 + 9	+ 24 + 11
m6	+ 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

## 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
H10	+ 40 0	+ 48 0	+ 58 0	+ 70 0	+ 84 0	+ 100 0
H11	+ 60 0	+ 75 0	+ 90 0	+ 106 0	+ 130 0	+ 160 0
H12	+ 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
JS5	+ 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

Tension Strength N/mm <sup>2</sup>	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

## 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



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

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





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



G.34 G.34U

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



G.33 G.33U

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



G.45

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



G.44

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



G.41

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



G.43

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



G.42

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



G.40

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



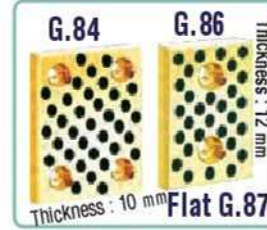
G.85

Thickness: 10 mm

Thickness: 5 mm

G.83

Page 54 Self-lubricating / Bronze Sliding Guide Thin Plates



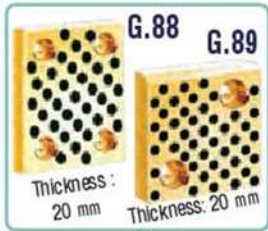
G.84

G.86

Thickness: 12 mm

Flat G.87

Page 55 Self-lubricating / Bronze Sliding Guide Thin Plates



G.88

G.89

Thickness: 20 mm

Thickness: 20 mm

Page 56 Self-lubricating / Bronze Perforated Steel Guide Plates



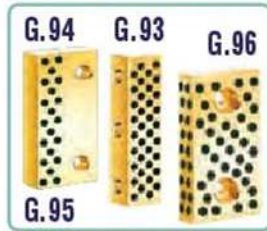
G.92

G.91

G.90

Thickness: 20 mm

Page 57 Self-lubricating / Bronze Guide Plates Standard Type



G.94

G.93

G.96

G.95

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



G.104

G.105

Page 59 Bronze / Self-lubricating L Type Guide Plates



G.108

G.106

Page 60 Bronze/Self-lubricating Cam Unit Guide Plates



G.111U

G.111V

Page 61 Self-lubricating / Bronze Guide Plates For U/V Cam



G.109

Page 61 Self-lubricating / Bronze Cam, Sliding Bearing Guide Plates



Page 62 Cam Connection Return / Support Steel Plates



Page 63 Bronze / Self-lubricating Cam Unit Support Plates



G.137

Page 63 Bronze / Self-lubricating Cam Unit Adjusting Plate



Page 64 Cam Unit Horizontal / Angular



Page 65 Cam Unit Horizontal / Flat



Page 66 Cam Unit Aerial Cam Unit



Page 67 Roller Cam Slide Plain Unit



G.99

Page 68 Power Routing Blocks



G.97

G.98

Page 68 Mould Guide Screw Cornered / Cylinder Vulkolon



Page 69 Mould Straightening Support Block "Hercules"



G.67

G.68

Page 69 Mechanical Sheet Thrust and Sensors



G.65

G.66

Page 70 Press Mould Inner Centering Pins



G.60

G.59

Page 71 Mould-Plate Conical Locking and Support Washer

SECTION: Press / Steel Mould, Standard Components INDEX

<b>G.64</b> 	<b>G.63</b> 	<b>G.46</b> 	<b>G.124</b> 	
Page <b>72</b> Conical Centering Unit and Adjusting Plate	Page <b>73</b> Conical Centering Unit and Adjusting Plate	Page <b>73</b> Conical Centering Guide Screw	Page <b>77</b> Product Counter Mould Mounting Assembly	Page <b>78</b> Mechanical Counters
				
Page <b>79</b> Letter / Figure Reverse - Straight Sets	Page <b>79</b> Letter / Figure Set With Holder	Page <b>231</b> Branding Unit and Wheel	Page <b>80</b> Wire Erosion Chucks Vise	Page <b>80</b> Wire Erosion Chucks Vise
				
Page <b>81</b> Permanent Magnetic Conveyor Mobile Block	Page <b>81</b> Permanent Magnetic Sheet Plate Carrier	Page <b>81</b> Magnetic Part Carrier Foot	Page <b>81</b> Mould Inner Magnetic Receiver Unit	Page <b>81</b> Magnetic Ejector Plate Separator Unit
<b>G.103</b> 	<b>ER-EL</b> 	<b>G.47</b> 	<b>G.52</b> 	<b>G.53</b> 
Page <b>82</b> Mould Safety Safe Transport Lock / Latch	Page <b>82</b> Mould Handling Eye Bolt Heavy Duty	Page <b>83</b> Mould Handling Threaded Eye Bolts ISO 10242	Page <b>84</b> Mould Handling Shafts VDI - Ford - Flat	Page <b>85</b> Mould Handling Bracket Flat
<b>G.115 KTB</b> 	<b>G.56</b> 			<b>G.141</b> 
Page <b>85</b> Mould Handling Bracket Shielded Cable	Page <b>86</b> Safety Pins Mould Hanger Broach Columns	Page <b>87</b> Swivel Eye Bolt Lug	Page <b>88</b> Load Lifting Sling / Hook Work Safety	Page <b>89</b> Fixed Screwed Load Eye Bolt Export / Domestic
<b>G.140</b> 		<b>High Quality 12.9</b> 		
Page <b>89</b> Angular Loading Swivel Screwed Eye Bolt	Page <b>90</b> Fasteners Countersink Cylinder Head Cap Screw - Stay Bolt - Nut - Washer	Page <b>91</b> Fasteners Cylinder Head Cap Screw Head Opening Burr	Page <b>92</b> Mould Mounting Set Allen Key and Sets	Page <b>93</b> Corrupted Thread Space Repair Kit - Sets





Page 94 Modular Mould Connecting Kits



Page 95 Mould Connecting 'T' Footed Stud Bolt



Page 96 Mould Connecting Plain Stud Bolt Nut - Washer



Page 97 Mould Connecting Wrench Ended Threaded Stud Bolt



Page 98 Hydraulic Air Drive Pump Unit



Page 98 Hydraulic Pump Control Panel



Page 99 Hydraulic T Channel Sleeve



Page 100 Hydraulic Connection Rotary Type Threaded Casing



Page 101 Hydraulic Connection Rotary Type Flange Adaptive



Page 102 Hydraulic Tension Threaded Cylinders Connection Hole



Page 103 Hydraulic Ejectors Threaded Cylinders Connection / Sphere



Page 104 Hydraulic 'T' Channel Mould Lifting Slides



Page 105 Mechanical Press Mounting Mould Sliding



Page 107 Die Gas Spring Production Series Instructions



Page 109 Die Gas Spring Holder Remover 'KN' Series



Page 110 Die Gas Spring ISO 11901 'SN' Series



Page 114 Die Gas Spring Area Saving 'Y' Series



Page 117 Die Gas Spring Standard Model 'YO' serial



Page 121 Die Gas Spring High Force 'G' serial



Page 124 Die Gas Spring Serial Connection Equipment



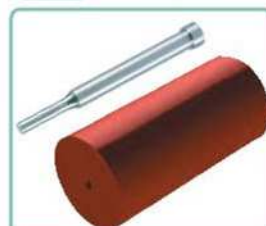
Page 127 Die Gas Spring Stamping Pad Burnishing Plate



Page 128 Die Gas Spring Stamping Plate Shock Absorber



Page 129 Disc / Plate Dish Springs DIN 2093



Page 130 Polyurethane Punch Stripper Bush



Page 130 Polyurethane Vibration Inhibitor Washer



Page 130 Polyurethane Dowels



Page 131 Polyurethane Mould Stamping Springs



Page 132 Ball Spring Guide Screw Screw



Page 132 Spring Bushing Ejector Screw Mounting Kit



Page 133 Spring Pin Ejector Stay Bolt Remover Pin

**SECTION: Press / Steel Mould, Standard Components**

**INDEX**





Page 134 Distance / Intermediate Safety Bolt



Page 134 Safety Pipe Spring Distance Pipe



Page 135 Spring Compressor Precise Control Threaded Plug



Page 135 Spring Fixing Guide Screw Bolt



Page 136 Guide Screws Locking



Page 137 Round Wire Steel, Special Winding Spring



Page 141 Rectangular Medium Load Blue Spring



Page 142 Rectangular Heavy Load Red Spring



Page 143 Rectangular Extra Heavy Load Yellow Spring



Page 144 Rectangular Ultra Heavy Load Yellow Spring



Page 145 Screw Slot Creation Unit



Page 146 Precise Control Pin Kit Control Gauge



Page 146 Dowel Pin 7979 Pin Puller Complete Set



Page 147 Dowel Pin 7979 Air Channeled



Page 148 Dowel Pin 6325



Page 149 Press Mould Spares Punch Holders Location Trace Punch



Page 150 Press Mould Spares Marking Holder Crush Plate



Page 151 HSS Punch Countersink



Page 152 HSS Punch Stepped Formed / Slot



Page 153 HSS Punch Cylinder Head and Stepped



Page 154 HSS Punch Cylinder Head Ejector Pinned



Page 155 HSS Punch Cassette Holders



Page 156 Cylinder Head Guide Pilot Pin



Page 157 Conical Head HSS Punch Head Burr



Page 158 Light Duty Guide Pilot Pins



Page 159 Light Duty Ball Locking HSS Punch



Page 160 Light Duty Ball Locking Ejector Punches



Page 161 Light Duty Ball Locking Wide Ended Punch



Page 162 Light Duty Punch Holder Bolster Plate



Page 162 Pneumatic Automatic Removal Punch Stripper





Page 162 Polyurethane Punch Stripper Bush



Page 163 Heavy Duty Pilot Pins



Page 164 Heavy Duty Ball Locking Ejector Punches



Page 165 Heavy Duty Ball Locking Punches



Page 166 Heavy Duty Ball Locking Wide Ended Punch



Page 167 Punch Stripper Wide Ended Type Holder / Spring



Page 167 Heavy Duty Ball Locking Triangle Holder



Page 168 Heavy Duty Ball Locking Round Holder



Page 168 Heavy Duty/ Small Ball Locking Triangle Holder



Page 169 Polyurethane Punch Stripper Retaining Spring



Page 170 Ball Locking Automotive Group Matrix / Bush



Page 171 Flat - Guide Conical Slotted Matrix / Bush



Page 172 Flat - Guide HSS Punch Matrix / Bush



Page 173 Plate Corners Chamfering Mobile / Motor



Page 173 Pin Cutting Length Adjustment Machine



Page 174 Small / Punch Forming Equipment



Page 175 Pin / Punch Forming Equipment



Page 175 Grinding Wheel Forming Equipment



Page 176 Cylinder Part Balance Control Precision Stand



Page 176 Sheet Band Lubricant Roller Unit



Page 177 Pneumatic Import / Precision Drivers



Page 178 Pneumatic Domestic Standard / Heavy Duty Drivers



Page 179 Servo Motor Drivers



Page 180 Sheet Band Roll Extender



Page 181 Fast Mounting Vertical / Horizontal Connecting Fixture



Page 185 Fast Mounting Pushing / Pulling Connecting Fixture



Page 186 Fast Mounting Pneumatic Connecting Fixture



Page 188 Fast Mounting Hooked / Dogwrench Connecting Fixture



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 01 up to 67 )



**EDS**

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



Working Table 1700 x 1000 Drilling up to Ø 3 mm ~ 30 mm DEEP HOLE DRILLING With Our Counter 2000 mm Angular and Plain, Ejector and Water Runners are processed.

**Standard, Injection Ready Mould Sets and Diversification**

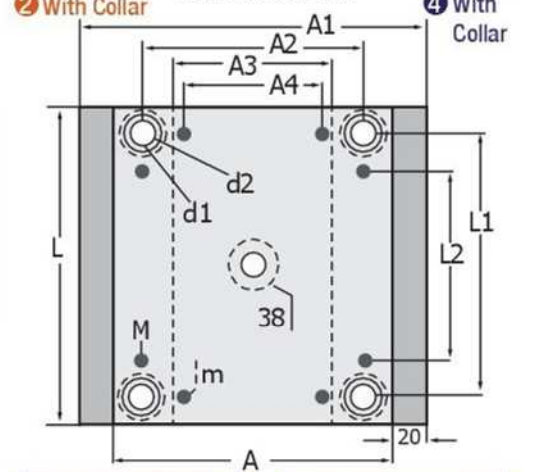
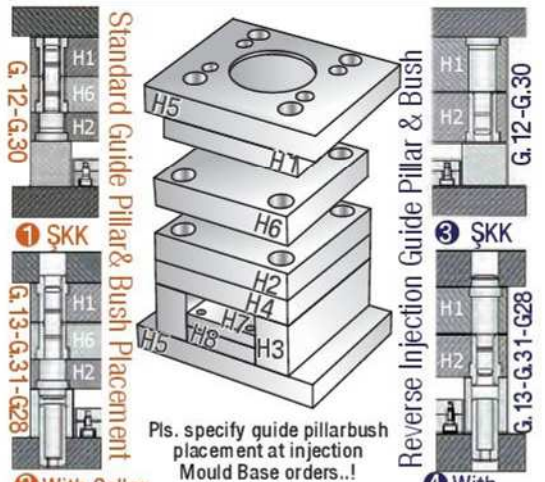
**Production (Our Company) : GTH**

<p>Type : EKS.01 G12 / G30</p>	<p>Type : EKS.02 U G12 / G30 Group</p> <p>Type : EKS.02 A (Split Group)</p>	<p>Type : EKS.03 G12 / G30</p>	<p>Type : EKS.05 G12 / G30</p>	<p>Type : EKS.07 G12 / G30</p>
<p>Type : EKS.11 G13 / G31 / G28</p>	<p>Type : EKS.12 U G13 / G31 Group</p> <p>Type : EKS.12 A (Split Group) G28</p>	<p>Type : EKS.13 G13 / G31 / G28</p>	<p>Type : EKS.15 G13 / G31 / G28</p>	<p>Type : EKS.17 G13 / G31 / G28</p>
<p>Type : EKS.21 G12 / G30</p>	<p>Type : EKS.22 U G12 / G30 Group</p> <p>Type : EKS.22 A (Split Group)</p>	<p>Type : EKS.23 G12 / G30</p>	<p>Type : EKS.25 G12 / G30</p>	<p>Type : EKS.30</p> <p>Type : EKS.32 G12 / G30</p>
<p>Type : EKS.41 G12 / G30</p>	<p>Type : EKS.42 U G12 / G30 Group</p> <p>Type : EKS.42 A (Split Group)</p>	<p>Type : EKS.43 G12 / G30</p>	<p>Type : EKS.51 G12 / G30</p>	<p>Type : EKS.52 U G12 / G30 Group</p> <p>Type : EKS.52 A (Split Group)</p>
<p>Type : EKS.61 G12 / G30</p>	<p>Type : EKS.62 U G12 / G30 Group</p> <p>Type : EKS.62 A (Split Group)</p>	<p>Type : EKS.63 G12 / G30</p>	<p>Type : EKS.65 G12 / G30</p>	<p>Type : EKS.67 G12 / G30</p>



**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.

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	27	27	27	27	17	17	47	196	114	80	56	114	60	16	24	M. 10	M. 8		
	196		37	37	37	37								154	100						
	246		47	47	47	47								204	150						
	296		57	57	57	57								254	200						
	346		67	67	67	67								304	250						
196	196	27	27	27	27	27	17	17	47	246	154	120	96	154	100	16	24	M. 10	M. 8		
	246		37	37	37	37								204	150						
	296		47	47	47	47								254	200						
	346		57	57	57	57								304	250						
	396		67	67	67	67								354	300						
246	246	27	27	27	27	27	17	17	47	296	194	148	126	194	130	20	25	28	M. 12	M. 8	
	296		37	37	37	37								244	180						
	346		47	47	47	47								294	230						
	396		57	57	57	57								344	280						
	446		67	67	67	67								394	330						
296	296	27	27	27	27	27	17	17	57	346	244	198	176	244	180	25	34	M. 12	M. 8		
	346		37	37	37	37								294	230						
	396		47	47	47	47								344	280						
	446		57	57	57	57								394	330						
	496		67	67	67	67								444	380						
346	346	27	37	37	37	37	17	22	57	396	294	228	202	294	220	25	34	M. 12	M. 10		
	396		47	47	47	47								344	270						
	446		57	57	57	57								394	320						
	496		67	67	67	67								444	370						
	546		77	77	77	77								494	420						
396	396	27	37	37	37	37	17	22	57	446	324	278	252	324	230	30	39	M. 16	M. 10		
	446		47	47	47	47								374	280						
	496		57	57	57	57								424	330						
	546		67	67	67	67								474	380						
	596		77	77	77	77								524	430						
446	446	27	37	37	37	37	17	22	57	496	374	328	302	374	280	30	39	M. 16	M. 10		
	496		47	47	47	47								424	330						
	546		57	57	57	57								474	380						
	596		67	67	67	67								524	430						
	646		77	77	77	77								574	480						
496	496	37	37	37	37	37	17	22	57	546	424	378	348	424	330	30	39	M. 16	M. 10		
	546		47	47	47	47								474	380						
	596		57	57	57	57								524	430						
	646		67	67	67	67								574	480						
	696		77	77	77	77								624	530						
546	546	596	596		646	646		696	696		746	746		796	796		846	846			
	596		646			696			746			796			846						
	646		696			746			796			846			896						
	696		746			796			846			896			946						



**Type : A x L**  
**H1-H2-H4/H6/H3**  
**Material: CK 45 Steel**  
**Production As Per Request**

**Injection ( Plastic / Metal ) Ready Mould Sets:**  
**GTH** 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  
 Section  
 Injection  
 Mould  
 Page  
 11



## 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.

Forging Anneal	: 1050 - 800° C	<b>Mercury Steel, is a tool steel hardening with water.</b>
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 : 180- 200° - 1 Hour / 25 mm.	

Temper

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

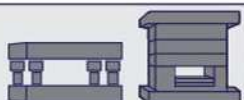
**CC** . Dia. Piece: (Length)

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.

Page  
12



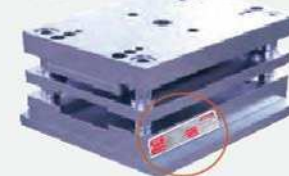
Mould Components

**GTH**

Injection Moulds



Press Mould



**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
<b>G.125</b>	44	90	0,5	Injection Mould ID Card
<b>G.126</b>	22	mm	mm	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 2,5x 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.

## Mould ID Card



Red Colour Mould ID card is for plastic injection moulds



Black Colour Mould ID card is for metal injection moulds.

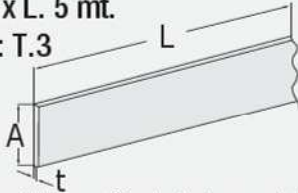


Red Colour Narrow Mould ID card is for general press injection moulds.

**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**

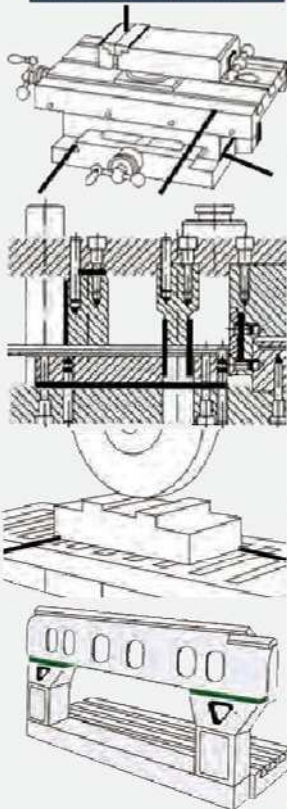
**HLB** Order Form  
Length can be adapted by cutting.

**HLB . t**  
Band Thickness

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

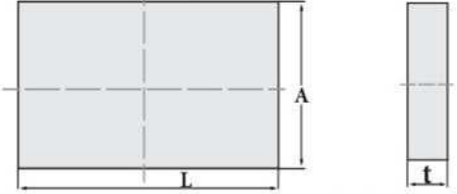
**Material :** Stainless  
Hardened Shiny Surface

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



**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

**Precision Grinded, Ready Steel Plates**  
Order Form:

**Special:** 3D technical drawing  
**Standard:** Technical drawing

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

**Material :** CK 45 Steel  
Production As Per Request



Production



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



**You can always trust our experience, expertise and GTH Quality. Standard & Special Press Mould Sets**

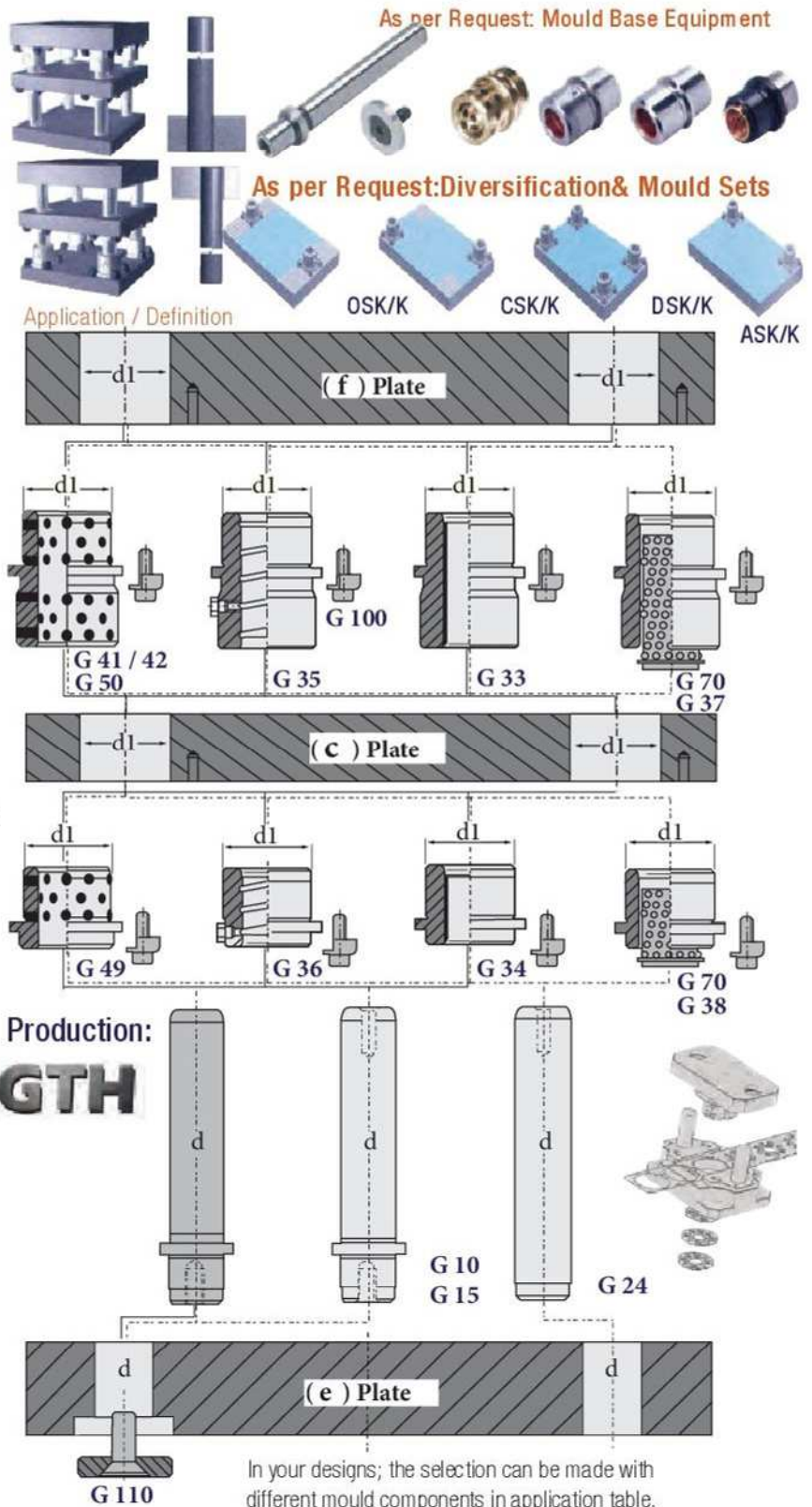
**Güvenal A.Ş.:** We have started with our precious masters in 1976 at Süleymaniye/Istanbul. Our mould passion has continued with mould experience/skill for many years. Even in the absence of machine/tool, we continued the development of mould making profession by using levelling technique unselfishly.

**Our 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,

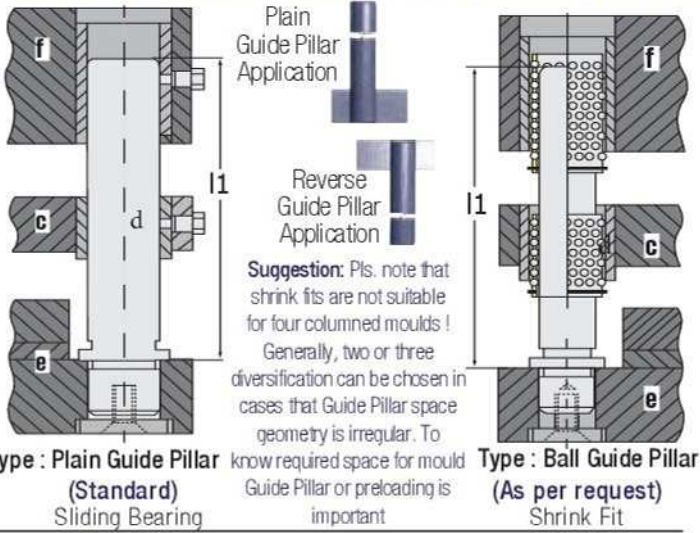
**GTH mould equipmen and our ready set manufacturing companies.** GÜVENAL that has given itself over to its job will continue "Suitable Mold Prices" Policy with 2. generation team having the same vision value as solution partner to our industry with your supports.

**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). Eređli / 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  $\pm 0.1-0.2$ . 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.



# Press Mould Base - Guide Pillar Bush Selection:

# Press Mould Base - Measurement Table



Mould Measure mm		Plate Thickness mm			K mm	Y mm	Z mm	Guide Pillar x Len.	
A	L	e	f	c				Ø d	x l1
156	156	27	27	27	100	128	100	20	100
	196								112
	246								125
	296								140
196	196	27	27	27	132	164	132	25	100
	246								112
	296								125
	346								140
	396								160

## DIVERSIFICATION OF Press Mould Base - Selection as per request

**Type : DSK/K** DSK/K Four Columnar

**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**

246	246	37	37	27	174	210	174	30	112
	296								125
	346								140
	396								160
	446								180

296	296	37	37	27	224	260	224	30	112
	346								125
	396								140
	446								160
	496								180

346	346	37	37	27	274	310	274	30	112
	396								125
	446								140
	496								160
	546								180

396	396	47	47	37	312	354	312	40	125
	446								140
	496								160
	546								180
	596								200

446	446	47	47	37	362	404	362	40	125
	496								140
	546								160
	596								180
	646								200

496	496	57	57	37	400	448	400	50	140
	546								160
	596								180
	646								200
	696								250

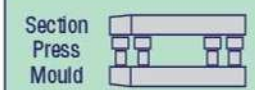
546	546	596	596	646	646	696	646	696	696
	596								746
	646								796
	696								846

**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

As per request, CNC Precision Works  
- Pooling Draining - Die Spaces - Core Slots  
with short delivery  
Production: GTH Mould Base Production



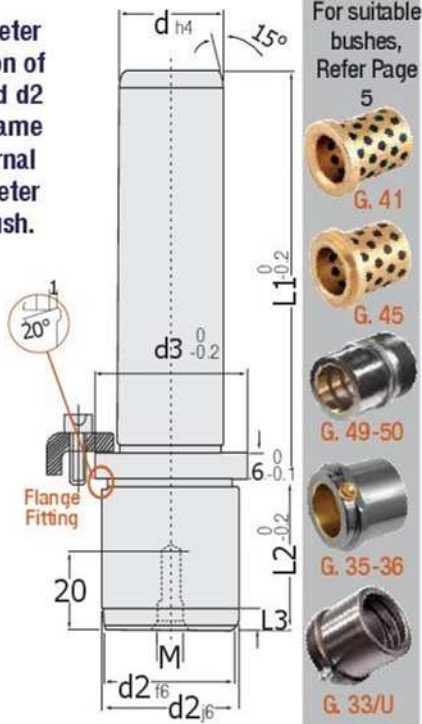
# THICKBACKED



**G. 15**

## Guide Pillar with Centre COLLAR

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



For suitable bushes, Refer Page 5

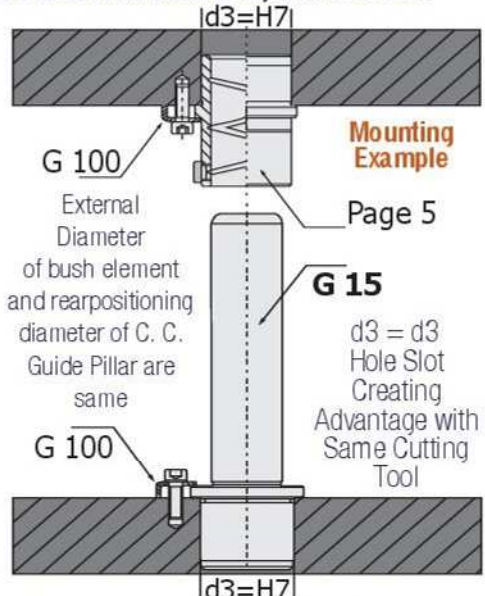


# THICKBACKED G. 15 Guide Pillar with Centre Collar

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

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

**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



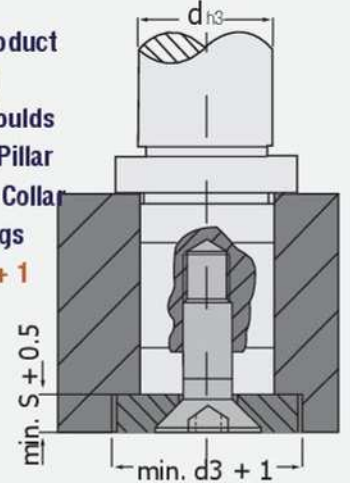
Page 16 Section Press Mould

**BOTH** Produces Sells Affordable Prices

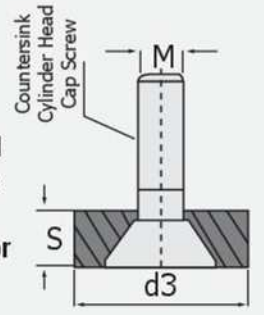


## Guide Pillar with Centre Collar MOUNTING FLANGE G. 110

Reliable Product Used at Press Moulds and Guide Pillar Mountings **Min. d3 + 1**



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



## Guide Pillar with Centre Collar MOUNTING FLANGE G. 110

Ø d3	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	7.5	
40	Ø 32 / 30		
50	Ø 38 / 40	9.5 mm	
60	Ø 48 / 50		
73	Ø 60 / 63	12	M12 x 20
93	Ø 80		

Order: **G.110 x d3**

Material: CK 45 Steel Grinded Mould Component

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



# 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 r.1
38	125	37	6	50	50	M8	r. 3,5
	140						
	160						
	180						
	200						
40	224	37	6	50	50	M8	r.1 30
	250						
	280						
	315						
	355						

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Lug d5	M M.1	r r.1
15	100	20	4	22	22	M8	r. 2
	112						
	125						
	140						
	160						
16	180	20	4	22	22	M8	r.1 15
	200						
	220						
	250						
	300						

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Lug d5	M M.1	r r.1
48	140	47	8	63	60	M8	r. 3,5
	160						
	180						
	200						
	224						
50	250	47	8	63	60	M8	r.1 30
	280						
	315						
	355						
	400						

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Lug d5	M M.1	r r.1
19	100	23	4	25	25	M8	r. 2,5
	112						
	125						
	140						
	160						
20	180	23	4	25	25	M8	r.1 20
	200						
	220						
	250						
	300						
320							

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Lug d5	M M.1	r r.1
60	160	47	8	80	70	M8	r. 4
	180						
	200						
	224						
	250						
63	280	47	8	80	70	M8	r.1 30
	315						
	355						
	400						

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Lug d5	M M.1	r r.1
24	100	30	6	32	32	M8	r. 3
	112						
	125						
	140						
	160						
25	180	30	6	32	32	M8	r.1 20
	200						
	224						
	250						
	320						
350							

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Lug d5	M M.1	r r.1
80	200	60	8	95	93	M 12	r. 4
	224						
	250						
	280					M 12	r.1 30
	315						
	355						
400							

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Lug d5	M M.1	r r.1					
32	112	37	6	40	40	M8	r. 3					
	125											
	140											
	160											
	180											
	30					200	37	6	40	40	M8	r.1 30
						224						
						250						
						280						
						315						
						400						

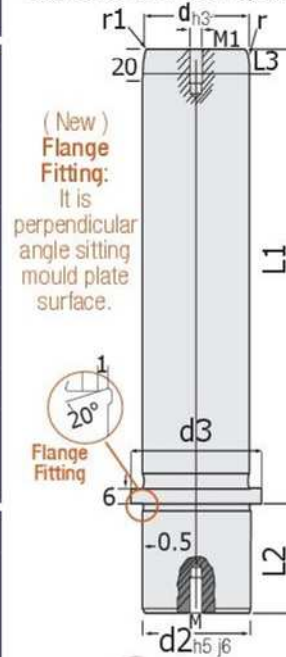
All dimensions are promptly delivered from our stocks. It is suitable to use with demountable pillars, ball cage and all other bushes. **Mould Producers;** should be paid attention to choose products suitable to the tolerances/standards in Guide Pillar-bush selection, to prevent reverse closing of mould, 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.



(New) Flange Fitting: It is perpendicular angle sitting mould plate surface.



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.

Production  
GTH



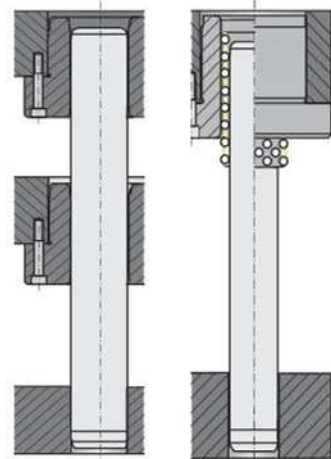
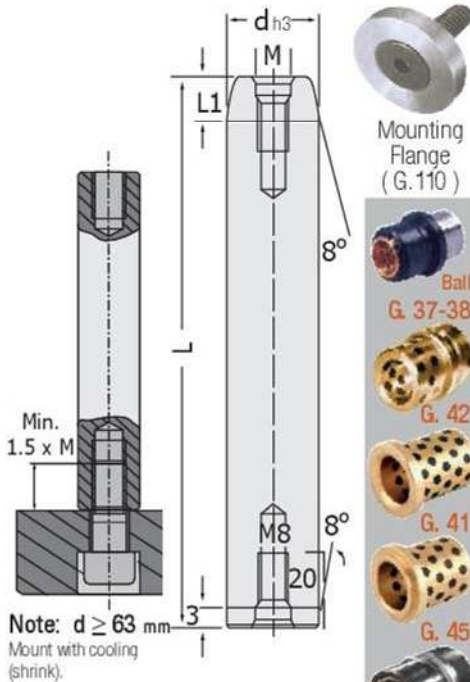
Page  
17



## Plain Guide Pillar G.24

### GUIDE PILLAR G.24

Mould Guide Pillar, Internal Screwed



In Friction System Applications

In Ball Bush System Applications

Order: **G.24. d x L**

Material:  $\varnothing 30 \geq 1.7131$  (16 MnCr5)  
Hardness:  $\varnothing 40 \geq C 45$  With induction  
60 - 64 HRC

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

Ø d	L mm	L1 mm	M
16	100	4	M.8
	112		
	125		
	140		
15	160	4	M.8
	180		
	200		
	250		

Ø d	L mm	L1 mm	M
19	100	4	M.8
	112		
	125		
	140		
	160		
	180		
	200		
20	224	4	M.8
	250		
	280		
	315		

Ø d	L mm	L1 mm	M
24	100	6	M.8
	112		
	125		
	140		
	160		
	180		
25	200	6	M.8
	224		
	250		
	280		

Ø d	L mm	L1 mm	M
30	112	6	M.8
	125		
	140		
	160		
	180		
	200		
	224		
	250		
32	280	6	M.8
	315		
	355		
	400		

Ø d	L mm	L1 mm	M
38	125	6	M.8
	140		
	160		
	180		
	200		
	224		
40	250	6	M.8
	315		
	400		

Ø d	L mm	L1 mm	M
38	280	6	M.8
	315		
	355		
40	400	6	M.8
	450		

Ø d	L mm	L1 mm	M
48	140	8	M.12
	160		
	180		
	200		
	224		
	250		
	280		
50	315	8	M.12
	355		
	400		
	450		

Ø d	L mm	L1 mm	M
60	200	8	M.12
	224		
	250		
	280		
	315		
63	355	8	M.12
	400		
	450		

Ø d	L mm	L1 mm	M
80	250	8	M.16
	280		
	315		
	355		
	400		
	500		

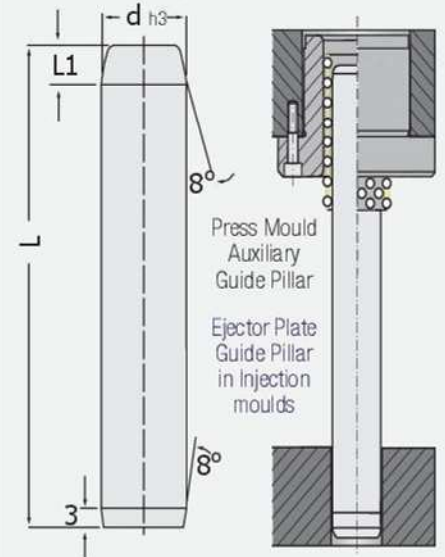
Not: Section (d), two different products are to avoid reverse closing of mould during mounting, three pieces main dimension and one piece  
 $d = \varnothing 15 - 19 - 24 - 32 - 38 - 48 - 60$  mm  
 $d = 48 / 50 - 60 / 63 - 80$  are produced as per request.

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.

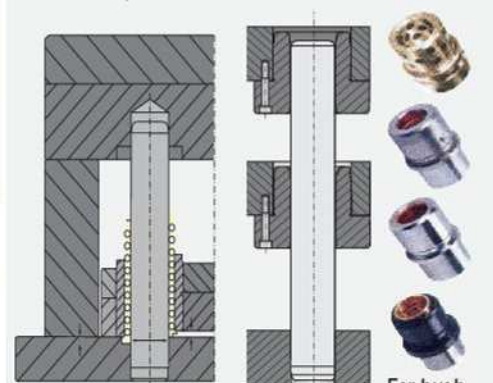


### GUIDE PILLAR G.19

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.



Plain Guide Pillar G.19

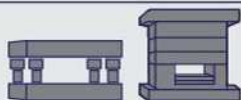
For bush selection Refer Page 5

Order: **G.19 d x L**

Material:  $\varnothing 30 \geq 1.7131$  (16 MnCr5)  
Hardness:  $62 \pm 2$  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
<b>80</b>	200	-	M12 x24	10	4	100
	224					
	250					
	280					
	315					
	355					
	400					

<b>100</b>	224	50	72	10	4	125
	250					
	280					
	315					
	355					
	400					
450						

<b>125</b>	315	65	90	12	5	140
	355					
	400					
	450					
	500					

<b>160</b>	400	95	132	12	5	180
	450					
	500					
	560					

 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.

Ø d	L mm	d2 Hole	L1 mm	L2 mm	L3 mm
<b>25</b>	125	-	8	4	40
	140				
	160				
	180				
	200				
	224				

<b>32</b>	140	-	8	4	45
	160				
	180				
	200				
	224				
250					

<b>40</b>	140	-	8	4	56
	160				
	180				
	200				
	224				
	250				
280					

<b>50</b>	160	-	10	4	70
	180				
	200				
	224				
	250				
	280				
	315				
355					

<b>63</b>	180	-	10	4	80
	200				
	224				
	250				
	280				
	315				
	355				
	400				

**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.



## GUIDE PILLAR **G.09** Mould Guide Pillar, Slotted Type

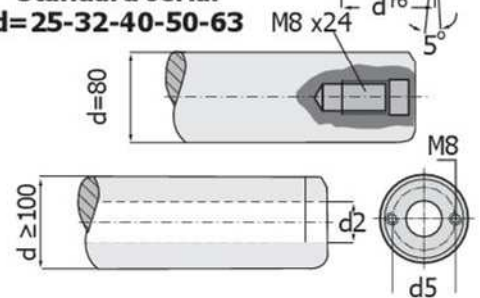
### Heavy Type Press Moulds

**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.

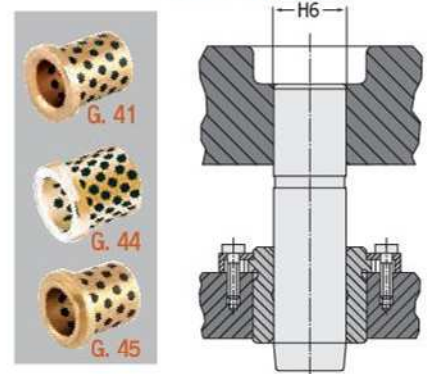
**Note:**  
Hole tolerance should be H7. It is recommended to use mould Guide Pillar only with self lubricating beddings

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

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



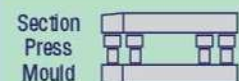
### Mounting Example



**Mould Pillars**  
**Large Size**

**DIN 9833**  
**ISO 9182-3**

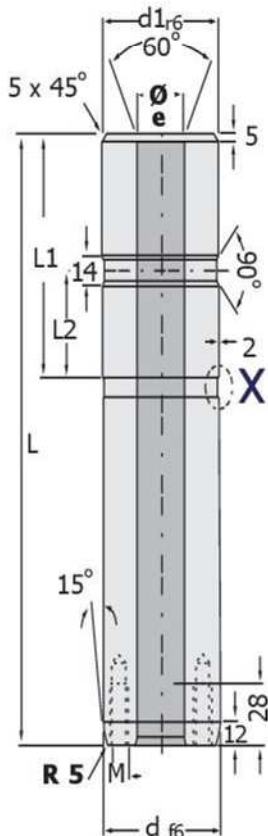
Production  
**GTH**



Page  
**19**

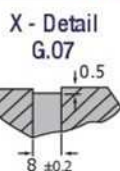


## GUIDE PILLAR G. 07 Large Size Slotted /Perforated



Reference:  
FIAT STQ  
10002  
DIN 9833  
FIAT

For Suitable  
Bushes,  
Refer Page 5.

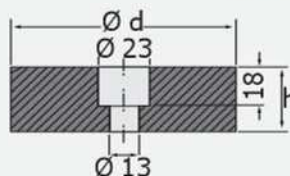


It has  $\emptyset d$  = Follow M.8, two pieces lifting holes.

### GUIDE PILLARSLOTTED - PERFORATED G.07

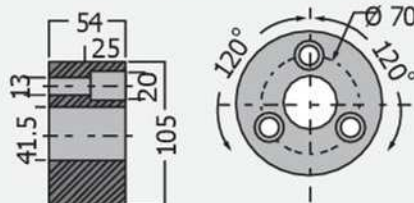
$\emptyset d$	L mm	d2	e	L1 mm	L2 mm	M
80	250	80	40	100	50	M.12
	280					
	315					
	355					
100	315	100	50	125	60	M.16
	355					
125	355	125	65	140	70	M.16
	400					

## Balancing / Centering Cylindrical Blocks G.81-82



d	h	FIAT Balancing Block G.82
80	25	FIAT Q 1001 (TDC)
	30	
100	25	Material : 1.6511 Hardness : HRC 46-48
	30	
120	25	G.81 Centering Drawing G.82.d x h
	30	

### FIAT Centering Blocks G.81



FIAT 230 GSG.74.01 Material : 1.6511 (36 CrNiMo 4)

For your extra orders, G.81  $\emptyset$  105

### GUIDE PILLAR G.06 G.07

Reference : FIAT STQ 10002  
DIN 9833 FIAT

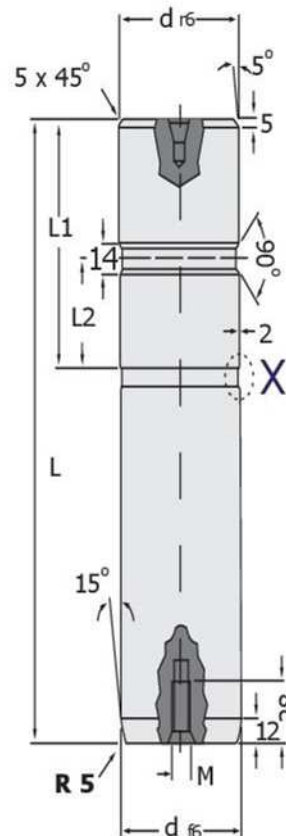
Order : G.06 / G.07 d x L  
FIAT STQ 10002 DIN 9833

Material : 1.7131 ( 16 MnCr5 )  
Hardness : 58 - 60 HRC Depth  $\geq$  0.8 mm

Operating Elements :  
Self lubricating bushes are recommended.

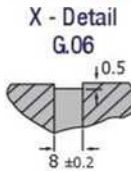


## GUIDE PILLAR G. 06 Large Size - Slotted



Reference:  
FIAT STQ  
10002  
DIN 9833  
FIAT

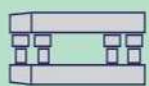
For Suitable  
Bushes,  
Refer Page 5.



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

### FIAT GUIDE PILLAR SLOTTED G.06

$\emptyset d$	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				



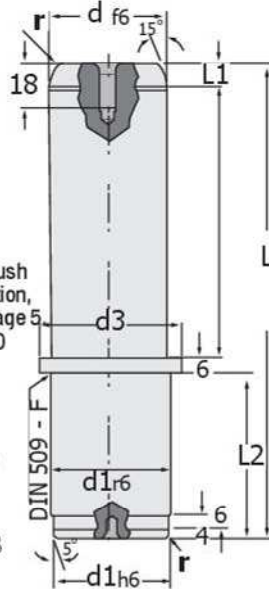
Section  
Press  
Mould

Production  
**GTH**



## G. 01 GUIDE PILLAR

Reference :  
FORD  
NAAMS  
WDX  
13 - 65



## GUIDE PILLAR Large Size - Slotted

G. 02

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



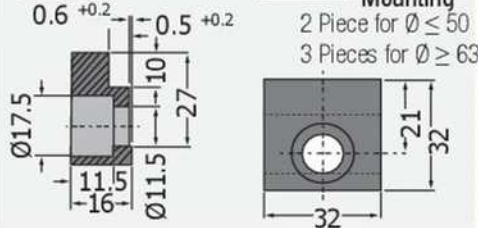
For Bush  
Selection,  
Refer Page 5  
G40

Sleeve G. 113  
is used together  
with G. 110 Guide  
Pillar  
2 Piece  $\varnothing \leq 50$   
3 Piece for  $\varnothing \geq 63$   
Holder Sleeves

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

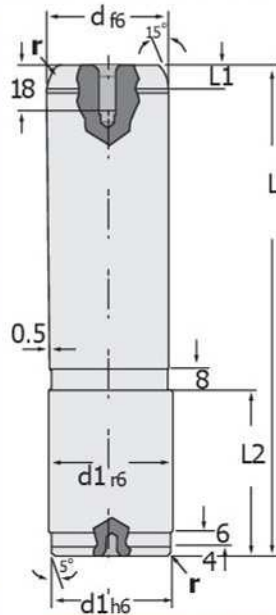


G.102



Mounting  
2 Piece for  $\varnothing \leq 50$   
3 Pieces for  $\varnothing \geq 63$

## G. 02 GUIDE PILLAR FORD NAAMS WDX 13 - 65



Lifting purpose  
M. 12 x 18  
thread is opened  
 $\varnothing 80$  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  $\geq 08$  mm

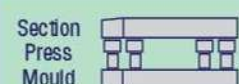
Operating Elements :  
With all lubricated bush components.

## GUIDE PILLAR G. 01 Large Size - With Collar

$\varnothing$ d - d1	L mm	$\varnothing$ 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				
63	200	80	3	10	80
	224				
	250				
	280				
	315				
	355				
80	250	90	3	10	100
	280				
	315				
	355				
	400				
100	315	110	3	10	125
	355				
	400				
	500				

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

Production  
GTH

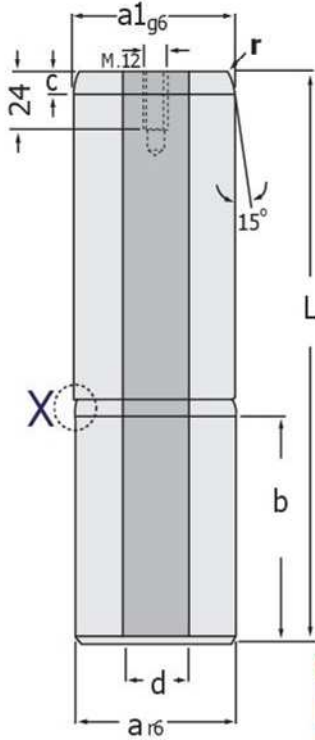


Page  
21



## 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

Mould Pillars, 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				

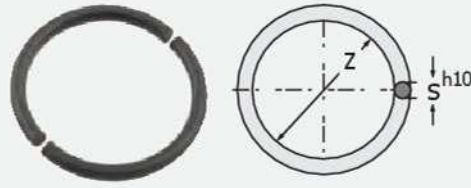
### Perforated Type Guide Pillar, Slotted

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

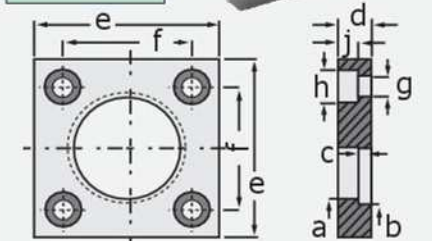


## RETAINING FLANGE G.119

Reference : PSA E24.52.105 G

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

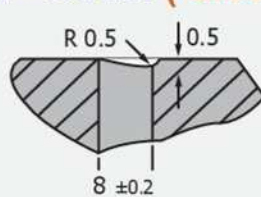
Material : 1.0503 (C45) R ≥ 480 N / mm



## RETAINING FLANGE G.119

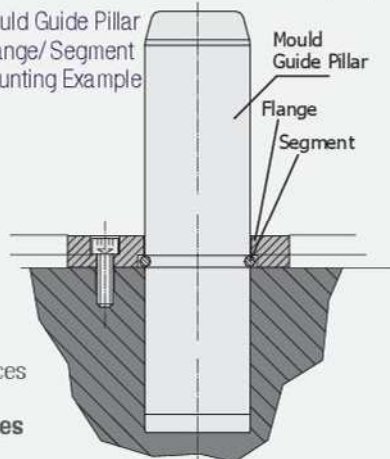
a	b	c	d	e	f	g	h	j
25	45	2.7	10	45	31			
32	37		10	56	36	6.6	12	7
40	45	4.2	12	70	50			
50	55		14	80	55	9	16	9
63	70		18	100	70	11	18	11
80	87	6.2	20	110	80	14	22	13

## X - Detail ( G.05 )



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

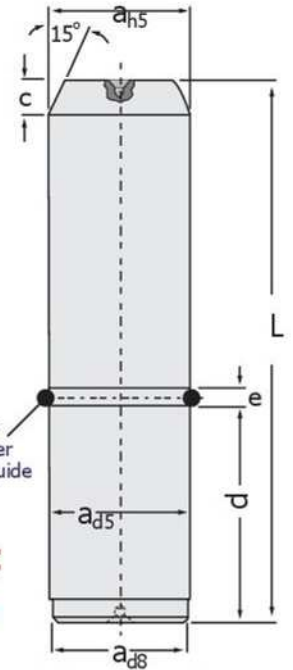
Mould Guide Pillar Flange/Segment Mounting Example



## GUIDE PILLAR G. 04

Large Size - Slotted

For Suitable Bushes, Refer Page 5



Ring is together with Guide Pillar

Reference : PSA E 24. 52.105.G

## GUIDE PILLAR G. 04

Large Size - Slotted

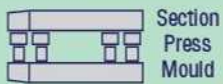
Ø a	L mm	c mm	d mm	e mm	Segment	
					z	s
40	180	12	63	4.2	36	4
	200					
	220					
50	220	16	80	4.2	46	4
	250					
	280					
63	250	16	100	6.2	57	6
	315					
80	315	16	125	6.2	74	6
	355					

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.

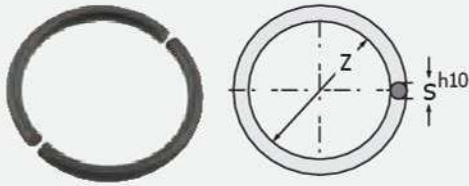


# CIRCLIP

**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.

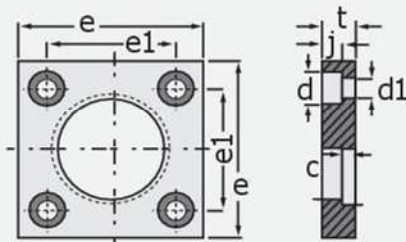
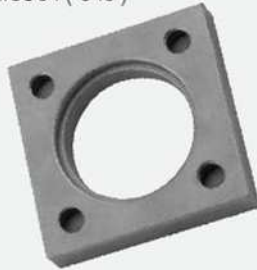
Example : G.112 x a

# 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					
40	70	50	12	9	16	9	4
50	80	55					
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 )



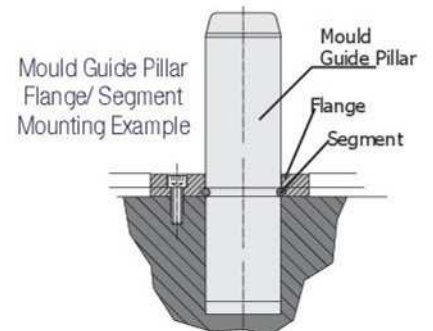
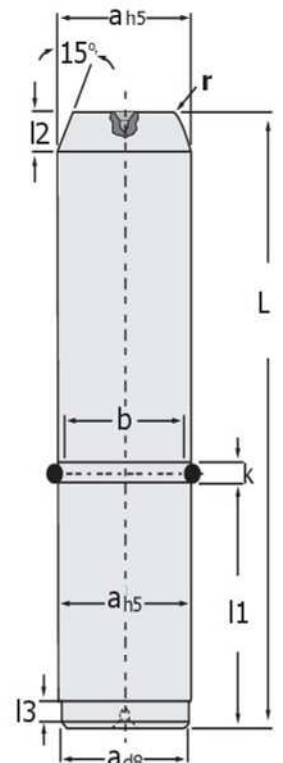
# GUIDE PILLAR - CNOMO

Large Size -Slotted

**G.03**

Reference: CNOMO EM 24.52.100

For Suitable Bushes, Refer Page 5



**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.



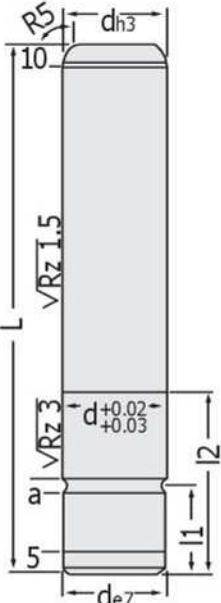
Suitable for extra usage  
G.24 ( Page 18 )  
Guide Pillar



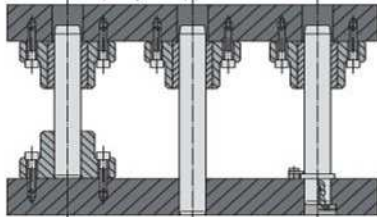
## RECTANGULAR, CAST BLOCK GUIDE PILLAR

Large Size **G. 20**  
Slotted

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.



## RECTANGULAR, CAST BLOCK GUIDE PILLAR

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

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

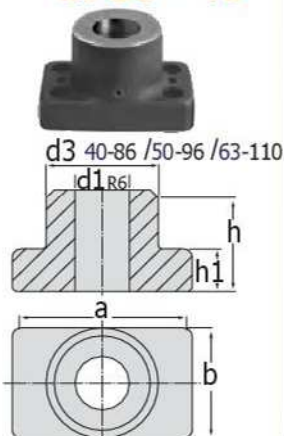
Operating Elements :  
Rectangular, Cast Block - Bushes

Absolutely, control the perpendicularity of pillars after mounting.

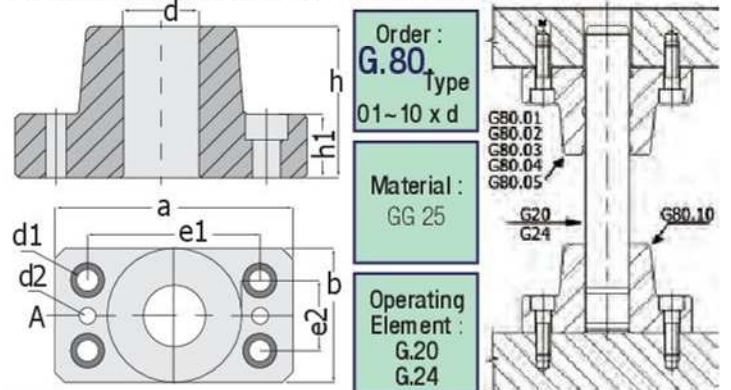
Page 24 Section Press Mould

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

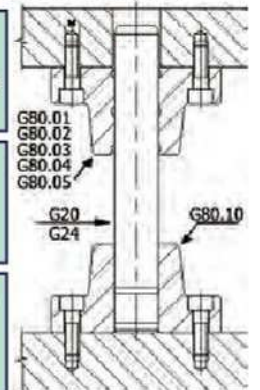
## G. 80 - 10



## 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

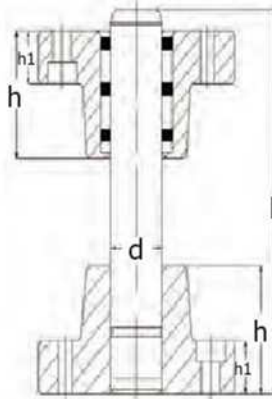
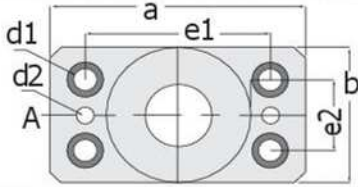


Cast Block Bush	Ø d	d1	d2	h	h1	a	b	e1	e2	M	
<b>G.80.01</b>	<b>40</b>	13	10	77	30	130	80	95	45	12	
	<b>50</b>	15	10	95	35	160	96	118	55	14	
	<b>63</b>	17	12	120	35	180	110	132	62	16	
	<b>STEEL Bearing</b>	<b>80</b>	21	14	120	40	215	130	160	75	20
	<b>G.80.02</b>	<b>40</b>	13	10	77	30	130	80	95	45	12
<b>50</b>		15	10	95	35	160	96	118	55	14	
<b>63</b>		17	12	120	35	180	110	132	62	16	
<b>BRONZE Bearing</b>		<b>80</b>	21	14	120	40	215	130	160	75	20
<b>G.80.03</b>		<b>40</b>	13	10	77	30	130	80	95	45	12
	<b>50</b>	15	10	95	35	160	96	118	55	14	
	<b>63</b>	17	12	120	35	180	110	132	62	16	
	<b>SINTER Bearing</b>	<b>80</b>	21	14	120	40	215	130	160	75	20
	<b>G.80.04</b>	<b>40</b>	13	10	77	30	130	80	95	45	12
<b>50</b>		15	10	95	35	160	96	118	55	14	
<b>63</b>		17	12	120	35	180	110	132	62	16	
<b>BALL Bush</b>		<b>80</b>	21	14	120	40	215	130	160	75	20
<b>G.80.05</b>		<b>40</b>	13	10	77	30	130	80	95	45	12
	<b>50</b>	15	10	95	35	160	96	118	55	14	
	<b>63</b>	17	12	120	35	180	110	132	62	16	
	<b>Self-lubricating Bronze</b>	<b>80</b>	21	14	120	40	215	130	160	75	20
	<b>G.80.10</b>	<b>40</b>	13	10	77	30	130	80	95	45	12
<b>50</b>		15	10	95	35	160	96	118	55	14	
<b>63</b>		17	12	120	35	180	110	132	62	16	
<b>GUIDE PILLAR Bush</b>		<b>80</b>	21	14	120	40	215	130	160	75	20





## Rectangular - Cast Block SETS **G.79** Connection Guide Pillar / Bush Cast Sets



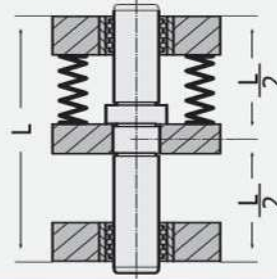
Order: **G.79.** d x L.Type  
Block Casting, Pillar / Sign Set

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

Operating Elements: SET Rectangular  
Cast Block Guide Pillar / Bush

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

### Mounting Example:



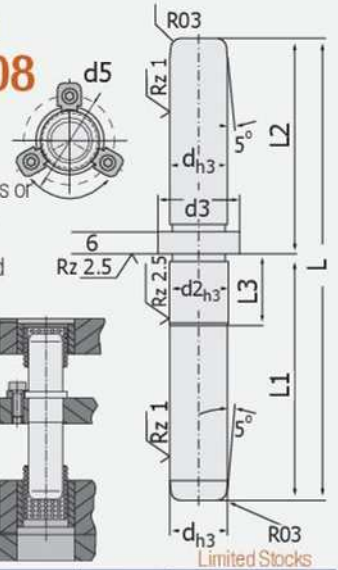
Order: **G.08.**  
d x L x L1

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.

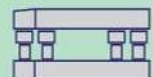


d	L	L1	L2	L3	d2	d3	d5
<b>12</b>	120	78.5	41.5	20	12.02	16	25
	140	80	60				
	150	90	60				
<b>16</b>	160	90	70	16	16.05	22	31
	170	100	70				
	180	100	80				
	190	100	90				
<b>20</b>	160	90	70	19	20.05	26	35
	170	100	70				
	180	100	80				
	190	110	80				
<b>25</b>	200	110	90	22	25.05	32	41
	210	110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

**BOTH** Produces  
Sells  
Affordable Prices

**GTH**

Section  
Press  
Mould

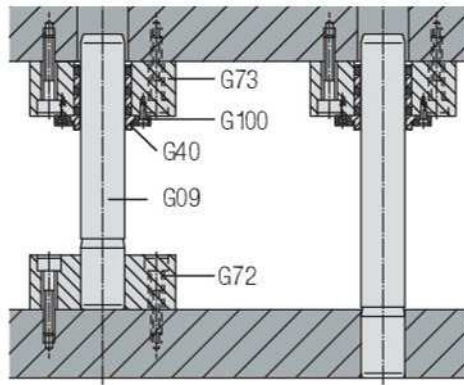


Page  
**25**



**G. 72**

**GUIDE PILLAR BEARING- BLOCK**  
Steel, Rectangular Type Slot Mould  
Bushes, with Connection Hole

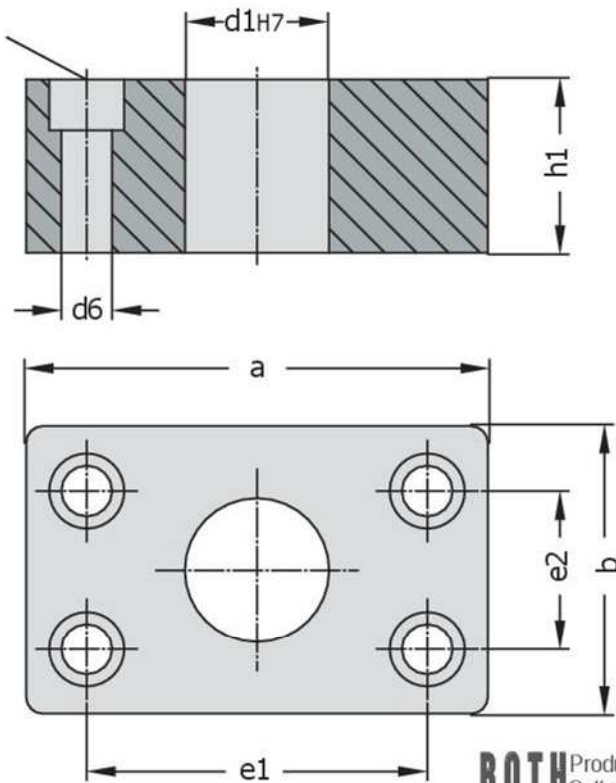


For Mould Pillars / Bush  
Components, also to give order, refer  
to Page 5.  
Control its perpendicularity of  
guide pillars after mounting.



**G. 73**

**BUSH BEARING - BLOCK**  
Steel, Rectangular Type Slot, Self-  
lubricating Bush with connection hole

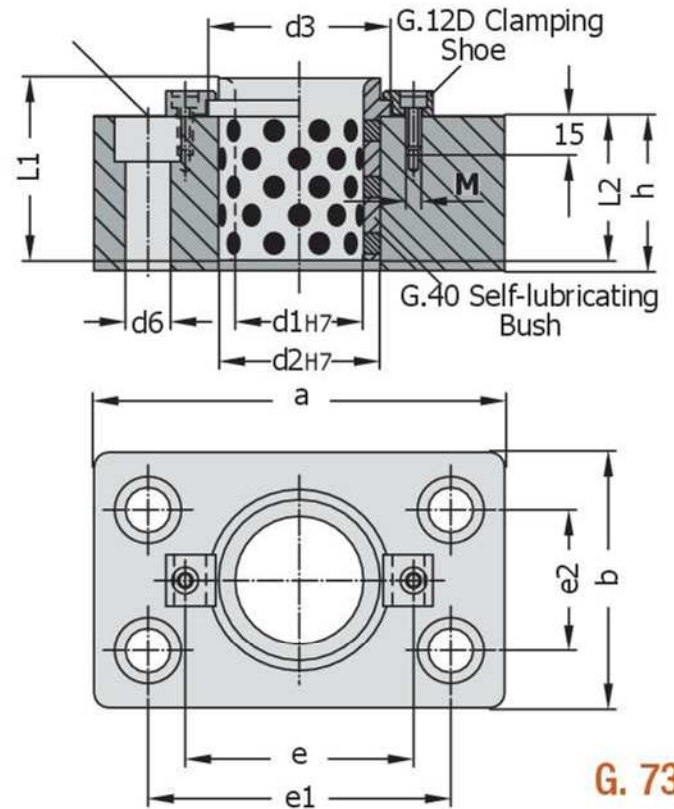


**BOTH** Produces  
Sells  
Affordable Prices

**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



**G. 73**

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

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

Order : **G.72 d1**

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

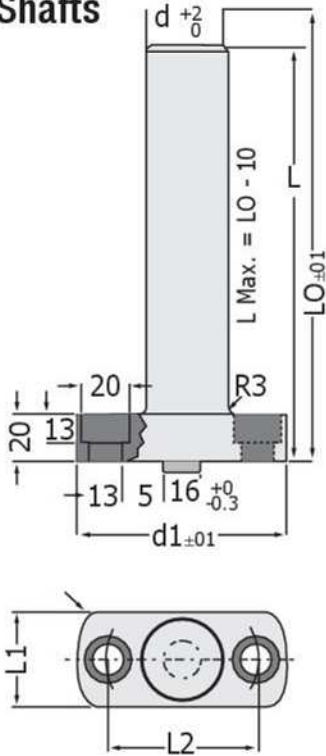
Order : **G.73 d1**

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

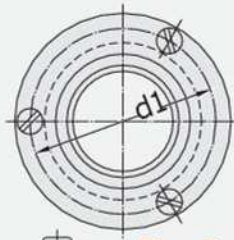
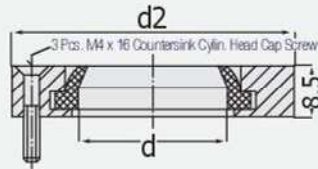
Material : CK 45  
Work Tool Steel

Reference : FORD WDX 17 - 70 M  
VW ALDI 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

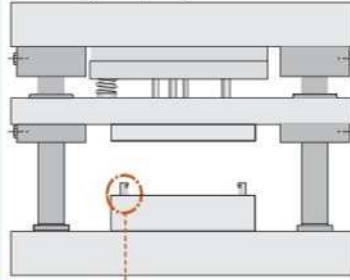
It is used at all Guide Pillar system and at other mould sets as extra.

**PERFORATED FLANGE** **G.22**  
**Guide Pillar Protection**

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

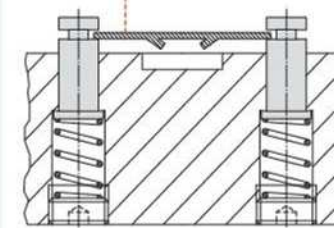
**Mounting Example**

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**  
**RETAINING 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

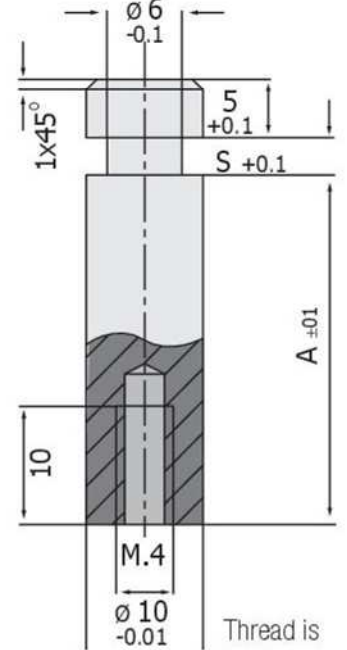
Using of sheet lifting is provided advantage at progressive moulds

**BOTH** Produces  
Sells  
Affordable Prices

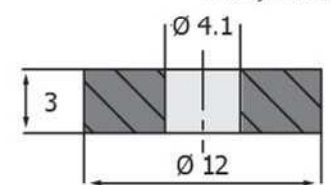


**G.23**

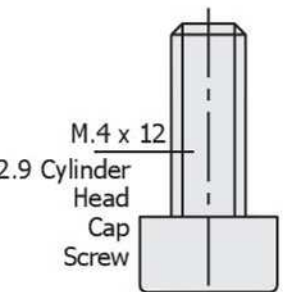
**RETAINING GUIDE PILLAR**  
**Sheet Lifting - Pin**



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.



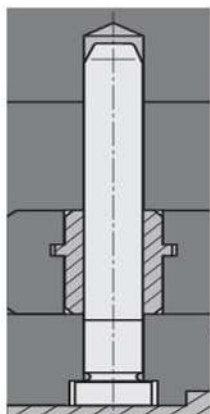
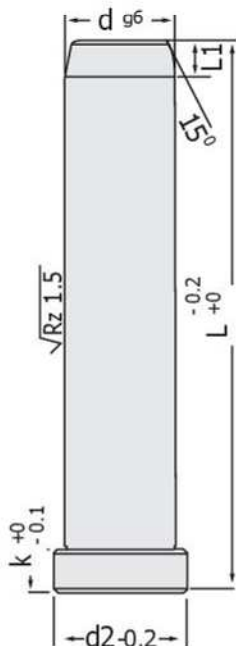
# GUIDE PILLAR



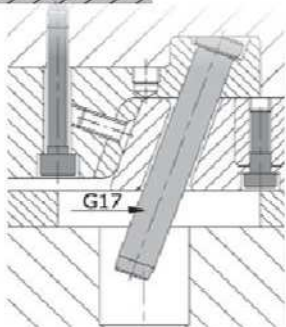
**G.17**

**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
<b>10</b>	40			
	60			
	80	4	12	3
	100			
	120			

d	L	L1	d2	k
<b>12</b>	40			
	60			
	80			
	100	7	16	6
	120			
	140			

d	L	L1	d2	k
<b>14</b>	60			
	80			
	100			
	120	7	18	8
	140			
	160			
	180			

d	L	L1	d2	k
<b>16</b>	40			
	60			
	80			
	100			
	120	7	20	8
	140			
	160			
	180			

d	L	L1	d2	k
<b>18</b>	60			
	80			
	100			
	120			
	140	7	22	8
	160			
	180			
	200			

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.

d	L	L1	d2	k
<b>20</b>	60			
	80			
	100			
	120			
	140	7	24	8
	160			
	180			

d	L	L1	d2	k
<b>22</b>	80			
	100			
	120			
	140			
	160	7	26	15
	180			
	200			
	240			

d	L	L1	d2	k
<b>24</b>	80			
	100			
	120			
	140			
	160	7	28	15
	180			
	200			
	220			
	240			
	300			

d	L	L1	d2	k
<b>30</b>	100			
	120			
	140			
	160			
	180	7	36	15
	200			
	220			
	240			
	300			
	360			

d	L	L1	d2	k
<b>40</b>	160			
	180			
	200			
	220			
	240	10	48	15
	280			

d	L	L1	d2	k
<b>50</b>	160			
	200			
	240	10	58	15
	300			
	360			

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.

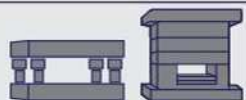
For bush selection, refer page 5.



**G.29**



DREI-S-WERK Germany Guide Pillar - Bush Lubricating Grease at high temp. 1400°C



Production **GTH**

# GUIDE PILLAR

# G.11 Oil Grooved (Chamfered) - Threaded Type

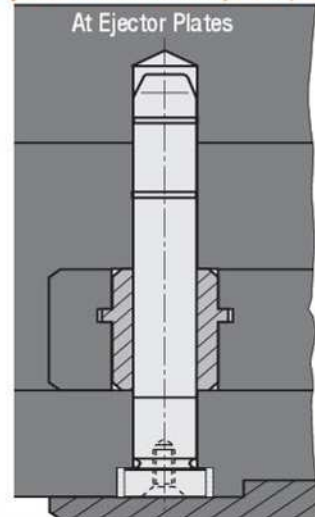
# GUIDE PILLAR

d	L	L1	L2	d2	k	M				
30	100	30								
	120									
	140									
	160									
	180									
	200	7					36	15	8	
	220	38								
	240									
	300									
	360									
400										

40	160	40								
	180									
	200	10					48	15	10	
	220									
	240									
	280									
	300	48								
	320									
360										

50	160	50								
	200									
	240	10					58	15	10	
	300	58								
	360									

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.

20	60													
	80													
	100						20							
	120													
	140													
	160						7					24	8	8
	180													
	200													
	240													
	250						24							
300														
320														

22	80														
	100						22								
	120														
	140														
	160						7					26	15	8	
	180														
	200														
	220														
	240						28								
	300														

24	80														
	100						24								
	120														
	140														
	160						7					28	15	8	
	180														
	200														
	220														
	240						30								
	300														

25	100														
	120						25								
	140														
	160						7					29	10	8	
	180														
	200														
	220														
	250						34								
	300														
	320														
350															

10	40														
	60						10								
	80						4					12	3	-	
	100						12								
	120														

12	40														
	60						12								
	80														
	100						7					16	6	-	
	120						16								
	140														
160															

14	60														
	80						14								
	100														
	120						7					18	8	-	
	140						18								
	160														
	180														

16	40																			
	60																			
	80											16								
	100																			
	120											7					20	8	8	
	140																			
	160																			
	180																			
	200											18								
	220																			
250																				
300																				

18	60																			
	80																			
	100																			
	120																7	22	8	8
	140																			
	160																			
	200																			
240	20																			



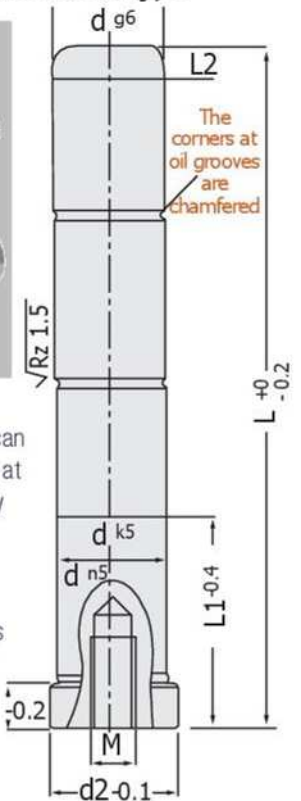
G.11

Oil Grooved (Chamfered) - Threaded Type

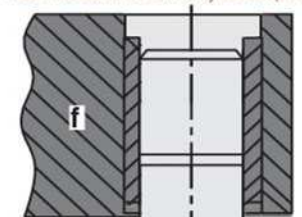


New product

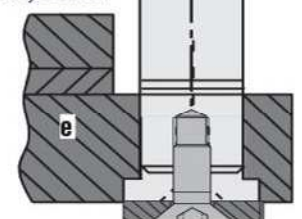
As per request, it can be fixed by thread at cap direction. By disassembling mould without dismantling, it provides process iteration advantage



Press Mould Mounting Example



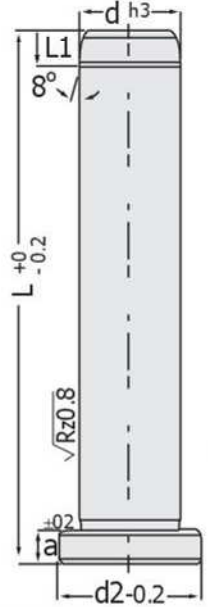
Don't use two products together that have no oil grooves. One of these products should be oil grooved.





## 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
<b>12</b>	80	4	16	4
	100			
	120			
<b>18</b>	120	7	22	6
	140			
	160			
<b>30</b>	160	7	36	6
	200			
	240			

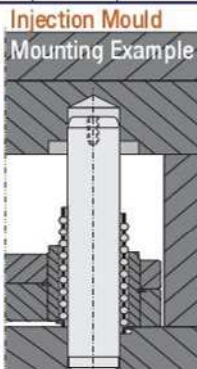
Order Form / Technical Data



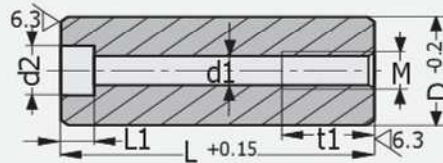
Order :  
**G. 18. d x L**

Material : 1.7131  
Hardness : 61-63 HRC

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

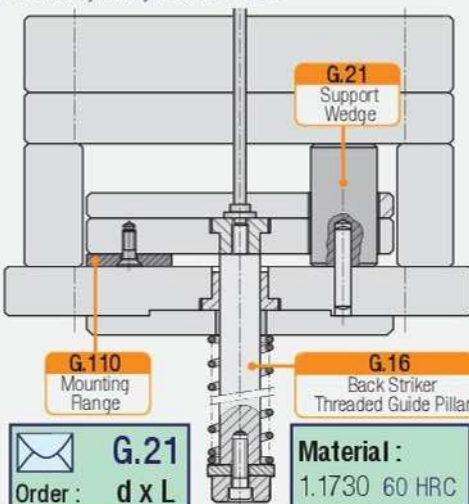


## SUPPORT / WEDGE PILLAR Support Plate - Ejector Plates **G.21** Intermediate Thrust Post / Wedge



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

At injection moulds; Thrust wedge that can be used in order to avoid dent between support plate (H4) and bottom pint 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.

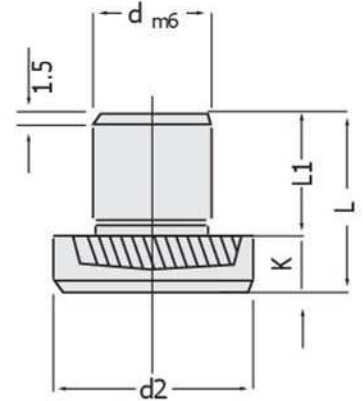


Order :  
**G. 21 d x L**

Material :  
1.1730 60 HRC

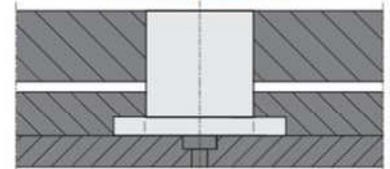


## THRUST PLATE **G.120** Mould Plate, Thrust Stop Pin



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

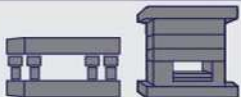
Product Order	G.120 Ø 8	G.120 Ø 14
<b>d</b>	<b>8</b>	<b>14</b>
<b>L</b>	<b>17</b>	<b>21</b>
<b>L1</b>	12	15
<b>d2</b>	16	24
<b>K</b>	5	6



Order : **G. 120. d x L**

Material : UNI 16 Cr Ni 4  
Hardened and Grinded

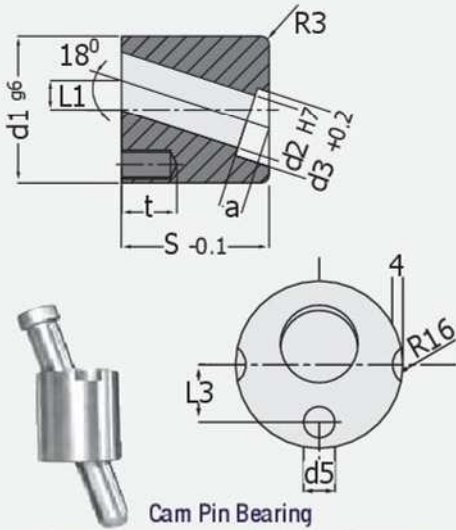
Operating Elements :  
It is used as thrust or equipment at injection or press moulds and between holder plates.





**G. 61**

**CORE ANGULAR BUSH  
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
<b>d2</b>	12	14	16	20	25
<b>d1</b>	32	36	40	45	50
<b>d3</b>	16	18	20	25	29
<b>d5</b>	M.6	M.8	M.8	M.8	M.8
<b>S</b>	36	36	46	46	56
<b>L1</b>	7	7	8.5	8.5	10
<b>L3</b>	10	12	13.5	15	16
<b>a</b>	10	10	10	10	12
<b>t</b>	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
<b>8</b>	40						
	50						
	63	10	10	8	M.5	4	7
	80						
	100						

<b>10</b>	50						
	63	12	10	9	M.6	5	8
	80						
	100						

<b>12</b>	50						
	63						
	80	12	12	9	M.6	6	10
	100						
	125						

<b>16</b>	63						
	80						
	100	15	15	12	M.8	8	13
	125						
	160						
	200						

<b>20</b>	63						
	80						
	100						
	125	20	16	15	M.10	10	16
	160						
	200						
	250						

<b>25</b>	80						
	100						
	125	20	20	15	M.12	12.5	21
	160						
	200						
	250						

<b>32</b>	100						
	125						
	160	25	25	18	M.16	16	27
	200						
	250						

Order : **G.14. d x L**

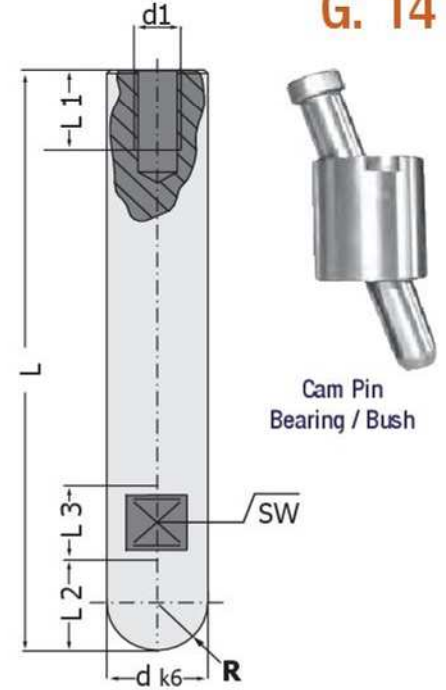
Material : 1.7131 (16 MnCr 5)  
Hardness : 58 -62 HRC

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



**Injection CORE GUIDE PILLAR  
Inclined - Threaded, Veldon  
Guide Pillar**

**G. 14**

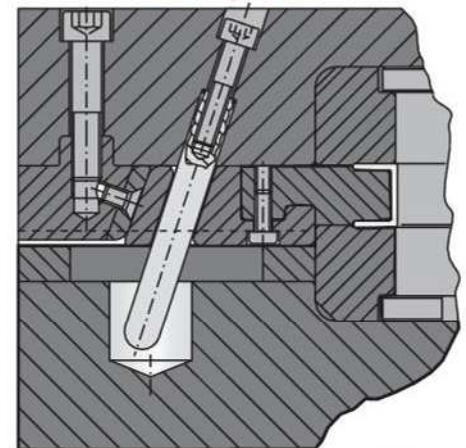


Cam Pin Bearing / Bush

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

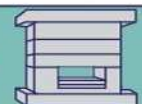
It is compatible to use at injection moulds, angular Guide Pillar positioning, core systems as cam pin.

Mounting Example



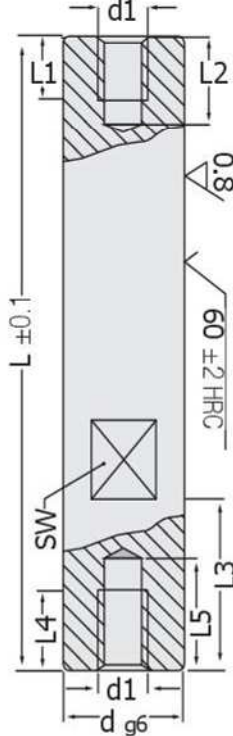
Production  
**GTH**

Section  
Injection  
Mould

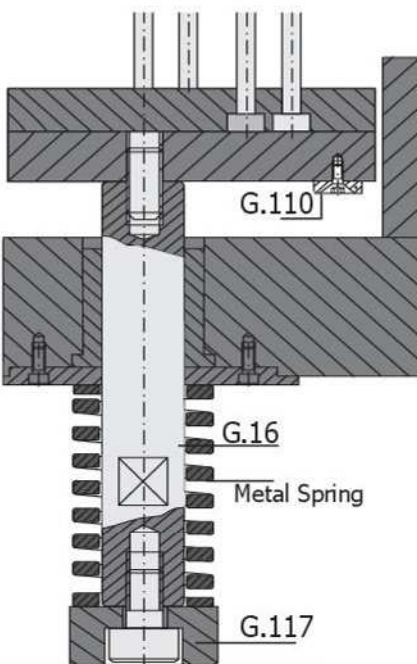


Page  
**31**

**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
<b>10</b>	60	M.6	9	14	30	20	25	8
	70							
	80							
	100							
	140							
<b>14</b>	60	M.8	12	15	32	20	25	10
	80							
	100							
	120							
	140							
180								
<b>16</b>	60	M.10	15	17	35	30	37	12
	70							
	80							
	100							
	120							
	140							
200								
<b>18</b>	100	M.10	15	17	35	30	37	14
	120							
	140							
	160							
	180							
	200							
	220							
240								
<b>20</b>	120	M.12	18	26	50	40	48	14
	140							
	160							
	180							
	200							
	240							
<b>24</b>	120	M.12	18	26	50	40	48	17
	140							
	160							
	180							
	200							
	260							
<b>34</b>	160	M.16	20	29	60	40	49	24
	200							
	240							
	260							
	300							

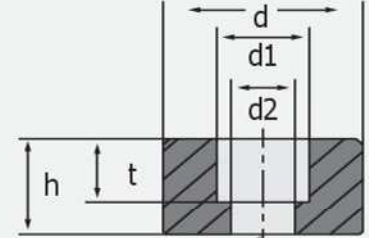
 Order : **G.16. d x L**

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



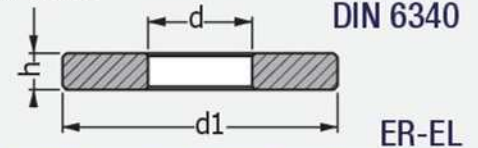
Cylinder Head Cap Screw  
**Back Striker - Mounting Set**

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



**G.114**  
**THICK MOUNTING WASHER**


Mould Inner Mounting Washer / Thick



DIN 6340

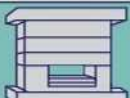
ER-EL

Bolt	d	d1	h	Weight
<b>M.6</b>	6.4	17	3	6 gr.
<b>M.8</b>	8.4	23	4	10 gr.
<b>M.10</b>	10.5	28	4	16 gr.
<b>M.12</b>	13	35	5	35 gr.
<b>M.14</b>	15	40	5	40 gr.
<b>M.16</b>	17	45	6	60 gr.
<b>M.18</b>	19	45	6	60 gr.
<b>M.20</b>	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					
		65					
		85	9	7	20	25	6
		95					
		105					
125							

d	L1	L2	L3	L4	d1	d2	k
15 14	76	35					
		55					
		75	9	7	20	25	6
		95					
		125					

d	L1	L2	L3	L4	d1	d2	k
15 14	86	55					
		75	9	7	20	25	6
		95					

d	L1	L2	L3	L4	d1	d2	k
15 14	96	55					
		75	9	7	20	25	6
		95					

d	L1	L2	L3	L4	d1	d2	k
15 14	116	75	9	7	20	25	6

d	L1	L2	L3	L4	d1	d2	k
18 20	17	35					
		55	9	7	26	31	6
		75					
		120					

d	L1	L2	L3	L4	d1	d2	k
18 20	22	35					
		45					
		65	9	7	26	31	6
		85					
		95					
115							

d	L1	L2	L3	L4	d1	d2	k
18 20	27	35					
		45					
		65	9	7	26	31	6
		85					
		105	9	7	26	31	6
125							
165							
225							
245							

d	L1	L2	L3	L4	d1	d2	k
15 14	17	35					
		55	9	7	20	25	6
		75					
		95					

d	L1	L2	L3	L4	d1	d2	k
15 14	22	30					
		50					
		70	9	7	20	25	6
		90					
		110					
125							
150							

d	L1	L2	L3	L4	d1	d2	k
15 14	27	30					
		45					
		65	9	7	20	25	6
		85					
		105					
		125					
145							
165							

d	L1	L2	L3	L4	d1	d2	k
15 14	36	35					
		55					
		75	9	7	20	25	6
		95					
		115					
		125					
145							
155							

d	L1	L2	L3	L4	d1	d2	k
15 14	46	35					
		45					
		65	9	7	20	25	6
		85					
		105					
125							
145							

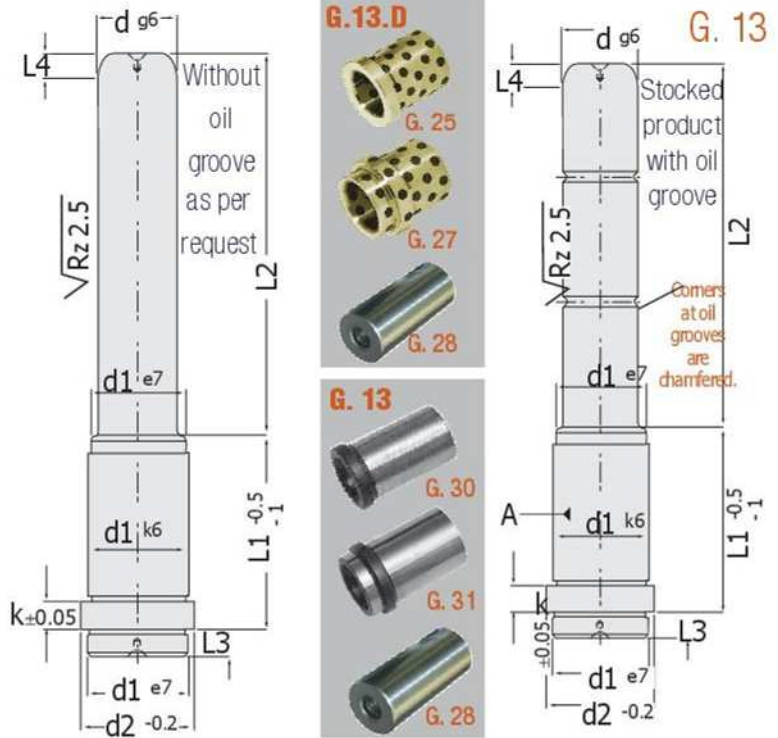
d	L1	L2	L3	L4	d1	d2	k
15 14	56	35					
		55					
		75	9	7	20	25	6
		95					
135							



G. 13.D

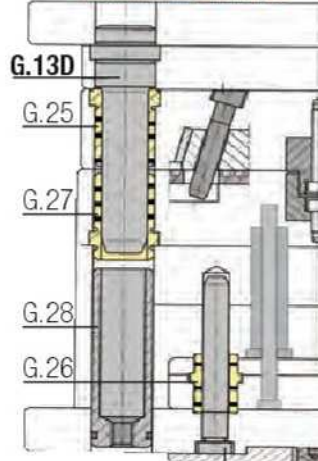
G. 13  
G. 13 / D

## WITH COLLAR / SHOULDERED GUIDE PILLAR Centering Guide Pillar with / without Oil Groove

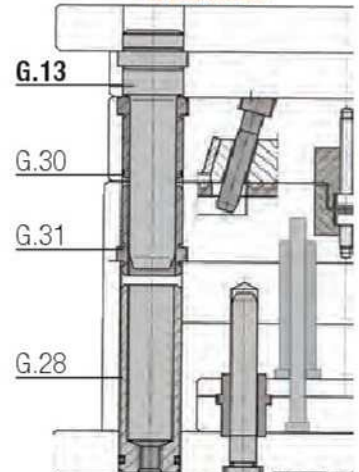


**GTH Mould Guide Pillars** are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding).

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.

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

**Material:** 1.7131 (16 MnCr 5)  
Hardness: 58 - 62 HRC  
Hardness Depth:  $\geq 1.8$  mm  
Case Hardening

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

Section Injection Mould

Contd 34

# 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					
		55					
		75					
		95					
		115	9	7	26	31	6
		135					
		165					
		255					

d	L1	L2	L3	L4	d1	d2	k
18 20	46	35					
		45					
		65					
		85					
		105	9	7	26	31	6
		135					
		245					

d	L1	L2	L3	L4	d1	d2	k
18 20	56	35					
		55					
		75					
		95	9	7	26	31	6
		115					
		155					

d	L1	L2	L3	L4	d1	d2	k
18 20	66	35					
		55					
		75					
		95	9	7	26	31	6
		115					
		135					
		145					

d	L1	L2	L3	L4	d1	d2	k
18 20	76	35					
		55					
		75					
		95	9	7	26	31	6
		115					
		135					

d	L1	L2	L3	L4	d1	d2	k
18 20	86	55					
		75					
		95	9	7	26	31	6
		125					
		135					

d	L1	L2	L3	L4	d1	d2	k
18 20	96	55					
		75	9	7	26	31	6
		95					

d	L1	L2	L3	L4	d1	d2	k
18 20	116	75					
		115	9	7	26	31	6

d	L1	L2	L3	L4	d1	d2	k
18 20	136	135	9	7	26	31	6

d	L1	L2	L3	L4	d1	d2	k
22 24	17	35					
		55	9	7	30	35	6
		75					

d	L1	L2	L3	L4	d1	d2	k
22 24	22	35					
		55					
		75	9	7	30	35	6
		95					
		105					
		130					

d	L1	L2	L3	L4	d1	d2	k
22 24	27	35					
		45					
		65					
		85					
		105	9	7	30	35	6
		125					
		165					
		245					

d	L1	L2	L3	L4	d1	d2	k
22 24	36	35					
		55					
		75	9	7	30	35	6
		95					

**Note:** To avoid reverse closing of mould holder plates, 2 different product range are used.  
**Main Dimensions :** 14 -20 -24 -30 -40  
**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. 16's.



d	L1	L2	L3	L4	d1	d2	k
22 24	36	135					
		165					
		205	9	7	30	35	6
		245					
		285					

d	L1	L2	L3	L4	d1	d2	k
22 24	46	35					
		45					
		65					
		85	9	7	30	35	6
		105					
		205					

d	L1	L2	L3	L4	d1	d2	k
22 24	56	35					
		55					
		75					
		95	9	7	30	35	6
		115					
		205					

d	L1	L2	L3	L4	d1	d2	k
22 24	66	35					
		55					
		75					
		95	9	7	30	35	6
		115					
		155					

d	L1	L2	L3	L4	d1	d2	k
22 24	76	35					
		55					
		75	9	7	30	35	6
		95					
		145					

d	L1	L2	L3	L4	d1	d2	k
22 24	86	55					
		75					
		95	9	7	30	35	6
		135					

d	L1	L2	L3	L4	d1	d2	k
22 24	96	55					
		75					
		95	9	7	30	35	6

d	L1	L2	L3	L4	d1	d2	k
22 24	106	55					
		75	9	7	30	35	6
		95					
		115					

d	L1	L2	L3	L4	d1	d2	k
22 24	116	75					
		115	9	7	30	35	6
		155					

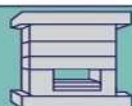
d	L1	L2	L3	L4	d1	d2	k
22 24	136	95					
		135	9	7	30	35	6

d	L1	L2	L3	L4	d1	d2	k
32 30	27	35					
		45					
		65					
		85					
		105					
		125	9	7	42	47	6
		145					
		285					

d	L1	L2	L3	L4	d1	d2	k
32 30	36	35					
		55					
		75					
		95					
		115	9	7	42	47	6
		135					
		155					
		285					

d	L1	L2	L3	L4	d1	d2	k
32 30	46	45					
		65					
		85					
		105					
		125	9	7	42	47	6
		145					
		165					
		285					

**BOTH** Produces Sells Affordable Prices **GTH**



Section Injection Mould

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

Contd 35

WITH COLLAR GUIDE PILLAR With/ Without Oil Groove

G.13 /D

d	L1	L2	L3	L4	d1	d2	k
32	56	45					
		55					
		75					
		95					
		115	9	7	42	47	6
		135					
		155					
		175					
245							
295							

d	L1	L2	L3	L4	d1	d2	k
32	106	75					
		95					
		115	9	7	42	47	6
		125					
		145					
165							
32	116	75					
		95					
		115	9	7	42	47	6
		135					
155							

d	L1	L2	L3	L4	d1	d2	k
42	136	95					
		135	12	7	54	60	10
		215					

d	L1	L2	L3	L4	d1	d2	k
42	156	115					
		155	12	7	54	60	10
		215					

d	L1	L2	L3	L4	d1	d2	k
42	196	155					
		195	12	7	54	60	10
		235					

d	L1	L2	L3	L4	d1	d2	k
42	246	165	12	7	54	60	10
		245					

d	L1	L2	L3	L4	d1	d2	k
32	66	45					
		55					
		75					
		95					
		115	9	7	42	47	6
		135					
		155					
		175					
245							
295							

d	L1	L2	L3	L4	d1	d2	k
32	136	95					
		115	9	7	42	47	6
		135					
		155					

d	L1	L2	L3	L4	d1	d2	k
32	156	115	9	7	42	47	6
		155					

d	L1	L2	L3	L4	d1	d2	k
32	196	155	9	7	42	47	6
		195					

d	L1	L2	L3	L4	d1	d2	k
32	76	55					
		75					
		95					
		115	9	7	42	47	6
		135					
155							
225							

d	L1	L2	L3	L4	d1	d2	k
42	46	95	12	7	54	60	10
		165					

d	L1	L2	L3	L4	d1	d2	k
42	56	75					
		115	12	7	54	60	10
		155					
		195					

d	L1	L2	L3	L4	d1	d2	k
42	66	75	12	7	54	60	10
		135					

d	L1	L2	L3	L4	d1	d2	k
42	76	75					
		115	12	7	54	60	10
		175					

d	L1	L2	L3	L4	d1	d2	k
42	86	75	12	7	54	60	10
		135					

d	L1	L2	L3	L4	d1	d2	k
32	96	55					
		75					
		95					
		115	9	7	42	47	6
		135					
		155					
205							

d	L1	L2	L3	L4	d1	d2	k
42	96	75					
		115	12	7	54	60	10
		155					

d	L1	L2	L3	L4	d1	d2	k
42	116	95					
		135	12	7	54	60	10
		195					



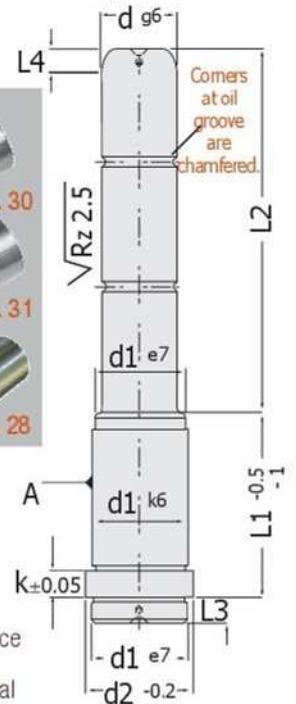
G.13

GUIDE PILLAR WITH COLLAR

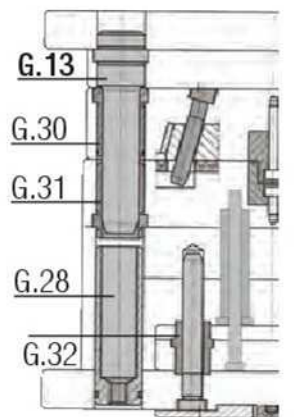
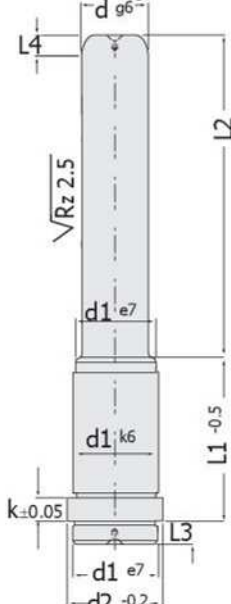
With Oil Groove - Guide Pillar  
With Collar Centering Guide Pillar



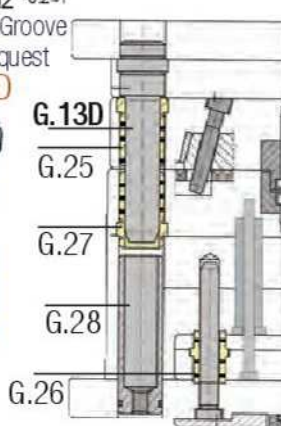
GUIDE PILLAR WITH COLLAR  
Without Oil Groove G.13.D  
Centering Guide Pillar



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

Section Injection Mould

d	L1	L2	d2	d3	k
40	56	156 186	54	58	10

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

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			

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

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			
		66			
		76			
		96			
116					
136					

30	86	36	39	43	10
		46			
		66			
		86			
		106			
		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			
		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			
		96			

25	36	26	34	38	8
		36			
		46			
		56			
		66			
		76			
		86			
		106			

25	46	26	34	38	8
		36			
		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
		36			
		66			
		86			
		106			
		126			

18	86	26	26	31	6
		46			
		66			
		86			
		106			
126					

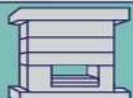
20	26	26	28	32	6
		36			
		46			
		56			
		66			
		86			

20	36	26	28	32	6
		36			
		46			
		56			
		66			
		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			



# GUIDE PILLAR SHOULDERED TYPE **G. 12**

d	L1	L2	d2	d3	k
<b>16</b>	<b>56</b>	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		96			
116					

<b>16</b>	<b>66</b>	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		86			
106					
116					

<b>16</b>	<b>76</b>	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		96			
116					

<b>16</b>	<b>86</b>	26	24	28	6
		36			
		46			
		56			
		66			
		76			
		96			
116					

<b>18</b>	<b>26</b>	26	26	31	6
		36			
		46			
		56			
		66			
86					

<b>18</b>	<b>36</b>	26	26	31	6
		36			
		46			
		56			
		66			
86					
106					

<b>18</b>	<b>46</b>	26	26	31	6
		36			
		46			
		56			
		66			
		86			
106					
126					

<b>12</b>	<b>26</b>	26	16	19	4
		36			
		46			
		56			

<b>12</b>	<b>36</b>	26	16	19	4
		36			
		46			
		56			

<b>14</b>	<b>26</b>	26	20	25	6
		36			
		46			
		56			
		66			
76					

<b>14</b>	<b>36</b>	26	20	25	6
		36			
		46			
		56			
		66			
86					

<b>14</b>	<b>46</b>	26	20	25	6
		36			
		46			
		56			
		76			
96					

<b>14</b>	<b>56</b>	26	20	25	6
		36			
		46			
		66			
		86			
106					

<b>16</b>	<b>26</b>	26	24	28	6
		36			
		46			
		56			
		76			
96					

<b>16</b>	<b>36</b>	26	24	28	6
		36			
		46			
		56			
		66			
86					
106					

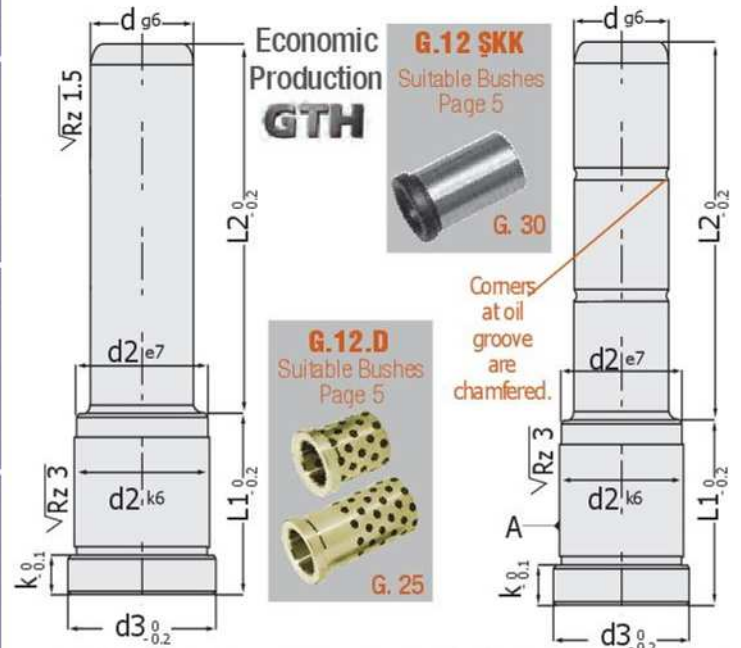
<b>16</b>	<b>46</b>	26	24	28	6
		36			
		46			
		56			
		66			
		76			
96					
116					



**G. 12.D**

**G. 12**

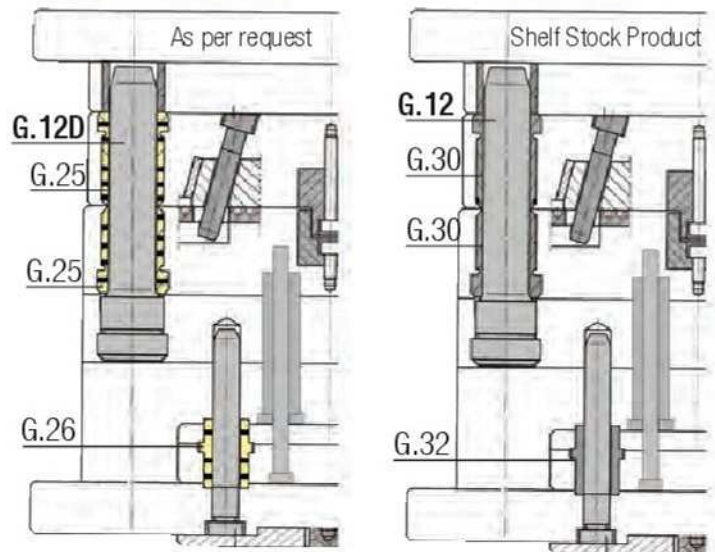
## GUIDE PILLAR SHOULDERED TYPE **G. 12 / D** Guide Pillar, With/Without Oil Groove



**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 :**  $\geq 1.8$  mm  
**Case Hardening**

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

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

**Section Injection Mould**

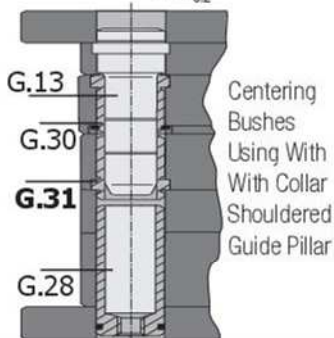
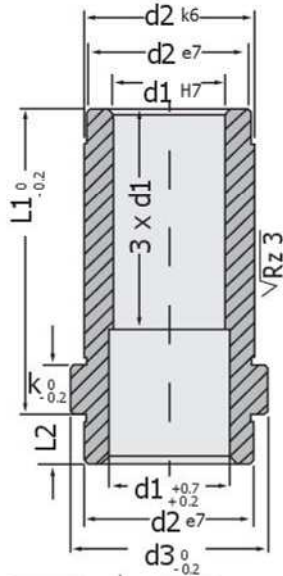
**Page 37**

**Contd 36**

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



**Bush with Collar G.31**  
Steel Bush With Centre Collar



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

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	17				
	22				
	27				
	36				
	46				
	56				
20	66	26	31	6	9
	76				
	86				
	96				
	106				
116					
136					

17					
22					
27					
36					
46					
56					
66	30	35	6	9	
76					
86					
96					
106					
116					
136					
156					

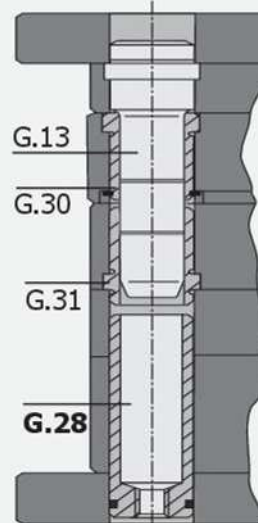
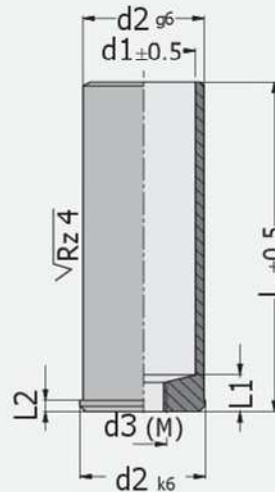
27					
36					
46					
56					
66					
76					
86	32	42	47	6	9
96					
106					
116					
126					
136					
156					
196					

46					
56					
66					
76					
86	42	54	60	10	12
96					
116	40				
136					
156					
196					
246					

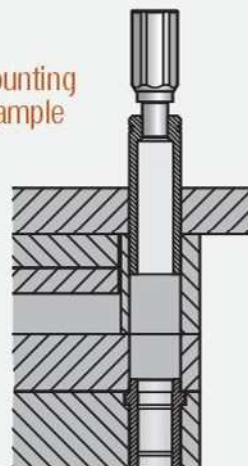


**G.28**  
**RETAINING BUSH**  
Centering Retaining Bush Steel

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



Mounting Example



**Retaining Bush G.28**

d2	L	d1	d3	L1	L2	
20	30					
	40					
	60					
	80		16	M. 8	13	2.5
	100					
	120					
140						
160						

30					
40					
60					
80					
100	21	M. 10	13	2.5	
120					
140					
160					
180					

40					
60					
80					
100					
120	25	M. 12	13	2.5	
140					
160					
180					
200					
240					

40					
60					
80					
100					
120					
140	33	M. 12	13	4.5	
160					
180					
200					
220					
260					
300					

60					
80					
120					
160	43	M. 12	13	4.5	
200					
240					
280					

**BOTH** Produces Affordable Prices **GTH**

Order: **G.28. d2 x L**

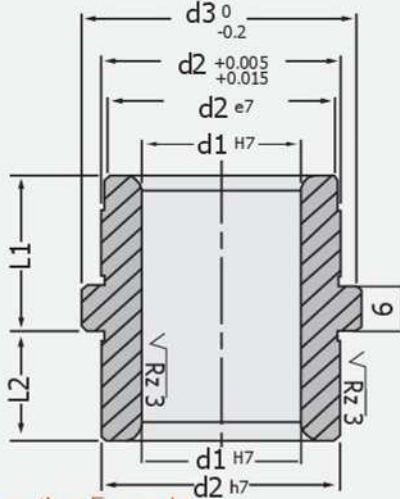
Material: 1.7131 (16 MnCr 5)  
Hardness: 62 ± 2 HRC  
Hardness Depth: ≥ 1.8 mm

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

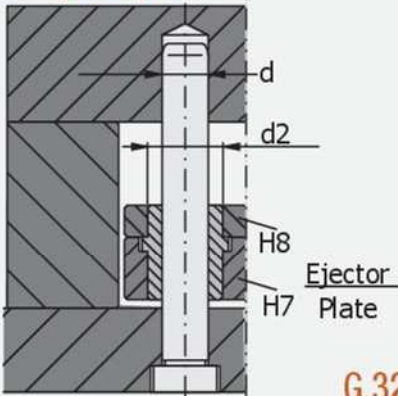


**G.32**

**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

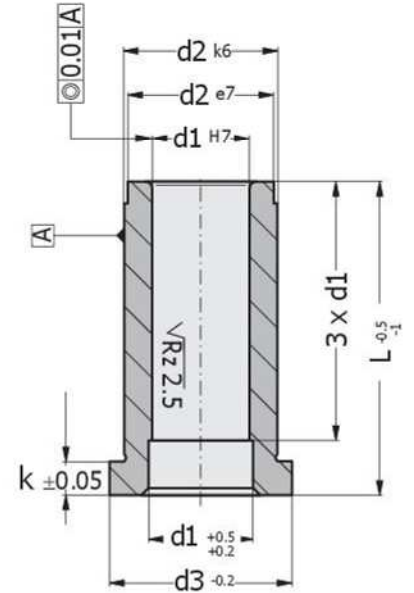
**Steel Guide Bush** **G.30**

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

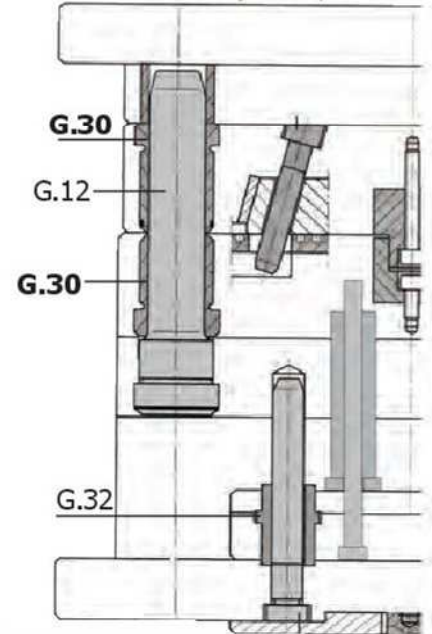


**G.30**

**GUIDE BUSH**  
Steel Guide Bush



**Mounting Example**



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

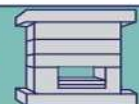
Material : 1.7131 (16 MnCr 5)  
Hardness : 62 ± 2 HRC  
Hardness Depth : ≥ 1.8 mm

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

Production



Section  
Injection  
Mould



Page  
**39**

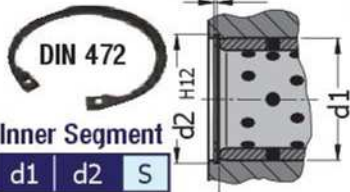
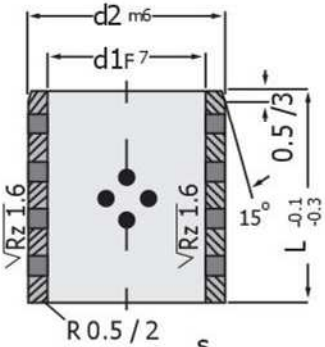


**G.48**

**SELF-LUBRICATING BUSH**

**Plain Bronze Guide Bush**

Graphite, Self-lubricating

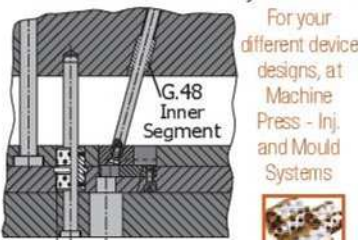
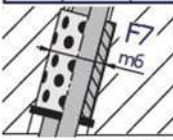


Inner Segment

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

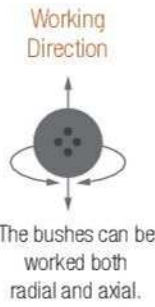
Hole Tolerance For Shrink Fit: H7

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



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

Material : Bronze Graphite  
Self-lubricating



The bushes can be worked both radial and axial.



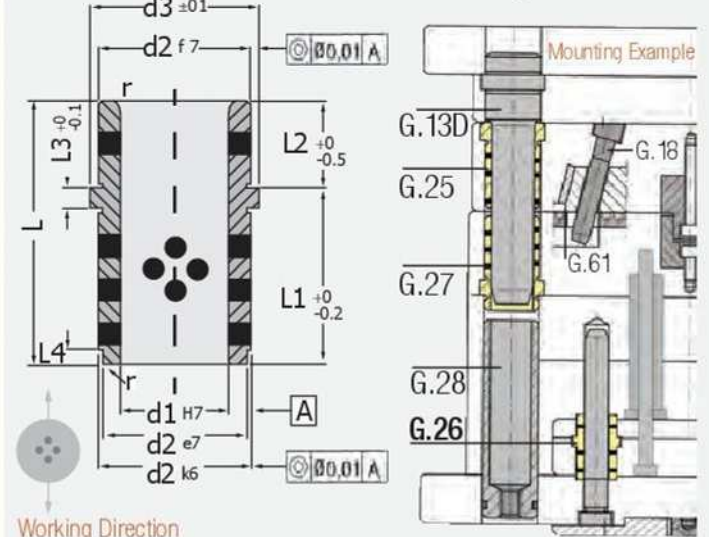
Self-lubricating used at ejector system with unlubricated Guide Pillar G. 17 at ejector plate pillaring system of injection moulds.

**SELF-LUBRICATING - 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

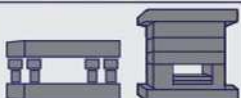
★Our Standard Stocks:  
'd' 14 - 16 - 20  
25 - 30

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)





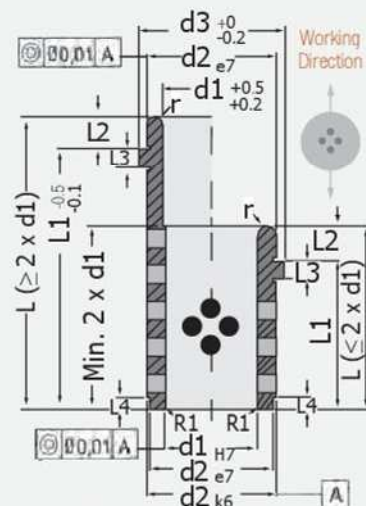
Self-lubricating  
Centering Bushes  
Using at Mould  
Pillaring System  
With Collar  
Shouldered  
Guide Pillar G. 13D  
without Oil  
Groove.



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



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



d1	L	d2	d3	L1	L2	L3	L4	r
16	25			17				
	30			22				
	35			27				
	44	20	25	36	8	6	2	1
	54			46				
	64			56				
74			66					
84			76					

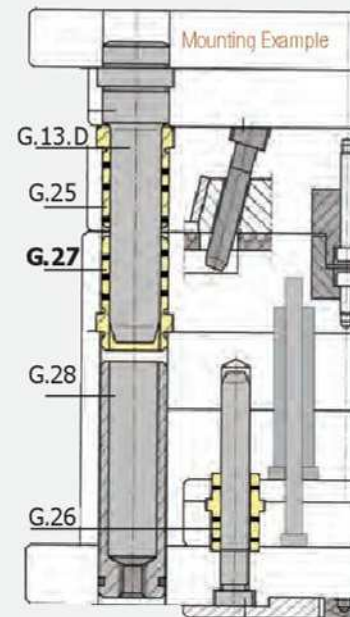
d1	L	d2	d3	L1	L2	L3	L4	r
20	25			17				
	30			22				
	35			27				
	44	26	31	36	8	6	2	2
	54			46				
	64			56				
74			66					
84			76					

d1	L	d2	d3	L1	L2	L3	L4	r
25	30			22				
	35			27				
	44			36				
	54			46				
	64	30	35	56	8	6	3	3
	74			66				
84			76					
94			86					
104			96					
124			116					

d1	L	d2	d3	L1	L2	L3	L4	r
30	35			27				
	44			36				
	54			46				
	64			56				
	74	42	47	66	8	6	4	3
	84			76				
94			86					
104			96					
124			116					
144			136					

d1	L	d2	d3	L1	L2	L3	L4	r
40	58			46				
	68			56				
	78			66				
	88			76				
	98	54	60	86	12	10	5	3
	108			96				
128			116					
148			136					
168			156					
208			196					

**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.

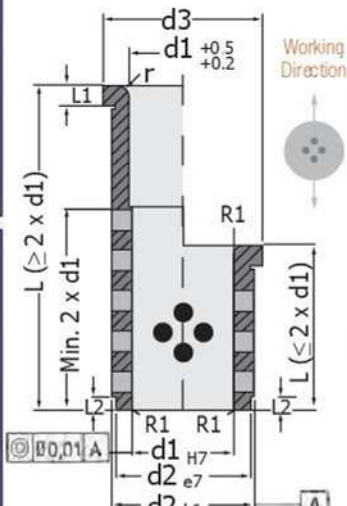


Order : **G.27. d x L**

Material : Bronze Graphite Self-lubricating

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

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

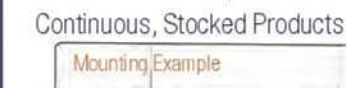


d1	L	d2	d3	L1	L2	r
16	27					
	36	22	27	6	2	2
	46					
	56					

d1	L	d2	d3	L1	L2	r
20	27					
	36					
	46	26	31	6	2	2
	56					
66						
76						

d1	L	d2	d3	L1	L2	r
25	36					
	46					
	56					
	66	30	35	6	3	3
	76					
	86					
96						

**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.



d1	L	d2	d3	L1	L2	r
40	46					
	56					
	66					
	76	54	60	10	5	3
	86					
	96					
116						
136						

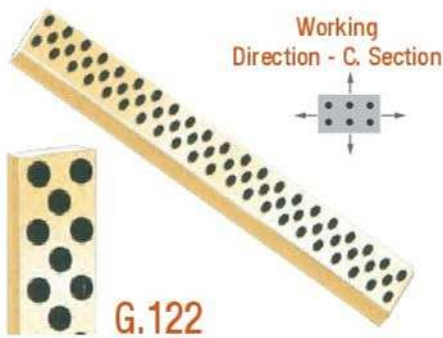
**INFORMATION:** Sliding bearings provide higher stability. Lubricating of these products as film is reduced negative impacts. Steel bearings produced in the past were required excessive lubrication and had breaking tendency at high strong or speeds.

Order : **G.25. d x L**

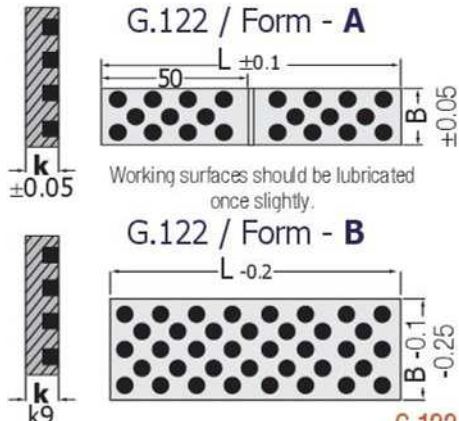
Material : Bronze Graphite Self-lubricating

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

**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



Plain Type DIMENSIONAL, Special Cutting **G.122**

k	L	B	Form
5.3	302	20	A
		35	
		50	

10.3	302	20	A
		35	
		50	

5	50	25	B
	71		
	90		

5	50	40	B
	71		
	90		

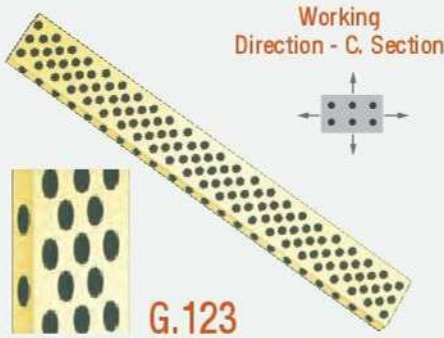
6	100	40	B
	125		
	160		
	200		

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

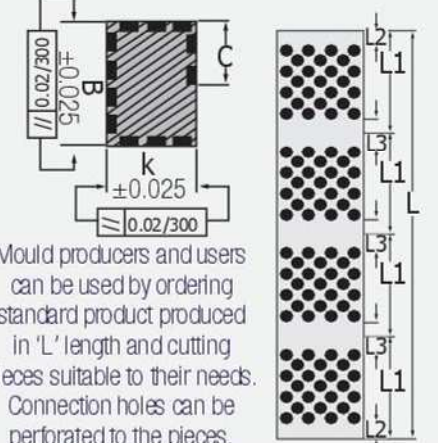
**G.122 (One Side Self-lubricating)**  
 Order: Form A / B : D x L x B

**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.

**G.123 (Double Side Self-lubricating)**  
 Order: 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

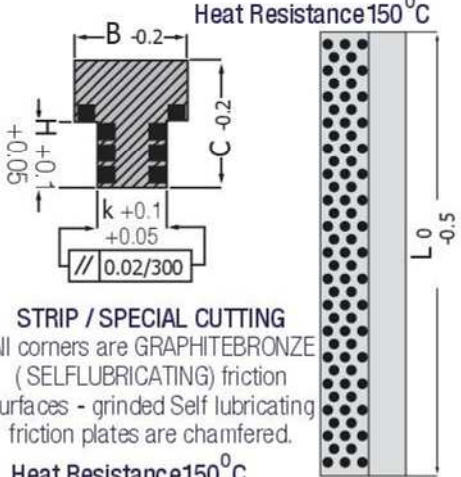
k	B	C	L	L1	L2	L3
10.3	15.3	6	75	25	3	6
			100			
			150			
			200			
			250			
300						

15.3	25.3	8	105	35	4	8
			140			
			175			
			210			
			245			
			280			
			315			
			350			
			385			
			420			
455						
490						

35.3	45.3	16	165	55	6	12
			220			
			275			
			330			
			385			
			440			
495						



**G.121**  
**GRAPHITE-BRONZE (SELF-LUB.) PLATE**  
 "T"Shape, DIMENSIONAL, Special Cutting



**STRIP / SPECIAL CUTTING**  
 All corners are GRAPHITEBRONZE (SELFLUBRICATING) friction surfaces - grinded Self lubricating friction plates are chamfered.

**Heat Resistance 150°C**  
 "T"Shape, DIMENSIONAL, Special Cutting

C	B	k	H	L
12	18	8	5	350

25	22	12	15	350
----	----	----	----	-----

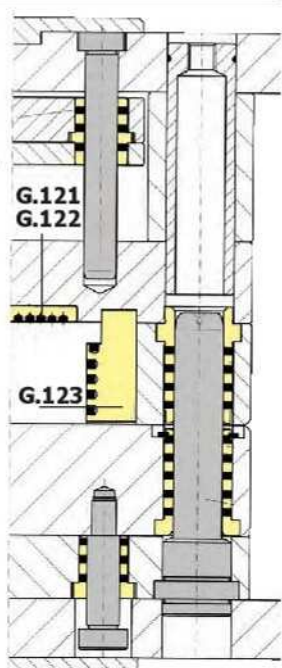
35	28	18	20	350
----	----	----	----	-----

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

**Material:** Bronze, Graphite Self lubricating Friction Plate

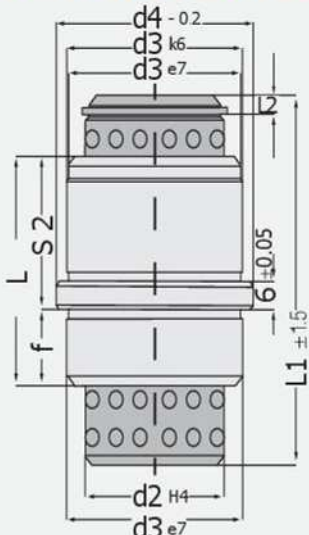
**Operating Elements:** Injection Moulds, Core Systems, Sliding Bearings etc.

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.



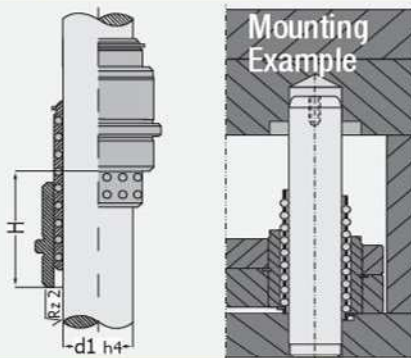


**BALL BUSH BEARINGS** **G.29**  
**Ejector Plate Ball Bush Standard Set**  
**Steel Short Bush / Ball Bronze Cage**



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							
30	71	96	4.8	54	21	38	46	52	33
	56	32							
	75	70							
	95	110							



Order : **G. 29. d1 x L1**

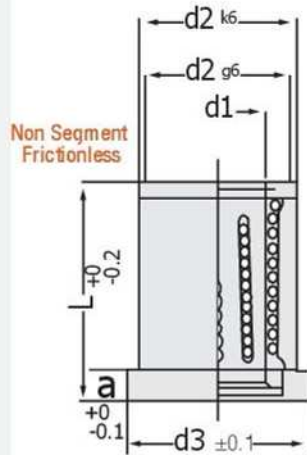
Material : Ball Materials : 1.3505 (100Cr6)  
 Cage : Ms58 - Steel Bush : 1.7131 (16 MnCr 5)

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



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

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.

**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
	35					
x20	45	32	36	6	3	6
	55					
x30	45	48	54	8	4	8
	63					
40	45	60	66	8	4	8
	63					

**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 taunting. 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.75 BEARING BUSH WITH CENTRE COLLAR**

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

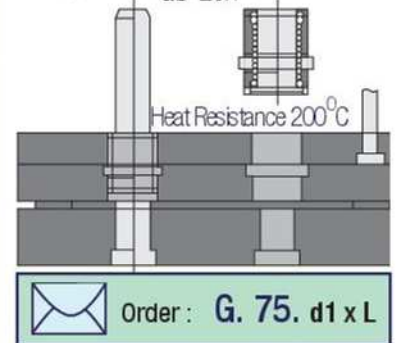
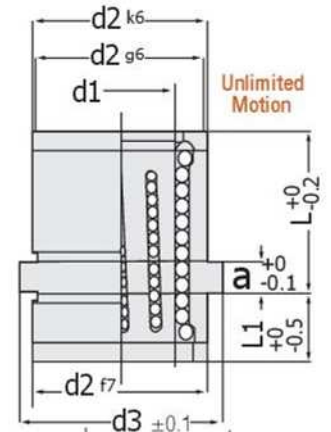


**GUIDE PILLAR**

Refer page 30

**Ball Type G. 18**

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



**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
x20	26	32	36	6	9	3
	36					
25	26	40	45	6	10	3
	36					
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



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

## STEEL/SHORT TYPE-BALL CAGE BUSH G. 38

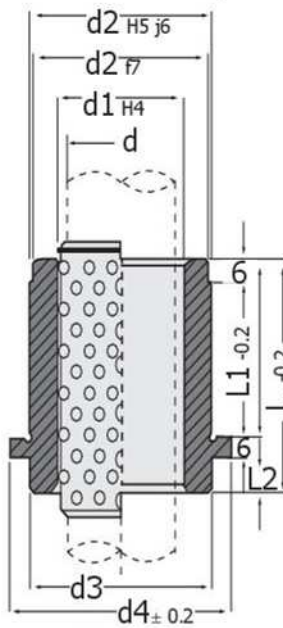
Press Mould Ball Cage Short Steel Guide Bush with Collar



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

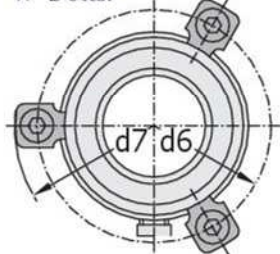
## STEEL / SHORT TYPE - BALL BUSH G. 37

Press Mould Ball Cage Long Steel Guide Bush with Collar

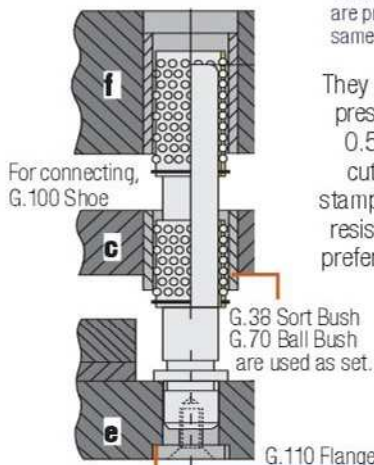


∅ d	L mm	∅ d1	∅ d2	∅ d3	∅ d4	d6 d7	L1 mm	L2 mm
15 16	35	21 22	30	30	34	35	23	12
19 20	35	25 26	32	32	40	52 64.7	23	12
24 25	35	30 31	40	40	48	60 72.7	23	12
32 30	42	40 38	48	48	55	79.7 67	30	12
38 40	52	46 48	58	58	55	77 89.7	37	15
48 50	65	56 58	70	70	80	91 104	47	18
60 63	80	68 71	85	85	95	106 119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

"x" Detail



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



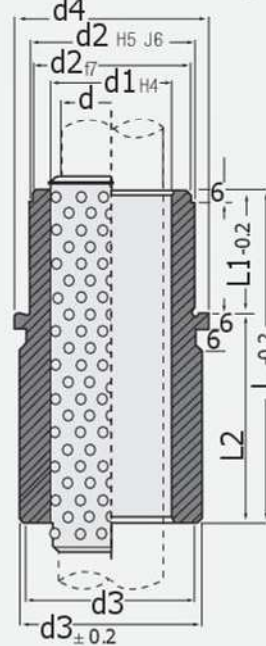
Note: Two different products in Section (d) are to avoid reverse closing of mould during mounting, by using three pcs. main dimensions and one pc. d = ∅ 15 - 19 - 24 - 32 - 38 - 48 - 60 mm dimensions at same mould, is avoided reverse closing of mould plate, thus symmetrical mould closure is ensured,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

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, G.100. Shoe x 3 are used together.



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

"x" Detail



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 100°C.

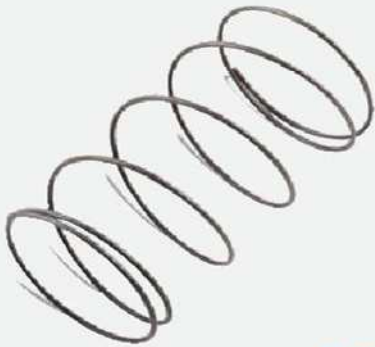
Order: G. 37 d x L x L1

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

Usage : G.10 Pillar, G.100. Shoe x 3 are used together.

**BALL CAGE Bronze Bush G. 70**

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



**G.70.1**

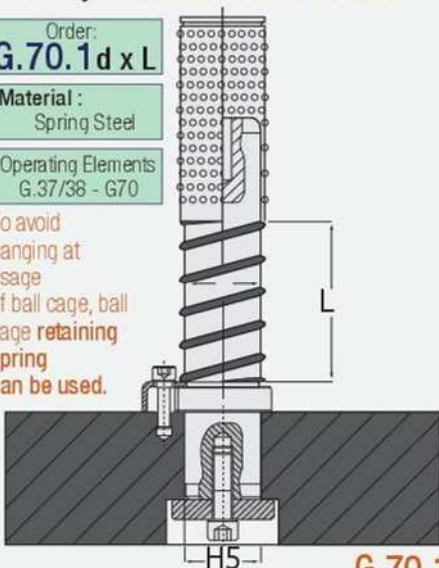
**Ball Cage RETAINING SPRING**

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

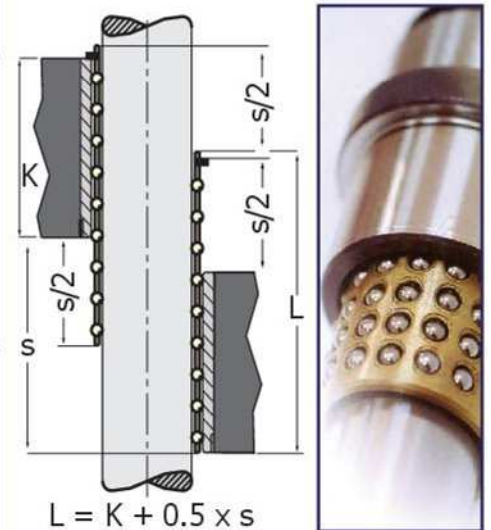
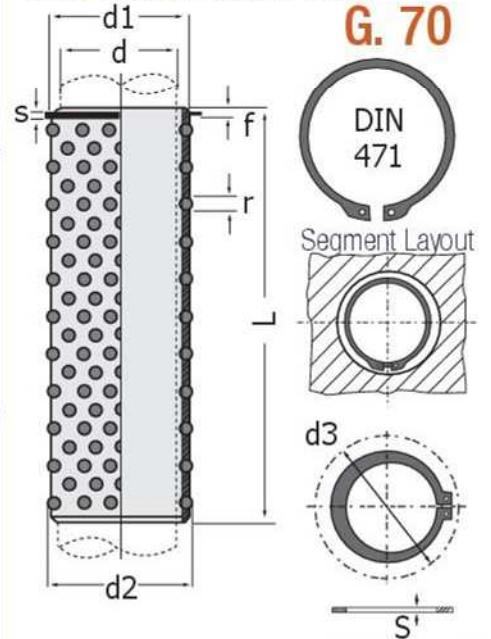
**BALL CAGE Bronze Bush G. 70**

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

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**



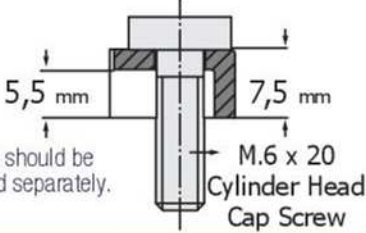
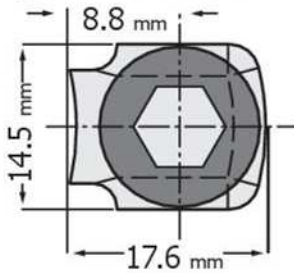
Order: **G. 70 d x L**  
With mounting segment

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



**FISH PLATE** **G.100**  
Clamping for Demountable Guide Pillar



Bolts should be ordered separately.

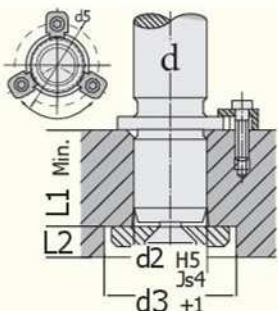
M.6 x 20  
Cylinder Head  
Cap Screw

Order : **G.100**



**Guide Pillar Mounting Flange**  
**G.110**

For product info, refer Page 16.

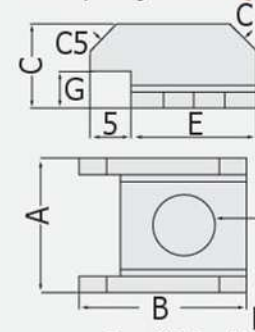


Mounting Dimensions and Tolerances of Demountable Mould Columns (Soft Shrink Fit)  
Given Dimensions: Standard Centre Collar Guide Pillar G.10 has recommended for product.

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  $\varnothing \leq 63'$  2 Pcs. and for  $\varnothing \geq 80'$  3 Pcs. holders are used. Mounting bolts are supplied separately.

For  $\varnothing 6.5 - M.6 - \varnothing 8.5 - M.8$

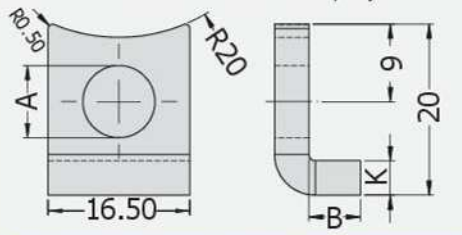
**Clamping Shoes (NAAMS) A-B** **G.101**

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

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

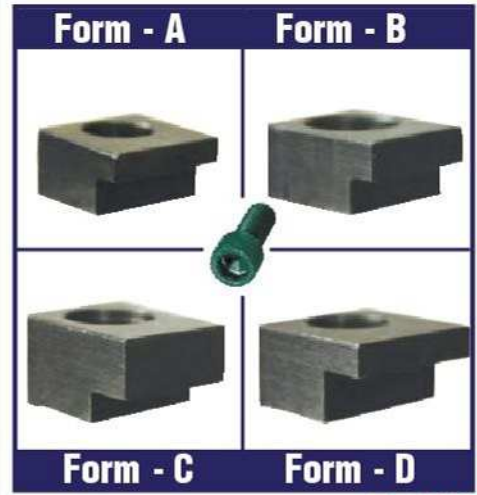


**CLAMPING SHOES** **G.143**  
Walled - Guide Pillar / Bush Clamping Shoe

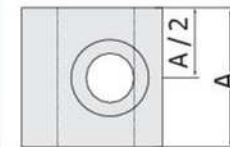
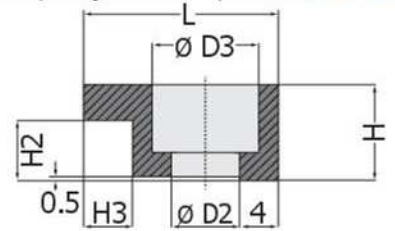


Form	A	B	K
M6	6.20	4.80	2.5
M8	8.40	5.80	4

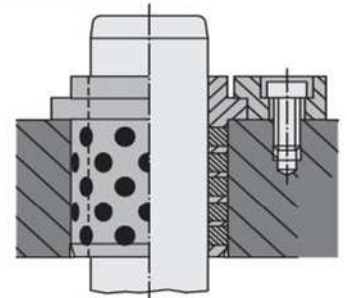
Order : **G.143. (M6 - M8)**



**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  $\varnothing \leq 63'$  two pieces and for  $\varnothing \geq 80'$  three pieces holders are used. Mould mounting bolts should be supplied separately.

**Clamping Shoes** **G.102**

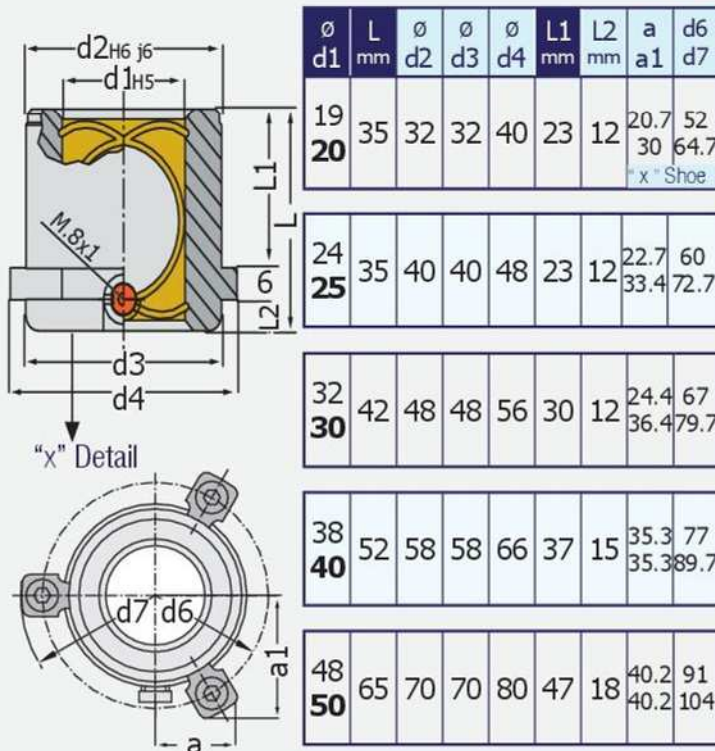
$\varnothing d1$ Guide Pillar	L mm	A mm	H mm	H2 mm	H3 mm	D2 $\varnothing$	D3 $\varnothing$	Form Bolt
25 - 32	20	20	10	6.3	5	7	11	<b>A</b> M.6 x16
40 - 50								
63 - 80	20	25	12	6.3	5	9	15	<b>B</b> M.8 x20
100 - 125	160							
63 - 80	25	32	16	6.3	10	11	18	<b>C</b> M.10 x20
100 - 125								
63 - 80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

Pls. lubricate from grease nipple on bush occasionally.



## STEEL / SHORT TYPE - BRONZE BUSH

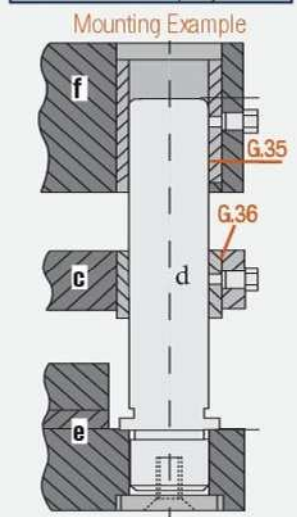
Press Mould / With Collar - Bronze Bearing Lubricated **G. 36**



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

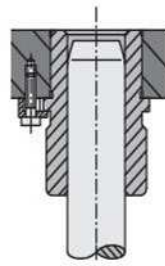
Operating Elements: G.01  
Pillar: G.15 - G.10 - G.19 - G.24  
G.17 - G.18 Clamping Shoes



∅ 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.

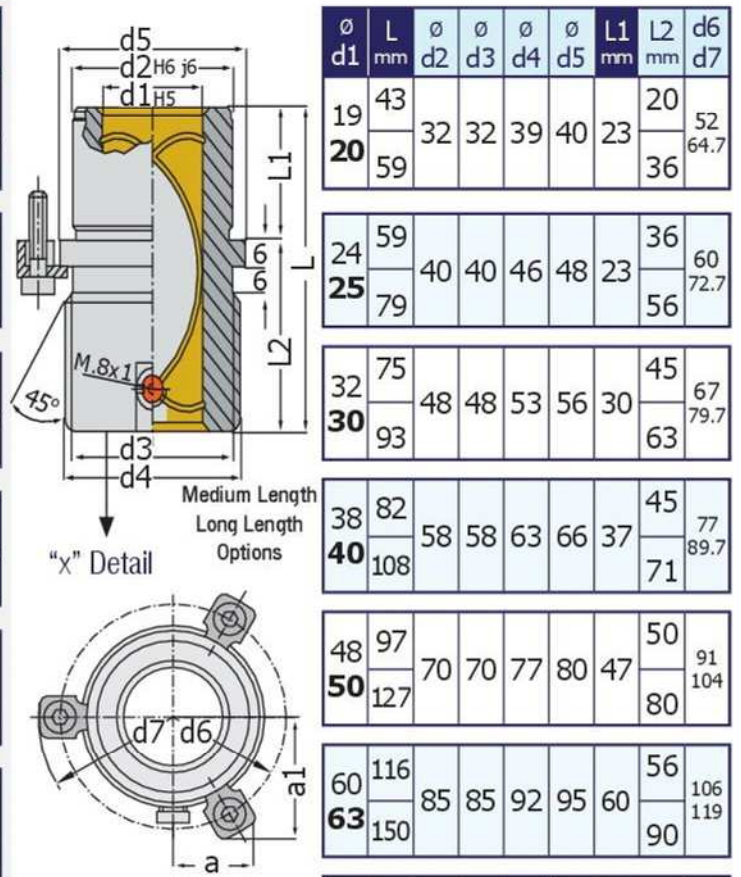
**Bronze plated bushes:** It has helical lubrication and inner lubrication system, its position can be lubricated with grease nipple from outside. Finally, equal distance to all lubrication points is ensured. Due to oil intake feature of bronze plated to inside it, there is no need for frequent lubrication, recommended operating speed is 15-30 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

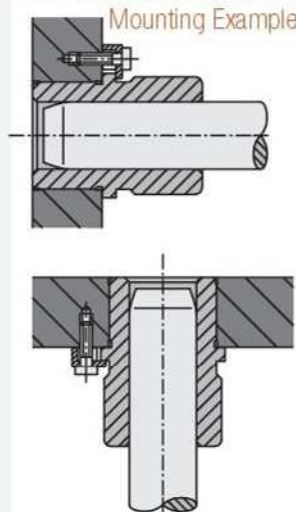


## STEEL / LONG TYPE - BRONZE BUSH **G. 35**

Press Mould / With Collar - Bronze Bearing - Lubricated



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



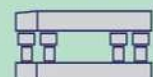
**Bronze Plated Bushes:** Hardened steel bushing absorbs strong side thrust. Thus, vibrationless rigid operation is ensured and bronze bush is protected against strong thrust made from end head, inner layer plated bronze with centrifugal technique is resistant against abrasion factor with its high quality. 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**

Section  
Press  
Mould



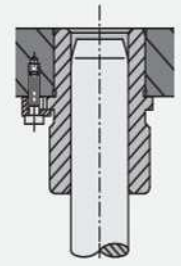
Page  
**47**



Pls. lubricate from grease nipple on bush occasionally.

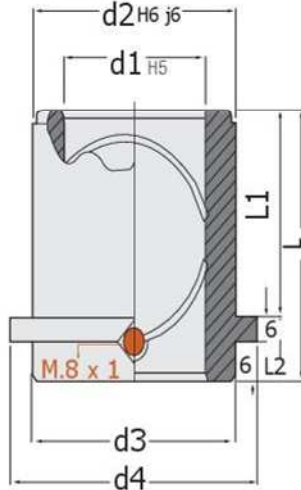


Mounting Example

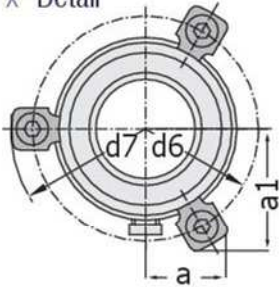


## STEEL / THICK TYPE - SHORT BUSH

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



"x" Detail



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

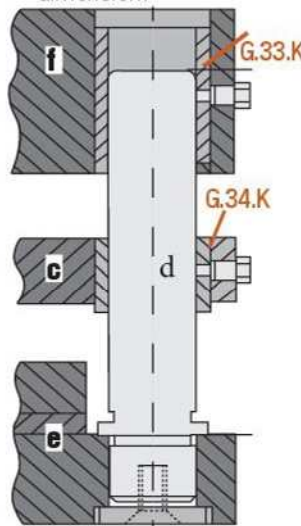
For spare shoes, refer Page 46. Clamping shoe M.6 x 20 4 Pcs. Clamping shoes for d1= 38 mm and long sizes.

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

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

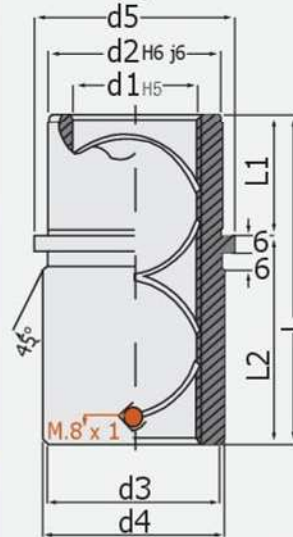
Operating Elements : G.01  
Guide Pillar Type: G.15-G.10-G.24  
G.11 - G.17 and clamping shoe.

**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.

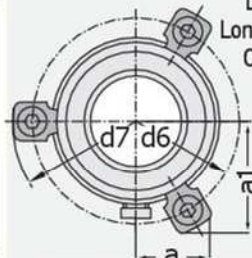


## STEEL / THICK TYPE - LONG BUSH

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



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.

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

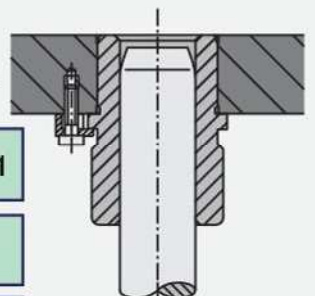
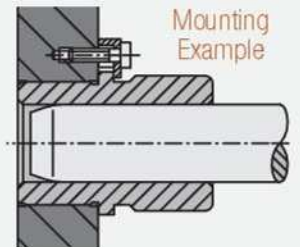
**Thick Type Steel Bushes:** Don't use two products without oil groove together. One of product at guide pillar or bushes should be used as set with oil groove.

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

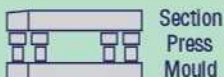
Order: **G. 33.K d1 x L x L1**

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 **GTH**  
Affordable Prices





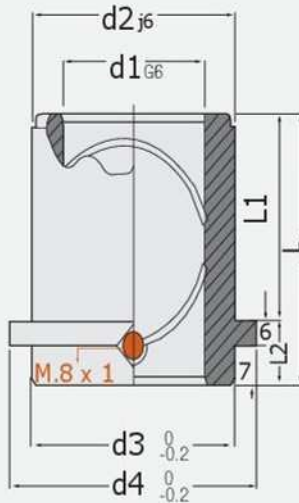
Pls. lubricate from grease nipple on bush occasionally.



## STEEL / THIN TYPE- SHORT BUSH

Press/ General Mould - With Collar - Lubricated

G. 34

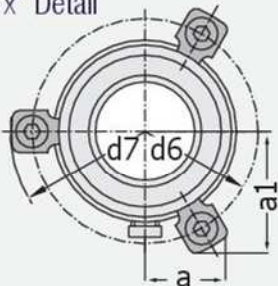


∅ d1	L mm	∅ d2	∅ d3	∅ d4	L1 mm	L2 mm	a a1	d6 d7
20	36	28	28	34	23	13	20.7 30	52 64.7

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
----	----	----	----	----	----	----	--------------	------------

"x" Detail



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
----	----	----	----	----	----	----	--------------	-----------

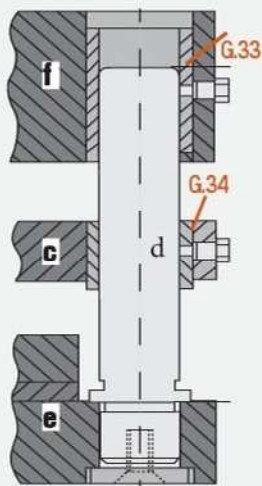
For spare shoes, refer Page 46. Clamping shoe M.6 x 20 4 Pcs. Clamping shoes for d1 = 40 mm and long sizes.

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

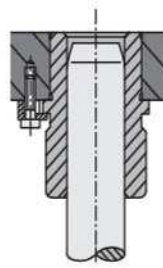
Material : 1.7131 (16 MnCr 5)  
Hardness : HRC 58 - 62 Depth : 12 mm

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

**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.



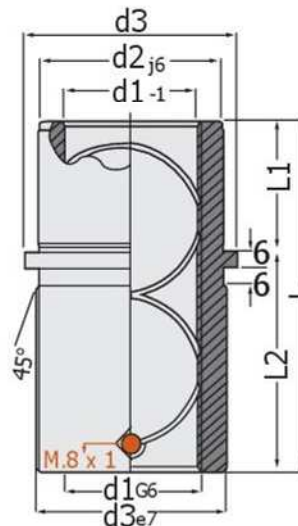
Mounting Example



## STEEL / THIN TYPE- LONG BUSH

Press/ General Mould - With Collar - Lubricated

G. 33



∅ d1	L mm	∅ d2	∅ d3	L1 mm	L2 mm	a a1	d6 d7
20	70	28	34	23	47	20.7 30	52 64.7

25	80	34	39	23	57	22.7 33.4	60 72.7
----	----	----	----	----	----	--------------	------------

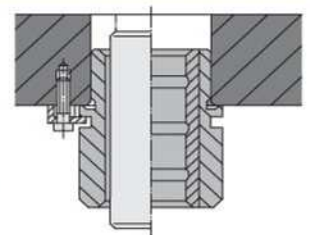
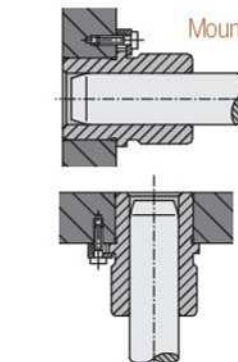
30	90	39	44	37	53	24.4 36.4	67 79.7
----	----	----	----	----	----	--------------	------------

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.

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



**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

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

Material : 1.7131 (16 MnCr 5)  
Hardness : HRC 58 - 62 Depth : 12 mm

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

Section  
Press  
Mould



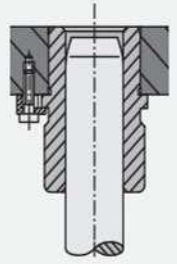
Page  
49



During mounting,  
should be lubricated  
once.



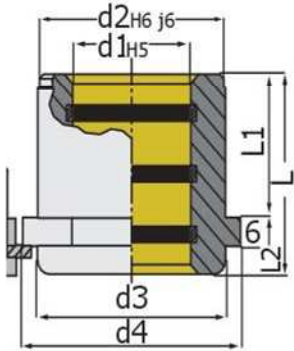
Mounting Example



### SHORT TYPE, STEEL /BRONZE /SELF-LUBRICATING BUSH

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

#### Self Lubricating Product



∅ d1	L mm	∅ d2	∅ d3	∅ d4	L1 mm	L2 mm	a a1	d6 d7
19	35	32	32	40	23	12	20.7	52
20							30	64.7
x Shoe								

24	35	40	40	48	23	12	22.7	60
25							33.4	72.7

32	42	48	48	56	30	12	24.4	67
30							36.4	79.7

38	52	58	58	66	37	15	35.3	77
40							35.3	89.7

48	65	70	70	80	47	18	40.2	91
50							40.2	104

60	80	85	85	95	60	20	45.5	106
63							45.5	119

80	80	105	105	118	60	20	54.5	129
							54.5	142

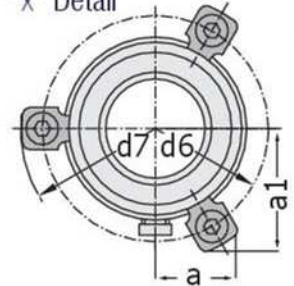
∅ 19 - 24 - 32 - 38 - 48 - 60  
are produced as per request.

#### 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.

"x" Detail



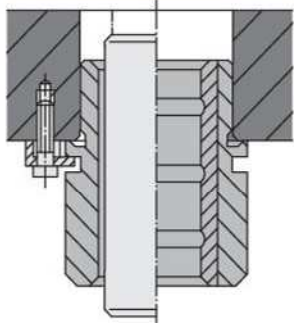
For spare shoes, refer Page 46. Clamping shoe M.6 x 20 4 Pcs. Clamping shoes for d1 = 38 mm and long sizes.

Order:

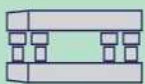
**G. 49 d1 x L x L1**

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.



Page  
50

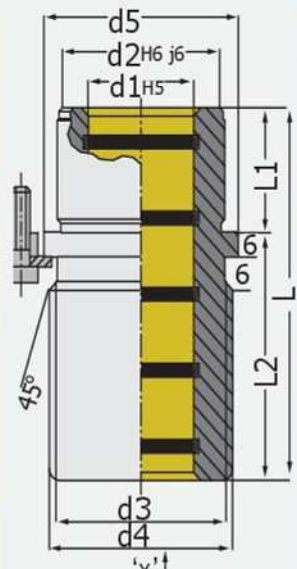


Section  
Press  
Mould

### LONG TYPE, STEEL /BRONZE /SELF-LUBRICATING BUSH

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

#### Self Lubricating Product



∅ d1	L mm	∅ d2	∅ d3	∅ d4	∅ d5	L1 mm	L2 mm	d6 d7
19	43	32	32	39	40	23	20	52
20							36	64.7

24	59	40	40	46	48	23	36	60
25							56	72.7

32	75	48	48	53	56	30	45	67
30							63	79.7

38	82	58	58	63	66	37	45	77
40							71	89.7

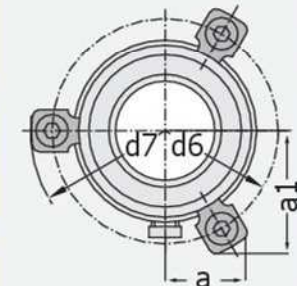
48	97	70	70	77	80	47	50	91
50							80	104

60	116	85	85	92	95	60	56	106
63							90	119

80	120	105	105	115	118	60	60	129
							90	142

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

Medium Length  
Long Length  
Options



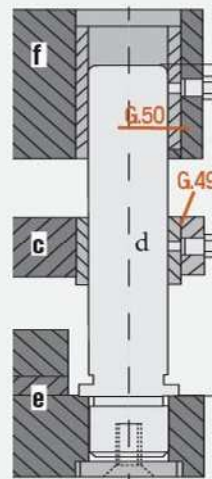
#### Self-lubricating Bronze Plated Bushes:

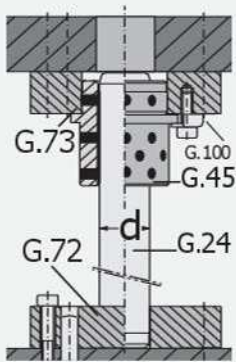
Self-lubricating channels has self lubrication feature. These channels create 25 % surfaces of total bearings. After lubrication during mounting, does not require any lubrication process. In cases that should be protected from effects such as impact, failure and heat effect, this system has most appropriate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

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

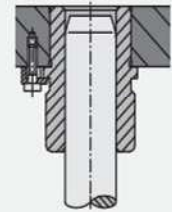
Material : 1.0503 (Ck 45 ) with induction  
Bronze Hardness: 80Hb / Self-lubricating plated

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





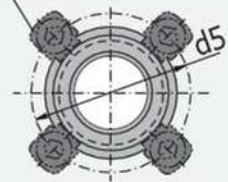
**GRAPHITE / BRONZE GUIDE BUSH WITH CENTER COLLAR** **G. 45**  
**DIN 9834 / ISO 9448 Self Lubricating**



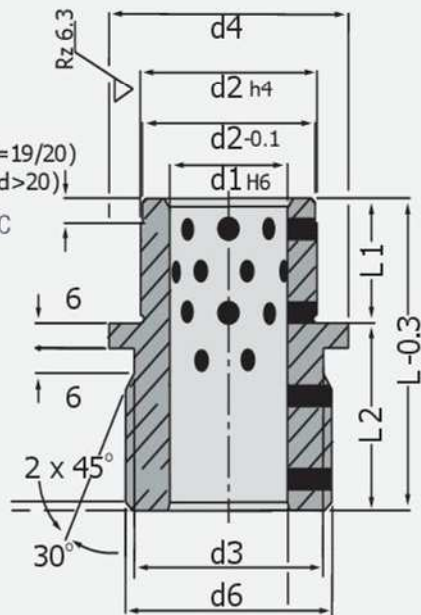
Heat Resistance : < 150°C



G.100 / G.101



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



**BRONZE GUIDE BUSH** **G. 45**

d d1	L mm	∅ d2	∅ d3	∅ d4	∅ d5	∅ 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

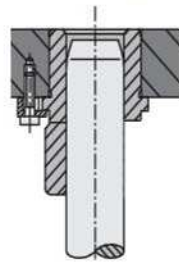


Order : **G. 45** d1 x L

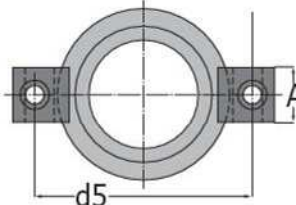
Operating Elements :  
 G. 24 - G.10  
 G. 18 - G.19 - G.20

Material : Bronze 190 - 220 HB  
 Graphite providing lubrication

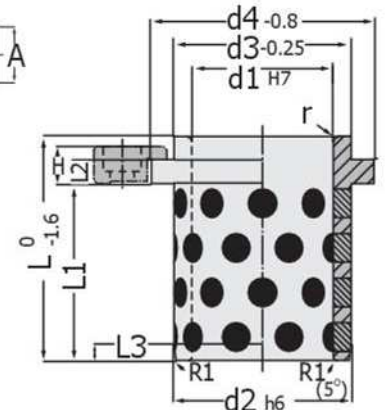
Mounting Example



**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



Heat Resistance : < 150°C

**DIN 9834 / ISO 9448 Self Lubricated** **G. 44**

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

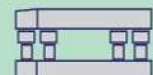
Material: Bronze / Graphite Providing Lubrication For  
 Bush Holder, select G.102 from Page 46.

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

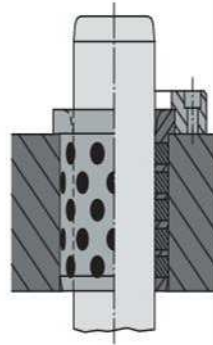
**BOTH** Produces  
 Sells  
 Affordable Prices



Section  
 Press  
 Mould



Page  
**51**

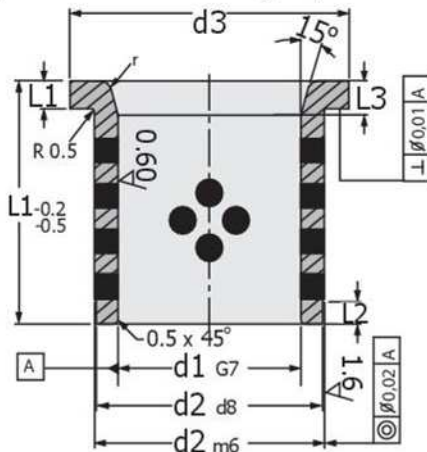


## GRAPHITE / BRONZE GUIDE BUSH

**CNOMO EM 24. 52. 100**

Graphite Bush Self Lubricating, Graphite

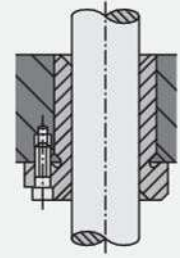
**G. 43**



Working Direction ↑

Heat Resistance : < 150°C

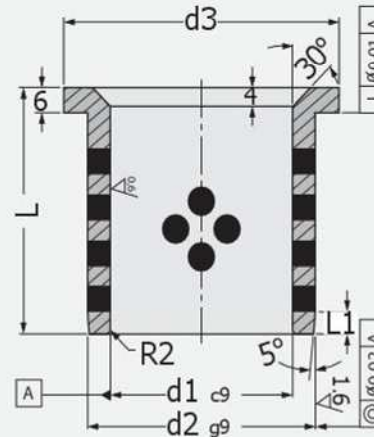
Should be lubricated once during mounting.



## GRAPHITE / BRONZE GUIDE BUSH

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

Graphite Bush Self Lubricating, Graphite

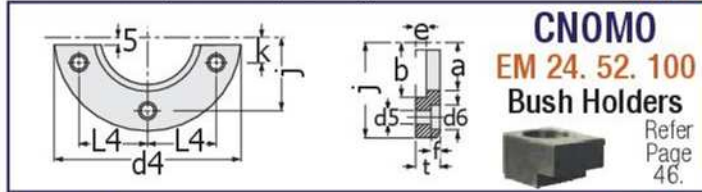


Working Direction ↑

Should be lubricated once during mounting.

### Guide Bush, Holder ( Shoe )

**G.102**



**CNOMO EM 24. 52. 100 Bush Holders**  
Refer Page 46.

Self Stock / Continuous Product

Heat Resistance : < 150°C

### Guide Bush, Holders (Clamping Shoes)

**G.101**



**Form - A**



**Form - B**



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

∅ d1	L mm	∅ d2	∅ 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**

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

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

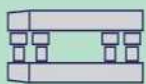
## NAAMS FORD WDX 13 - 80 Graphite Bush G. 41

∅ d1	L mm	∅ d2	∅ 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**

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.

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



Section Press Mould

**BOTH** Produces Affordable Prices



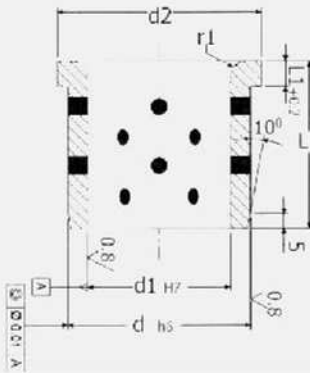
Should be lubricated once during mounting



### GRAPHITE / THICK GUIDE BUSH

#### NAAMS FORD WDX 13 - 70 Graphite Bush G. 42

Self Lubricated, Graphite Heat Resistance : < 150°C



### Guide Bush With collar, Holders

G.102

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



For  $\varnothing < 50$  2 Pcs. - for  $\varnothing > 50$  3 Pcs. holders can be used.

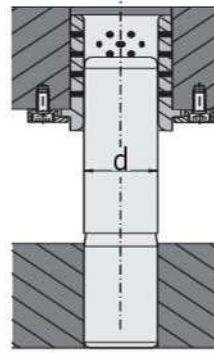
### NAAMS FORD WDX 13 - 70 Graphite Bush G. 42

$\varnothing$ d1	L mm	$\varnothing$ d	$\varnothing$ 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.

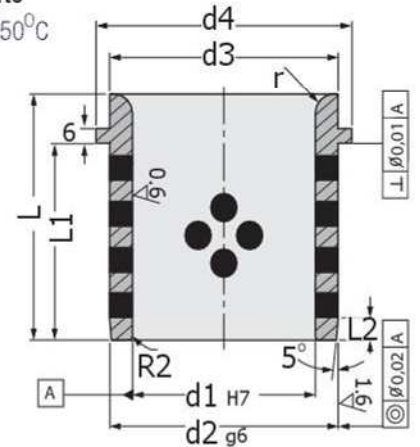
Operating Elements:  
It is compatible to use with G.01 / G.02  
G.04 / G.05 / G.03  
G.06 / G.07 / G.09  
Pillars.



### GRAPHITE / BRONZE GUIDE BUSH WITH COLLAR

#### NAAMS FORD WDX 13 -70 Graphite Bush G. 40

Self Lubricated, Graphite  
Heat Resistance : < 150°C



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

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



For  $\varnothing < 50$  2 Pcs. - for  $\varnothing > 50$  3 Pcs. holders can be used.

### NAAMS FORD WDX 13 -70 Graphite Bush G. 40

$\varnothing$ d1	L mm	$\varnothing$ d2	$\varnothing$ d3	$\varnothing$ 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

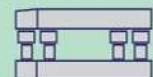
Material : Bronze / Graphite Providing Lubrication  
For Bush Holder, Select G.102 (Form D) from Page 46.

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.

**BOTH** Produces  
Sells  
Affordable Prices



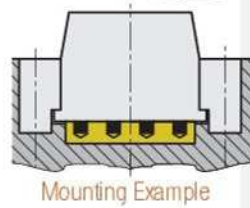
Section  
Press  
Mould



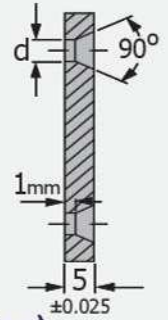
Page  
53



Should be lubricated once during mounting



Mounting Example

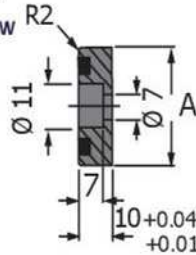
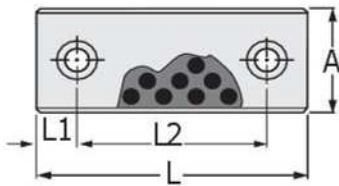


## Bronze/Graphite (Self-Lubricating) GUIDE PLATES

**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**

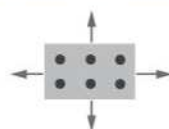
A	L	L1	L2	Hole	Bolt
<b>G. 85</b> <b>18</b>	75	15	45	2 Pcs.	2 Pcs. M.6 x20
	100	25	50		
	125		75		
	150		100		
<b>G. 85</b> <b>28</b>	75	15	45	2 Pcs.	2 Pcs. M.6 x20
	100	25	50		
	125		75		
	150		100		
<b>G. 85</b> <b>38</b>	75	15	45	2 Pcs.	2 Pcs. M.6 x20
	100	25	50		
	125		75		
	150		100		
<b>G. 85</b>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

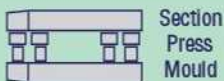
Working  
Direction - C. Section



Mould  
Components

**GTH**

Page  
54

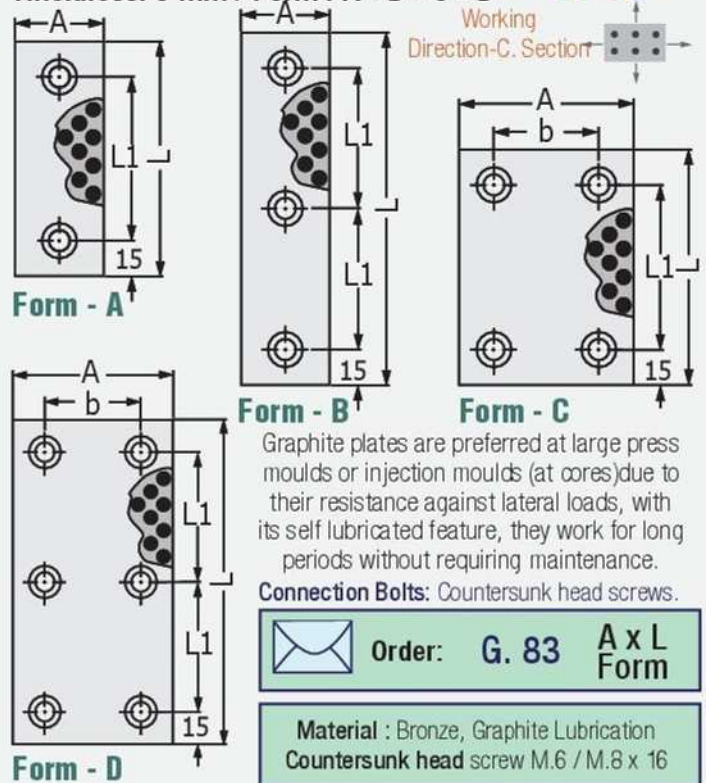


Section  
Press  
Mould

## Bronze/Graphite (Self-Lubricating) GUIDE PLATES

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

**G. 83**



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**

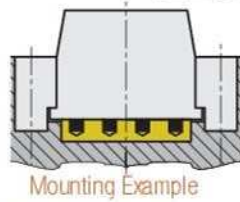
Material : Bronze, Graphite Lubrication  
Countersunk head screw M.6 / M.8 x 16

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

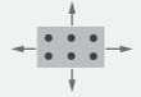




Should be lubricated once during mounting.



Working Direction- C. Section



Referans : ISO 9183 - 1

### Bronze/Graphite (Self-Lubricating) GUIDE PLATES

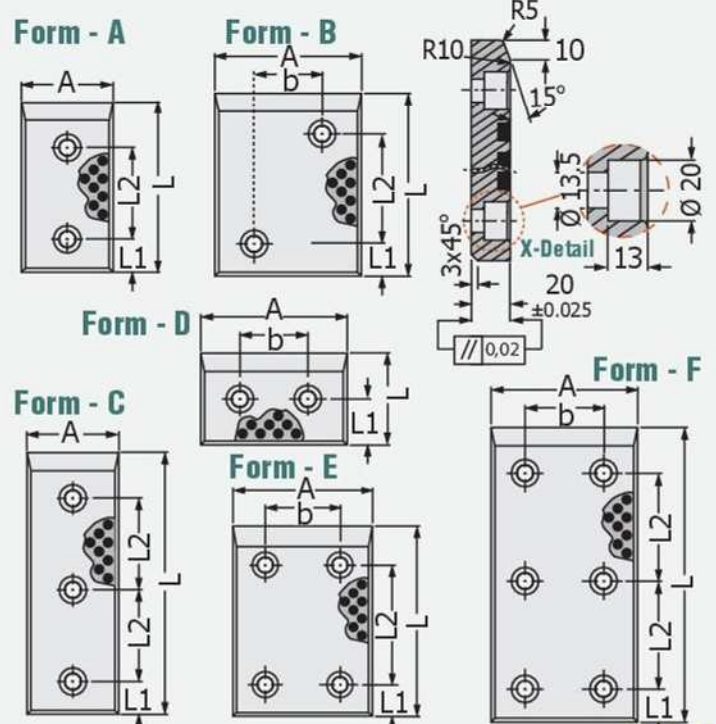
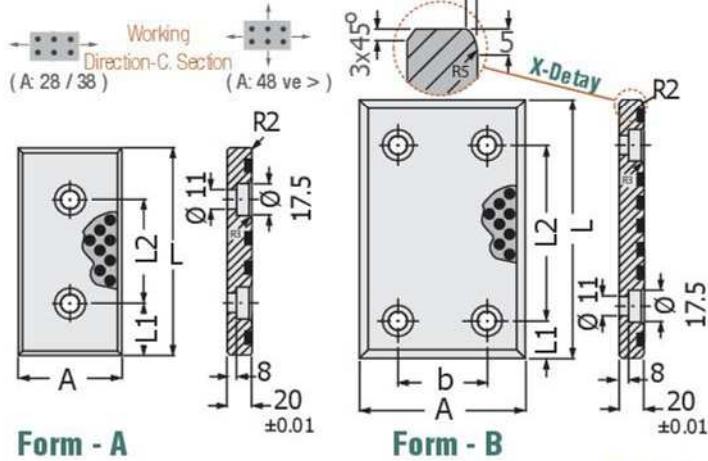
Thickness : 20 mm / Form: A - B

G. 88

### Bronze/Graphite (Self-Lubricating) GUIDE PLATES

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

G. 89



### GRAPHITE - BRONZE GUIDE PLATES

G. 88

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


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

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


### GRAPHITE - BRONZE GUIDE PLATES

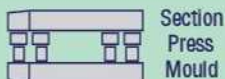
G. 89

	A	L	L1	L2	b	Form
G. 89 <b>50</b>	80			35		A
	100			55		
	125	20		80		
	160	20		115		
	200	20		155		
	250	20		100		
	315	20		132		
G. 89 <b>80</b>	50	25				D
	80	25		35		
	100	25		55		
	125	20		80	40	
	160	20		115		
	200	20		155		
	250	20		100		
G. 89 <b>100</b>	50	25				D
	80	25		35		
	100	25		55		
	125	20		80	60	
	160	20		115		
	200	20		155		
	250	20		100		
G. 89 <b>160</b>	50	25				D
	80	25		35		
	100	25		55		
	125	20		80	120	
	160	20		115		
G. 89 <b>200</b>	50	25				D
	80	25		35		
	100	25		55		
	125	20		80	120	
	160	20		115		
G. 89 <b>315</b>	50	25				D
	80	25		35		
	100	25		55		
	125	20		80	60	
	160	20		115		

	A	L	L1	L2	b	Form
G. 89 <b>50</b>	50	25				D
	80	25		35		
	100	25		55		
	125	20		80	85	
	160	20		115		
G. 89 <b>125</b>	50	25				D
	80	25		35		
	100	25		55		
	125	20		80	120	
	160	20		115		
G. 89 <b>200</b>	50	25				D
	80	25		35		
	100	25		55		
	125	20		80	120	
	160	20		115		
G. 89 <b>315</b>	50	25				D
	80	25		35		
	100	25		55		
	125	20		80	120	
	160	20		115		

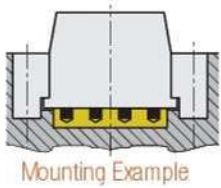
Reference : ISO 9183 -1 Type- A  
Mounting: Cylin. Head Cap Screw M12 x 25  
General Usage is up to 150° C. special products can be produced as per request

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



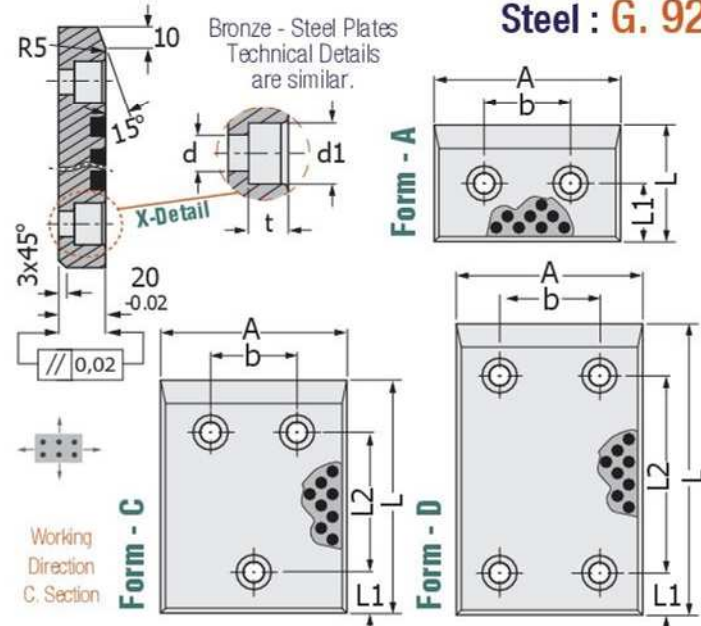


Reference :  
VDI 3357  
VW / AUDI 390 954  
BMW B2 2961 11  
FORD WDX 13-65



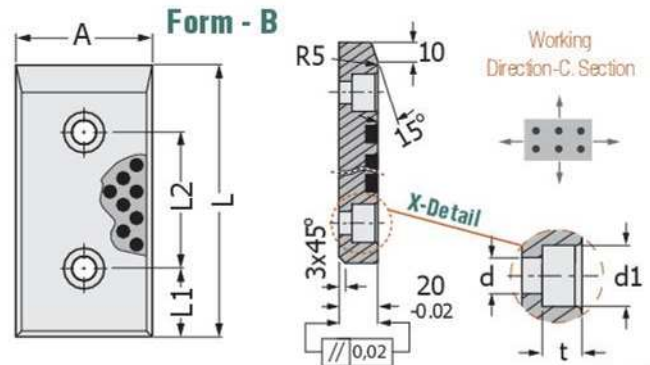
### STEEL & BRONZE GRAPHITE GUIDE PLATES

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



### 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
<b>50</b>	80	25	30	13.5	20	13	<b>B</b>	M8x25
	100		50					2 Pcs. M.12 x 25
	125		75					
	160		110					
	200		150					
<b>80</b>	80	25	30	13.5	20	13	<b>B</b>	2 Pcs. M.12 x 25
	100		50					
	125		75					
	160		110					
	200		150					
	250		170					
<b>100</b>	100	25	50	13.5	20	13	<b>B</b>	2 Pcs. M.12 x 25
	125		75					
	160		110					
	200		150					
	250		170					
	315		235					

### GRAPHITE - BRONZE GUIDE PLATES **G. 91 / 92**

A	L	L1	L2	b	d	d1	t	Form	Bolt
<b>80</b>	50	25	-	30	9	15	9	<b>A</b>	M8x25
<b>100</b>	50	25	-	50	13.5	20	13	<b>A</b>	2 Pcs. M.12 x 25
	80	40	-	75					
<b>125</b>	50	25	-	75	13.5	20	13	<b>A</b>	
	80	40	-	110					
<b>160</b>	50	25	-	110	13.5	20	13	<b>A</b>	
	80	40	-	150					
<b>125</b>	100	25	50	110	13.5	20	13	<b>C</b>	3 Pcs. M.12 x 25
	125		75						
	160		110						
	200		150						
	250		170						
315	235								
<b>160</b>	100	25	50	110	13.5	20	13	<b>C</b>	
	125		75						
	160		110						
	200		150						
	250		170						
<b>160</b>	250	40	170	110	13.5	20	13	<b>D</b>	
	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 150° C. Special products can be produced as per request.

Order: **G. 90**  
**A x L . Form**

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

**BOTH** Produces Sells Affordable Prices **GTH**

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

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

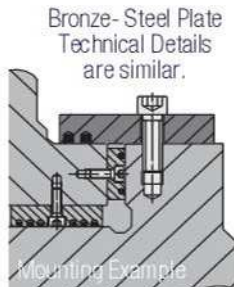
Section Press Mould Page 57



G. 94



G. 95



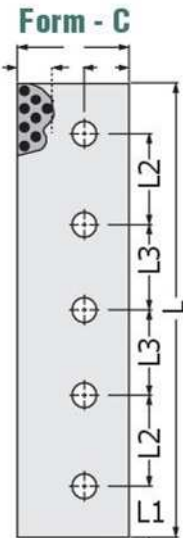
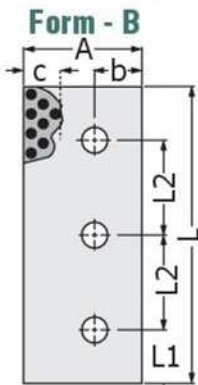
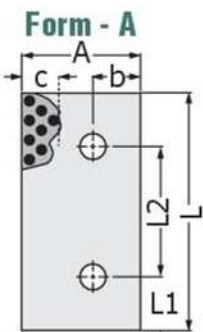
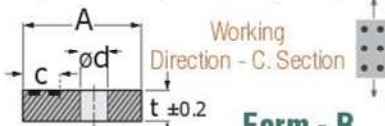
Reference : VDI 3357

**STEEL & BRONZE, GRAPHITE "E" TYPE PLATES**

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

General usage is up to 150°C.

Special products are produced as per request

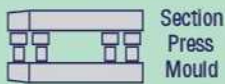


**GRAPHITE - BRONZE - STEEL PLATES G. 94 / 95**

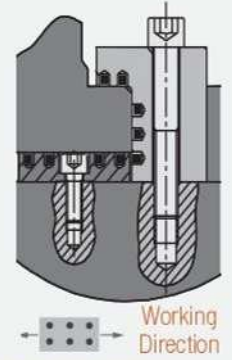
A	L	L1	L2	L3	t	c	b	d	Form			
35	160	45	70	-	10	10	15	11	A			
	200		110						B			
	250		80						B			
45	160	45	70	-	15	15	15	13.5	A			
	200		110						B			
	250		80						B			
55	160	45	70	-	15	20	20	17.5	A			
	200		110						B			
	250		80						B			
75	160	45	70	-	25	25	35	17.5	A			
	200		110						B			
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

Order: **G. 94 / 95** A x L Form

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



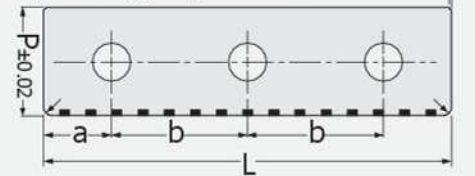
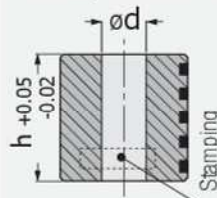
G. 93



Working Direction

**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		

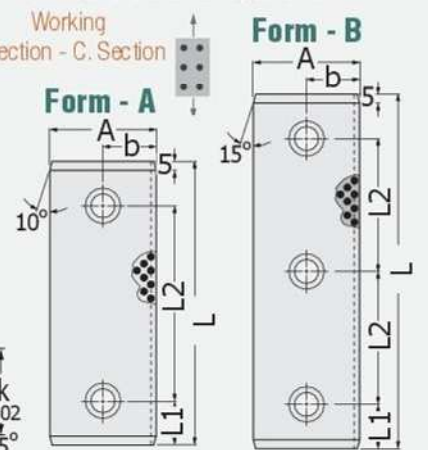


**GRAPHITE PLATE G. 96**

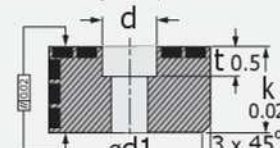
Block, Plate with two slipper surface.

Reference: VDI 3357 E TÍPI

Working Direction - C. Section



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	A								
	160		110	40					B			
200	75	B										

Order: **G. 96** A x L Form

Material : Bronze - Graphite





Reference:  
NAAMS  
G.15- G.17  
G.21- G.23  
G.11- G.33  
Serisi



## GRAPHITE / BRONZE, CAM GUIDE PLATES

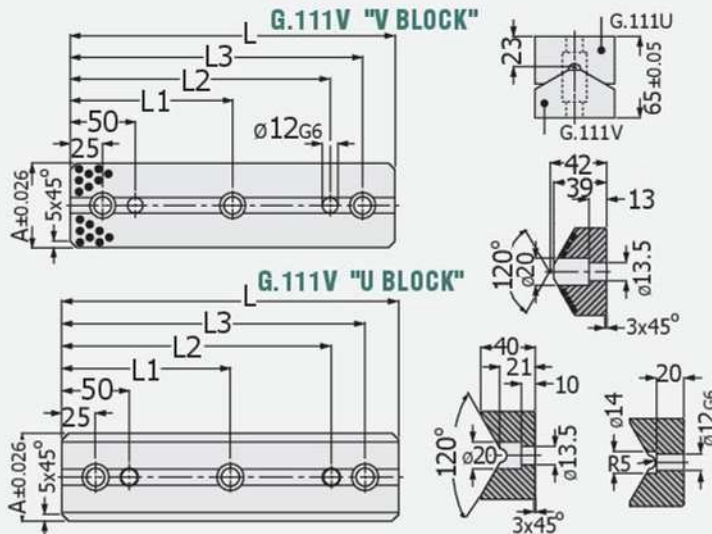
Bronze, Self Lubricated - "U / V" Bearings

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



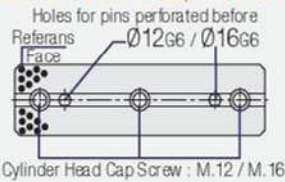
CAM GUIDE BLOCKS LENGTH : 65 / 75

Reference : NAAMS, G.15 / 17 / 21 / 23

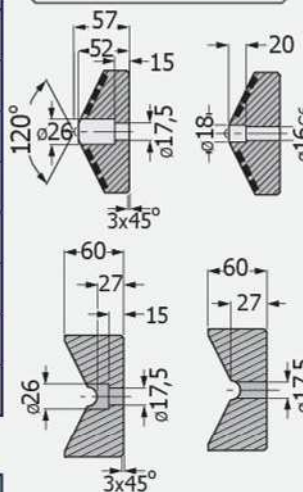
CAM BLOCK LENGTH : 125

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



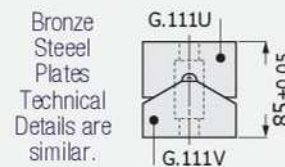
Cylinder Head Cap Screw : M.12 / M.16



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

Order: **G.111U / V**  
**A x L**

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



Reference:  
CNOMO  
E24.52.500

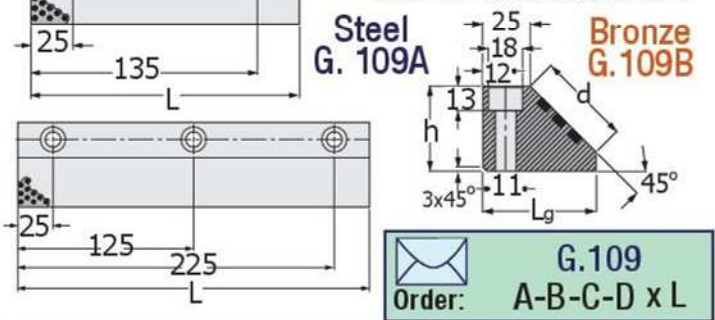


## GRAPHITE / BRONZE, CAM GUIDE PLATES

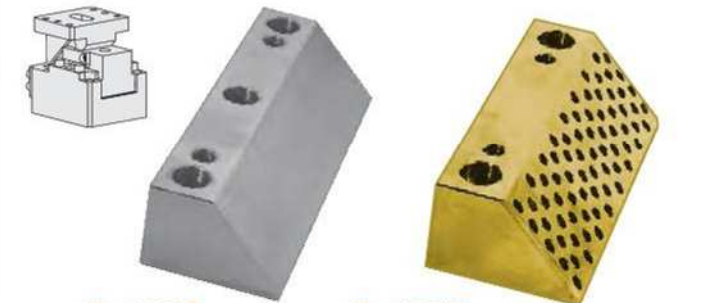
Bronze, Self Lubricated - Steel "V" Bearings

Reference : CNOMO E24.52.500

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



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

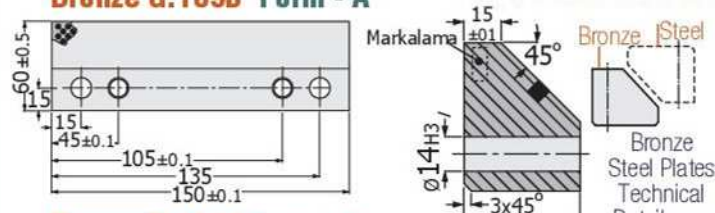


## GRAPHITE - BRONZE, CAM GUIDE BLOCKS

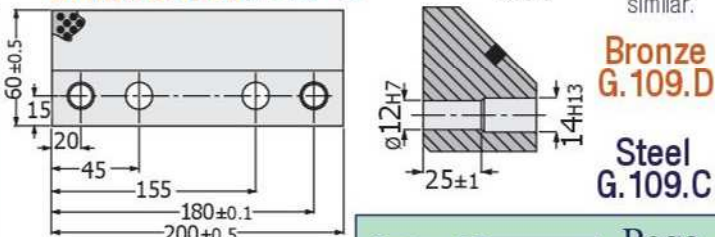
Bronze, Self Lubricated - Steel "V" Bearings

Bronze G.109D Form - A

PSA E24.52.535.G



Bronze G.109D Form - B

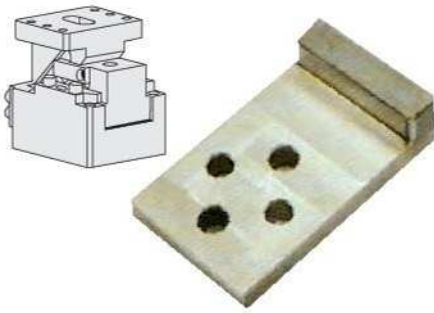


BOTH Produces Sells Affordable Prices

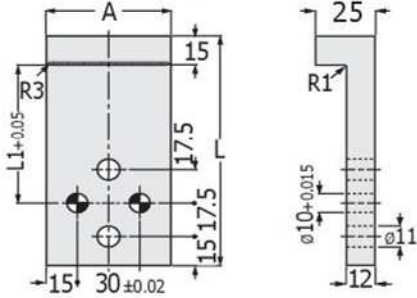


Section Press Mould

Page 61

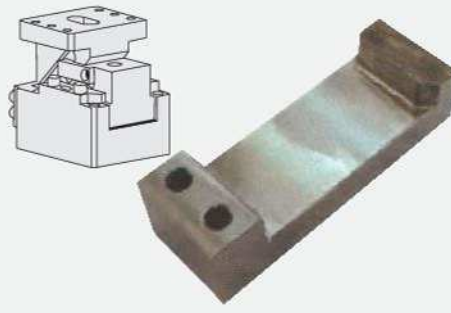


**CAM RETURN PLATE G. 139**  
Steel, Mandatory Return-Support

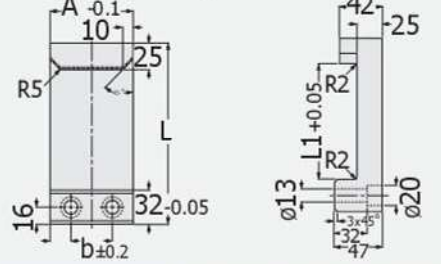


A	L	L1
60	100	52.5
	120	72.5

Order: **G. 139** A x L

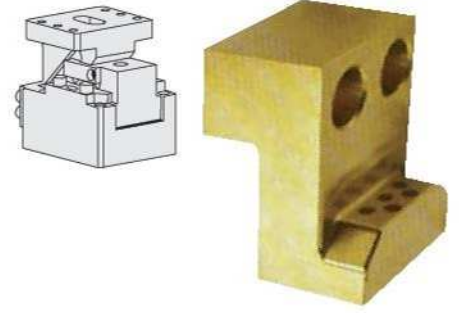


**CAM RETURN PLATE G. 78**  
Steel, Mandatory Return-Support

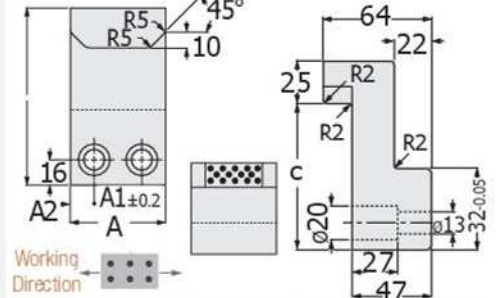


A	L	C	b	L1
60	171	30	15	114
	191			134
80	171	40	20	114
	191			134

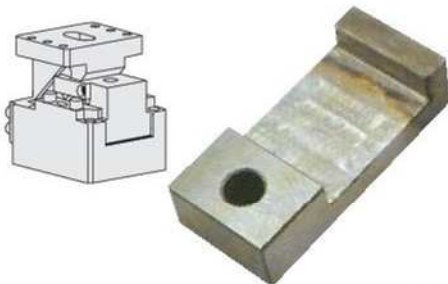
Material : 1.0503 ( C 45 ) HRC : 52 - 54  
Partly Induction /// Surface Hardening



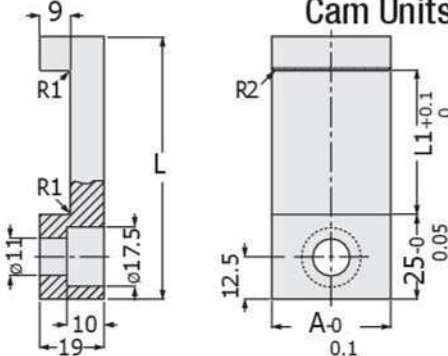
**CAM SUPPORT PLATE G. 77**  
Bronze - Graphite Plate for Cam



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

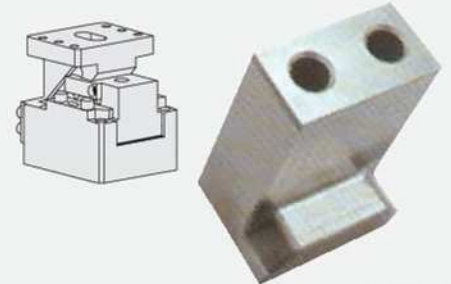


**SMALL CAM SUPPORT G. 138**  
Support Plate for Steel, Small Cam Units

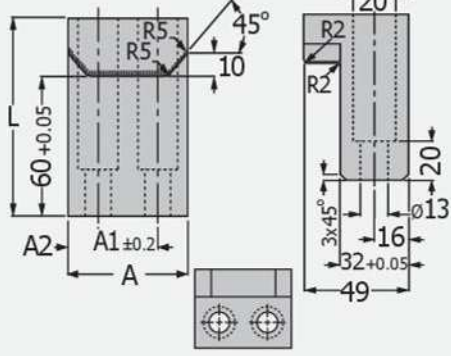


A	L	A2
30	67.5	32.4
35	77.5	42.4

Order: **G. 138** A x L



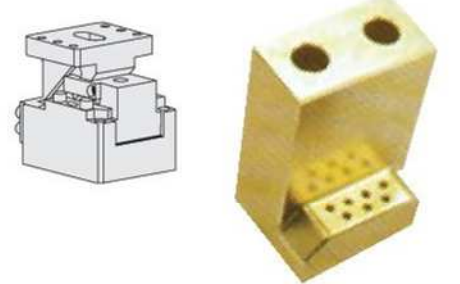
**CAM SUPPORT PLATE G. 78.D**  
Steel - Support Plate for Cam



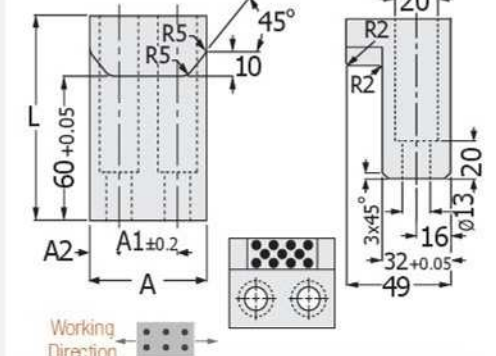
A	L	A1	A2
60	85	30	15
80		40	20

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

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



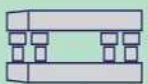
**CAM SUPPORT PLATE G. 77.D**  
Bronze - Graphite Plate For Cam

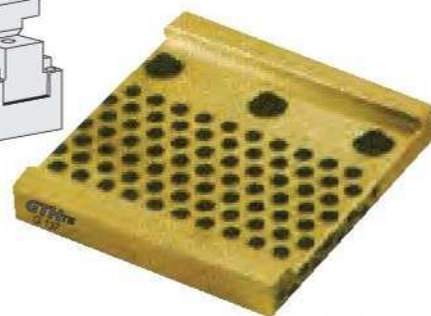
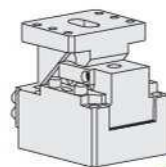
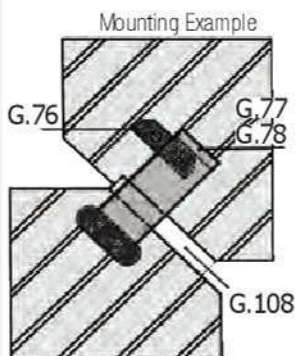
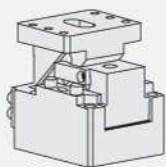


A	L	A1	A2
60	85	30	15
80		40	20

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

Material : Bronze and Graphite Providing Lubrication

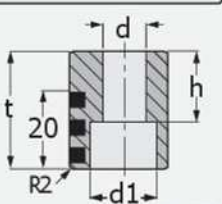
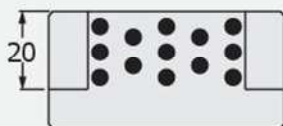
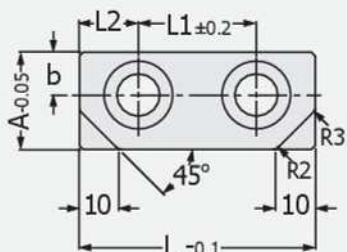




## FIXED CAM RETURN PLATES

Bronze and Graphite, Self Lubricated

**G.76.G**



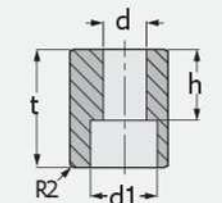
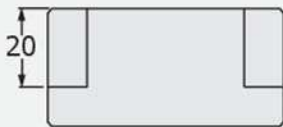
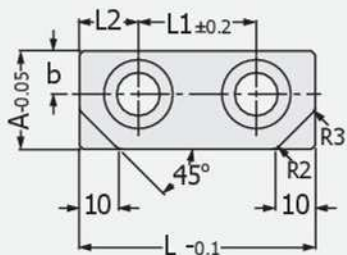
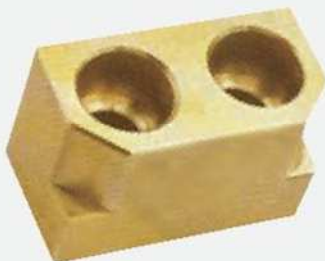
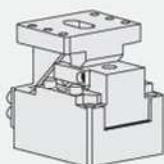
Working Direction →

## 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



Working Direction →

## 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

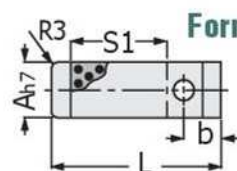
Order: **G.76.G / G.76.B**  
A x L

Material : Bronze and Graphite Bronze

## SELF LUBRICATING - CAM PLATES

**G. 137**

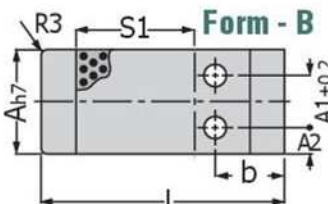
Cam Motion Distance Adjusting Plate



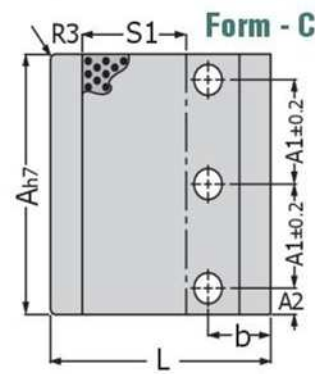
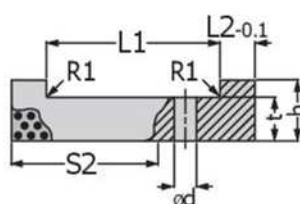
**Form - A**

Working Direction →

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



**Form - B**



**Form - C**

## GRAPHITE - BRONZE - STEEL, CAM PLATES

**G. 137**

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

Order: **G.137**  
Form x A x L

Material : Bronze - Graphite

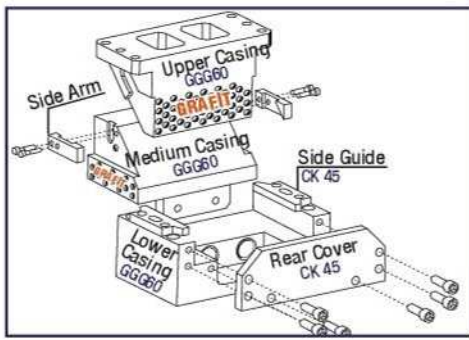
Order: **G.76.G / G.76.B**  
A x L

Material : Bronze and Graphite Bronze

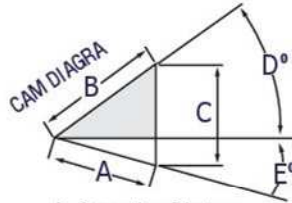
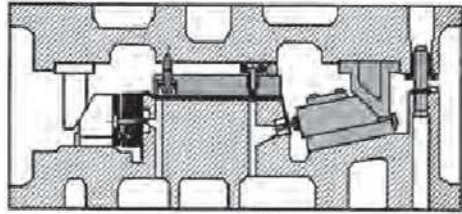
Mould Components **GTH**

Section Press Mould

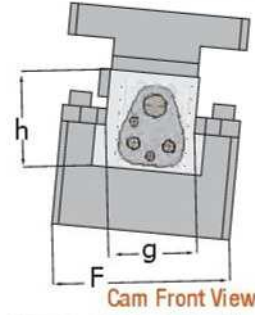
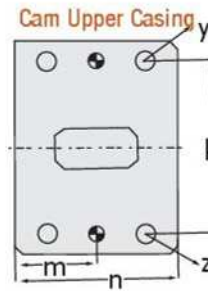
Page 63



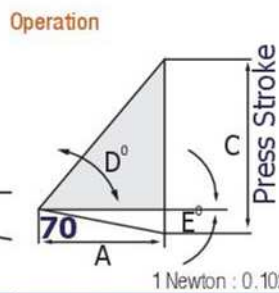
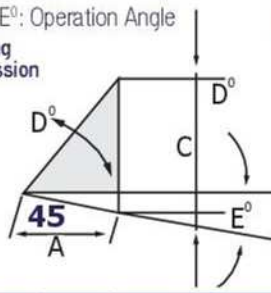
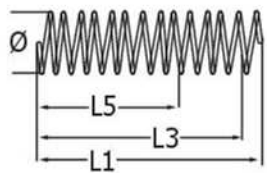
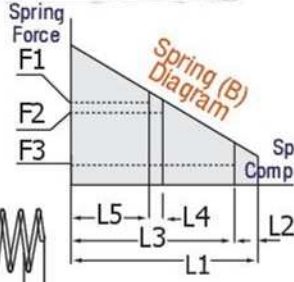
Mounting Example **CAM UNITS, DKA Serial HORIZONTAL Self Lubricating ANGULAR CAM UNIT Serial: DKA**



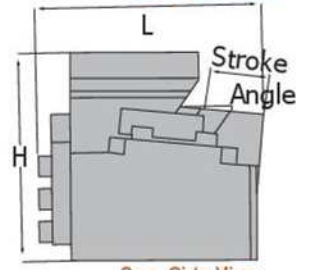
A: Operation Distance  
 B: Spring Motion Distance  
 C: Press Motion Distance  
 D°: Pushback Angle  
 E°: Operation Angle



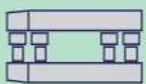
For spring diagram descriptions Refer Page 65



1 Newton : 0.102 Kg.



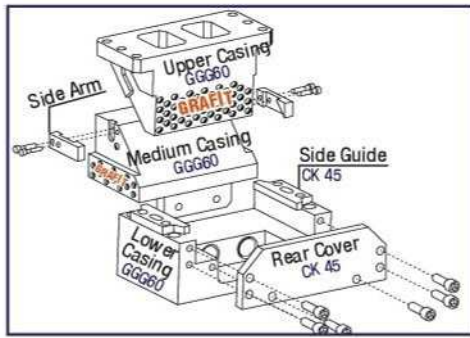
Order Type Model	Standard Operation (kN) Tone	Possible Operation Tone	CAM Stroke A	Press Stroke C	CAM Angle (E°)	Push Back D-E	Punch Space g/h	CAM Dimensions F x L x H	CAM Upper Casing k x m x n	Spring Force Newton F1 - F2 - F3	SPRING (B) Dimension x Operation					CAM Kg.	
											Ø x L1	L2	L3	L4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



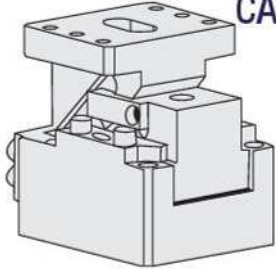
Section Press Mould

**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 (0°) / DIE MOUNTED CAM UNIT Serial: DK



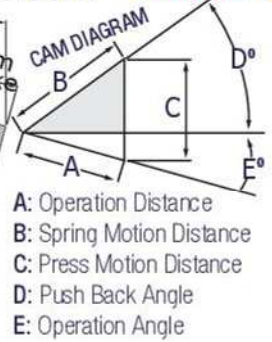
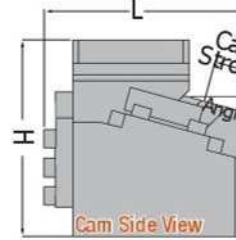
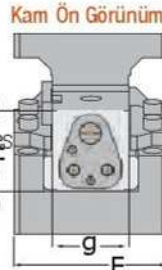
**Cam Units:** By turning vertical motion of press to horizontal motion, drilling - cutting - form processes are provided at moulds. These cam units are standard compact design components, plain / angular or aerial cam types are available. As well as standard cam models are suitable to many general applications,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

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

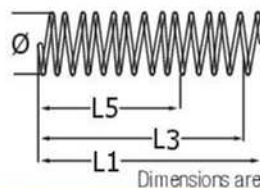
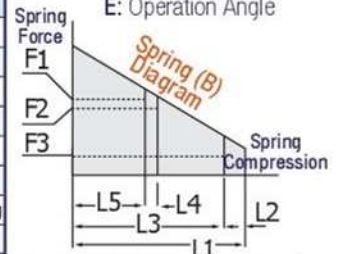
**Cam Units:** They are compact elements that can be turned press energy / motion from vertical motions to the different motions and can be connected to different angles. - They can be worked at wide force and stroke ranges.

Giving 10% Stroke tolerance is recommended.

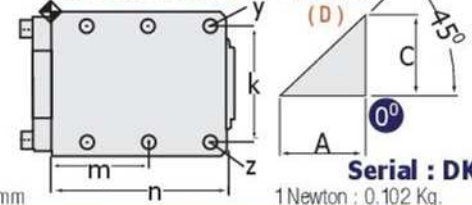
**Safety and working conditions:** Absolutely, should be avoided from lateral loads, cam unit should not be exposed to dirt and burrs (It can be L damaged to friction and surfaces.) To protect repeated operation of cam unit, it should be secured to the mould robustly. Steel or Die Gas spring used at 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)



Cam Upper Casing



Operation (D) Serial : DK  
1Newton : 0.102 Kg.

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					CAM Weight Kg.
									Ø x L1	L2	L3	L4	L5	
DK 52.25	1.5 Ton	3 Ton	25	g:52 h:65	98x140x140	98x40x80	Ø	594-504-144	20 x76	8	68		43	8.3
DK 52.40	Stamp	Stamp	40		98x155x140	98x45x90	9 - 14	605-542-101	20 x102	8	94	5	54	9.1
DK 52.60	1.000.000	300.000	60		98x200x140	98x55x110	2 x 7	613-571-109	20 x152	13	139		79	11.9
DK 65.40	2 Ton	4 Ton	40	65	130x167x160	130x50x100	11-18	749-671-125	25 x102	8	94		54	14.6
DK 65.60	1.000.000	300.00	60	70	130x212x160	130x55x110	2 x 9	760-707-136	25 x152	13	139	5	79	18.2
DK 100.40	3 Ton	6 Ton	40	100 100	175x218x200	165x60x120	Ø	1133-1015-189	32 x102	10	92		52	31.9
DK 100.60	Stamp	Stamp	60		175x238x200	165x70x140	14-20	1133-1063-203	32 x152	15	137	5	77	33.2
DK 100.80	1.000.000	300.000	80		175x277x200	165x75x150	2 x 11	1306-1235-170	32 x203	15	188		108	38.7
DK 150.40	6 Ton	9 Ton	40	150	260x225x220	230x60x120	11-26	1843-1651-307	32 x102	10	92		52	53.4
DK 150.60	1.000.000	300.00	60	100	260x245x220	230x70x140	2 x 15	1854-1727-330	32 x152	15	137	5	77	56.5
DK 200.40	8 Ton	12 Ton	40	200	310x236x240	280x65x130	18-26	2765-2577-461	32 x102	10	92		52	73.9
DK 200.60	1.000.000	300.00	60	110	310x256x240	280x75x150	2 x 15	2781-2591-495	32 x152	15	137	5	77	77.6
DK 300.40	12 Ton	18 Ton	40	300	410x246x270	380x70x140	15-18	3614-3238-602	40 x105	10	92		52	116.2
DK 300.60	1.000.000	300.00	60	130	410x266x270	380x80x160	2 x 15	3657-3407-651	40 x152	15	137	5	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

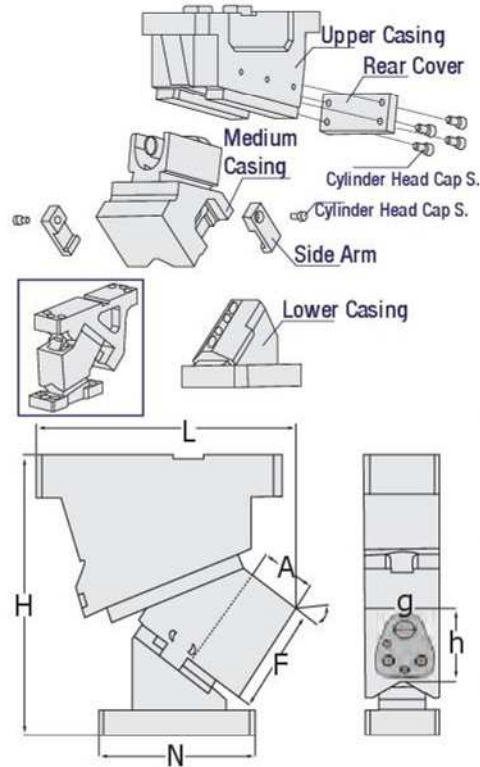
**Required Stroke and Force Criteria at Die Mounted Cams:** Drive Angle - CAM Angle - Operation Stroke - Required Force ( Drilling Force + Spring Force + Friction Force ) - Press Force - Driver Force- Cam Force ( Required Force / Drive Angle ) - Press Stroke ( Operation Stroke / Drive Angle)



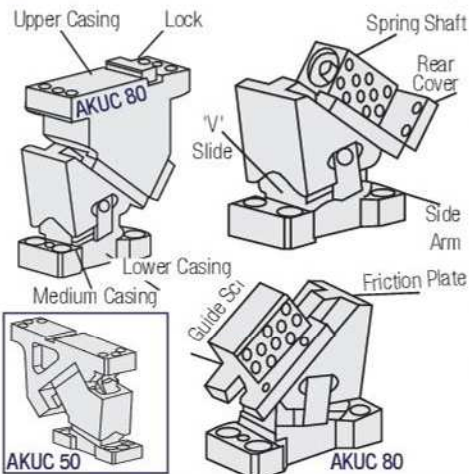
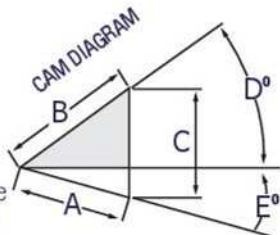


Serial: AKUC

**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**

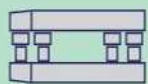
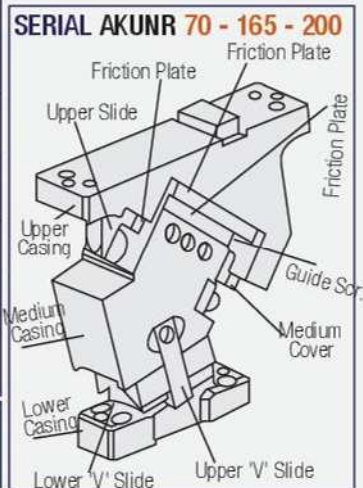
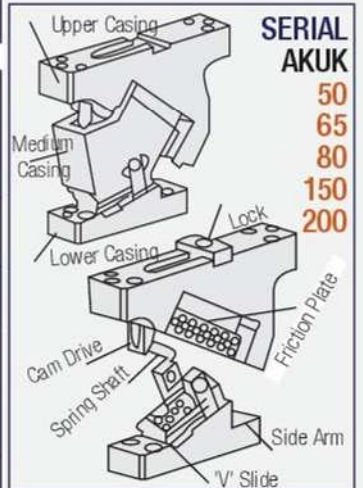
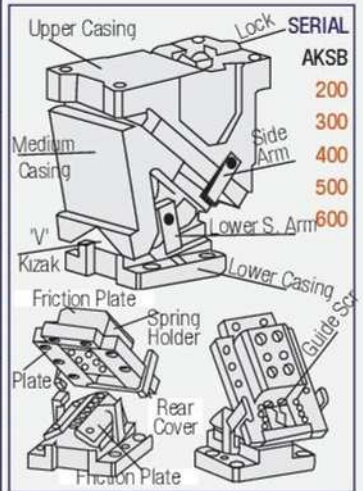
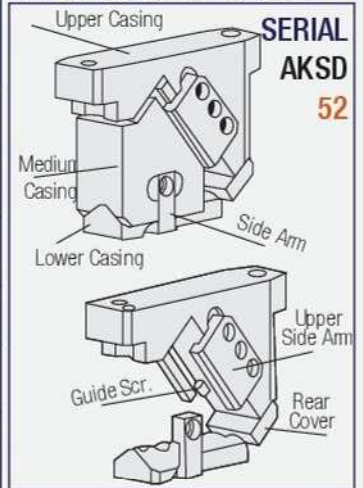
AKUC 50 : Standard working power is 2 Tons-Possible working 4 Tons

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. 0°	0°	50°	30.2	36		47	118x122.5 225x200	12.7
AKUC 50. 5°	5°	45° 5°	30.5	33.1		43	127x121.5 227x200	12.3
AKUC 50. 10°	10°	40° 10°	30.3	30.3		39	134x120 223.7x200	11.8
AKUC 50. 15°	15°	35° 15°	30.5	28.6		36	140x117.7 224.4x200	11.8
AKUC 50. 20°	20°	30° 20°	30.4	26.9		33	151x114.6 221.8x200	11.5
AKUC 50. 25°	25°	25° 25°	30	25.4	G: 50	30	158x111.8 215.9x200	11.3
AKUC 50. 30°	30°	20° 30°	32.6	26.5		30	159x115.3 213.6x200	11.1
AKUC 50. 35°	35°	15° 35°	35.4	28.1	h: 75	30	170x103.1 204.9x200	10.9
AKUC 50. 40°	40°	10° 40°	38.6	30		30	177x97.3 206.7x200	10.9
AKUC 50. 45°	45°	5° 45°	42.3	32.5		30	182x97 202x200	10.6
AKUC 50. 50°	50°	50° 50°	46.7	35.8		30	186x94 195.7x200	10.6
AKUC 50. 55°	55°	5° 55°	52.1	40.1		30	190x83.7 189.8x200	10.8
AKUC 50. 60°	60°	10° 60°	59.1	46		30	194x75 179.3x200	11.2
AKUC 50. 65°	65°	10° 65°	58.3	48.5	50 90	25	209x73.2 176.6x200	11.6
AKUC 50. 70°	70°	10° 70°	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. 0°	0°	50°	32.1	38.3		50	160x171 260x270	25.9
AKUC 80. 5°	5°	40° 5°	38.4	35.5		50	173x160.6 273x270	26.3
AKUC 80. 10°	10°	40° 10°	38.9	38.9		50	180x149.6 280x270	26.6
AKUC 80. 15°	15°	40° 15°	39.7	42.4		50	186x138 286x270	25.1
AKUC 80. 20°	20°	30° 20°	46.1	40.8		50	196x140.9 286x270	25.3
AKUC 80. 25°	25°	30° 25°	47.8	45.2	G: 80	50	200x128.4 290x270	25.3
AKUC 80. 30°	30°	20° 30°	54.3	44.2		50	208x135.7 283x270	23.2
AKUC 80. 35°	35°	20° 35°	57.4	50	h: 86	50	209x122.7 284.3x270	23.4
AKUC 80. 40°	40°	10° 40°	64.3	50		50	215x129.7 275x270	22.4
AKUC 80. 45°	45°	10° 45°	69.6	57.9		50	214x166.6 274x270	22.4
AKUC 80. 50°	50°	50° 50°	77.8	59.6		50	228x118.6 262.5x270	21.6
AKUC 80. 55°	55°	55° 55°	87.2	71.4		50	225x105.9 259.6x270	21.7
AKUC 80. 60°	60°	10° 60°	98.5	76.6		50	241x93.4 240.7x270	23.2

**OTHER MODELS OF AERIAL CAM UNITS**

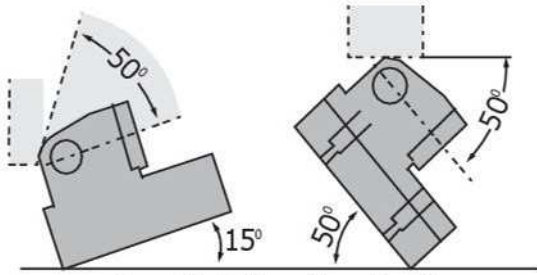


Section Press Mould

**GTH** Mould Components



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

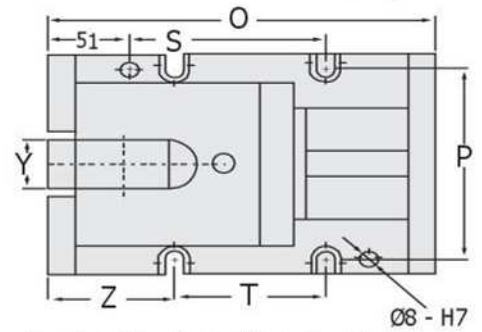
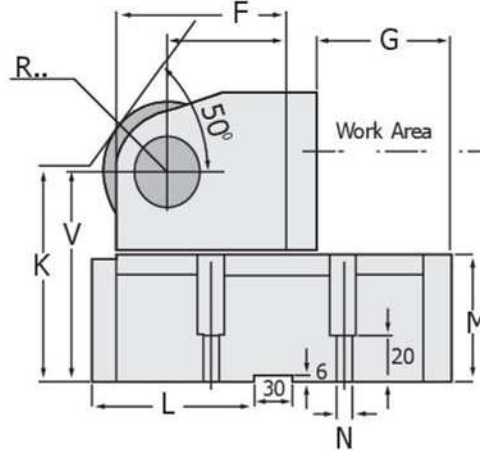
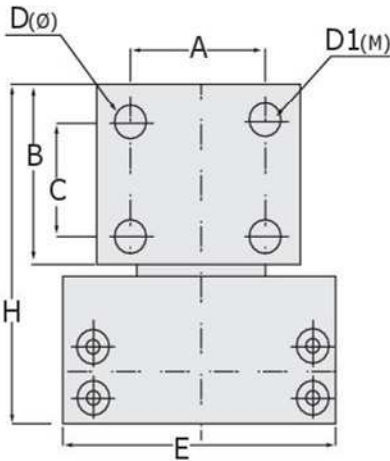


Cam Unit Handling Draft  
Cylinders Eccentric Cylinders



SLIDE PLAIN UNIT - ROLLER CAM

Serial: RK



Detailed Dimensions of Product Technical Drawing

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



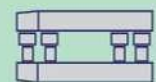
Large Type Press Mould



Large Type Press Mould

GTH  
Mould Components

Section Press Mould

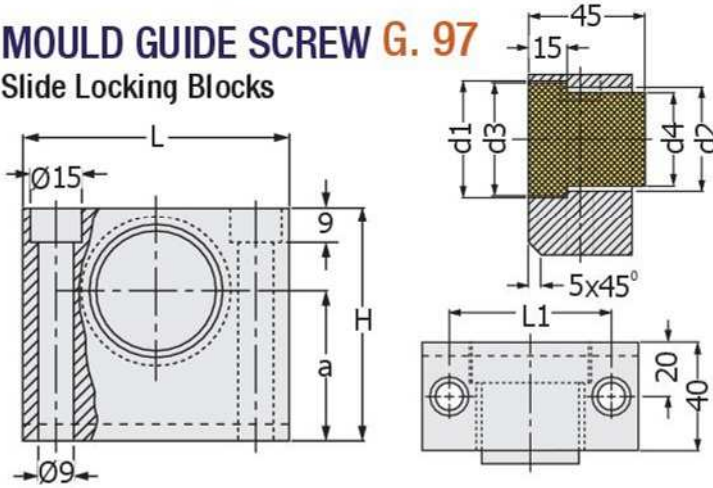




Connection bolts should be supplied separately.

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

**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

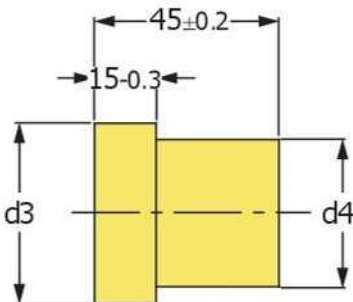
Material : 1.0503 ( C 45 )  
 Bolts can be supplied separately.

**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

Page 68 Section Press Mould

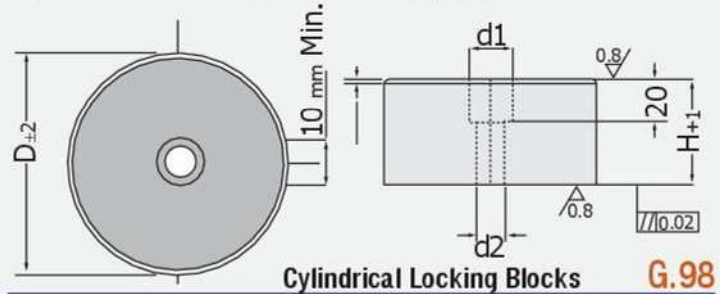
Order: **G.97.A**  
 d2 x d3



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

Connection bolts ( Imbus ) should be supplied separately.

**CYLINDER MOULD GUIDE SCREW G.98**  
 Cylindrical Locking Blocks



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

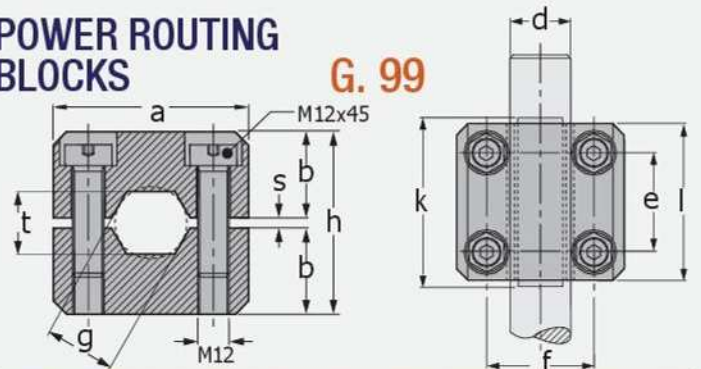
Order: **G.98**  
 D x H

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



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

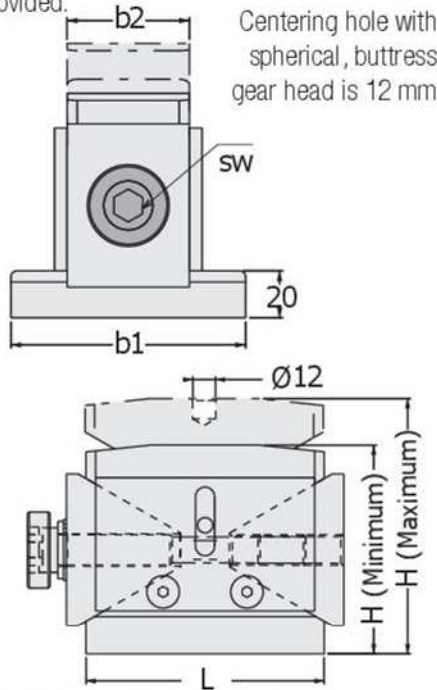
Order: **G.99**  
 a x l

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.



**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.

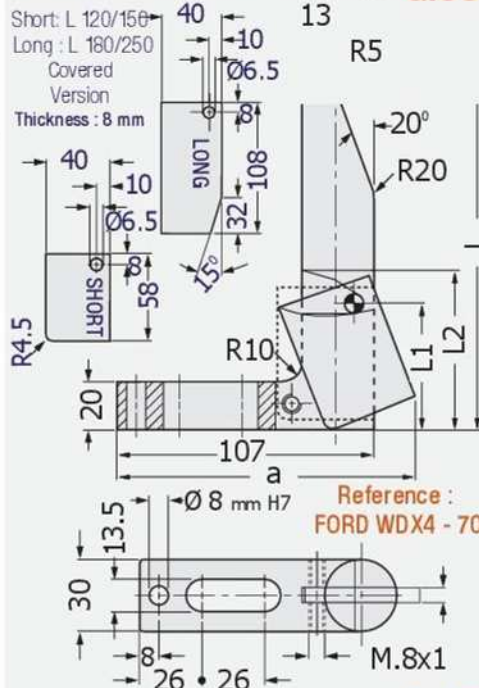
**Straightening Wedges: Serial: 1520**

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**



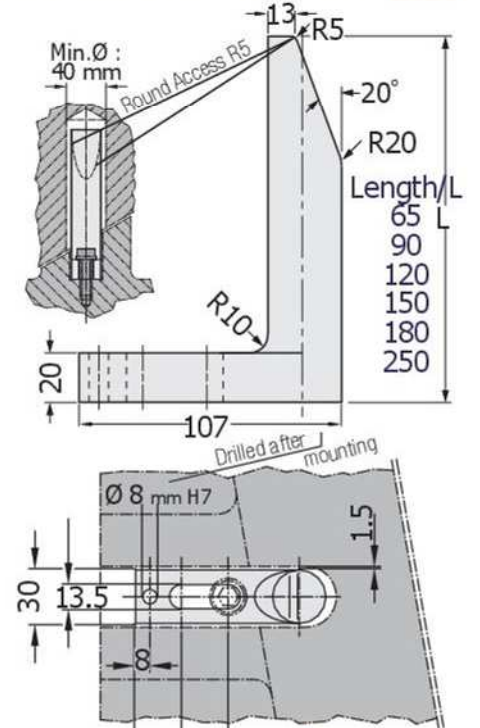
**Control Part Mechanical Thrusts G.68**

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**



L
65
90
120
150
180
250

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

**Continuous Stock**  
**Order: 67.L**  
 Material: Ck 40 Forged

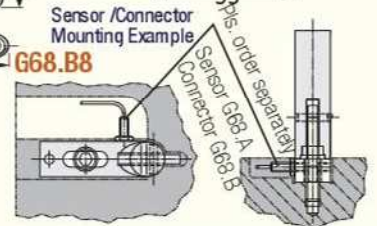
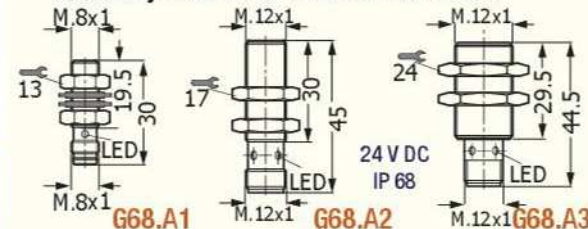
**PROXIMITY SENSORS AND CONNECTORS FOR PART CONTROL THRUST**

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**



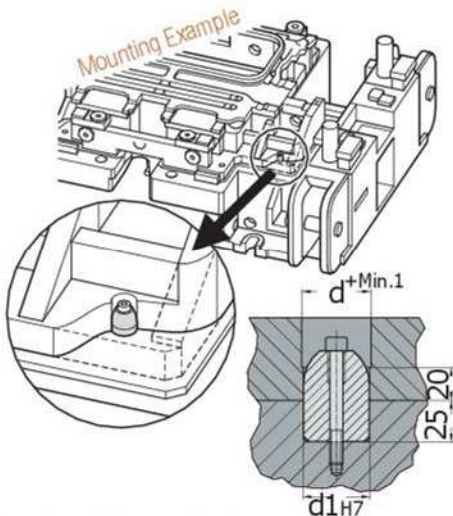
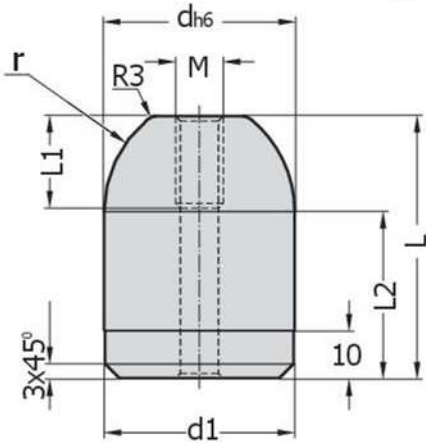
**Proximity Sensor for Control Part Thrust**



**Section Press Mould**  
**Page 69**



**CENTERING PIN G.65**  
At centering of perforated parts  
Overhead Screw Type



**Overhead Screw Centering Pin**

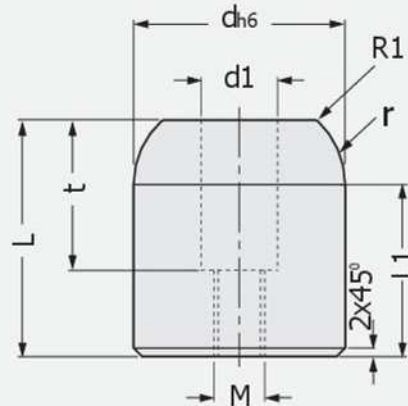
d	L	L1	L2	d1	M	r
22	45	16	35	21.95	M.8	15
22	55		45	21.95		
32	50	20	35	31.95	M.10	20
40	55		35	39.95		
40	65		45	39.95		25
50	55		35	49.95		



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

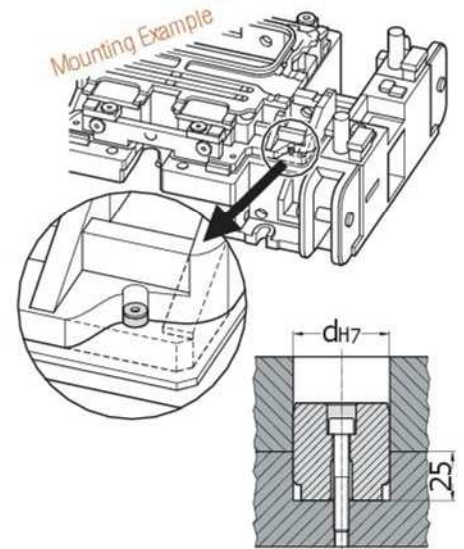
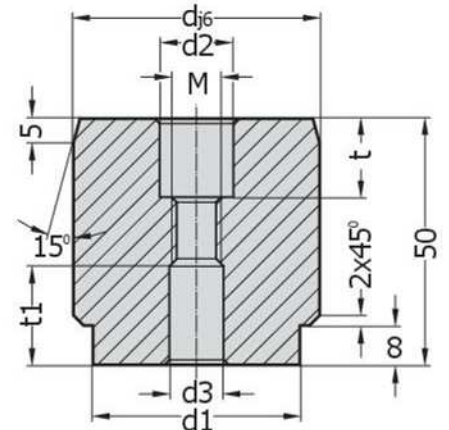


Order: **G.66** d x L

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



**CENTERING PIN G.62**  
Centering Pin at Daimler Standard  
Reference :  
DAIMLER B8 0602 321 00 8 801



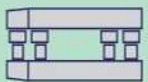
**Centering Pin at Daimler Standard**

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



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

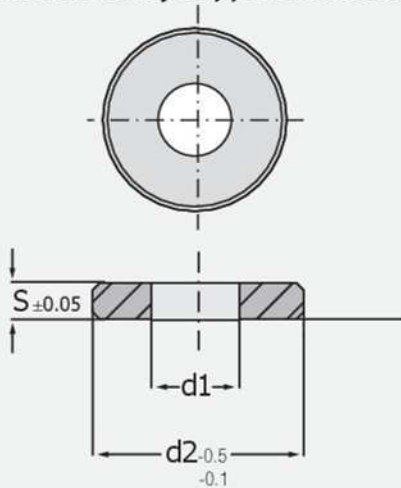
**Material:** 1.7131 (16 MnCr 5)  
**Hardness:** 58 - 60 HRC Heat Treated





**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**

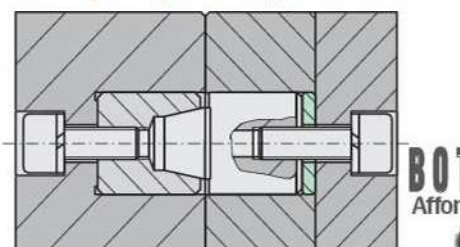
d1	L	L1	L2	L3	L4	L5	L6
12	34	16	4.5	9.6	8.6	8	7.5
14	34	16	6	12.4	6	7.5	8
16	34	16	6	12.4	5.8	7.5	8
20	54	26	9	19.7	10.6	12	9.5
25	54	26	10	19.7	9.2	11	11
30	72	35	14	25	12.2	15	13
32	72	35	14	25	12.2	15	13
42	92	45	18	27	16.8	16	13

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

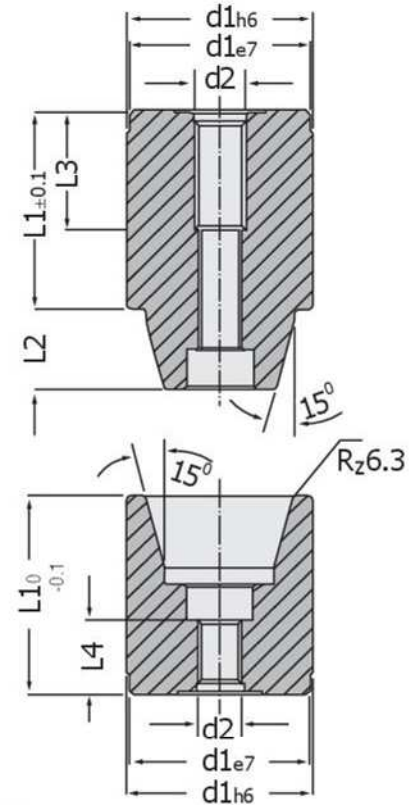
Material : 1.7131 ( 16 MnCr5 )  
Hardness : 62 ± 2 HRC Heat Treated

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

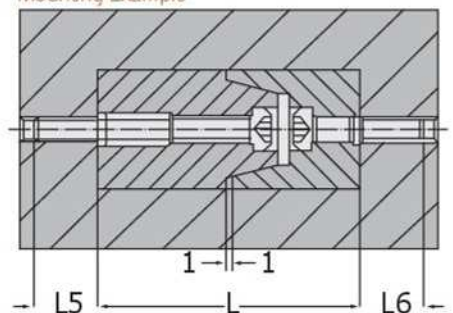
**Mounting Example with Support Washer**



**CONICAL LOCKING** **G. 60**  
Cylindrical, Precision Centering

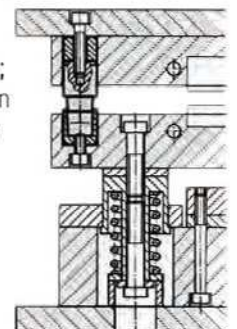


**Mounting Example**



**Conical Locking Units;**

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



**Continuous Stock**

**BOTH** Produces Sells Affordable Prices





## CONICAL CENTERING UNIT

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

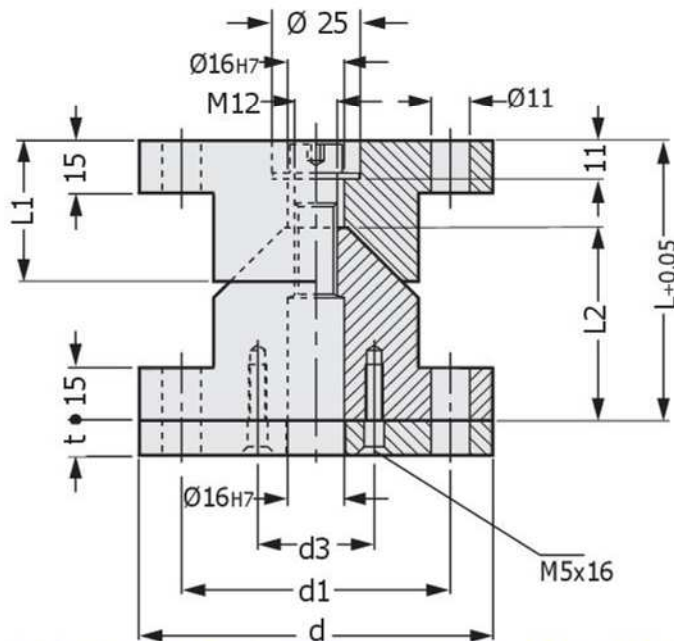
G.64

Special Productions As per Request

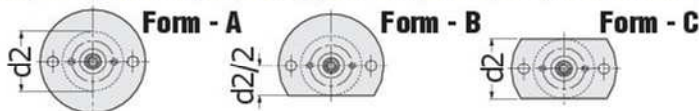


## ADJUSTING PLATES (CONICAL CENTERING) G.64.A

Adjusting Plates for Conical Centering Units



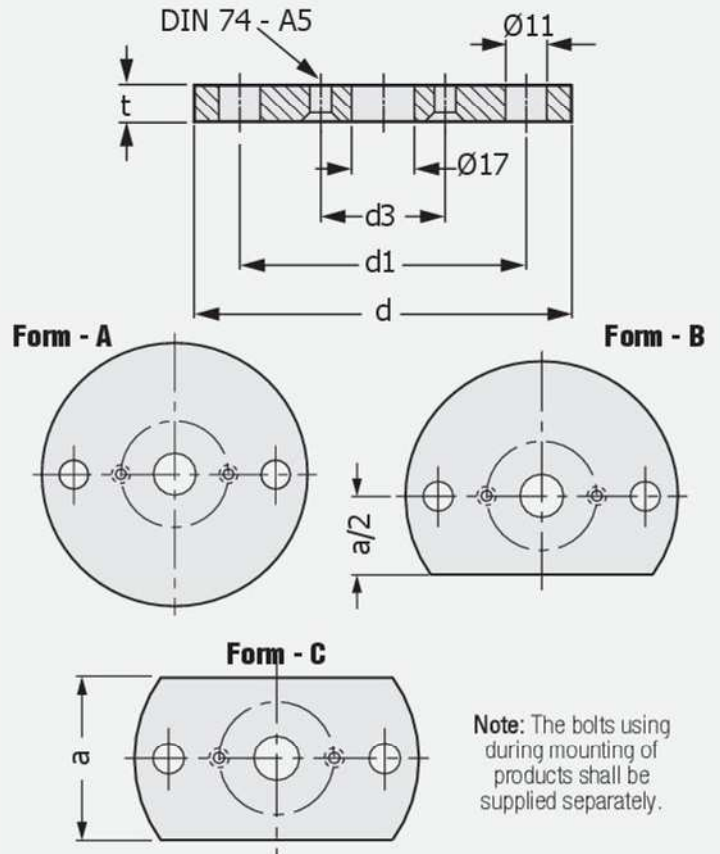
Adjusting Plates ( Adjusting plate as per request, Form A.B.C)



## 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		



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	



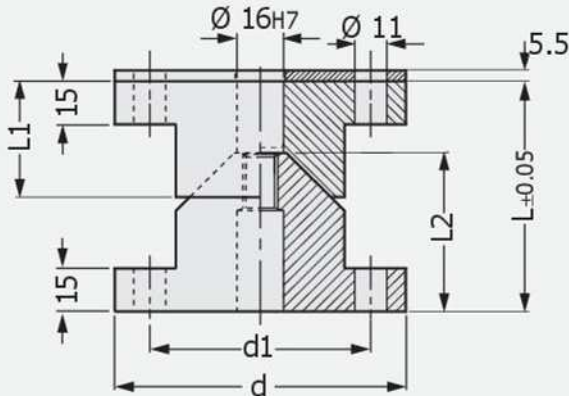


## CONICAL CENTERING UNIT

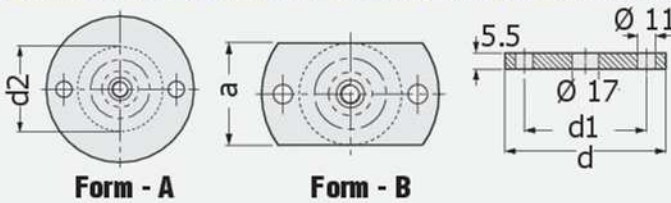
Adjusting Plate (Adjusting Plate A.B as per request)

Referans: NAAMS G91

G.63



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 : <b>G.63</b> 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 : <b>G.63.A</b> d x Form	Material : 1.0503 (C 45) Work Tool Steel Heat Threated as per request	Usage : NAAMS G.91 Adjusting Plate
--	--------------------------------------	---	--

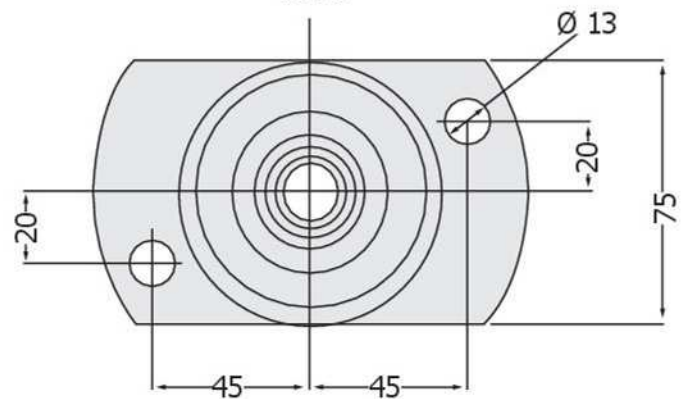
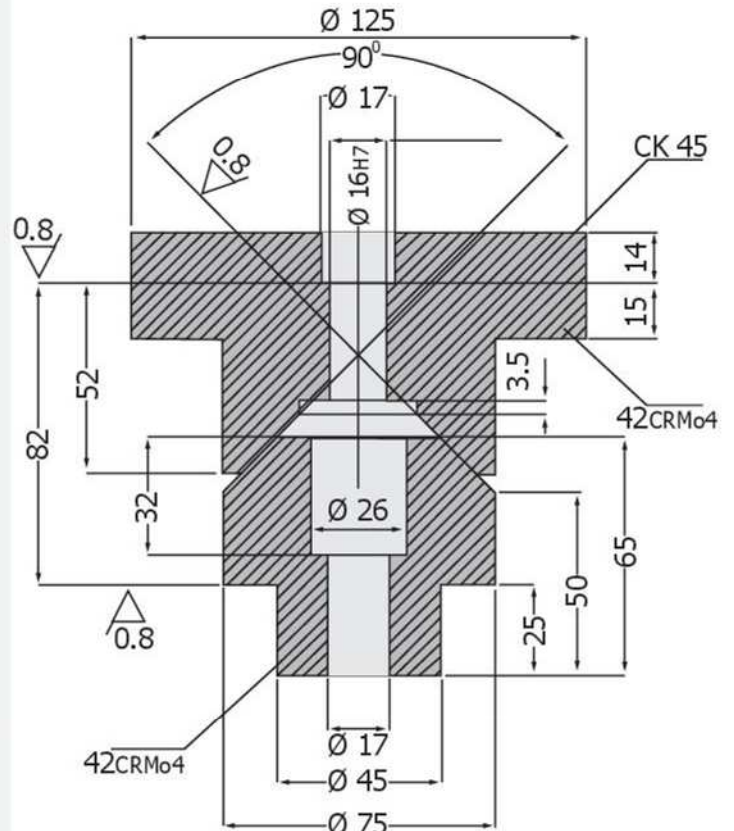
Special Productions As per Request



## 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 : <b>G.46</b> Technical Drawing	Material : Technical Drawing Within Details	Usage : Special Production As Per Request
--	---	---	---

**BOTH** Produces  
Sells  
Affordable Prices

**GTH**

Section  
Press  
Mould



Page  
**73**



**G.130**

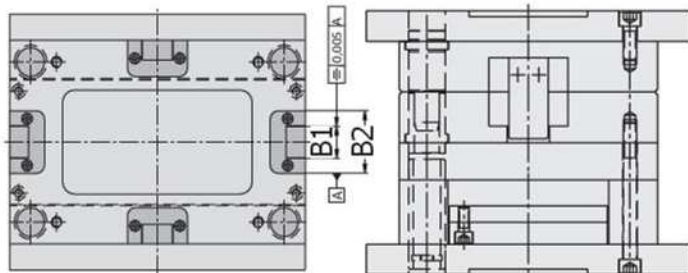
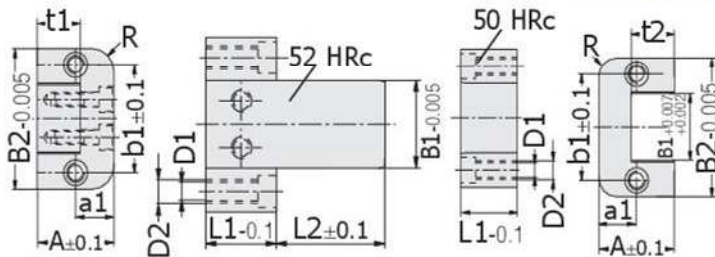
**G.130.G**

### 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**

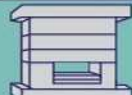
B1	L1	L2	A	B2	D1	D2	a1	b1	t1	t2	R
16	20	20	22	45	6.8	M8	11	30	11.5	12	8
		40									
30	26	40	35	60	6.8	M8	17.5	46	19.5	20	10
		63									
48	36	32	46	100	10.3	M12	23	74	25.5	26	12.5
		50									
		63									
		80									
77	56	50	60	150	14	M16	30	114	35.5	36	16
		71									
		100									

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 Threaded

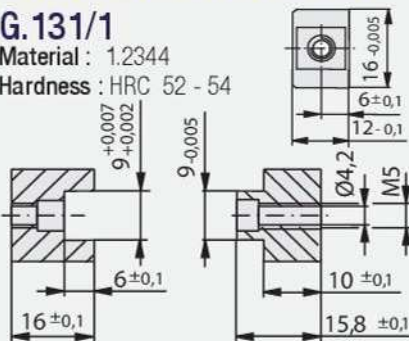
Usage :  
Injection Mould  
Centering Unit



### CENTERING BLOCKS

**G.131/1**

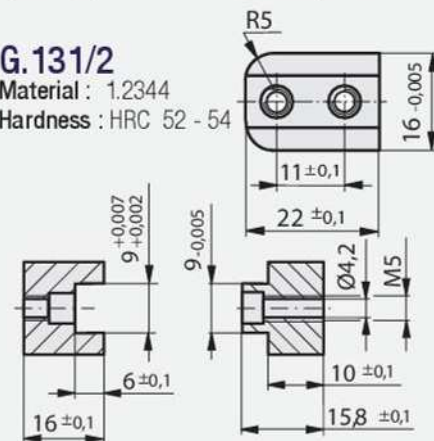
Material : 1.2344  
Hardness : HRC 52 - 54



Order :  
**G.131/1**

**G.131/2**

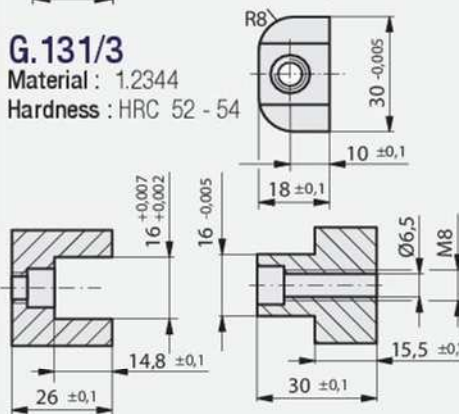
Material : 1.2344  
Hardness : HRC 52 - 54



Order :  
**G.131/2**

**G.131/3**

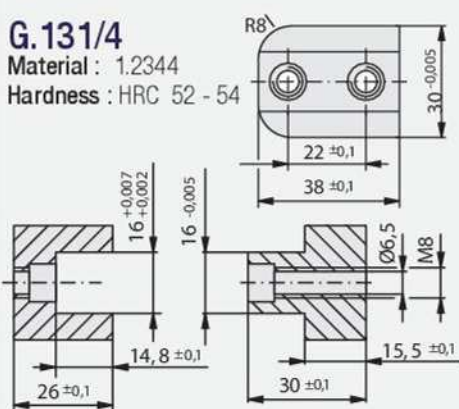
Material : 1.2344  
Hardness : HRC 52 - 54



Order :  
**G.131/3**

**G.131/4**

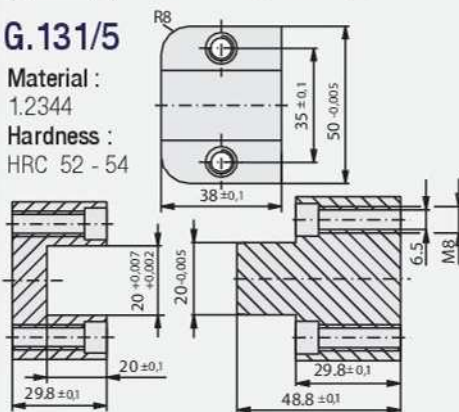
Material : 1.2344  
Hardness : HRC 52 - 54



Order :  
**G.131/4**

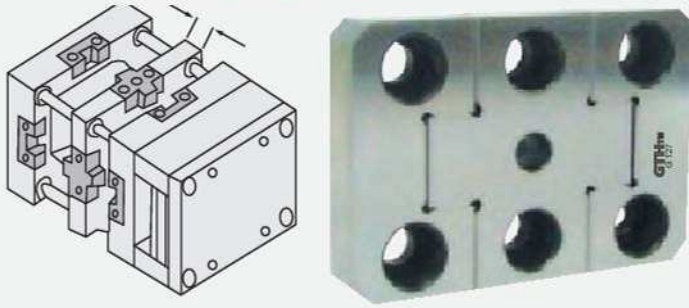
**G.131/5**

Material : 1.2344  
Hardness : HRC 52 - 54



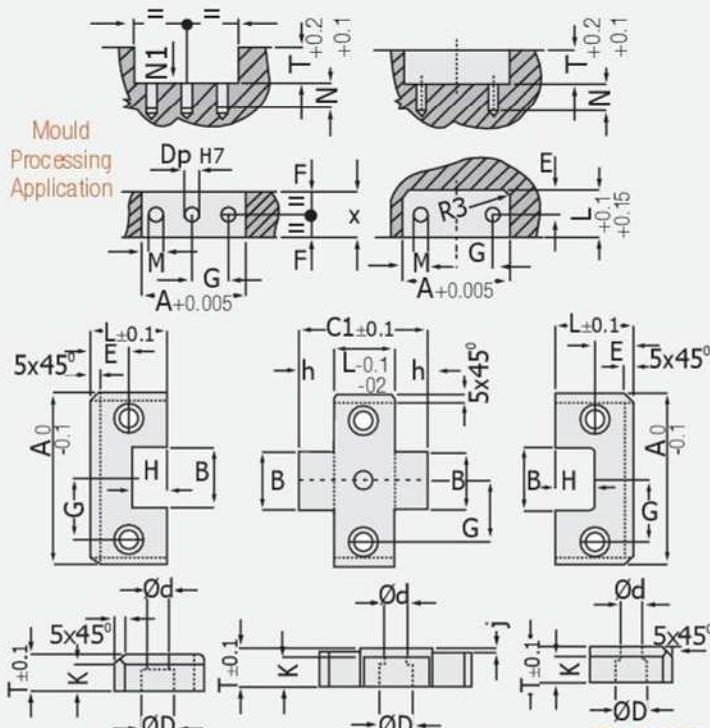
Order :  
**G.131/5**

Mounting Example



**SQUARE LOCKING GROUP BLOCKS**

**G.127**




Injection Mould, Precision / Grinded Group Blocks **G.127**

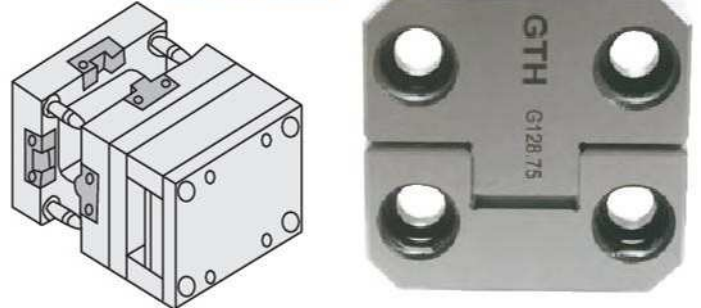
A	X	B	C1	D	d	E	F	G	h
<b>50</b>	26	17	43	10.5	6.5	11	13	17	8.5
	36		53				18		
<b>75</b>	26	25	54	16.5	10.5	18	13	25	14
	36		64				18		
<b>100</b>	36	35	76	16.5	10.5	22	18	35	20
	46		86				23		
<b>125</b>	36	45	76	16.5	10.5	22	18	42	20
	46		86				23		

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

Connection bolts of centering unit products are supplied separately

 Order : <b>G.127</b> A . X	Material : 1.7131 Carburized Hardness : 58-60 HRC	Usage : Injection Mould Locking Assembly
---	---	--

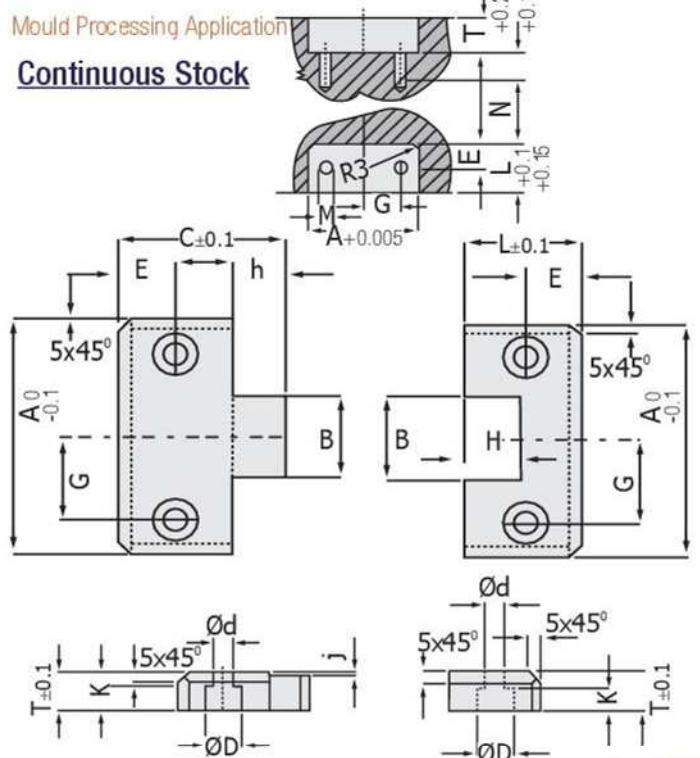
Mounting Example



**SQUARE LOCKING / CENTERING BLOCK**

**G.128**


Injection Mould, Precision / Grinded Blocks



Injection Mould, Precision / Grinded Blocks **G.128**

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

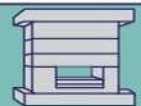
A	B	C	d	D	h	H	j	K
<b>38</b>	15	30	5.5	9.5	8	9	1.5	5.5
<b>50</b>	17	30	6.5	10.5	8.5	9.5	1.5	8
<b>75</b>	25	50	10.5	16.5	14	15	1.5	12
<b>100</b>	35	65	10.5	16.5	20	21	1.5	12
<b>125</b>	45	65	10.5	16.5	20	21	1.5	12

 Order : <b>G.128</b> A	Material : 1.7131 Carburized Hardness : 58-60 HRC	Usage : Injection Mould Locking Assembly
--	---	--

**BOTH** Produces  
Sells  
Affordable Prices

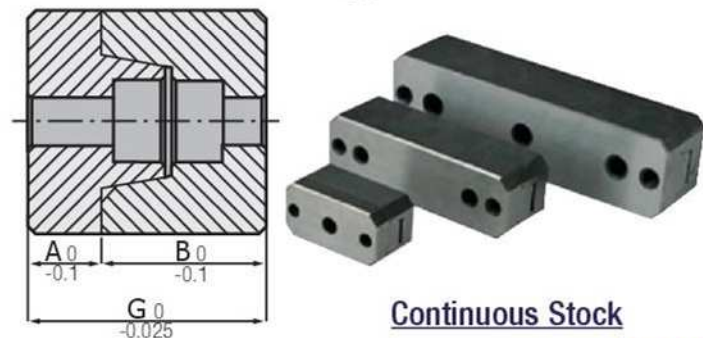
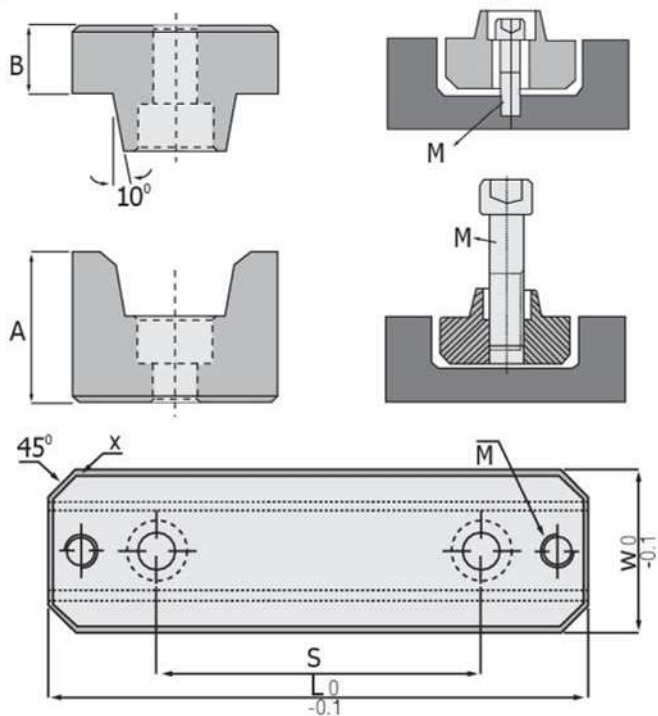
**GTH**

Section  
Injection  
Mould





**PARALLEL CENTERING BLOCK G.132**  
Injection Mould, Intermediate Plate Long Thrust Block



**Injection Mould, Intermediate Plate Long Thrust Block G.132**

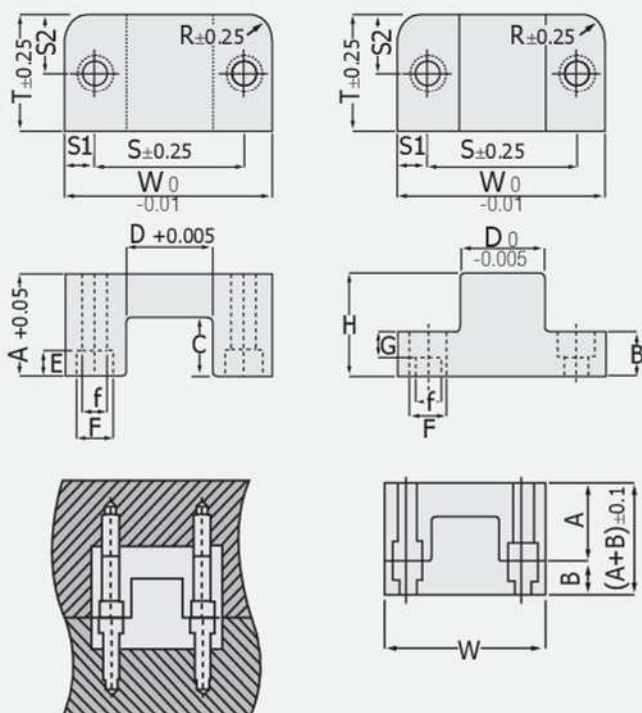
W	L	A	B	G	S	X	M
25	50	17.5	8	25.5	-	5	M5
30	100	22	10	32	60	5	M6
40	150	25	13	38	100	5	M8

Connection bolts of centering unit products are supplied separately

Order : <b>G.132</b> W x L	Material : 1.1625 Steel Hardness : 52-54 HRC	Usage : Injection Mould Locking Assembly
----------------------------------	--	--

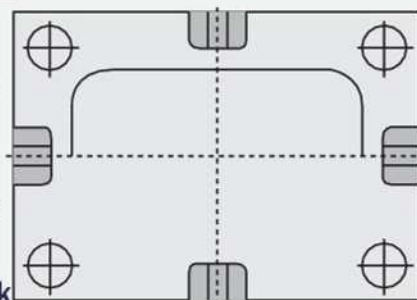


**CONICAL CENTERING BLOCK G.129**  
Injection Mould, Plate Positioning Block



Two Part Set  
Conical Centering Unit  
Connection bolts of  
centering unit  
products are supplied  
separately.

**Continuous Stock**

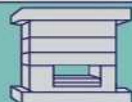


**Injection Mould, Plate Positioning Block G.129**

Type	W	T	A	B	C	D	E	Imbus
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

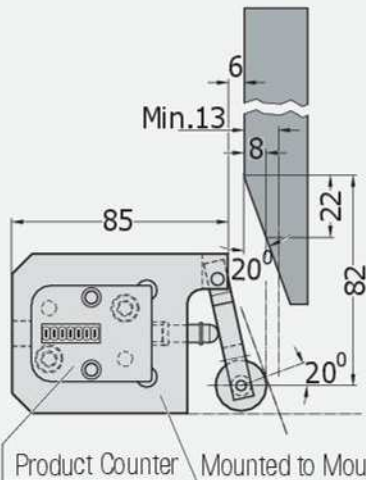
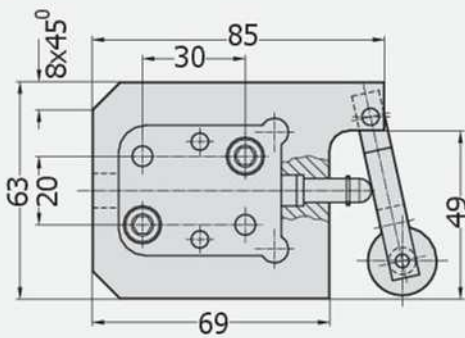
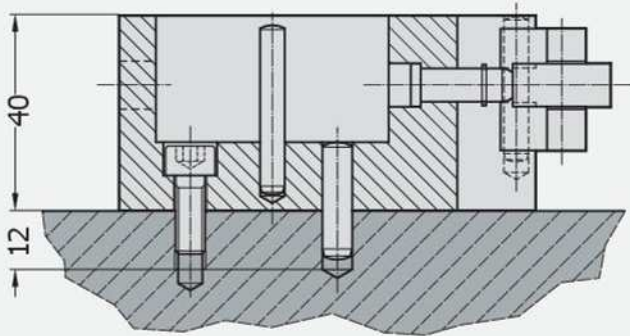
Type	F	f	G	H	R	S	S1	S2
15	10.5	6.0	7	22.1	7	25.4	6.35	12.7
25	12	7.2	8	34.8	8.5	44.45	9.53	19.05
35	15.5	10.5	11	44.2	9.5	63.5	12.7	25.4

Order : <b>G.129</b> Type	Material : 1.2510 Steel Hardness : 52-54 HRC	Usage : Injection Mould Locking Assembly
---------------------------------	--	--





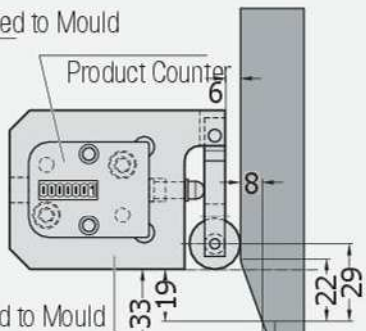
**PRODUCT - COUNTER MOUNTED TO MOULD**  
**Mounting Slot to Press Mould** **G.124P**



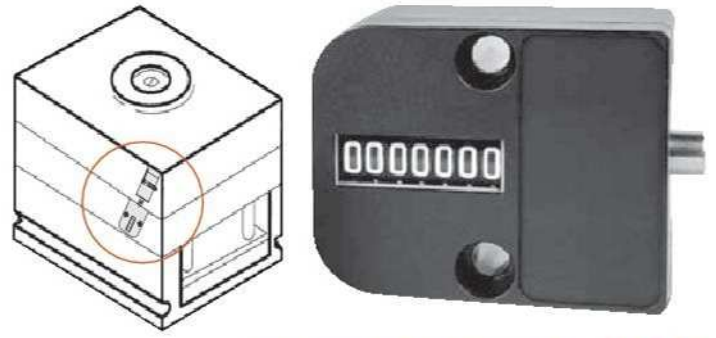
Mounting:  
 Pls. secure product counter to mounting frame slot. 2 Pieces Imbus Screw M6x16 and 2 Pieces Retaining Pins.

Product Counter Mounted to Mould

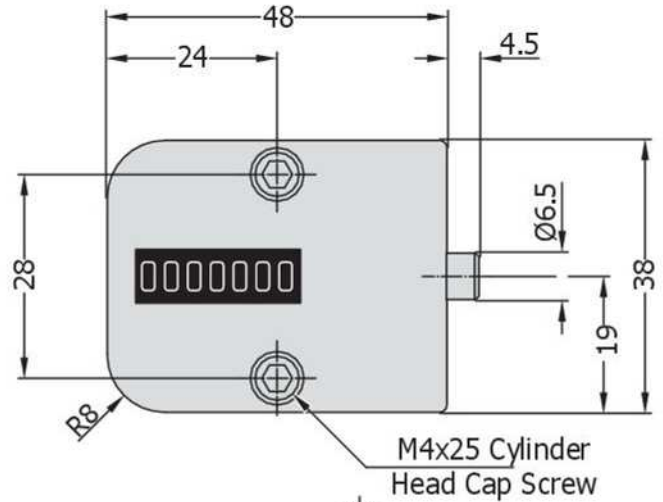
**Operation Mode:**  
 Product counter is undetachable when is mounted once. This is to avoid playing with production quantity.



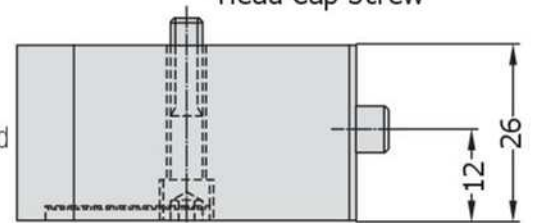
Product Counter Mounted to Mould



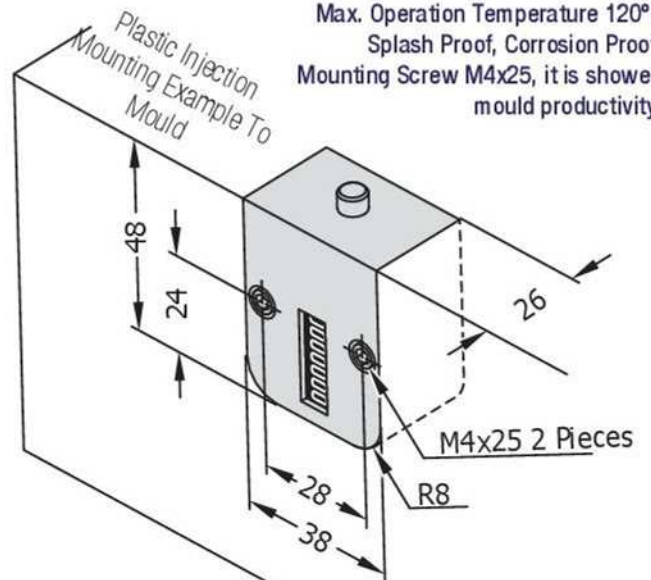
**PRODUCT COUNTER G.124**  
**Non Resettable Counter Showing Mould Productivity**



Counter Block will be generated by the user



Max. Operation Temperature 120°C  
 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.



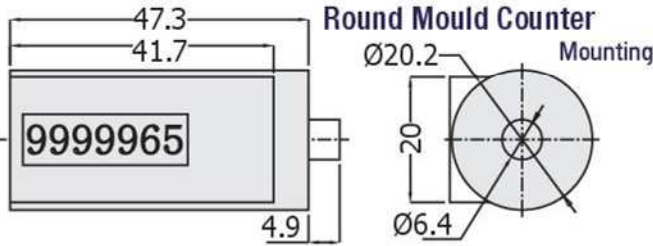
**BOTH** Produces  
 Sells  
 Affordable Prices



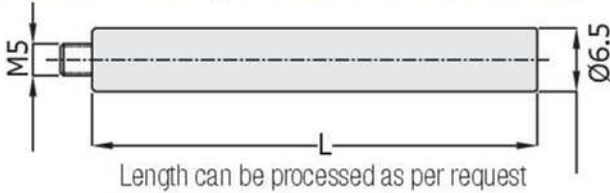
# MECHANICAL COUNTER / CYCLE METER



## ROUND TUBE, MOULD COUNTER **G.142** Injection Mould (Holder Plate) Practical Mount, Hole Inner



Extension, Actuator Rod (Processable in desired dimension)

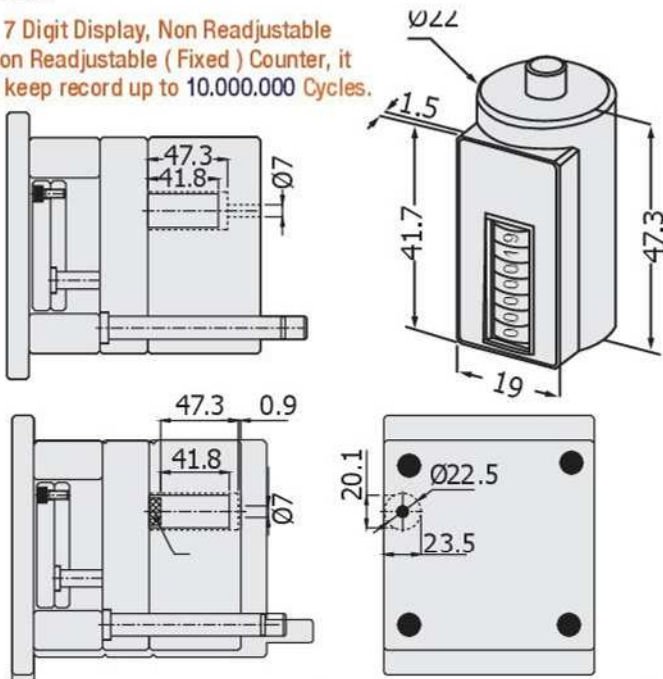


**Round Mould Counter:** Production Counter / Unite has round (cylindrical structure and can be mounted inside of holder plate according to the following drawings. (If your mould holder is in suitable position). In case your holder is high / long, additional operation can be provided with extension rod.

**Max. Operation Temperature:** 120°C.

**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.**



**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

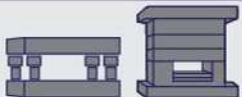
Order : **RS-204**  
Made in Japan

**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






<b>REV. &amp; STRAGHT FIGURE Set</b>	<b>NICKEL / INOX FIGURE- LETTER</b>	<b>REV. &amp; STRAGHT LETTER Set</b>	<b>STRING - LETTER / FIGURE SET WITH HOLDER</b>
--	---	--	---

**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/mm<sup>2</sup> 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)		5 Normal Stamping	2 Rev&Str Stamping	5 Nickel Stainless
	Dia.	Len.			
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	



**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.

LETTER Set 27's Set Box Letter Size	L (mm)		F Normal Stamping	F Rev&Str Stamping	F Nickel Stainless
	Dia.	Len.			
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	

**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	

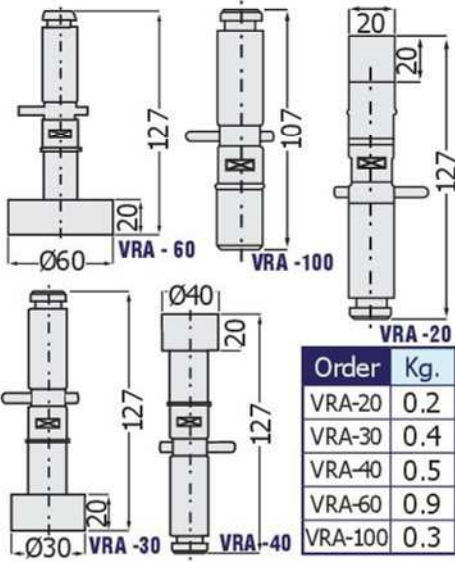
Steel Letter and Figure Set; can be applied to metal surfaces applicable hardness and dimensional tolerance,  
" Nickel " Steel Letter and Figure Set; can be applied especially to the stainless/ inox surfaces.

**GTH**  
Mould  
Components

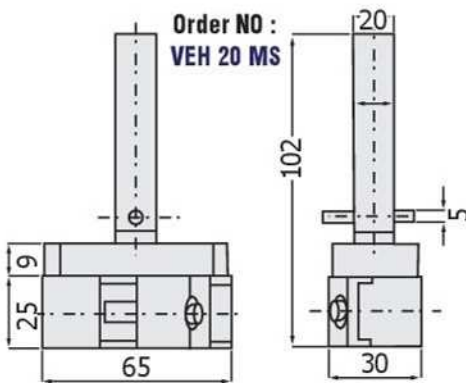




### SINKING EROSION HOLDERS EDM Chucks Kit

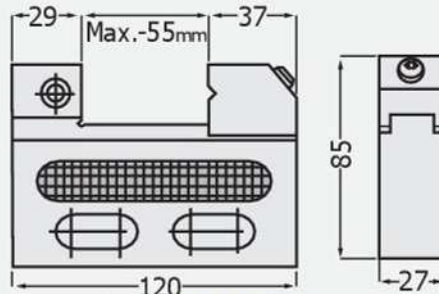


### SINKING EROSION CLAMP EDM Chucks Kit



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

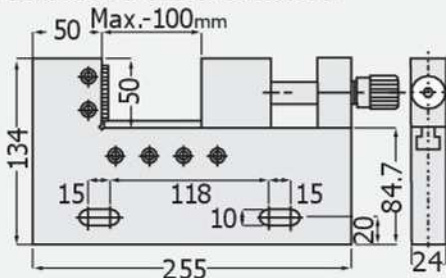


#### Order NO : VSTV - 50 W

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:  $\pm 0.002$  mm/100mm  
 Max. Opening Capacity: 55 mm  
 Vise Height: 27 mm  
 Jaw Depth: 25 mm Weight: 1.4 Kg.



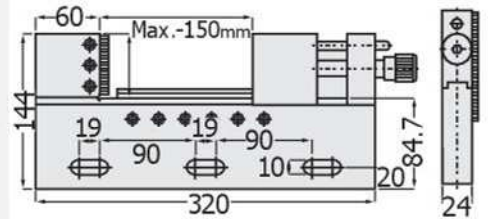
### WIRE EROSION CHUCKS Stainless Steel Holders



#### Order NO : VSTV - 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:  $\pm 0.002$  mm/100mm  
 Max. Opening Capacity: 100 mm  
 Vise Height: 24 mm  
 Jaw Depth: 50 mm Weight: 4.9 Kg.

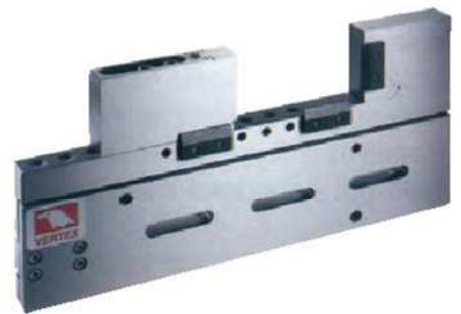
### WIRE EROSION CHUCKS Stainless Steel Holders



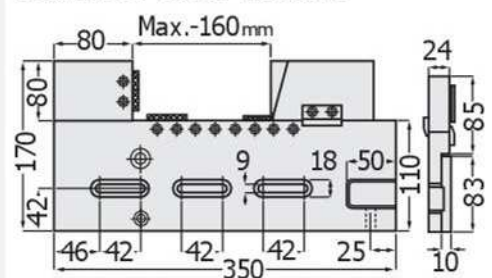
#### Order NO : VSTV - 150 W

#### 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:  $\pm 0.002$  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 - 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:  $\pm 0.003/5$  mm/100mm  
 Max. Opening Capacity: 160 mm  
 Vise Height: 24 mm  
 Jaw Depth: 60 mm Weight: 8 Kg.  
Positioning Example







Special Tools  
As Per Request

### PERMANENT MAGNETIC CARRIER

#### Load Bearing Magnetic Block

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

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

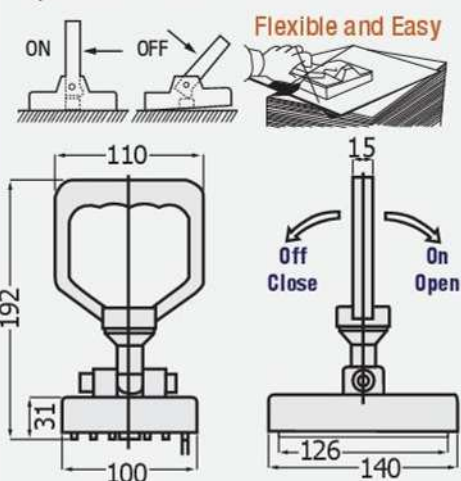
**Magnetic Carrier Blocks;** It is compatible to carry magnetic sensitive metal work pieces, steel plates, machine parts and round metals. Lifting power can be changed according to surface cleaning, thickness of material, flatness and magnetic block and intermediate clearance of material. Self magnetic 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.

Front View		DIMENSIONS		Side View			
		(mm)					
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



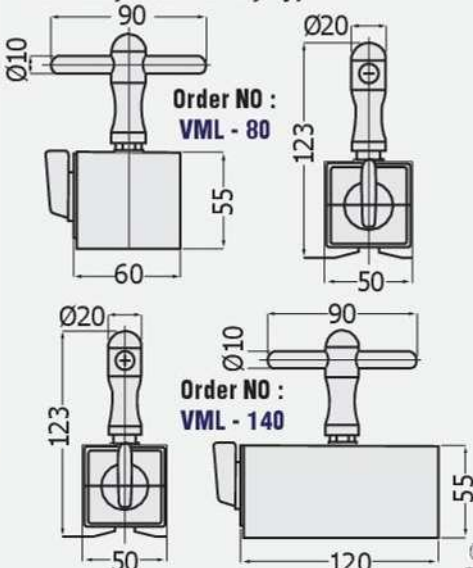
Lifting Capacity : 150 Kg.  
Unit Weight : 2,5 Kg.

Order NO :  
**VML - 150**

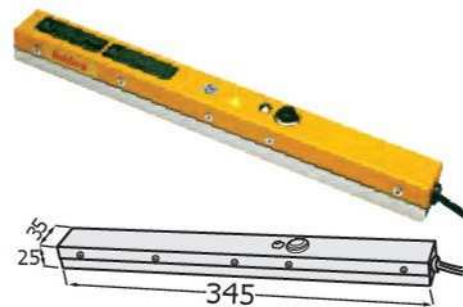


### MAGNETIC PART CARRIER FOOT

#### 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.



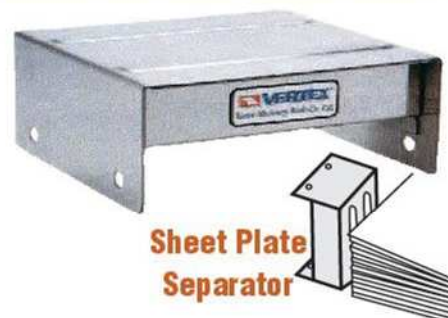
### MOULD, MAGNETIC RECEIVER UNIT

#### 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.

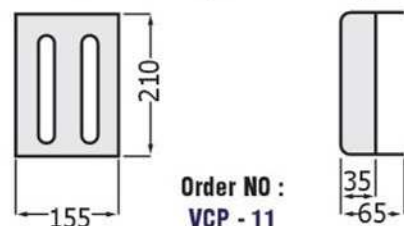
Order No	Current	Voltage	Effect Area	Product Kg.
<b>EHDB-210</b>	1.2 A	220 V	100 mm	1 Kg.



Sheet Plate Separator

### MAGNETIC EJECTOR - SHEET SEPARATOR

#### It is cleaned and separated sheet plates.



Order NO :  
**VCP - 11**

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.

### MAGNETIC 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.

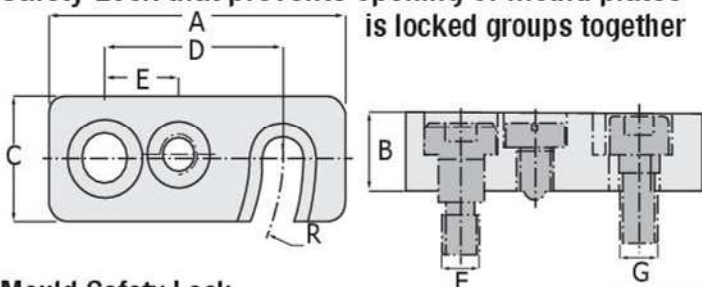




## MOULD SAFETY LATCH

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

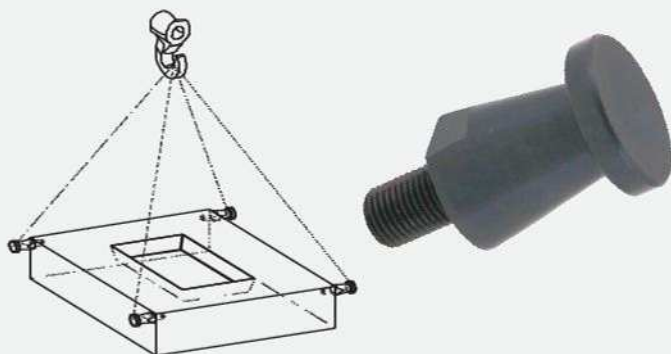
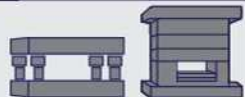
Order : 	G.103 x A	Material : 1.0503 Steel Forged Blasting/Processing	Usage : Especially, while carrying injection mould
-------------	--------------	--	--

**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.



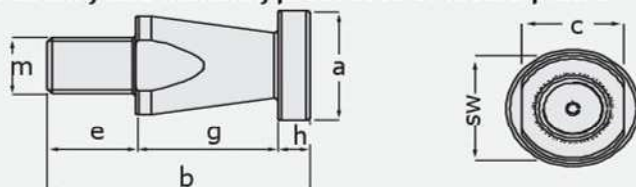
### Injection Moulds

**BOTH** Produces  
Sells  
Affordable Prices



## MOULD TRANSPORT LUG / HEAVY DUTY

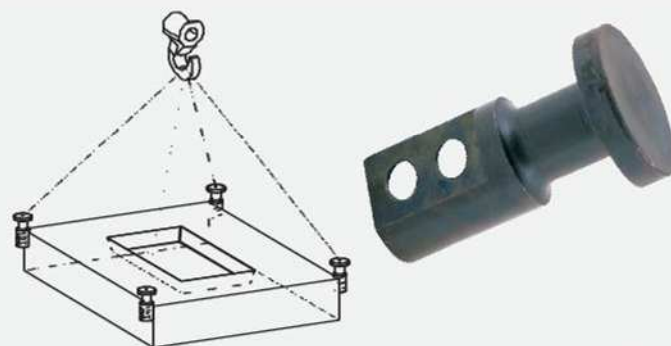
At turning and handling processes of mould plates



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

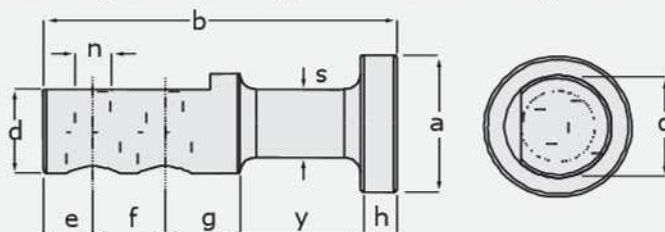
Order : 	2730 x m	Material : CK 45 DIN Black Plated	Usage : At Lifting/ Turning Of Mould Plates.
-------------	-------------	---	--

Transport Lug Thread Place Dimensions : M 16 x 2 Thread - 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	i	n	s
44	107	32	27	15	22	23	11	37	11	22

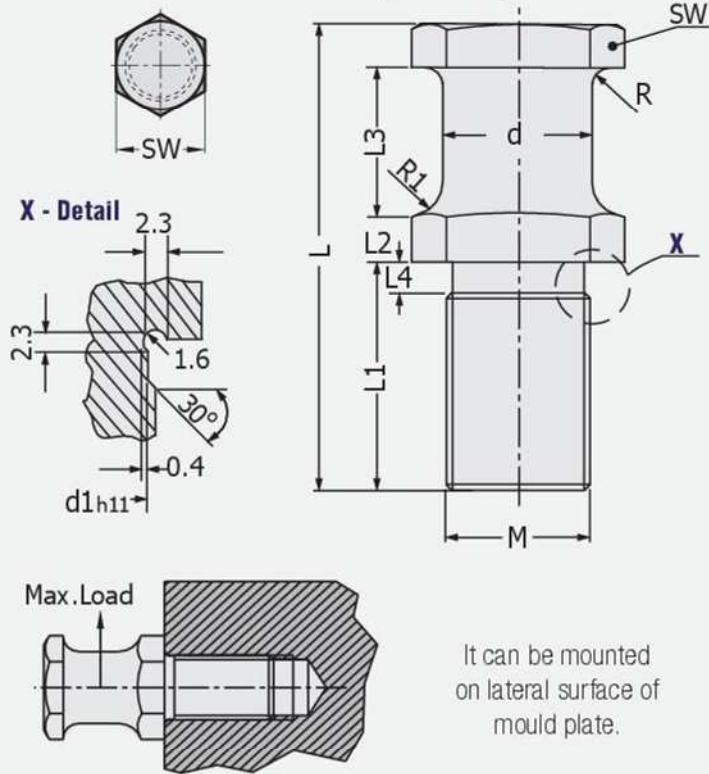
Order : 	2750 x a	Material : CK 45 DIN Black Plated	Usage : At Lifting/ Turning Of Mould Plates.
-------------	-------------	---	--

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



## THREADED, MOULD BASE LUGS VDI 3366 Standard Transport Lug

G.47



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

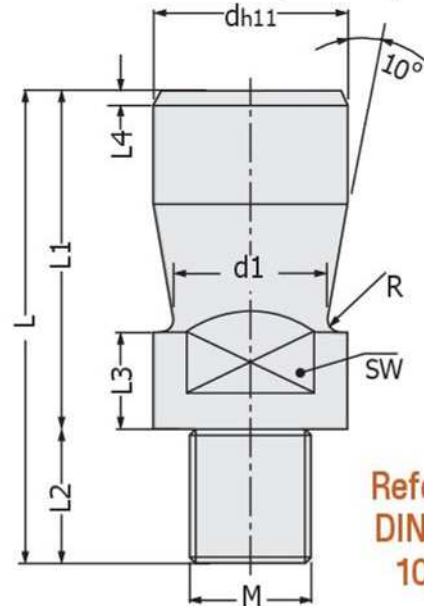
Material : 1.0503 (C-45)  
700-800 N mm<sup>2</sup>

Usage : At Lifting/ Turning Of Mould Plates



## THREADED, MOULD BASE LUGS DIN EN ISO 10242 - 1 Transport Lugs

G.54



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 Continuous 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
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 Affordable Prices



Section Press Mould



Page 83

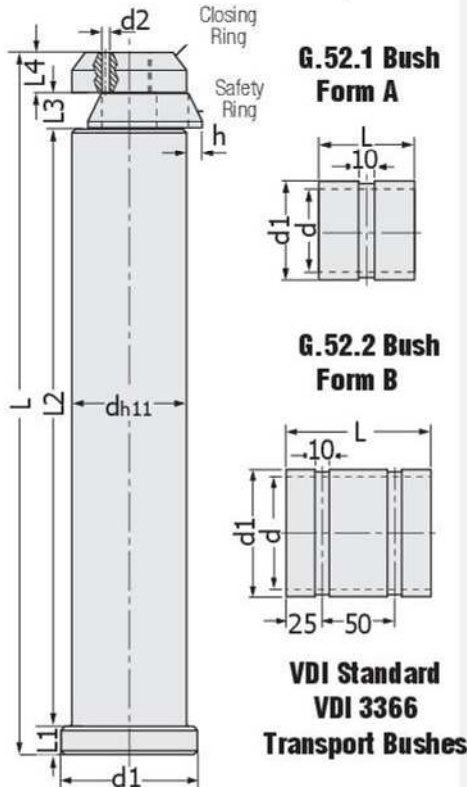


**G.52.1 Bush**



**G.52**

**MOULD TRANSPORT SHAFT G.52**  
VDI 3366 Standard Mould Transport Shaft



**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 x 10	175	10	145	9	10	4
5000	40	50	4 x 12	225	10	188	13	13	6
8000	50	60	4 x 15	273	11	230	15	16	6
12500	63	75	5 x 20	347	14	295	17	20	7.5
31500	76	95	5 x 25	422	15	360	19	27	8

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

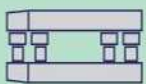
d mm	d1 mm	L mm	Form
34	44	40	A
42	52	50	
52	62	60	
65	75	80	
78	88	100	

**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)



Usage: Shaft Bush Bracket

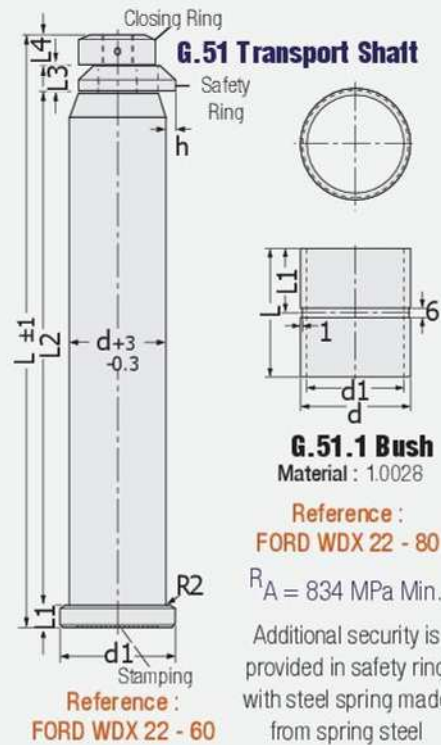


**G.51.1 Bush**



**G.51**

**MOULD TRANSPORT SHAFT G.51**  
FORD WDX22 - 60 Transport Shaft



**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

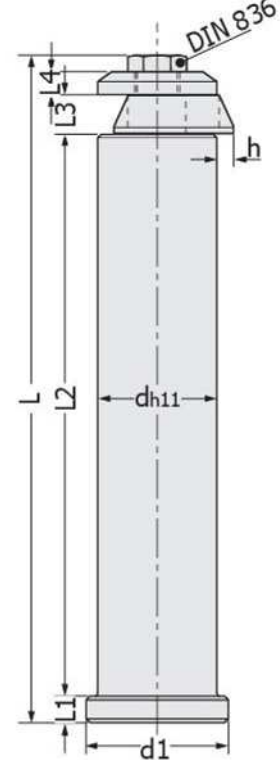
Don't use shafts with broken spring and damaged casing. When using shafts, don't exceed carrying capacity. While using for turning mould, loading should be done only with 2 Pcs. Pin.

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

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



**MOULD TRANSPORT SHAFT G.55**  
FIAT STQ.40002 Transport Shaft



**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**

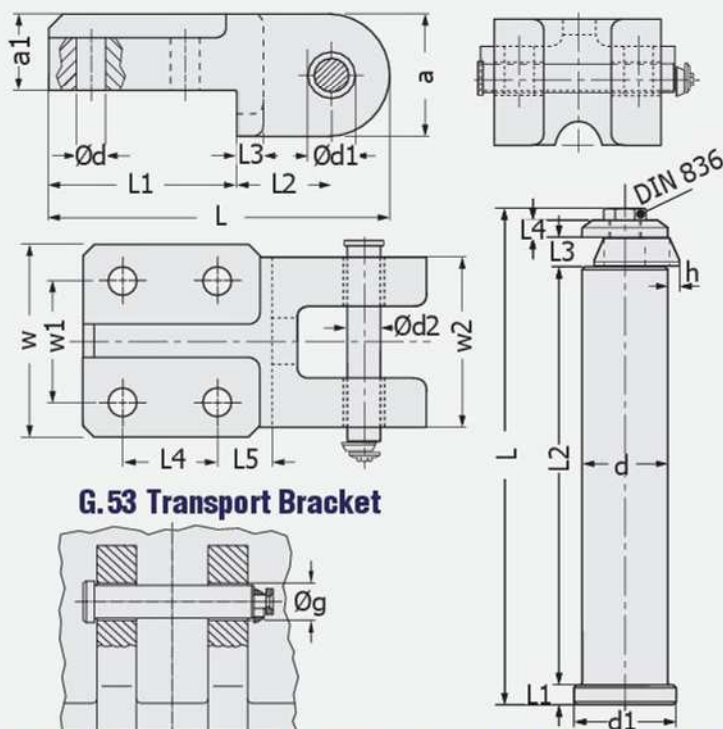
Material : 1.0503 (C-45)



**TRANSPORT BRACKET**  
Shaft - Transport Flange

**G.53**

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 mm	Ø d1 g mm	Ø d2 mm	a1 mm
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 : <b>G.53</b> w x d1	Material : 1.0503 (C-45) 700-800 N mm <sup>2</sup>	Usage : With transport bracket and transport shaft.
-------------------------------	--	---



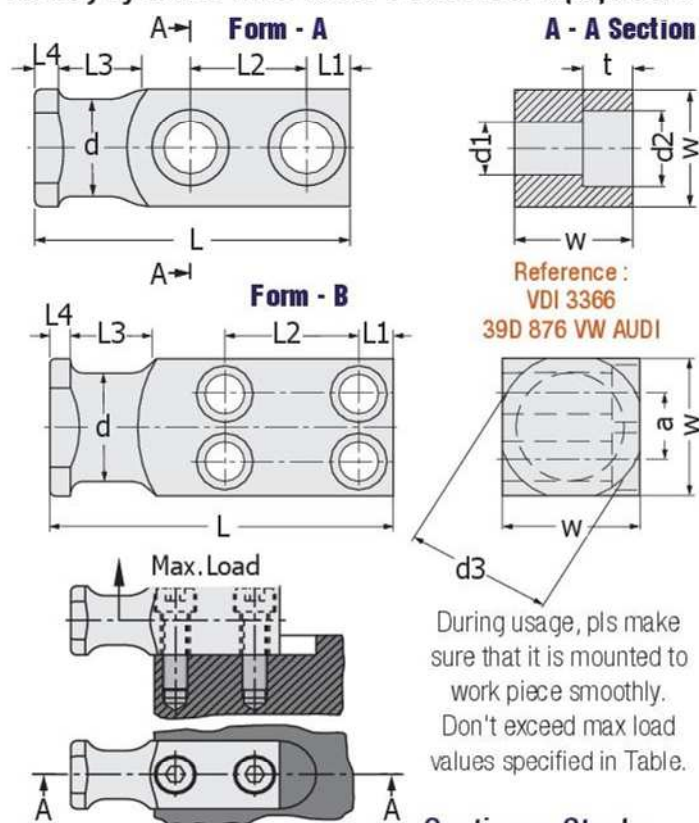
**Form - B**

**Form - A**

**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.

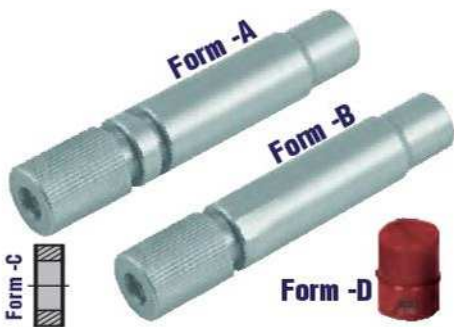
**Continuous Stock**

**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 mm	Ø d mm	Ø d1 mm	Ø d2 mm	Ø d3 mm	Head t mm
320 Kg	<b>Form A</b>	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	<b>Form B</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 : <b>KTB</b> Form x W	Material : 1.0503 (C-45) 700-800 N mm <sup>2</sup>	Usage : Mould Plates Lifting / Carrying
--------------------------------	--	---

<b>BOTH</b> Produces Sells Affordable Prices		Section Press Mould	Page <b>85</b>
--	--	---------------------	----------------

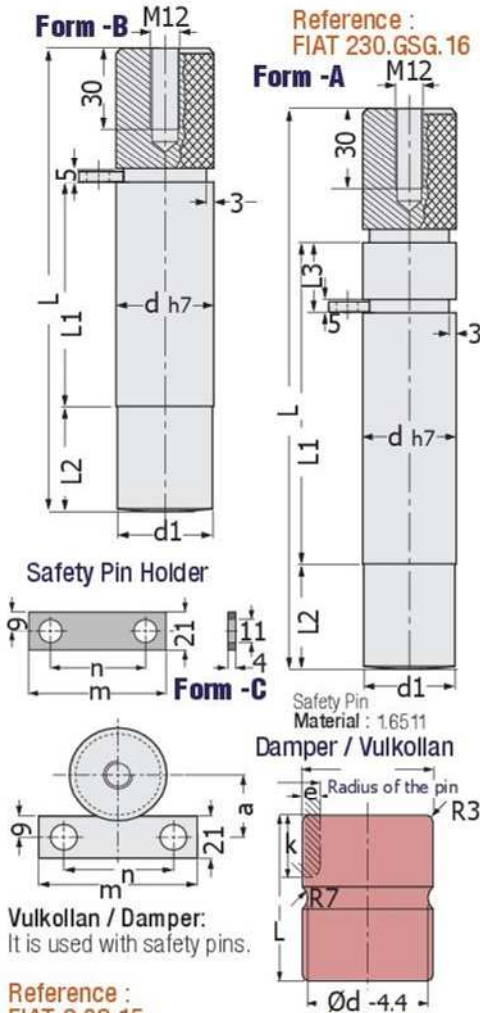


### FIAT - SAFETY PINS

Press Mould, Hanger Broach Guide Pillars

**G.56**

Reference :  
FIAT 230.GSG.16



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

Safety Pins  
Form - D  
Damper Vulkollan

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

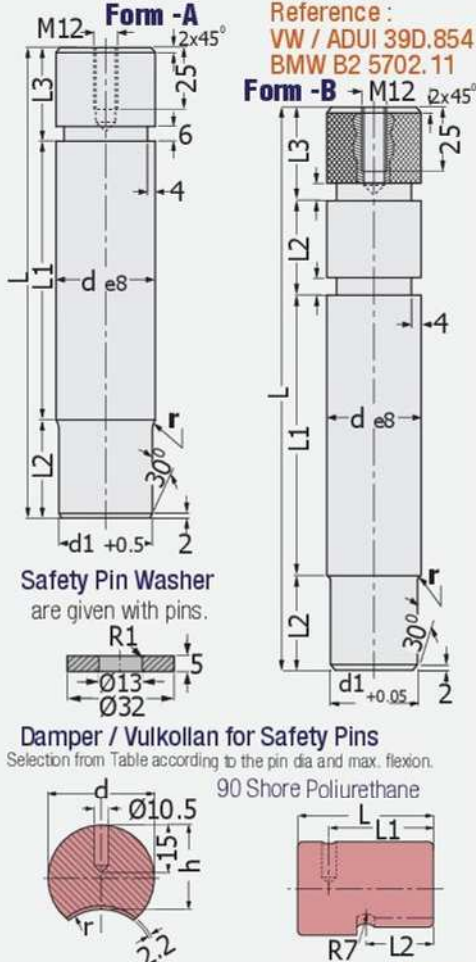


### VDI - SAFETY PINS

Press Mould, Hanger Broach Guide Pillars

**G.57**

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



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
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

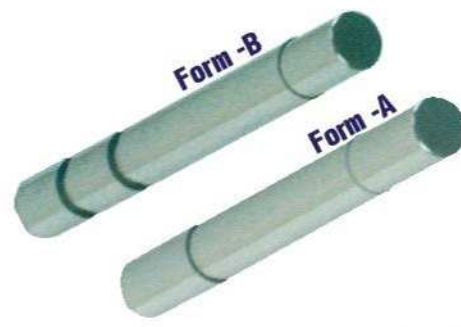
Safety Pins, Damper Vulkollan Form - D

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

Order :  
G.57.d  
Form A.B

Material :  
1.0503 (C-45)  
Polyurethane 90 Shore

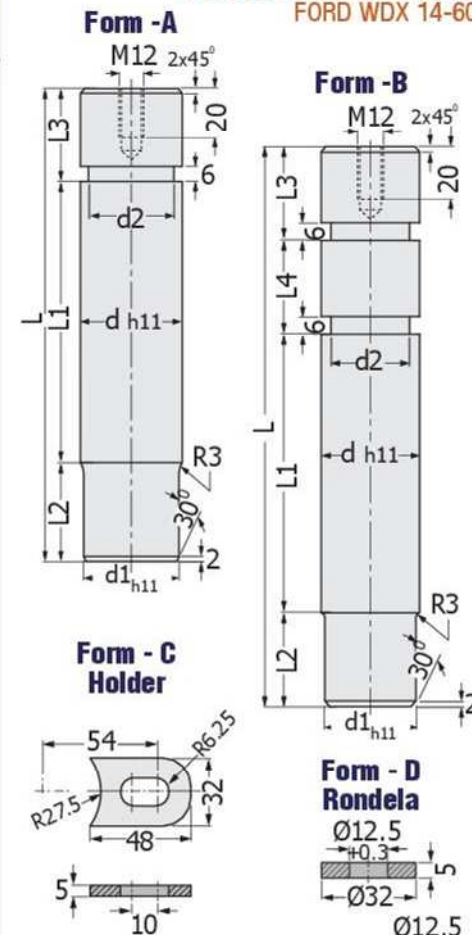


### NAAMS - SAFETY PINS

Press Mould, Hanger Broach Guide Pillars

**G.58**

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

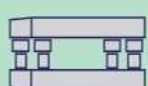
1 Pcs. Washer and (M12x20) Bolt are presented with safety pin.

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



Section  
Press  
Mould

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

Order :  
G.57.d  
Form A.B

Material :  
1.0503 (C-45)  
Polyurethane 90 Shore

Order :  
G.58.d  
Form A.B

Material :  
1.0503 (C-45)  
Holder / Washer



**HEAVY TONNAGE EYEBOLT LUG**  
Swivel ( Axial Rotation ) Lifting Lug

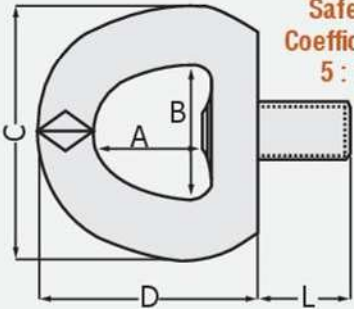
**AK 450**



**DOUBLE MOTION EYEBOLT LUG**  
Swivel / Lug Chargable at Every Angle

**AK 400**

Class > 8CE  
Safety  
Coefficient  
5:1

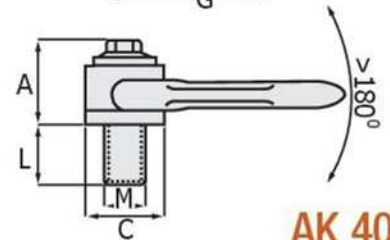
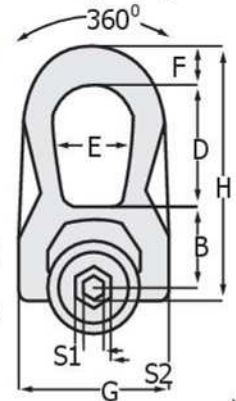


Lifting Equipment manufactured as forging in our country, has been registered that its production quality is in European Standards with "Approval of Material Manufacturer" Certificate given by Germanischer Lloyd.



Class > 8CE  
Safety  
Coefficient  
5:1

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



**AK 450**

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

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

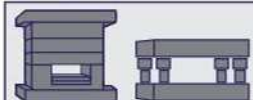
M	↑	↑	↑	↑	↑45°	↑60°	↑45°	↑60°
M8	0.3	0.6	0.3	0.6	0.4	0.3	0.6	0.3
M10	0.6	1.2	0.6	1.2	0.8	0.6	1.3	0.6
M12	1.0	2.0	1.0	2.0	1.4	1.0	2.1	1.0
M14	1.3	2.6	1.3	2.6	1.8	1.3	2.7	1.3
M16	1.6	3.2	1.6	3.2	2.2	1.6	3.4	1.6
M18	2.0	4.0	2.0	4.0	2.8	2.0	4.2	2.0
M20	2.5	5.0	2.5	5.0	3.5	2.5	5.3	2.5
M24	4.0	8.0	4.0	8.0	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 450**  
x M

Material :  
Class > 8CE  
Safety Certificate

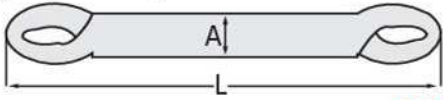
Usage :  
Axial Rotations in  
Tensile Direction

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	0°-45°		45°-60°		
	% 100	% 80	% 200	% 140	% 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 : **GPSx Colour ( Load ) x Length**

**SPANZET / POLYESTER TURN BUCKLE**



**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			Eyebolt Turn Buckle		
Order	CG	Tone	Order	MG	Tone
228. 20	x2.5	3.0	238. 20	x2.5	3.0
228. 27	x3	5.0	238. 27	x3	5.0
228. 33	x3.5	8.0	238. 33	x3.5	8.0
228. 36	x4	12	Hooked Turn Buckle		
228. 42	x4.5	16	Order	KG	Tone
228. 48	x5	20	248. 20	x2.5	3.0
228. 50	x5	25	248. 27	x3	5.0
			248. 33	x3.5	8.0



**WORK SAFETY SUPPLIES**

**Work Shoes**

Order	Size
EA.39	No.39
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)





**AK-582 S  
EYENUT  
Heavy  
Duty**



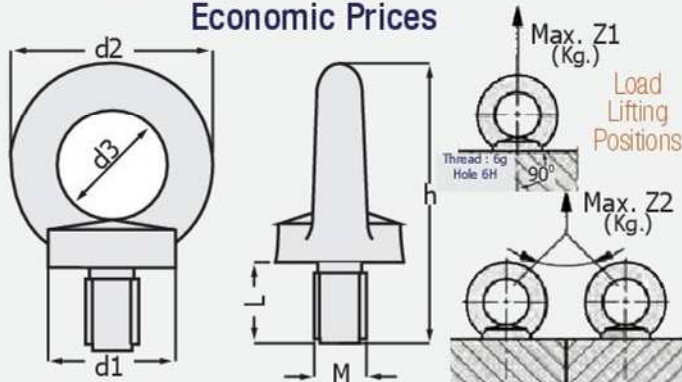
**G.141**



**AK-580 C  
EYEBOLT  
Heavy  
Duty**

**FIXED LIFTING EYEBOLT**  
Screwable Hanger Load Eyebolt  
Economic Prices

**G.141**  
DIN 1580



**Fixed Hanger Eyebolt:** It is loaded only with forces making max. 45° 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: <b>G.141</b> 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

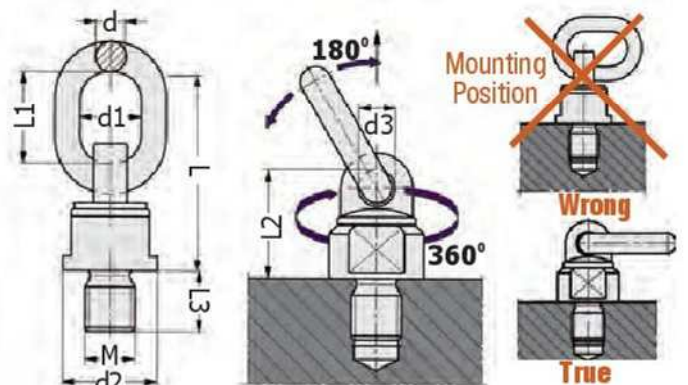
Class > 8CE  
Import Product  
Load Lifting  
Lugs  
are for your  
more higher  
quality  
selection.  
Our stocks  
with security  
certificate are  
also available.

Order: **EGM** x M  
Class > 8CE



**TWO SIDED ROTARY EYEBOLT**  
Swivel / Lug Attachable at Every Angle

**G.140**



**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 180° 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.	Lateral	Biangular	Tetragonal
M8 x 1.25	0.4	0.2	0.3	0.2
M10 x 1.50	0.5	0.3	0.4	0.3
M12 x 1.75	1.0	0.5	0.7	0.5
M16 x 2.0	1.9	1.0	1.4	1.0
M20 x 2.50	2.1	1.1	1.5	1.1
M24 x 3.0	3.2	1.6	2.3	1.6
M30 x 3.50	5.0	2.5	3.6	2.5
M36 x 4.0	8.0	4.0	5.5	4.0
M42 x 4.50	10	5.0	7.0	5.0
M56 x 4.0	14	7.2	10	7.3
M64 x 6.0	15	7.5	11	7.5

Order: **G.140**  
x M

Page  
**89**



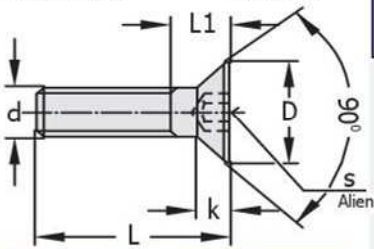
### COUNTERSUNK HEAD SCREW

Countersunk, Cylinder Head Cap Screw

HIC

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

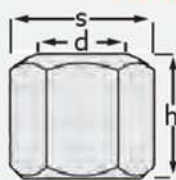
d (M)	L mm	L1	D	k	s
M12 x 1.75	20	11.8	24	6.5	8
	25				
	30				
	35				
	40				
	50				
	60				

M16 x 2	25	15.4	30	8.5	10
	30				
	35				
	40				
	50				
	60				
	70				

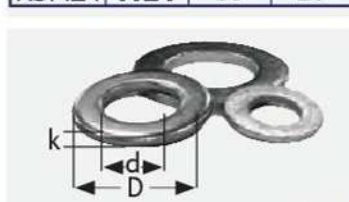


### PLATED NUT KSM

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



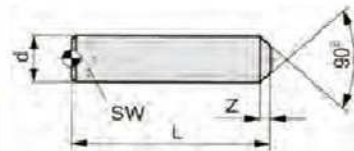
### PLATED NUT KPM

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		

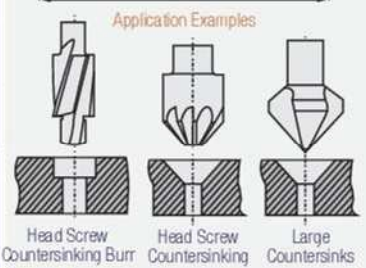
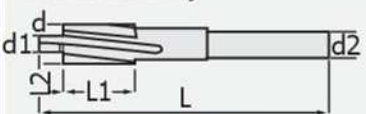
M16 x 2	20	2	0.8
	25		
	30		
	35		
	40		
	50		
	60		

Order: SEC d x L



### PILOT COUNTERSUNK HEAD SCREW ICF

Countersinking



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	100	22	14	8
M10	18	10.5				10
M12	20	13				12
M14	24	15				14
M16	26	17	12.5	22	14	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
<b>M18</b> 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				

d (M)	L mm	b	D	k	s
<b>M20</b> 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				

d (M)	L mm	b	D	k	s
<b>M24</b> 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				

**Cylinder Head Cap Screw**

**12.9**

d (M)	L mm	b	D	k	s
<b>M12</b> 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			
	200	36			
260	36				
300	36				

d (M)	L mm	b	D	k	s
<b>M14</b> 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				

d (M)	L mm	b	D	k	s
<b>M16</b> 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
<b>M6</b> 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				

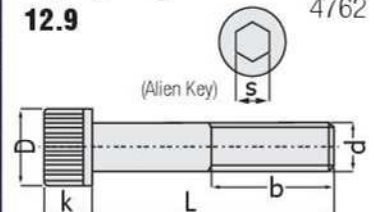
d (M)	L mm	b	D	k	s
<b>M8</b> x 1.25	10	8	13	8	6
	15	13			
	20	17			
	25	22			
	30	27			
	35	32			
	40	28			
	45	28			
	50	28			
	55	28			
	60	28			
	70	28			
	80	28			
	90	28			
	100	28			
	120	28			
	130	28			
	140	28			
	150	28			
160	28				
180	28				
200	28				

d (M)	L mm	b	D	k	s
<b>M10</b> 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 High Quality 12.9**

**IMB**  
DIN ISO 4762



High Quality Cylinder Head Cap Screw 12.9  
Unbroken / Unextended / Unwarped / Rigid Material

**Cylinder Head Cap Screw IMB**

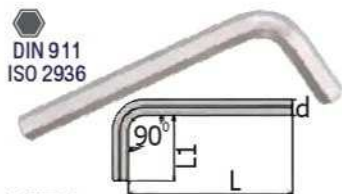
d (M)	L mm	b	D	k	s
<b>M3</b> x 05	10	8.5	5.5	2	2.5
	15	15			
	20	18			
	25	23			
	30	20			

d (M)	L mm	b	D	k	s
<b>M4</b> 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				

d (M)	L mm	b	D	k	s
<b>M5</b> 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				

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  
Stainless INOX Cylinder Head Cap Screws are available. The production in desired material and dimensions can be done.  
Smashing Prices at rush of orders

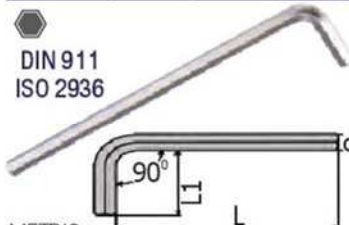
Order: <b>IMB</b> d x L	Material: SEC435 Hardness: 39-44 HRC 1220 N/mm <sup>2</sup>
----------------------------	---



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 Pressure: 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.**

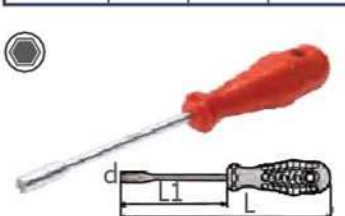
Order	d	L	L1
TA.20	2	139	52
TA.25	2.5	153	52
TA.30	3	153	55
TA.35	3.5	153	55
TA.40	4	179	70
TA.45	4.5	200	84
TA.50	5	200	84
TA.60	6	221	103
TA.70	7	236	106
TA.80	8	255	117
TA.100	10	285	132



Long Side Dish

**ROUND 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 -Izeltas -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
Izeltas 10's	2-2.5-3-4 5-6-7-8 9-10

**ALIEN WRENCH SET**



Order	Dia.
KAAS 8's	2-2.5-3 4-5-6 8-10
KAAS 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
KTBS 8's	2-2.5-3 4-5-6 8-10
KTBS 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.**

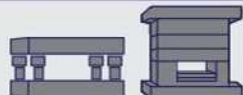


Order	Dia.
KTA 8's	T10-T15 T20-T25 T27-T30 T40-T50
KTA 10's	T7-T9

**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 guides, 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 repairing 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 changment. The Springs resistant to corrosion and abrasion have long life time, thread slot armour plating during repairing of threads, V-Coil Tools are used securely for more flexible materials having low shear resistance, For example: Machine Productions of Aluminium Alloys or Magnesium Alloys, Electric- Medical - Space etc. Industries.

Recycling the rejected materials is ensured.



Each Thread Space 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	
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				15 Piece
M8	x1.25	8.30 mm	No:11	No:11		
M8	x1	8.30 mm				
M9	x1.25	9.30 mm	No:12	No:12		
M10	x1.5	10.4 mm				
M10	x1.25	10.3 mm	No:13	No:13		10 Piece
M10	x1	10.3 mm				
M11	x1.5	11.4 mm	No:14	No:14		
M12	x1.75	12.4 mm				
M12	x1.5	12.4 mm	No:15	No:15		
M12	x1.25	12.3 mm				5 Piece
M12	x1	12.3 mm				
M14	x2	-	No:16	-		
M14	x1.5	-				
M14	x1.25	-	No:17	-		
M14	x1	-				5 Piece
M16	x2	-	No:18	-		
M16	x1.5	-				
M18	x2.5	-				
M18	x2	-	No:20	-		
M18	x1.5	-				5 Piece
M20	x2.5	-				
M20	x2	-	No:21	-		
M20	x1.5	-				
M22	x2.5	-				
M22	x2	-	No:22	-		5 Piece
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)	Usage :
Repair Kit	Repairing and Renewing of Damaged Thread Slots



**THREAD SLOT REPAIR KITS**  
Sets as Group ( Economic Presentation )

M	Clavuz	HSS Drill Bit	Spring Installation	Spring Breaker	Springs 1.5 D
<b>SET grouped from M5 up to M12</b>					
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
M12	x1.75	12.40	No : 15	No : 15	10 Piece
<b>SET grouped from M6 up to M10</b>					
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
M12	x1.75	12.40	No : 15	No : 15	10 Piece
M14	x1.25	-	No : 17	-	10 Piece
<b>PT Ignition Plug Guided From M6 up to M14</b>					
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
M12	x1.75	12.40	No : 15	No : 15	10 Piece
M14	x1.25	-	No : 17	-	10 Piece
<b>SET grouped from M6 up to M10</b>					
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



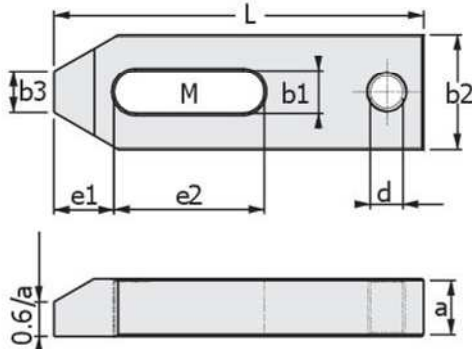
Order : 1330

## 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
	M22	200						80	2.200
	M25	250						100	2.500
M24	M24	160	26	35	70	26	35	60	1.900
		200						80	2.500
	250	100	3.750						
	315	130	4.200						
M24	M30	250	33	40	80	34	45	100	4.800
		315						130	7.600
M24	M36	400	43	60	100	43	100	150	18
									M42

## DIFFERENT LUG SETS

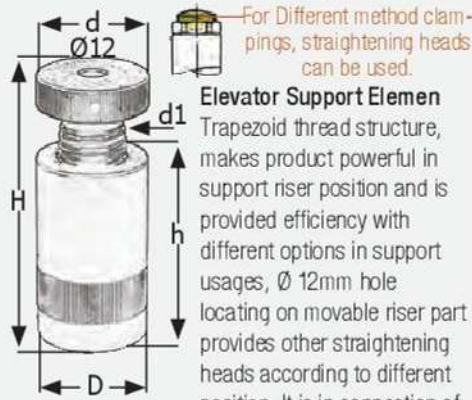


PLAIN LUG



## WORK PIECE SUPPORT ELEMENT

### Rear Thrust for Plain Lugs



For Different method clamping, straightening heads can be used.

### Elevator Support Element

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 pieces, stacked and different device design suitability.

Support Elevator Order : 1510.No

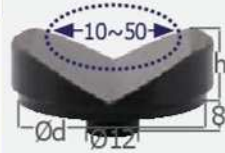
No	D	h - H	d1	d	Kg.
01	34	23 -30	M16	32	0.14
02		40 -60	M16		0.25
03	50	42 -52	Trapeze 30 x 4	50	0.55
04		50 -70			0.62
05		70 -100			0.90
06		100 -140			1.60
07	54	140 -220	Trapeze 30 x 6	54	2.40
08	58	210 -330		58	3.90
09	68	260 -430		68	6.70

## WORK PIECE BALANCING / PLACEMENT Straightening Heads- 'V' Bearings



Straightening Heads  
Radius Screwed Feet  
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

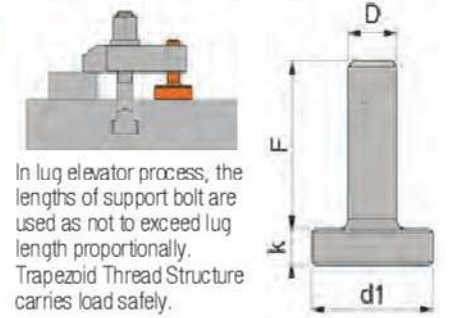
Order	d	h
1575	45	8

## 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.

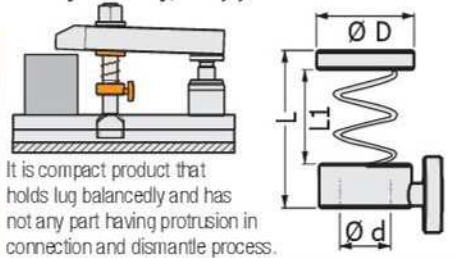
Support Elevator Order : 1490.Dx F

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

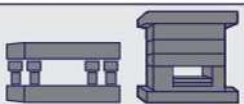
### Lug Lifting, Support Element




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

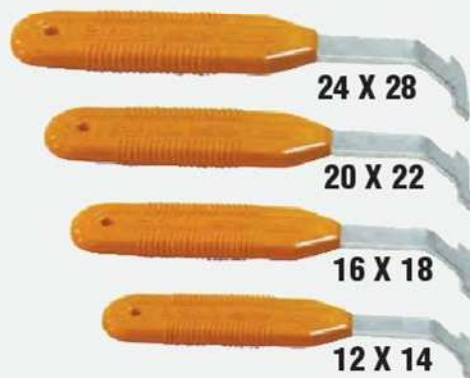
 d M	L	b mm	a mm	e mm	k mm	Proc. Kg.
<b>M30</b> x 3,5 <b>d.36</b>	125	80	35.6	54	22	1.86
	160	110				1.95
	200	135				2.25
	250	150				2.55
	315	200				2.95
500	300	3.95				

<b>M36</b> x 4 <b>d.42</b>	160	100	41.6	65	26	3.22
	250	175				3.84
	400	250				4.95
	600	340				6.50


<b>M42</b> x 4.5 <b>d.48</b> <small>İsteğe Göre Üretim</small>	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.

 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 mm	k mm	Proc. Kg.
<b>M14</b> x 2 <b>d.16</b>	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				

<b>M16</b> x 2 <b>d.16</b>	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				

<b>M16</b> x 2 <b>d.18</b>	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				

<b>M18</b> x 2.5 <b>d.20</b>	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				

<b>M20</b> x 2.5 <b>d.22</b>	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				

<b>M24</b> x 3 <b>d.24</b>	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				

<b>M24</b> x 3 <b>d.28</b>	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.

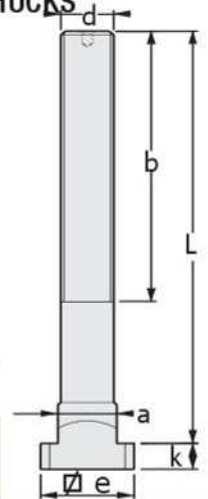
Quality : 10.9


Security Certificated Product The products up to 180°C are supplied separately.

Material : 42 CrMo4 DIN Black Plated Cap Forged Heat Treated

Thread: Hardened (Scrubbed) between two drum.

Order : **1610**  
 **d x L**



 d M	L	b mm	a mm	e mm	k mm	Proc. Kg.
<b>M10</b> x 1.5 <b>d.10</b>	40	30	9.7	15	6	0.07
	63	45				0.08
	80	50				0.09
	100	60				0.11

<b>M10</b> x 1.5 <b>d.12</b>	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				

<b>M12</b> x 1.75 <b>d.12</b>	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				

<b>M12</b> x 1.75 <b>d.14</b>	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				

 **GTH**



Page  
**95**



Full 'T' Nut

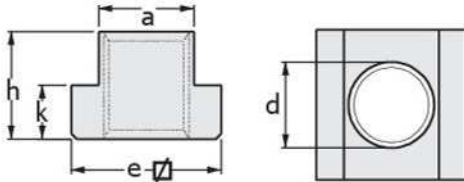


Angular 'T' Nut



**'T' MOULD INNER / NUT 1750**

Mould Connecting, Straight Stud Bolt Set



**O. Edged Stud Bolt Order : 1750.axd**

Thread	a mm	e mm	h mm	k mm	Product Kg.
<b>M 6 x 8</b>	7.7	13	10	6	0.009
<b>M 8 x 10</b>	9.7	15	12	6	0.012
M 8 x 12	11.7	18	14	7	0.022
<b>M 10 x 12</b>					0.020
M 8 x 14	13.7	22	16	8	0.040
M 10 x 14					0.037
<b>M 12 x 14</b>					0.035
M 8 x 16					15.7
M 10 x 16	0.050				
M 12 x 16	0.050				
<b>M 14 x 16</b>	17.7	28	20	10	0.045
M 8 x 18					0.090
M 10 x 18					0.087
M 12 x 18					0.080
M 14 x 18					0.075
<b>M 16 x 18</b>					0.065
M 16 x 20	19.7	32	24	12	0.110
<b>M 18 x 20</b>					0.105
M 16 x 22	21.7	35	28	14	0.175
M 18 x 22					0.160
<b>M 20 x 22</b>					0.155
M 16 x 24					23.7
M 20 x 24	0.230				
<b>M 22 x 24</b>	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
<b>M 24 x 28</b>					0.320
M 24 x 36	35.6	54	44	22	0.700
<b>M 30 x 36</b>					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

Reinforced Nut

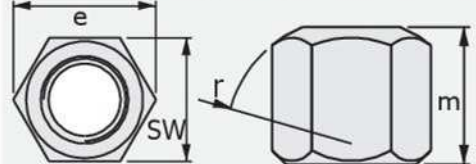


Extension Nut



**REINFORCED NUT 1790**

Mould Connecting, Straight Stud Bolt Set



Reinforced Nut Order : 1790.Thread

Thread	SW	e mm	m mm	r mm	Product Kg.
<b>M6</b>	10	11.5	9	9	0.005
<b>M8</b>	13	15.0	12	12	0.009
<b>M10</b>	17	19.6	15	15	0.014
<b>M12</b>	19	21.9	18	17	0.020
<b>M14</b>	22	25.4	21	20	0.045
<b>M16</b>	24	27.7	24	22	0.060
<b>M18</b>	27	31.2	27	24	0.085
<b>M20</b>	30	34.6	30	27	0.110
<b>M22</b>	32	36.9	33	30	0.130
<b>M24</b>	36	41.5	36	32	0.200
<b>M30</b>	46	53.1	45	41	0.400
<b>M36</b>	55	63.5	54	50	0.720

Nut with Washer

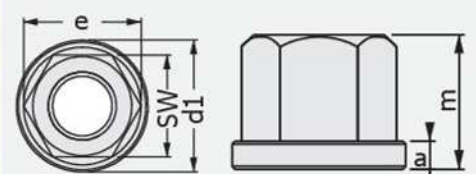


Moveable Head Nut



**NUT WITH WASHER 1810**

Mould Connecting, Straight Stud Bolt Set



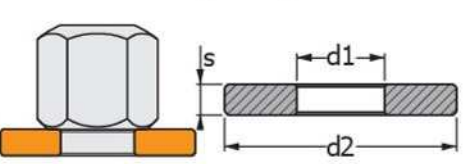
Nut with Washer Order : 1810.Thread

Thread	SW	e mm	m mm	a mm	d1 mm	Product Gr.
<b>M8</b>	13	15.0	12	3.5	18	12
<b>M10</b>	17	19.7	15	4.0	22	25
<b>M12</b>	19	21.9	18	4.0	25	35
<b>M14</b>	22	25.4	21	4.5	28	50
<b>M16</b>	24	27.7	24	5.0	31	70
<b>M18</b>	27	31.2	27	5.0	34	95
<b>M20</b>	30	34.6	30	6.0	37	130
<b>M22</b>	32	36.9	33	6.0	40	160
<b>M24</b>	36	41.5	36	6.0	45	230
<b>M30</b>	46	53.1	45	8.0	58	470
<b>M36</b>	55	63.0	54	10	68	800



**THICK, WASHER ASSEMBLY 1870**

Mould Connecting, Straight Stud Bolt Set



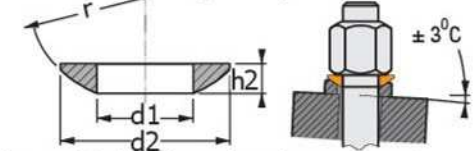
Reinforced Nut Order : 1790.Dia.

Stud Bolt	d1 mm	d2 mm	s mm	Product Kg.
<b>M6</b>	6.4	17	3	0.006
<b>M8</b>	8.4	23	4	0.010
<b>M10</b>	10.5	28	4	0.016
<b>M12</b>	13	35	5	0.035
<b>M14</b>	15	40	5	0.040
<b>M16</b>	17	45	6	0.060
<b>M18</b>	19	45	6	0.065
<b>M20</b>	21	50	6	0.075
<b>M22</b>	23	50	8	0.095
<b>M24</b>	25	60	8	0.170
<b>M30</b>	31	68	10	0.230
<b>M36</b>	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), 3° 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.
<b>M6</b>	6.4	12	2.3	9	0.002
<b>M8</b>	8.4	17	3.2	12	0.003
<b>M10</b>	10.5	21	4.0	15	0.005
<b>M12</b>	13	24	4.6	17	0.007
<b>M14</b>	15	28	5.0	22	0.010
<b>M16</b>	17	30	5.3	22	0.015
<b>M20</b>	21	36	6.3	27	0.025
<b>M24</b>	25	44	8.2	32	0.045
<b>M30</b>	31	56	11.2	41	0.085







**QUALITY DIN 6379**  
: 12.9



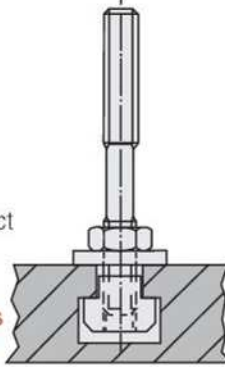
**Plain Stud Bolt**  
**Dismantled Set of Connecting Kit**

Plain stud bolt are used modular as dismantled set. It is used with lugs and connecting elements individually.

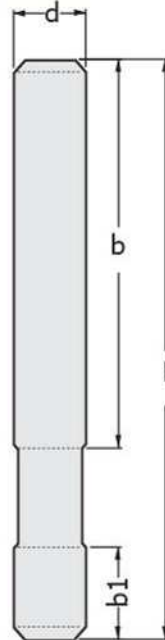
**Quality: 10.9**  
Security Certified Product  
The products up to 180°C are supplied separately.

**Our special production is available as per request.**

**Material:** 42 CrMo4 DIN Black Plated  
**Cap Forged Heat Threaded**  
**Thread:** Hardened (Scrubbed) between two drums.  
**Two screw two stud bolt together, extension nut is used with plain stud bolt.**



**1690**



**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
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
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
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
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
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
M22 x 2.5	160	31	100	0.430
	200		125	0.500
	250		160	0.670

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
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
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
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
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
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
M22 x 2.5	160	31	100	0.430
	200		125	0.500
	250		160	0.670

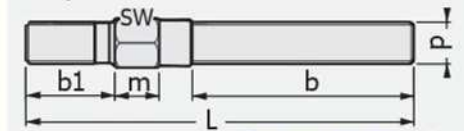
Modular Plain Stud Bolt Order : 1690.d x L

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
M30 x 3.5	125	43	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
M42 x 4.5	315	59	200	2.950
	400		250	3.750
	500		315	4.690

**Including NUT and WASHER**



**WRENCH EDGED STUD BOLT**  
Usage Suitable to the Threaded Plate



**W. Edged Stud Bolt Order : 1670.d x L**

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

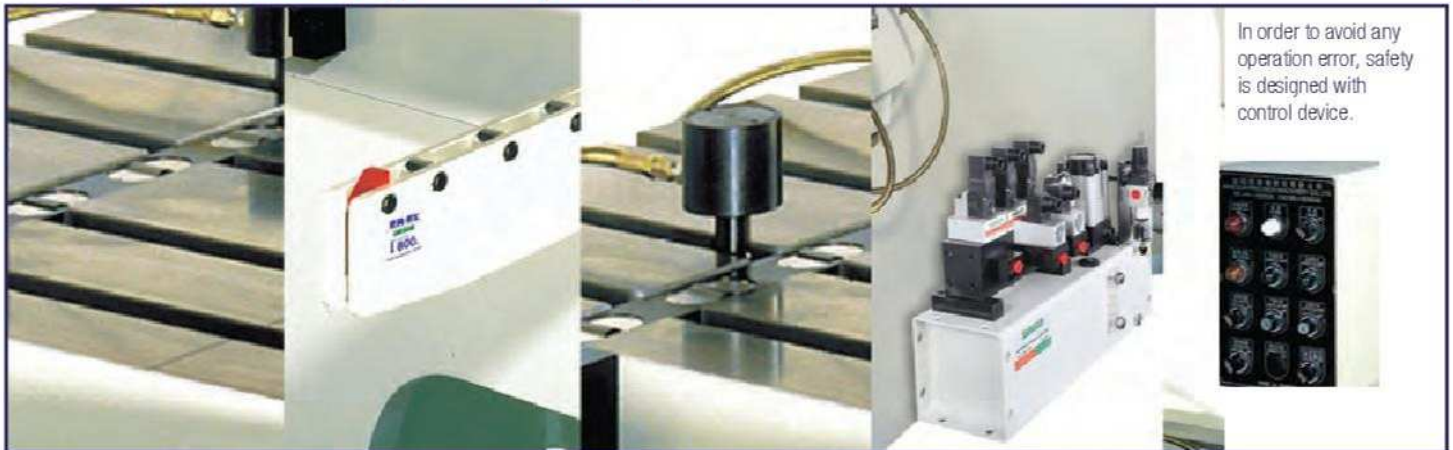
PLAIN STUD BOLT  
Order : 1690 .d x L



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.

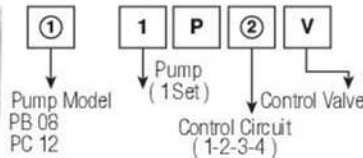
<b>MOULD LIFTING UNIT</b> * Hydraulic Type * 'T' or 'U' Channel Installation	<b>MOULD SLIDING ARM</b> * 4 Different Usage Options * RC - RD - RE - RF - RS	<b>'T' CHANNEL, HYDRAULIC LUG</b> * CA ( Cylinder Type ) * CB ( Block Type )	<b>AIR DRIVE HYDRAULIC PUMP</b> PB-1P1V Model Pump <b>PB 08</b> PB-1PP3V Model Pump <b>PC 12</b>	<b>OPERATION CONTROL PANEL</b> 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 automotive - 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.

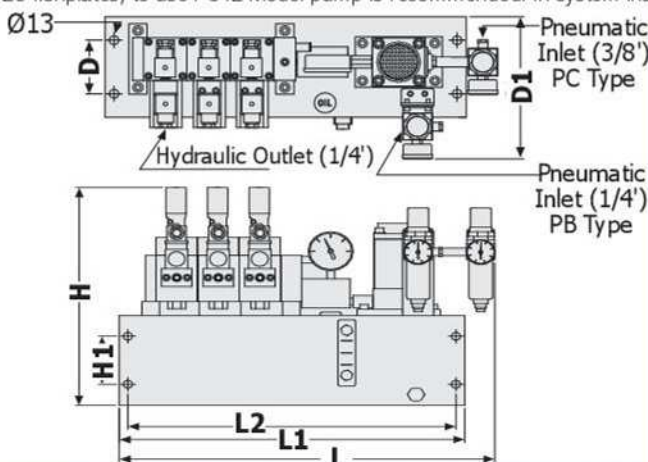


## HYDRAULIC AIR DRIVE PUMP UNIT

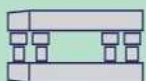
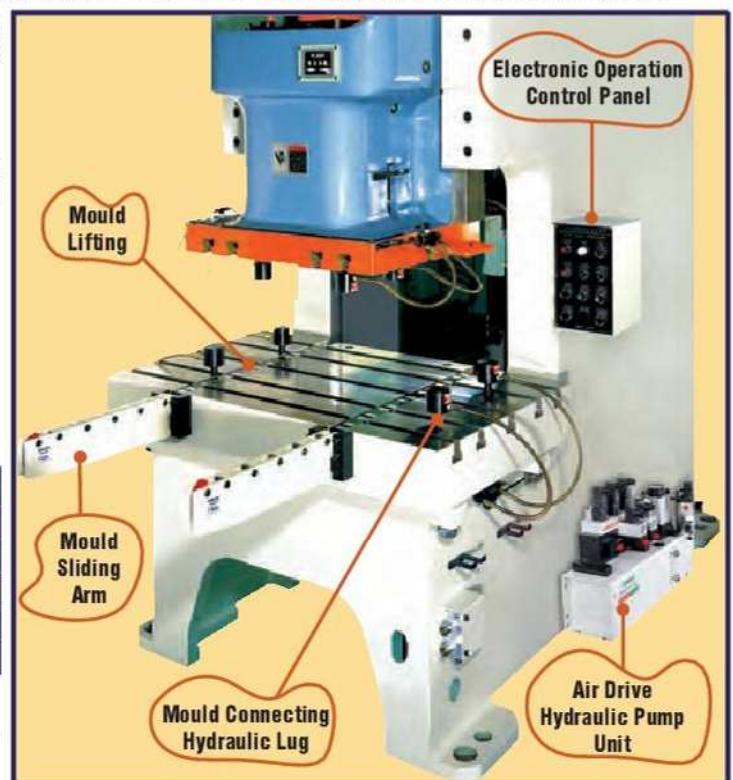
Hydraulic Pump Model Selection



**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



## Hydraulic Lugs

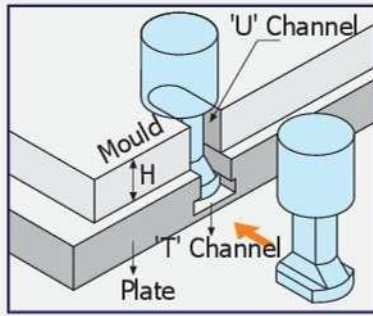


## Rotatory Connecting



## Model : CA ( At Large plates) HYDRAULIC LUG

1010 CA ..



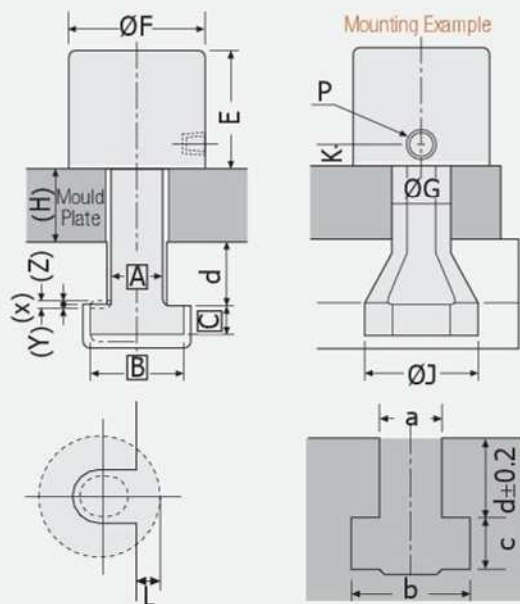
Hydraulic Lug Model CA / CB: In cases that mould connecting plates are large, it can be preferred at points that bench plate are equal to the lug location. Cylindrical hydraulic part of product makes tightening / compression downwards with pressure.

## Hydraulic Lug Model: CA ( Large Plates )

Hydraulic Pressure: 250 Kgf / cm<sup>2</sup> ( 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 )

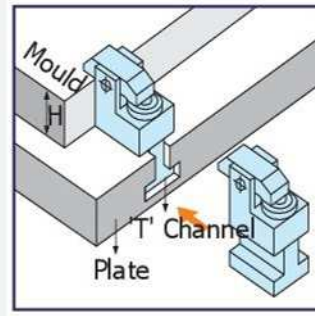
1010 CA ..

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 ..

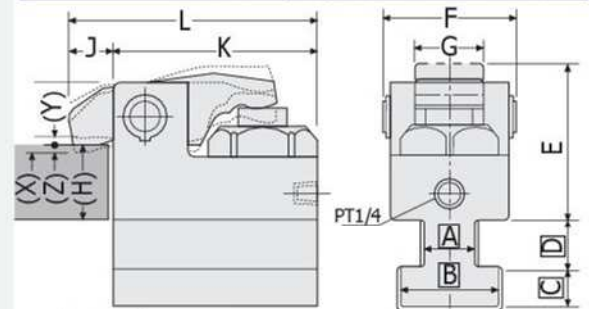


Hydraulic Lug Model CA / CB: It is made hydraulic pressing in conformity with traditional pressings. By heightening read piston, it tightens/ pressures lug.

## Hydraulic Lug Model: CB ( Large Plates )

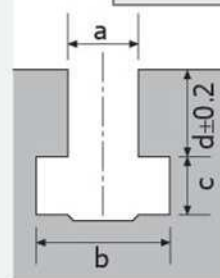
Hydraulic Pressure: 250 Kgf / cm<sup>2</sup> ( For single unit )

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.



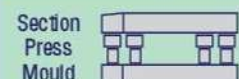
## Model : CB ( Large Plates )

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	
1015-CB04	134	110	24	25	77	79	40	18	12	
1015-CB06	159	130	29	30	92	96	46	22	14	PT
1015-CB10	189	159	30	40	114	117	54	24	16	1/4
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.

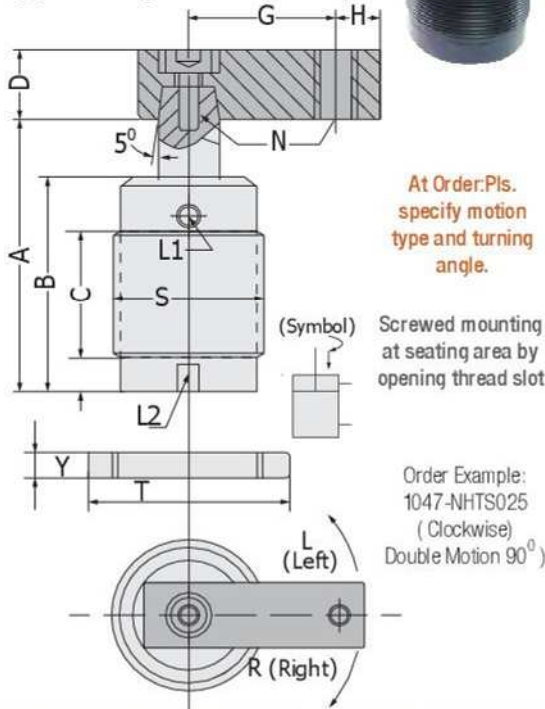
**BOTH** Produces  
Sells  
Affordable Prices  
**GTH**



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.

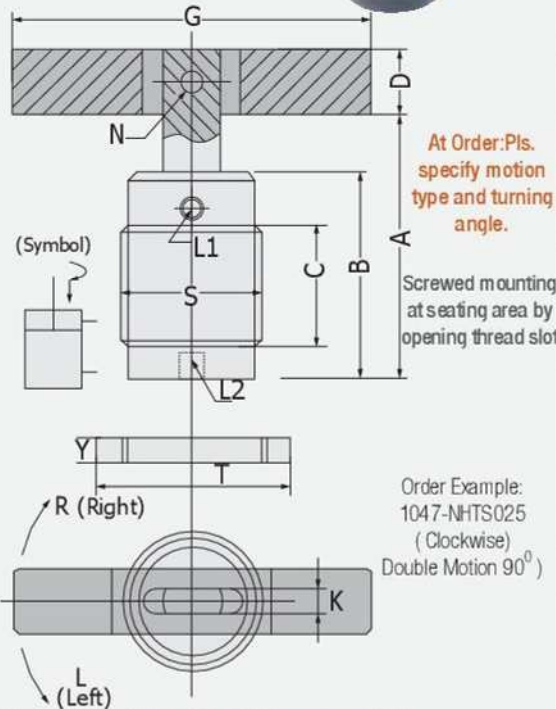
Screwed mounting at seating area by opening thread slot

Order Example: 1047-NHTS025 (Clockwise) Double Motion 90°

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 <sup>2</sup>			
Normal Pressure	20 - 45 Kg. / cm <sup>2</sup>			
Motion Type	Double Motion ( Clockwise )			
Turning Angle	90° (0° - 45° - 60° - 180°) ± 2°			
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 <sup>2</sup> )	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°

## 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 <sup>2</sup>			
Normal Pressure	20 - 45 Kg. / cm <sup>2</sup>			
Motion Type	Double Motion ( Clockwise )			
Turning Angle	90° (0° - 45° - 60° - 180°) ± 2°			
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 <sup>2</sup> )	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

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 90°C and has 0° - 45° and 60° 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)

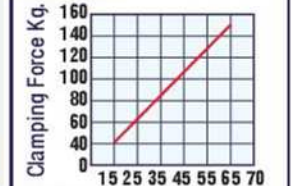
'L' Left / 'R' Right

40 - (Piston Ø) 25 - 32 - 40 - 50 - 63

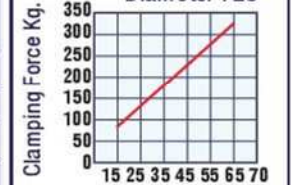
X 90° - (Angle) 0° - 45° - 60° - 90° - 130°

Theoretical Connection power

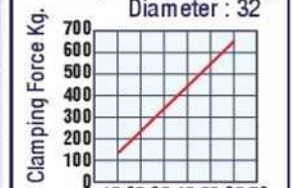
Under Pressure



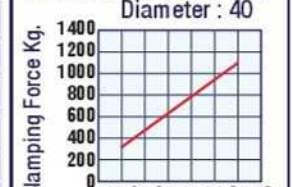
Working Pressure (Kg cm<sup>2</sup>) Diameter : 25



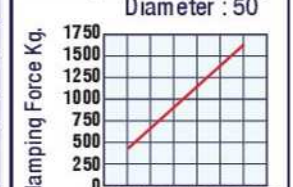
Working Pressure (Kg cm<sup>2</sup>) Diameter : 32



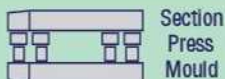
Working Pressure (Kg cm<sup>2</sup>) Diameter : 40



Working Pressure (Kg cm<sup>2</sup>) Diameter : 50



Working Pressure (Kg cm<sup>2</sup>) Diameter : 63

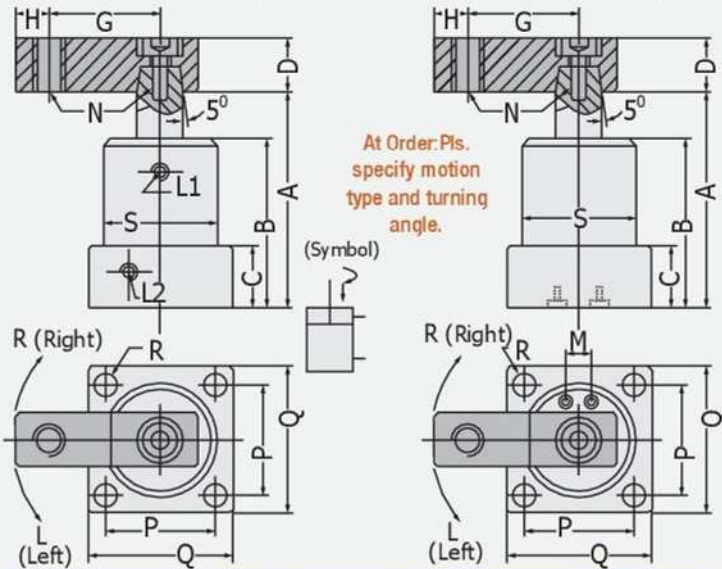


Section Press Mould



## NHS HYDRAULIC ROTATORY COUPLING 1043

Flanged Adaptation, Single Arm / One Way Overhead Tightening



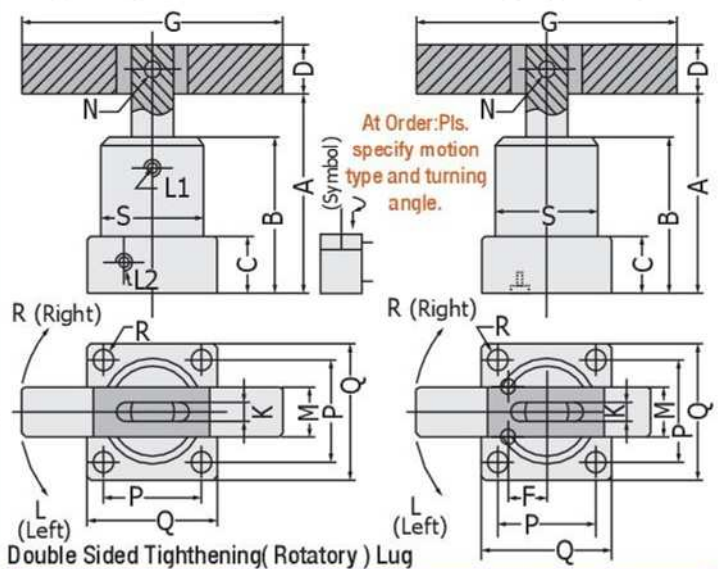
Order No Application	1043-NHS 025	1043-NHS 032	1043-NHS 040	1043-NHS 050	1043-NHS 063
Connection Type	Perforated Block /Flanged				
Clamp /Arm	Single Arm Overhead Tightening				
Max. Pressure	70 Kg. / cm <sup>2</sup>				
Normal Pressure	25 - 45 Kg. / cm <sup>2</sup>				
Motion Type	Double Motion ( Clockwise )				
Turning Angle	90° (0° - 45° - 60° - 180°) ± 2°				
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 <sup>2</sup> )	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) ∅	6.5	6.5	8.5	8.5	10.5
S (mm) ∅	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° )



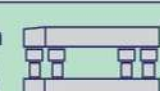
## NHS HYDRAULIC ROTATORY COUPLING 1045

Flanged Adaptation, Double Arm / Center Two Way Tightening



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 <sup>2</sup>				
Normal Pressure	25 - 45 Kg. / cm <sup>2</sup>				
Motion Type	Double Motion ( Clockwise )				
Turning Angle	90° (0° - 45° - 60° - 180°) ± 2°				
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 <sup>2</sup> )	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) ∅	8	8	8	8	10
P (mm)	40	44	48	57	70
Q (mm)	50	55	62	74	88
R (mm) ∅	6.5	6.5	8.5	8.5	10
S (mm) ∅	45	50	54	65	80
O - rings	S 4				
M (mm)	18	24	26	30	40
F (mm)	15	17	20	25	30
Weight	0.9	1.1	1.2	1.5	2.5

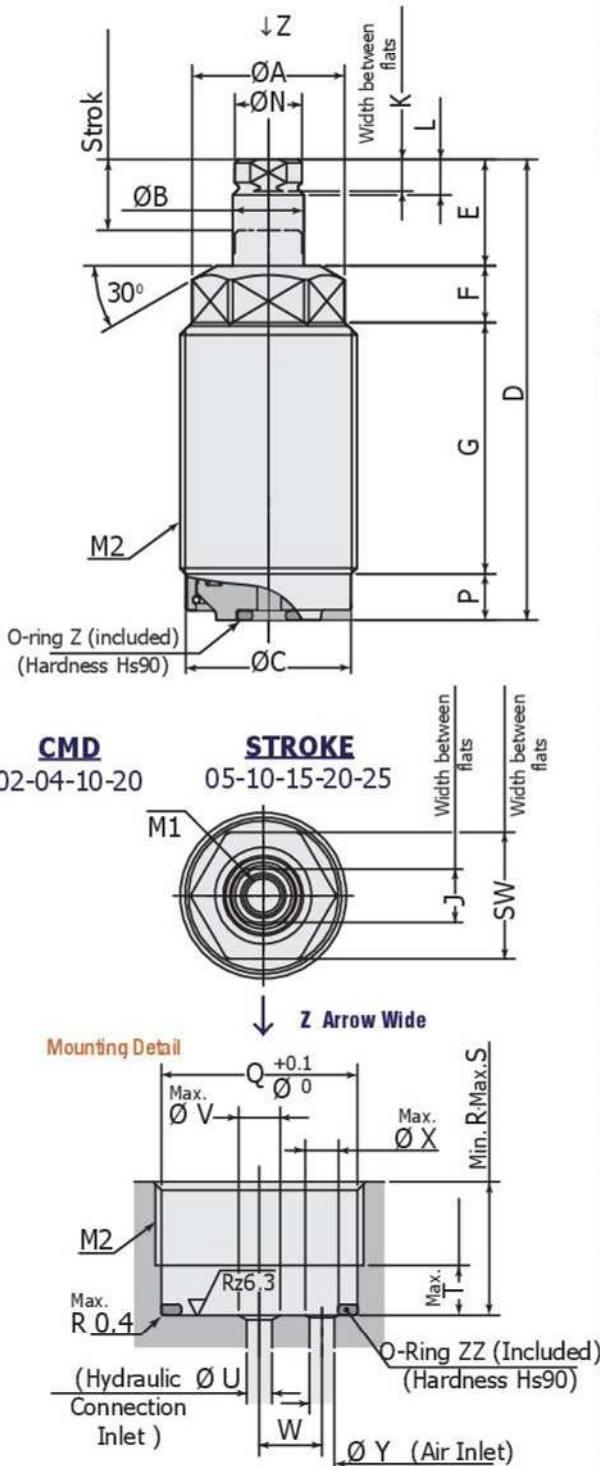
**Order Example** 1045 -NHSD 25 ( Clockwise Double Motion 90° )

L1 /L2 Connecting / Dismantling	1.8 PF	Section Press Mould 	Page 101
---------------------------------	--------	---	----------



## HYDRAULIC TENSILE THREADED CYLINDERS

Threaded Adaptation (Screwed Type) Kit with Connection Hole



## 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 <sup>2</sup> )	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 <sup>3</sup> )	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	CMD	02	16	Strok
Order No.	Product Code	Serial A	Piston Ø	Pulse	
	Extractor		16		
	Threaded		18		5
	Cylinder		22		10
			28		
			36		

### 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

<b>TC</b>	<b>12</b>	<b>A</b>
Order No.	Piston Ø	Serial
	12	A: Without Female Thread
	16	B: With Female Thread
	20	
	25	

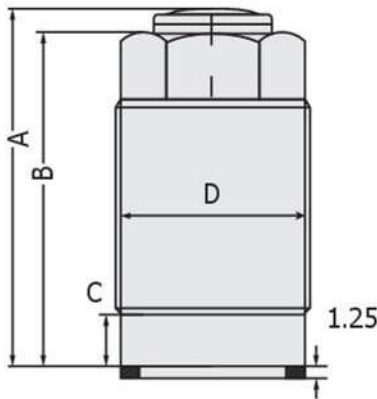
This threaded / casing connecting cylinder works in certain stroke range for conditional push and connecting work pieces safely.

**Type: A Serial** Pushing out without Piston Gear  
**B Serial** Ejector cylinders related with piston gear (equipment etc)

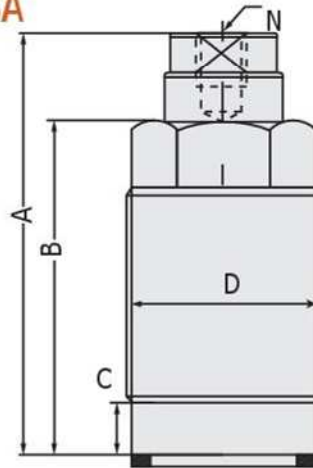


## HYDRAULIC EJECTOR CYLINDER 1053A

Screwed Type, Out Pusher Single Plunger



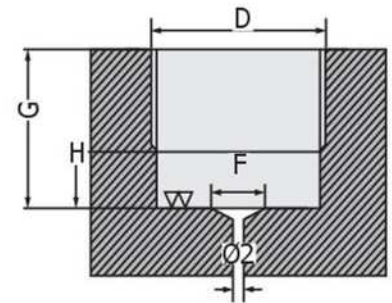
**A Serial Single Plunger**



**B Serial Distributed Piston**

## HYDRAULIC EJECTOR CYLINDER 1053B

Screwed Type, Out Pusher Equipment Connected



**Connecting Diagram**

**Ejector Cylinders;** 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 cylinders 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.

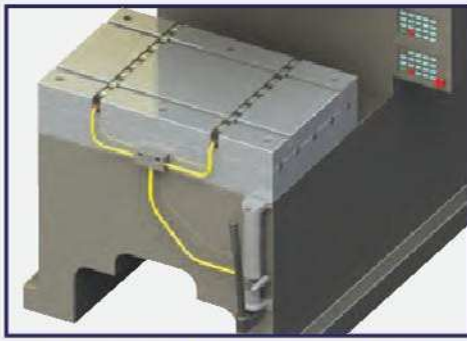
**B Serial:** It is placed with screwed casing by opening thread to the desired area. Thread structure existing on ejector piston is in fast connection position and works as ejector with certain ejector by preparing various threaded equipment as per request (Straightening Caps - 'V' Bearing / Pinned Support / Ball support or centering average etc.).

## TC HYDRAULIC EJECTOR CYLINDERS 1053A / A Serial Cylinder 1053B / B Serial Cylinder

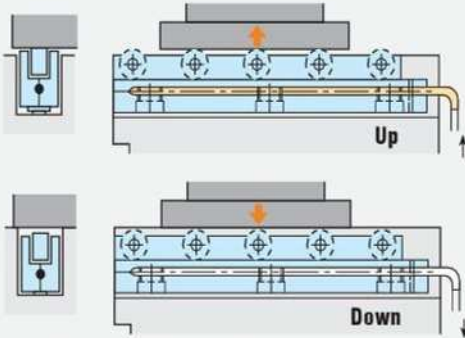
Order Technical Details	1053 TC12A	1053 TC16A	1053 TC20A	1053 TC25A	1053 TC12B	1053 TC16B	1053 TC20B	1053 TC25B
Working Oil Pressure	20 - 350 Kg / cm <sup>2</sup>							
Motion Type	Single Motion							
Stroke <b>S</b> (mm)	10	12	15	16	10	12	15	16
Piston Rod Ø (mm)	12	16	20	25	12	16	20	25
Connecting Power (200 Kg/cm <sup>2</sup> )	200 (Kg.)	400 (Kg.)	620 (kg.)	980 (Kg.)	200 (Kg.)	400 (Kg.)	620 (kg.)	980 (Kg.)
<b>A</b> (mm)	38	46.5	56	57	45	52	64.5	67
<b>B</b> (mm)	36	44.5	54	55	36	44.5	54	55
<b>C</b> (mm)	7	8	8	11	7	8	8	11
<b>D</b> (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 x 1.5
<b>F</b> (mm)	12	16	20	25	12	16	20	25
<b>G</b> (mm)	16	20	24	28	16	20	24	28
<b>H</b> (mm)	6	7	7	10	6	7	7	10
<b>N</b> (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

For examples working with computer aided application with our company and your application designs of hydraulic cylinders and during installation of systems and also model selection, our engineers continue their supports.



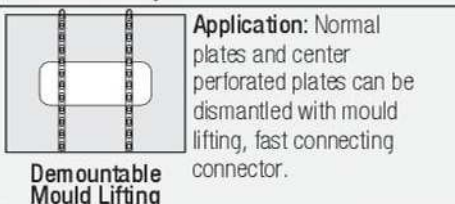
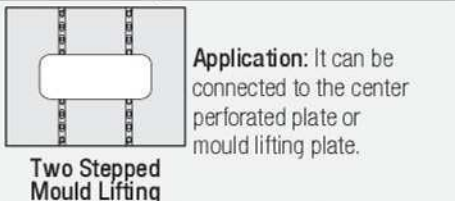
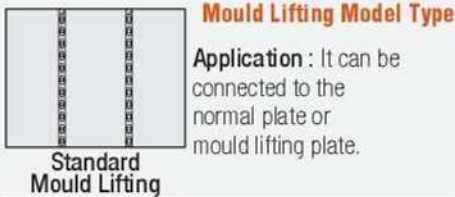


## HYDRAULIC MOULD LIFTING

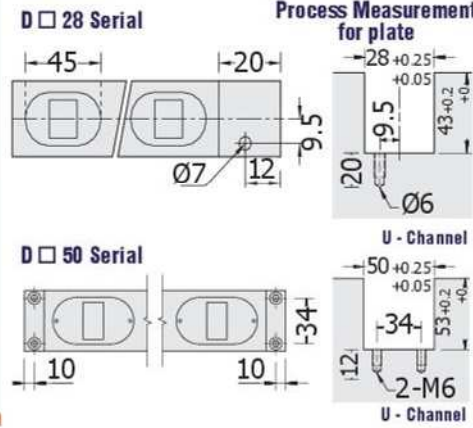


Model	Cylinder Type	Mould Lifting Width	Mould Lifting Length
L	Ball Type	28	28 mm
		50	50 mm
B	Ball Type	80	80 mm
		50	50 mm

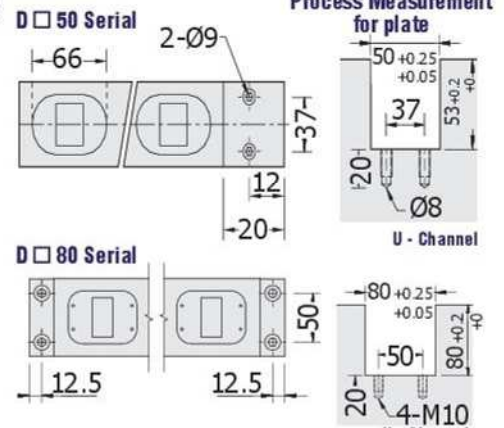
Model	Each Cylinder Capacity	Draft Stroke	Capacity Per Ball / Roll (Kgf)	
			SS41	S45C
D□28	0.44 Ton	3 mm	80	140
D□50	1.1 Ton	3 mm	200	350
DL 80	2.8 Ton	4 mm	460	800



## MODEL-DL Needle Bearing, Roller



## MODEL-DB Misketli, (Bilya) Noktasal



## HYDRAULIC MOULD LIFTING Roller - Ball

## MODEL-DL / MODEL-DB

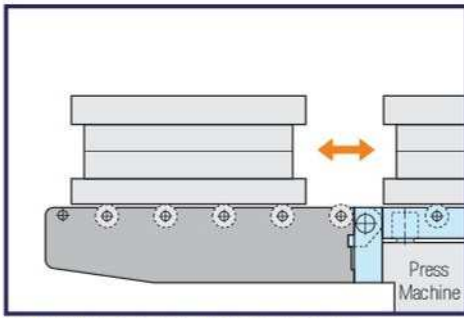
Order Example : 1020 - 0200 - DL 28 ( DB 28 )

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





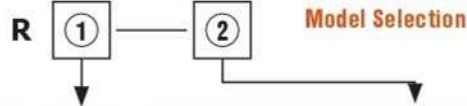


## MOULD LIFTING ARM

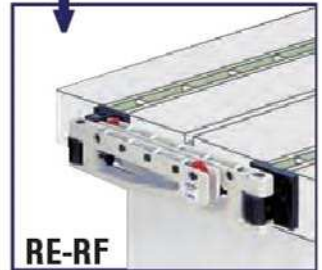
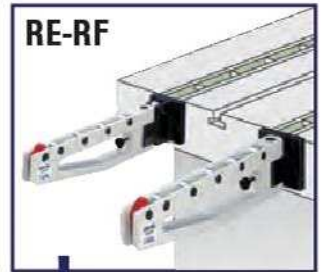
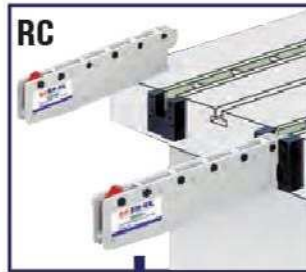
Model : RC - RD - RE - RF - RS

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



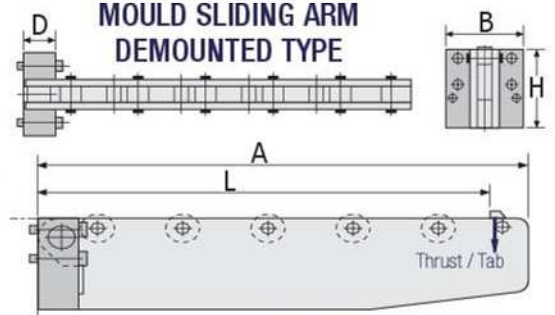
Model	Using Method	Definition
C	Dismantled	580 mm
D	Mounted	760 mm
E	Folding (Short)	880 mm
F	Folding (Short)	990 mm



Model : RC



## MOULD SLIDING ARM DEMOUNTED TYPE



## 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.



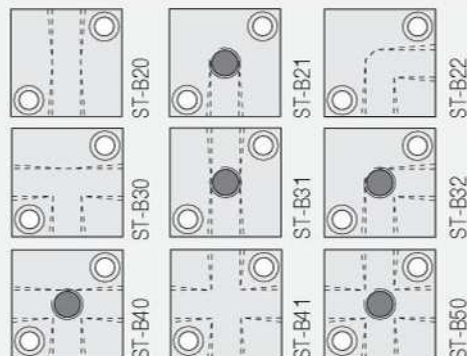
STA Model Distributor Connector

STA Model Distributor Connector

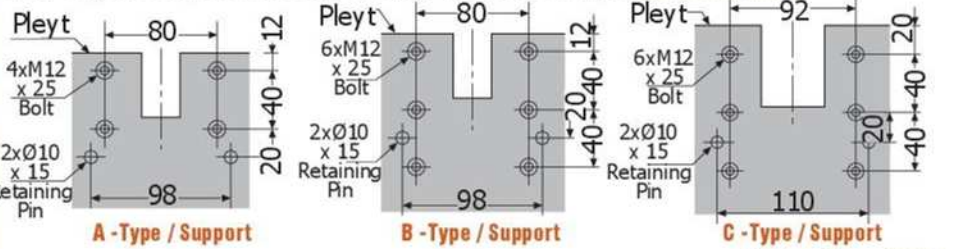


Spare accessory tube connector providing distribution of hydraulic pump (in 2 directions) to the different directions in hydraulic system installation.

### Tube Connector Direction Distributor Modeling



### Rear Support Component Hole Processing / Mounting Example Installation Holes



## Mould Sliding Arm (Demounted)

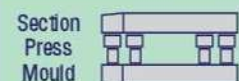
Order No : 1025  
Order No : 1027

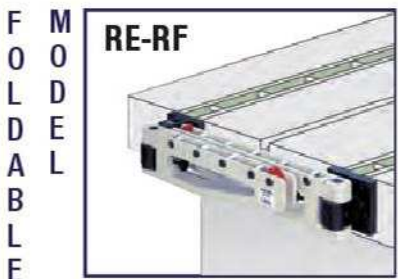
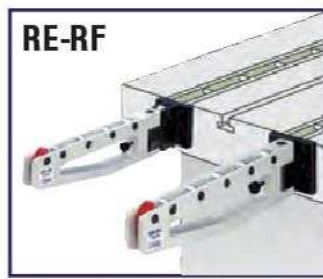
Order No. Reference	Support Model	Required Mould Length (L)	Max. Capacity (Kgf)	Total Length (A)	Rear Support Measures			Support Installation Holes	Roller Cylinder Qty
					D	B	H		
RC 580	RC-12	500	800	550	48	115	118	A -Type	5
RC 760	RC-12	700	600	750	48	115	118	A -Type	7
RC 880	RC-16	800	800	850	48	115	158	B -Type	8
RC 990	RC-20	900	900	950	48	115	188	B -Type	9

### Order No : 1027

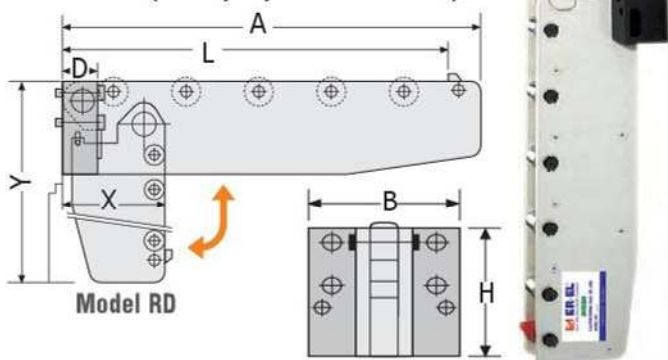
RC 5125	RC-14H	500	1250	550	55	130	138	C -Type	7
RC 5160	RC-16H	500	1600	550	55	130	158	C -Type	7
RC 5200	RC-18H	500	2000	550	55	130	178	C -Type	7
RC 7125	RC-14H	700	1250	750	55	130	138	C -Type	9
RC 7160	RC-16H	700	1600	750	55	130	158	C -Type	9
RC 7200	RC-18H	700	2000	750	55	130	178	C -Type	9
RC 8125	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.





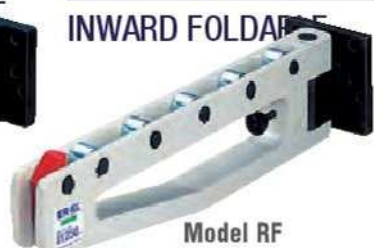
**MOULD SLIDING FOLDABLE ARM**  
Model: RD (Hanging Down Model)



**MOULD SLIDING**



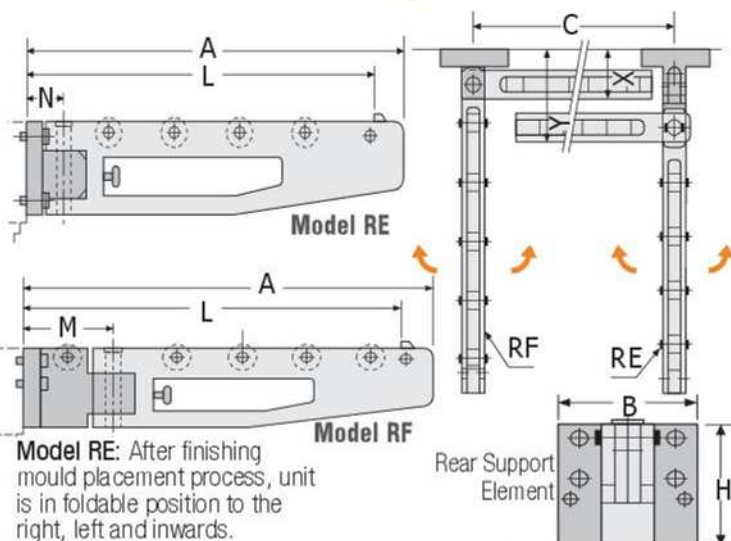
**INWARD FOLDABLE**



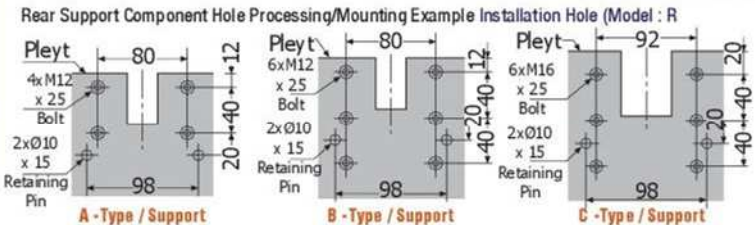
**HANGING DOWN FOLDABLE ARM** Order : 1030

Height difference of mould sliding RD model between (Y) floor and V plate at hanging length should be lower during mounting.

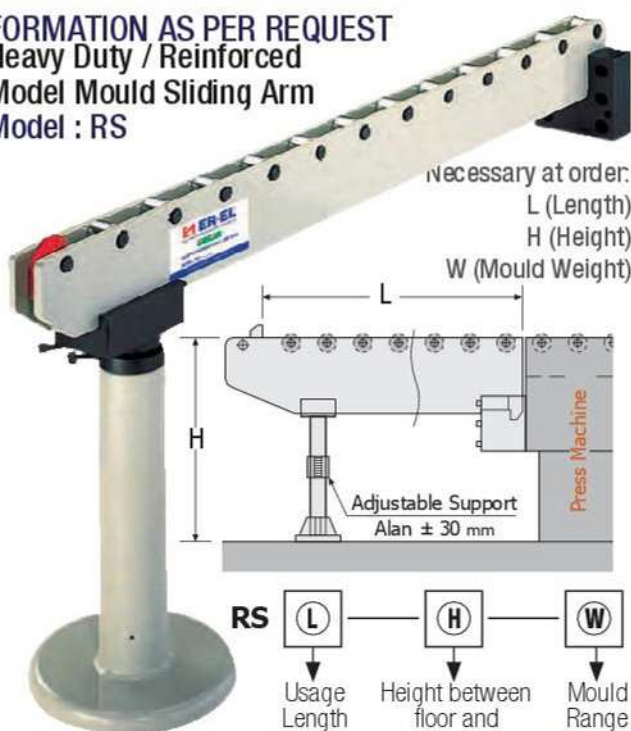
Order No	Your Mould Length	Max. Capacity	Arm Full Length	Hanging Measures		Support Measurements			Support Mounting	Quantity	Roller
				X	Y	D	B	H			
RD 580	500 mm	800 Kgf	550 mm	140 mm	620 mm	52 mm	115 mm	118 mm	A -Type	5	
RD 760	700 mm	600 Kgf	750 mm	140 mm	820 mm	52 mm	115 mm	118 mm	A -Type	7	
RD 880	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	



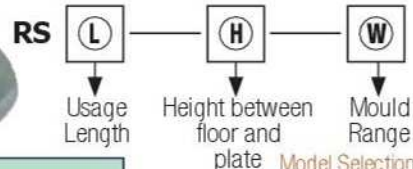
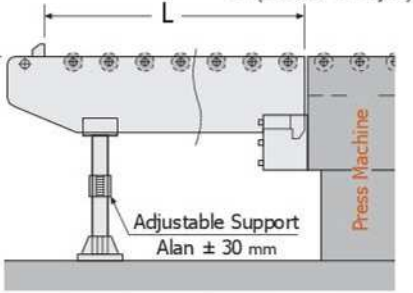
Model RE: After finishing mould placement process, unit is in foldable position to the right, left and inwards.



**FORMATION AS PER REQUEST**  
Heavy Duty / Reinforced  
Model Mould Sliding Arm  
Model : RS



Necessary at order:  
L (Length)  
H (Height)  
W (Mould Weight)

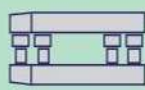


**MOULD SLIDING ARM (Inward Foldable)**

Order No.	Your Mould Length	Max. Capa. (Kgf)	Total Len. (A)	Min. Distance Required For Mounting	Measures When Folded		Support Measures		Cylinder Quantity	M	N	Hole Shape For Mounting
					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



**GTH**



**BUREAU VERITAS**

CE 0062

**PEO**  
97/23/EC



**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

**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

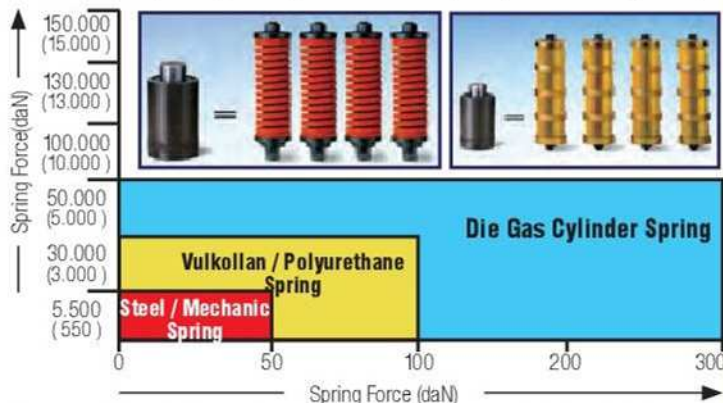
VD: Threaded Casing / Threaded Slot Placement at 'EU ( German )' Mould Standards

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 with 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 requiring high force with minimum floor requirement or when long stroke length is desired, the solution is provided with just one complex product. Gas used in Die Gas springs, is environment-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 gas, it can be worked by itself. For safety usage, absolutely should be selected by persons who have Die Gas spring experience in suitable measures and capacities / diversification selection and should be used in accordance with mounting instructions. **Different systems cause hazards and accidents.** Instructions are on the back page.





**Die Gas SPRING CYLINDERS:** 2 YEAR Maintenance Guaranty ( From the date of sale ) for the products. Intervention out of Warranty Coverage ( Misusages / Heavy Applications, Intervention 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 should 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).

**Example:**  $F(\text{Force daN}) = P(\text{Bar / Psi}) \cdot S(\text{cm}^2)$  *To avoid course risk, it is recommended not to exceed 90% of stroke length.*  
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).

**Example:**  $P(\text{Bar / Psi}) = F(\text{daN}) \div S(\text{cm}^2)$  *In the spring selection, absolutely a spring above criteria should be selected.*

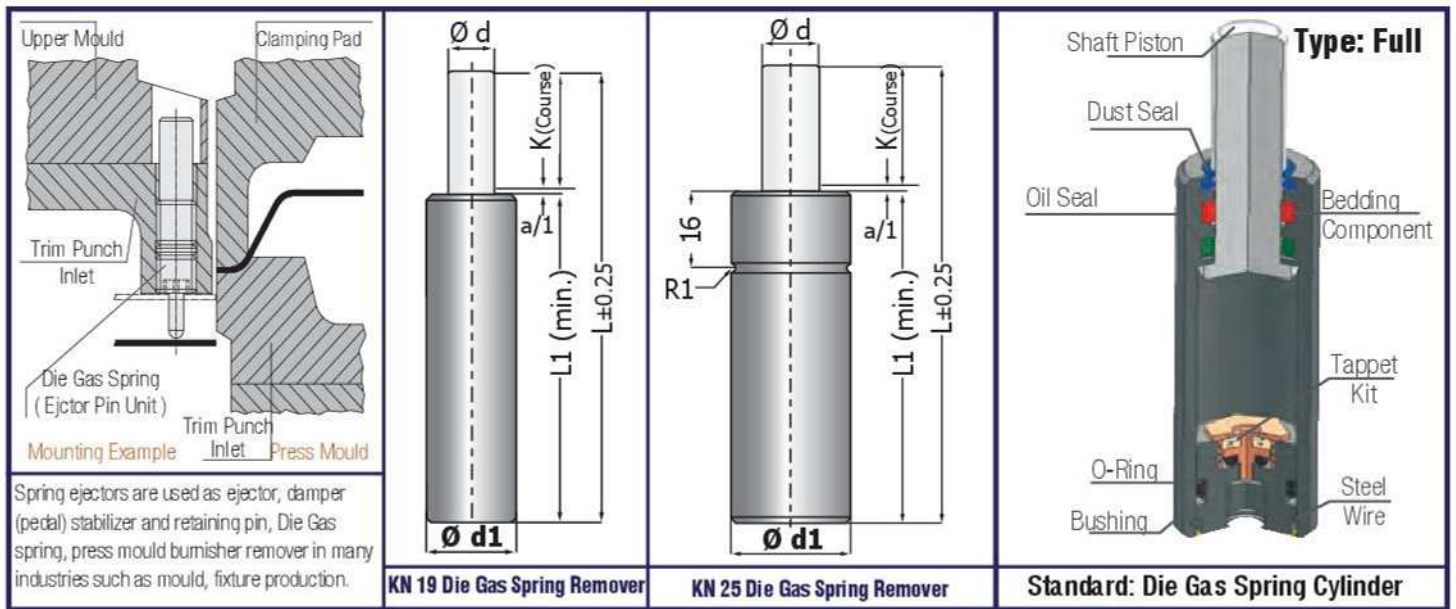
**Usage Instruction ( Things to avoid )**

<p><b>B1</b></p> <p>Don't use cylinder except in specified max. values!</p>	<p><b>B2</b></p> <p>Bring Cylinder into vertical position!</p>	<p><b>B3</b></p> <p>Don't make any mechanical process on casing or shaft!</p>	<p><b>B4</b></p> <p>Don't let to contaminate Cylinder surface with liquid or solid substance, in imperative piston, cylinder can be used as reverse</p>	<p><b>B5</b></p> <p>Don't charge cylinder with any gas except Nitrogen N<sub>2</sub></p>	<p><b>B6</b></p> <p>Don't charge cylinder with More Than 150 Bar Pressure !</p>
<p><b>B7</b></p> <p>Don't mount Cylinder without securing!</p>	<p><b>B8</b></p> <p>Never remove the cylinder!</p>	<p><b>B9</b></p> <p>Don't let someone else to make maintenance except the incumbent</p>	<p><b>B10</b></p> <p>While securing Cylinder, don't use hole over piston!</p>	<p><b>B11</b></p> <p>While using gas Cylinder, don't let mould temperature to exceed 80°</p>	<p><b>Label Information:</b></p> <p>YO 4200 38 — Model Name and Model No 09 / 14 — Production Date 000 10 — Party / Traceability No PED 97 / 23 / EC — P.E.D Pressure Vessels CE — Directive Max Pressure 150 bar — Max. Filling Pressure Use only gas N<sub>2</sub> — Wind of used gas WARNING — High Pressure Warning Made in Turkey</p>

**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 Dis. M12	Ø 15	250
KV 1000	10 ~ 100	58 ~ 238	48 ~ 138	Ø50 Dis. 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.



## 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)		Weight Kg.	Technical Specifications
KN 19 -10	d: 10 mm	10	65	55		0.09	Pressure Gas N <sub>2</sub> Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0°C ve + 80°C Max. Working Speed 0.8 m / s Piston Area (S) 0.5 cm <sup>2</sup>
KN 19 -16	d1: 19	16	77	61			
KN 19 -25	a: 1 mm	25	95	70			
KN 19 -38		38	121	83			
KN 19 -50		50	145	95			
KN 19 -63		63	171	108			
KN 19 -80		80	205	125			
<b>Cylinder Coupling Fastening</b>			At slot, volume Ø +1.0 +0.5				

Serial :KN 19

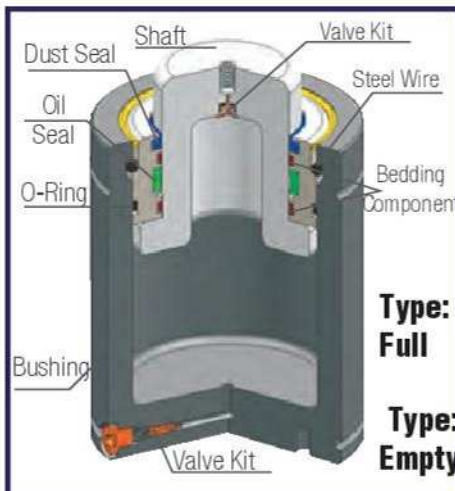
**Note:** According to the 20° C value calculated nominally, any variation at temperature can cause a change at gas pressure (P). During spring selection, absolutely above spring criterias should be selected, by assuming that the quality continuity of processed sheet material can be changed, usage criterias should be adjusted.

Order Kod KN 25..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Weight Kg.	Technical Specifications
KN 25 -10	d: 12 mm	10	65	55		0.15	Pressure Gas Nitrogen Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0°C ve + 80°C Max. Working Speed 0.8 m / s Piston Area (S) 1.13 cm <sup>2</sup>
KN 25 -13	d1: 25	13	71	59			
KN 25 -16	a: 1 mm	16	77	61			
KN 25 -25		25	85	70			
KN 25 -38		38	121	83			
KN 25 -50		50	145	95			
KN 25 -63		63	171	108			
KN 25 -80	80	205	125				
KN 25 -100	100	245	145				
KN 25 -125	125	295	170				
<b>Cylinder Coupling Fastening</b>			At slot, volume Ø +1.0 +0.5		Bottom Screwed Coupling M6		Supported Volume Ø +1.0 +0.5

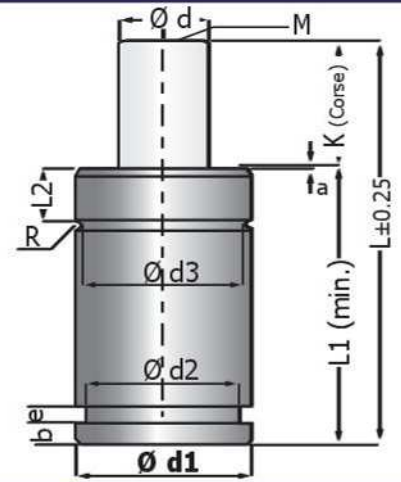
Serial :KN 25

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.

**Usage Advantages of Die Gas Spring Cylinder:** \* Significant 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 significant 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 continuously (Fixed production are provided) etc.



Type: Full  
Type: Empty



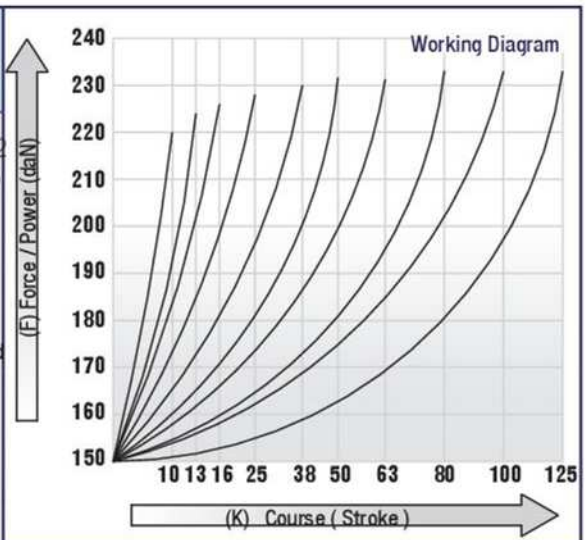
Serial Connection: Gasless (With Valve)

Standard: Die Gas Spring (Ready /Full)

SN Serial Die Gas Spring Technical Drawing Detail

## SN Serial Die Gas Springs Compatible with ISO 11901 / Serial Connection / Wide Options

Order Code <b>KN 150</b>	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications
<b>SN 150 - 10</b>	d: 12 mm <b>d1: 32</b>	10	70	60	<b>(F)</b> 150 daN	0.28	Pressure Gas N <sub>2</sub> 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) 1.13 cm <sup>2</sup> <b>ISO 11901-1</b>
<b>SN 150 - 13</b>	d2: 27 mm	13	75.4	62.7		0.29	
<b>SN 150 - 16</b>	d3: 30 mm	16	82	66		0.30	
<b>SN 150 - 25</b>	a: 2 mm b: 4 mm	25	100	75		0.33	
<b>SN 150 - 38</b>	e: 3.5 mm	38	126	88		0.36	
<b>SN 150 - 50</b>	L2: 10.5	50	150	100		0.40	
<b>SN 150 - 63</b>	R: 1	63	177	113.5		0.44	
<b>SN 150 - 80</b>	M: 6	80	210	130		0.49	
<b>SN 150 - 100</b>	Base Hole	100	250	150		0.55	
<b>SN 150 - 125</b>		125	300	175		0.64	



**Silindir Bağlantı Sabitleme**

At slot, volume Ø +1.0 +0.5

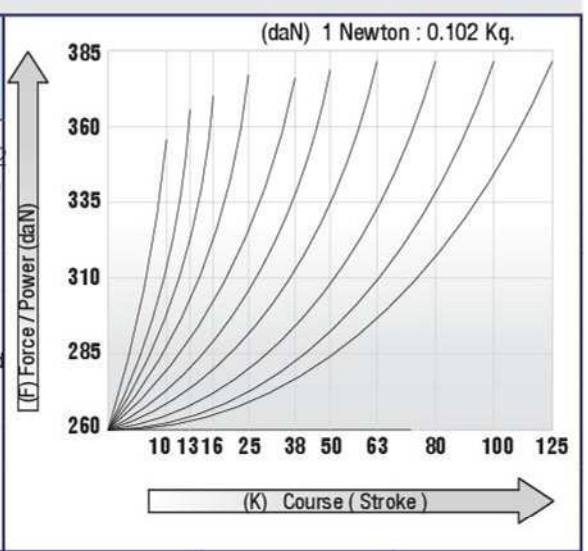
Bottom Screwed Coupling M8

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: SN 150

Order Code <b>SN 250..</b>	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications
<b>SN 250 - 10</b>	d: 15 mm <b>d1: 38</b>	10	70	60	<b>(F)</b> 250 daN	0.40	Pressure Gas N <sub>2</sub> 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) 1.77 cm <sup>2</sup> <b>ISO 11901-1</b>
<b>SN 250 - 13</b>	d2: 33 mm	13	75.4	62.7		0.41	
<b>SN 250 - 16</b>	d3: 36 mm	16	82	66		0.43	
<b>SN 250 - 25</b>	a: 2 mm b: 4 mm	25	100	75		0.48	
<b>SN 250 - 38</b>	e: 3.5 mm	38	126	88		0.54	
<b>SN 250 - 50</b>	L2: 10.5	50	150	100		0.60	
<b>SN 250 - 63</b>	R: 1	63	177	113.5		0.66	
<b>SN 250 - 80</b>	M: 6	80	210	130		0.74	
<b>SN 250 - 100</b>	Base Hole	100	250	150		0.81	
<b>SN 250 - 125</b>		125	300	175		0.98	



**Cylinder Coupling Fastening Components**

At slot, volume Ø +1.0 +0.5



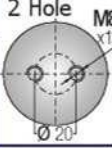
Bottom Screwed Coupling M8

BT 38 BY 38


Serial: SN 250

Contd. 110-113


# SN Series Die Gas Springs ( For technical drawing details, pls. refer next page upper section )

Order Code SN 500..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder Length (L1)			Technical Specifications
SN 500 -13	d: 20 mm	13	110.4	97.7	(F) 500 daN	0.90	Pressure Gas N <sub>2</sub>
SN 500 -25	d1: 45 d2: 40 mm d3: 43 mm	14	135	110		1.00	Max. Pressure (P) 150 Bar
SN 500 -38	a: 2 mm	38	161	123		1.10	Min. Pressure 25 Bar
SN 500 -50	b: 4 mm e: 3.5 mm	50	185	135		1.20	Working Temp. 0°C ve + 80°C
SN 500 -63	L2: 14.5 R: 1 / M: 8	63	212	148.5		1.30	Max. Working Speed 1.8 m / s
SN 500 -80		80	245	165		1.40	Piston Area (S) 4.91 cm <sup>2</sup>
SN 500 -100		100	285	185		1.60	<b>PEI</b> ISO 91/23/EG 11901-1
SN 500 -125		125	335	210		1.80	
SN 500 -160		160	405	245	2.10		

**Cylinder Coupling Fastening**

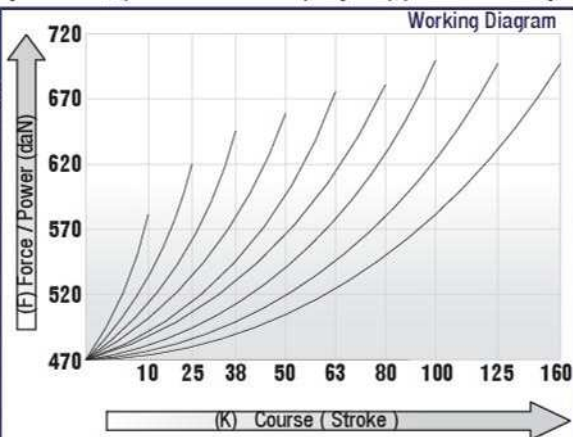





Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.




Example: Serial Connection SN 500 S

For each model, protect pressure level.



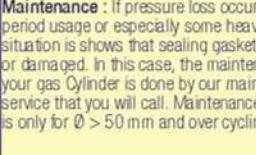
Order Code SN 750..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications
SN 750 -13	d: 25 mm	13	120.4	107.7	(F) 750 daN	1.25	Pressure Gas N <sub>2</sub>
SN 750 -25	d1: 50	25	145	120		1.38	Max. Pressure (P) 150 Bar
SN 750 -38	d2: 43 mm d3: 46 mm	38	171	133		1.53	Min. Pressure 25 Bar
SN 750 -50	a: 3 mm	50	195	145		1.65	Working Temp. 0°C ve + 80°C
SN 750 -63	b: 8 mm	63	222	158.5		1.80	Max. Working Speed 1.8 m / s
SN 750 -80	e: 5 mm	80	255	175		1.96	<b>PEI</b> ISO 91/23/EG 11901-1
SN 750 -100	L2: 14.5 R: 1	100	295	195		2.09	
SN 750 -125	M: 8	125	345	220		2.33	
SN 750 -160		160	415	255		2.68	Piston Area (S) 3.14 cm <sup>2</sup>
SN 750 -200		200	495	295		3.10	
SN 750 -250		250	595	345		3.60	
SN 750 -300		300	695	395		4.10	

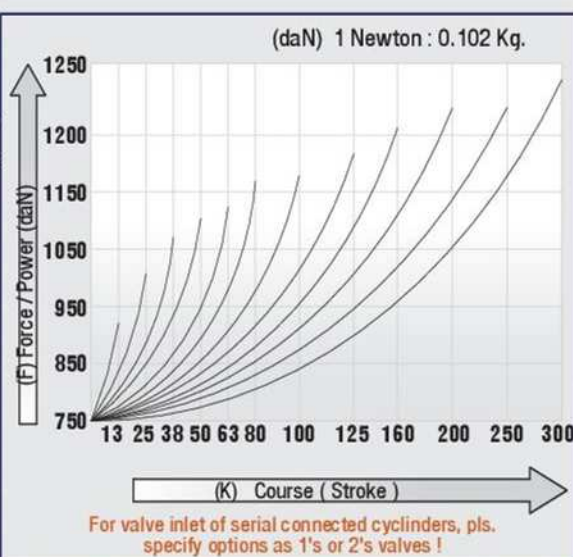
**Cylinder Coupling Fastening**



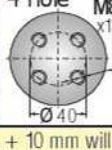


Maintenance: If pressure loss occurs after long period usage or especially some heavy applications, this situation is shows that sealing gaskets are worn or damaged. In this case, the maintenance of your gas Cylinder is done by our maintenance service that you will call. Maintenance service is only for Ø > 50 mm and over cyclinders.

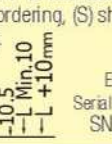
Serial Connection: +10mm will be added to L Length. During ordering, (S) should be added while coding.






Order Code SN 1500..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications
SN 1500 -25	d: 36 mm	25	160	135	(F) 1500 daN	3.64	Pressure Gas N <sub>2</sub>
SN 1500 -38	d1: 75	38	186	148		3.91	Max. Pressure (P) 150 Bar
SN 1500 -50	d2: 67 mm d3: 70 mm	50	210	160		4.15	Min. Pressure 25 Bar
SN 1500 -63	a: 3 mm	63	237	173.5		4.47	Working Temp. 0°C ve + 80°C
SN 1500 -80	b: 8 mm e: 5 mm	80	270	190		4.81	Max. Working Speed 1.8 m / s
SN 1500 -100	L2: 18 R: 2.5	100	310	210		5.22	<b>PEI</b> ISO 91/23/EG 11901-1
SN 1500 -125	M: 8	125	360	235		5.75	
SN 1500 -160		160	430	270		6.33	
SN 1500 -200		200	510	310		7.34	
SN 1500 -250		250	610	360		8.50	
SN 1500 -300		300	710	410	9.60		

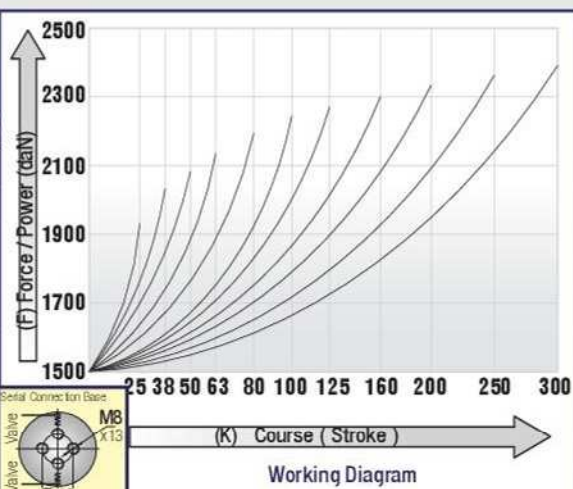
Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.

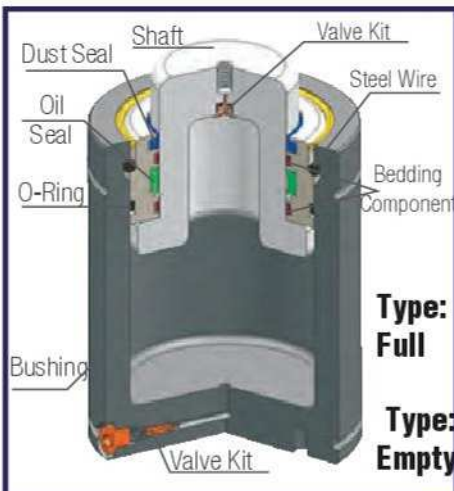


Example: Serial Connection SN 1500 S

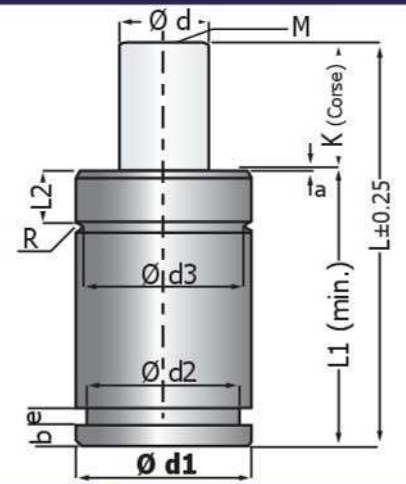
**Cylinder Coupling Fastening**







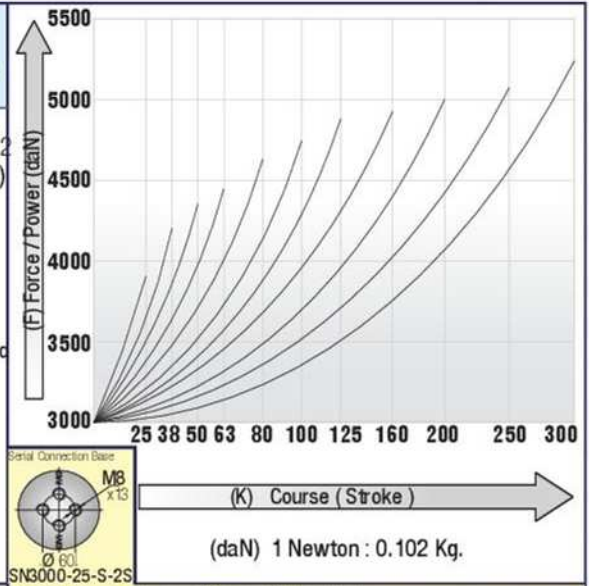
**Type: Full**  
**Type: Empty**



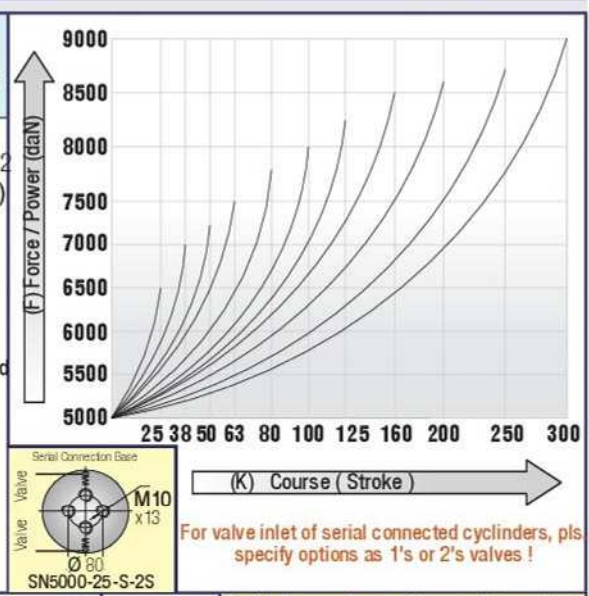
Serial Connection: Gasless (With Valve)    Standard: Die Gas Spring (Ready /Full)    SN Serial Die Gas Spring Technical Drawing Detail

**SN Serie Die Gas Springs** Compatible with ISO 11901 / Serial Connection / Wide Options

Order Code	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications
<b>SN 3000..</b>							
SN 3000 -25	d: 50 mm	25	170	145	<b>(F)</b> 3000 daN	6.36	Pressure Gas N <sub>2</sub>
SN 3000 -38	<b>d1: 95</b> d2: 87 mm	38	196	158		6.75	Max. Pressure (P) 150 Bar
SN 3000 -50	d3: 90 mm	50	220	170		7.35	Min. Pressure 25 Bar
SN 3000 -63	a: 3 mm	63	247	183.5		7.87	Working Temp. 0°C ve + 80°C
SN 3000 -80	b: 8 mm	80	280	200		8.44	Max. Working Speed 1.8 m / s
SN 3000 -100	e: 5 mm	100	320	220		9.03	Piston Area (S) 19.63 cm <sup>2</sup>
SN 3000 -125	L2: 21	125	370	245		10.1	
SN 3000 -160	R:2.5	160	440	280		11.3	
SN 3000 -200	M:8	200	520	320		12.8	
SN 3000 -250		250	620	370		14.5	
SN 3000 -300		300	720	420	16.2		



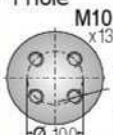




Order Code	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications
<b>SN 5000..</b>							
SN 5000 -25	d: 65 mm	25	190	165	<b>(F)</b> 5000 daN	12.2	Pressure Gas N <sub>2</sub>
SN 5000 -38	<b>d1:120</b> d2:112 mm	38	216	178		12.9	Max. Pressure (P) 150 Bar
SN 5000 -50	d3:115 mm	50	240	190		13.7	Min. Pressure 25 Bar
SN 5000 -63	a: 3 mm	63	267	203.5		14.5	Working Temp. 0°C ve + 80°C
SN 5000 -80	b: 8 mm	80	300	220		15.4	Max. Working Speed 1.8 m / s
SN 5000 -100	e: 5 mm	100	340	240		16.7	Piston Area (S) 33.18 cm <sup>2</sup>
SN 5000 -125	L2: 22.5	125	390	265		18.3	
SN 5000 -160	R:2.5	160	460	300		20.1	
SN 5000 -200	M:8	200	540	340		22.3	
SN 5000 -250		250	640	390		24.8	
SN 5000 -300		300	740	440	27.3		






# SN Serie Die Gas Springs (For technical drawing details, pls. refer next page upper section)


Order Code	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications
<b>SN 7500..</b>							
<b>SN 7500 -25</b>	d: 80 mm	25	205	180	<b>(F)</b> 7500 daN	19.8	Pressure Gas N <sub>2</sub>
<b>SN 7500 -38</b>	<b>d1:150</b>	38	231	193		21.0	Max. Pressure (P) 150 Bar
<b>SN 7500 -50</b>	d2:142 mm d3:145 mm	50	255	205		21.8	Min. Pressure 25 Bar
<b>SN 7500 -63</b>	a: 3 mm b: 8 mm	63	282	218.5		22.6	Working Temp. 0°C ve + 80°C
<b>SN 7500 -80</b>	e: 5 mm	80	315	235		24.4	Max. Working Speed 1.8 m / s
<b>SN 7500 -100</b>	L2: 24.5 R:2.5	100	355	255		26.1	Piston Area (S) 50.27 cm <sup>2</sup>
<b>SN 7500 -125</b>	M:8	125	405	280		28.0	
<b>SN 7500 -160</b>		160	475	315		31.4	
<b>SN 7500 -200</b>		200	555	355		35.0	
<b>SN 7500 -250</b>		250	655	405		38.5	
<b>SN 7500 -300</b>		300	755	455	42.4		
							




BT  
150



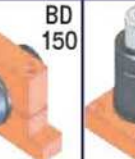
BY  
150




BY  
150-A



BA  
150




BD  
150



BA  
150-A

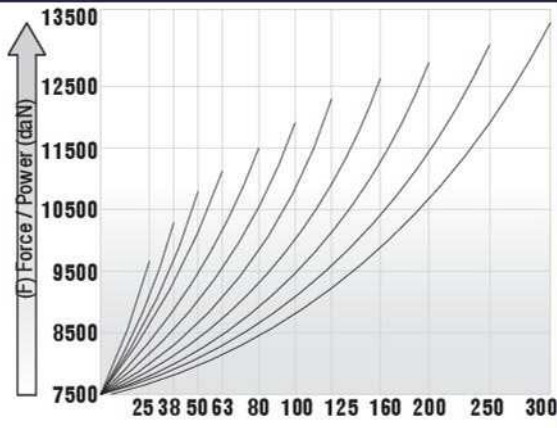
**Serial Connection Base**



Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.

Example: Serial Connection SN 7500 S





For each model, protect pressure level.




(K) Course (Stroke)


(daN) 1 Newton : 0.102 Kg.

For valve inlet of serial connected cylinders, pls. specify options as 1's or 2's valves !


Order Code	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications
<b>SN10000..</b>							
<b>SN10000-25</b>	d: 95 mm	25	185	34.8	<b>(F)</b> 10000 daN	19.8	Pressure Gas N <sub>2</sub>
<b>SN10000-38</b>	<b>d1:195</b>	38	198	36.7		21.0	Max. Pressure (P) 150 Bar
<b>SN10000-50</b>	d2:187 mm d3:190 mm	50	210	38.5		21.8	Min. Pressure 25 Bar
<b>SN10000-63</b>	a: 3 mm b: 8 mm	63	223.5	40.5		22.6	Working Temp. 0°C ve + 80°C
<b>SN10000-80</b>	e: 8 mm	80	240	43.0		24.4	Max. Working Speed 1.8 m / s
<b>SN10000-100</b>	L2: 30 R:2.5	100	260	46.0		26.1	Piston Area (S) 70.88 cm <sup>2</sup>
<b>SN10000-125</b>	M:8	125	285	49.8		28.0	
<b>SN10000-160</b>		160	320	55.0		31.4	
<b>SN10000-200</b>		200	360	61.0		35.0	
<b>SN10000-250</b>		250	410	68.5		38.5	
<b>SN10000-300</b>		300	460	76.0	42.4		
							




BT  
195



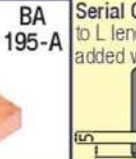
BY  
195



BY  
195-A

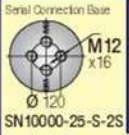


BA  
195



BA  
195-A

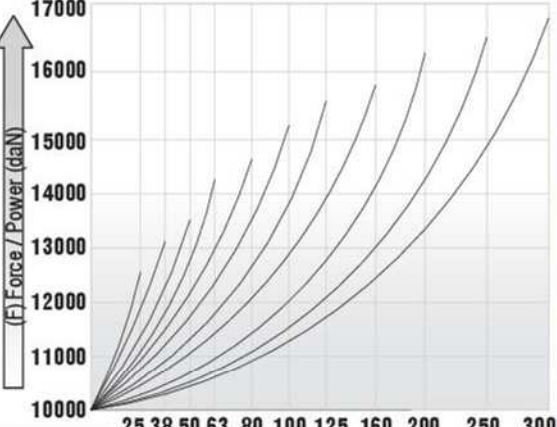
**Serial Connection Base**



Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.

Example: Serial Connection SN 10000 S


For each model, protect pressure level.




(K) Course (Stroke)

For valve inlet of serial connected cylinders, pls. specify options as 1's or 2's valves !

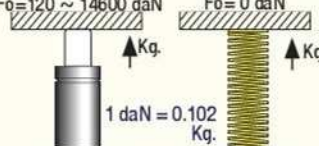
## PRACTICAL INFORMATION OF USING Die Gas SPRING & USAGE ADVANTAGES OF Die Gas SPRING



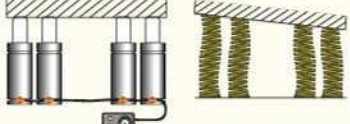
By using the Die Gas spring, required application area, height, occupied volume, retaining springs for preloading are decreased significantly.



Together with same study course and force increment, significant length decrease, length saving, spring structure advantage are provided.

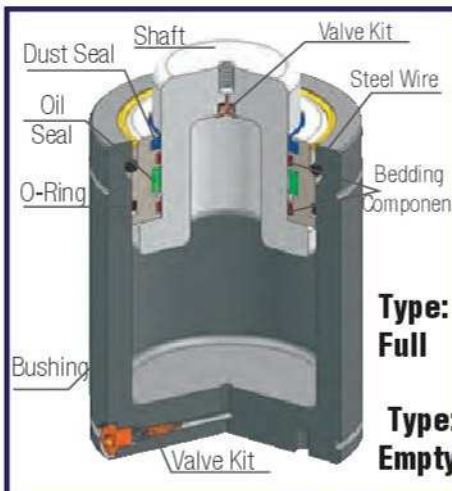


Higher performance, easier and fast mounting is provided with small preloading (0.5 - 1 mm).

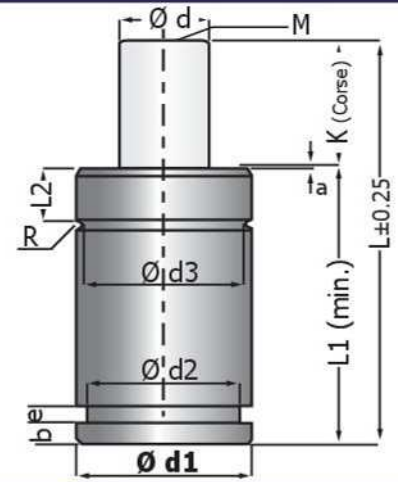


At each contact point, same forces can be placed to the pure desired point continuously, system can be monitored in terms of pressure.

**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 completely with that 10 Pieces Mechanic Steel Yellow Spring ~ (6000 Kg.). In case of that Die Gas Spring is selected 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.



Type:  
Full  
Type:  
Empty



Serial Connection: Gasless (With Valve)

Standard: Die Gas Spring (Ready /Full)

Y Serie 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)			Technical Specifications
Y 300 - 10	d: 16 mm d1: 32	10	70	60			Pressure Gas N <sub>2</sub> 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) 2.01 cm <sup>2</sup>
Y 300 - 13	d2: 27 mm	13	74.4	62.7			
Y 300 - 16	d3: 30 mm	16	82	66			
Y 300 - 25	a: 2 mm	25	100	75			
Y 300 - 38	b: 4 mm	38	126	88			
Y 300 - 50	e: 3.5 mm	50	150	100			
Y 300 - 63	L2: 10.5	63	177	113.5			
Y 300 - 80	R: 1	80	210	130			
Y 300 - 100	M: 6	100	250	150			
Y 300 - 125	Base Hole 	125	300	175			

**(F)**

300 daN

**Cylinder Coupling Fastening**

 At slot, volume Ø +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)			Technical Specifications
Y 500 - 10	d: 20 mm d1: 38	10	70	60			Pressure Gas N <sub>2</sub> 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) 3.14 cm <sup>2</sup>
Y 500 - 13	d2: 33 mm	13	75.4	62.7			
Y 500 - 16	d3: 36 mm	16	82	66			
Y 500 - 25	a: 2 mm	25	100	75			
Y 500 - 38	b: 4 mm	38	126	88			
Y 500 - 50	e: 3.5 mm	50	150	100			
Y 500 - 63	L2: 10.5	63	177	113.5			
Y 500 - 80	R: 1	80	210	130			
Y 500 - 100	M: 6	100	250	150			
Y 500 - 125	Base Hole 	125	300	175			

**(F)**

500 daN

**Cylinder Coupling Fastening**

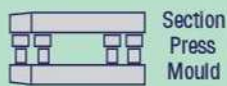
 At slot, volume Ø +1.0 +0.5
 Bottom Screwed Coupling M8

BT 38

BY 38



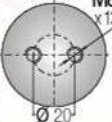
Serial: Y 500

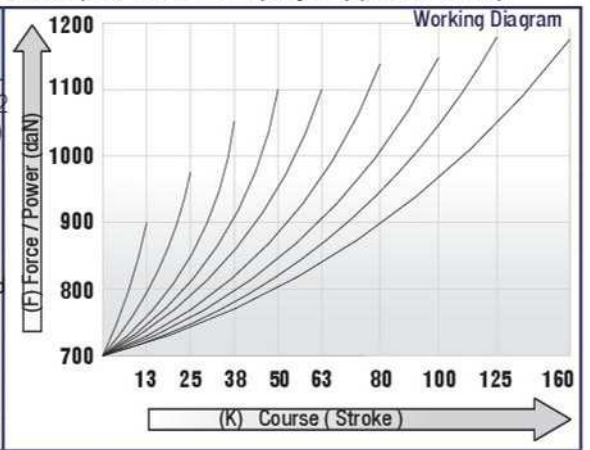
Contd  
114-116



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)			Technical Specifications	
Y 700 -13	d: 24 mm d1: 45	13	110.4	97.7	(F)	700 daN	Pressure Gas N <sub>2</sub> 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) 4.52 cm <sup>2</sup> <b>PEO</b> 97/23/EG	
Y 700 -25	d2: 40 mm d3: 43 mm	25	135	110				1.07
Y 700 -38	a: 2 mm b: 4 mm	38	161	123				1.16
Y 700 -50	e: 3.5 mm L2: 14.5	50	185	135				1.25
Y 700 -63	R: 1 / M: 8	63	212	148.5				1.35
Y 700 -80		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			

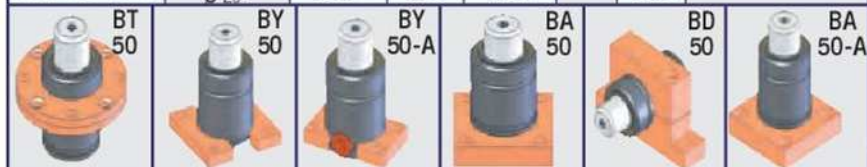
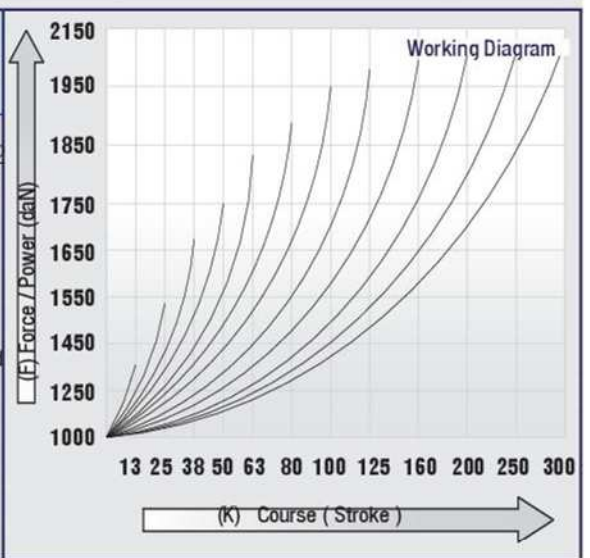


Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.

For each model, protect pressure level.

Example: Serial Connection Y 700 S



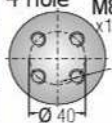
Order Code Y 1000..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications	
Y 1000 -13	d: 30 mm d1: 50	13	120.4	107.7	(F)	1000 daN	Pressure Gas N <sub>2</sub> Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0°C ve + 80°C Max. Working Speed 1.8 m / s Piston Area (S) 7.07 cm <sup>2</sup> <b>PEO</b> 97/23/EG	
Y 1000 -25	d2: 43 mm d3: 46 mm	25	145	120				1.44
Y 1000 -38	a: 3 mm b: 8 mm	38	171	133				1.59
Y 1000 -50	e: 5 mm L2: 14.5	50	195	145				1.68
Y 1000 -63	R: 1	63	222	158.5				1.83
Y 1000 -80	M: 8	80	255	175				1.99
Y 1000 -100		100	295	195				2.19
Y 1000 -125		125	345	220				2.43
Y 1000 -160		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				

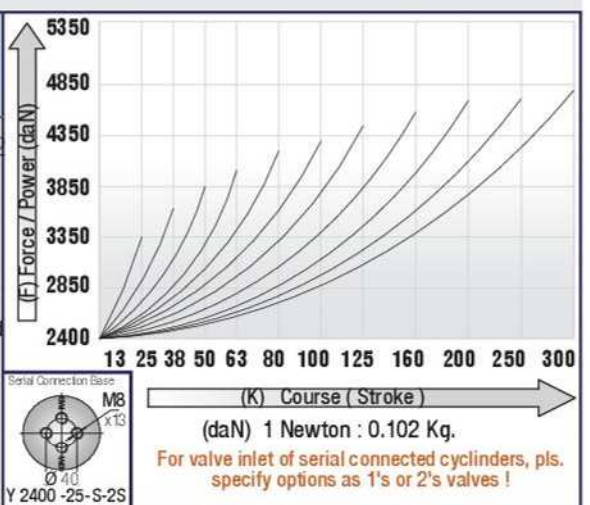


Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.

For each model, protect pressure level.

Example: Serial Connection Y 1000 S

Order Code Y 2400..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications	
Y 2400 -25	d: 45 mm d1: 75	25	160	135	(F)	2400 daN	Pressure Gas N <sub>2</sub> 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) 15.09 cm <sup>2</sup> <b>PEO</b> 97/23/EG	
Y 2400 -38	d2: 67 mm d3: 70 mm	38	186	148				3.96
Y 2400 -50	a: 3 mm b: 8 mm	50	210	160				4.21
Y 2400 -63	e: 5 mm L2: 18	63	237	173.5				4.50
Y 2400 -80	R: 2.5	80	270	190				4.81
Y 2400 -100	M: 8	100	310	210				5.23
Y 2400 -125		125	360	235				5.67
Y 2400 -160		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				

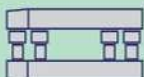


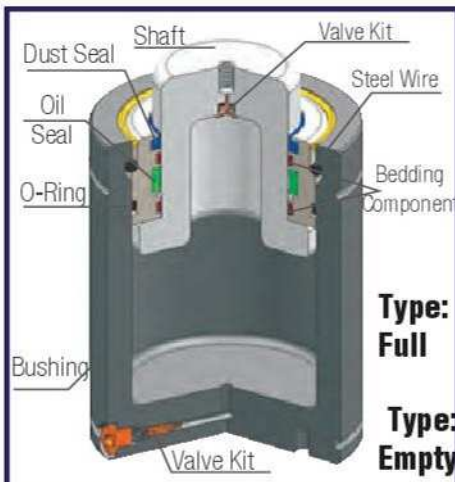
Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.

Example: Serial Connection Y 2400 S

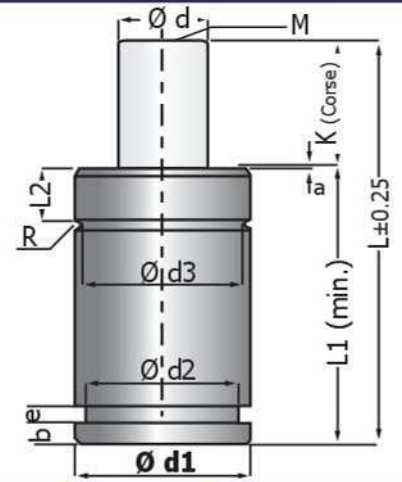
Serial Connection Base: M8 x13 Ø 40

**Cylinder Coupling Fastening**

Section Press Mould 



Type:  
Full  
Type:  
Empty



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 $\varnothing$	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications
Y 4200 -25	d: 60 mm	25	170	145	(F) 4200 daN	6.54	Pressure Gas $N_2$ Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. $0^{\circ}C$ ve $+80^{\circ}C$ Max. Working Speed 1.8 m / s Piston Area (S) 28.27 $cm^2$
Y 4200 -38	d1: 95 d2: 87 mm	38	196	158		7.00	
Y 4200 -50	d3: 90 mm	50	220	170		7.37	
Y 4200 -63	a: 3 mm	63	247	183.5		7.84	
Y 4200 -80	b: 8 mm	80	280	200		8.35	
Y 4200 -100	e: 5 mm	100	320	220		9.30	
Y 4200 -125	L2: 21	125	370	245		9.80	
Y 4200 -160	R:2.5	160	440	280		10.5	
Y 4200 -200	M:8	200	520	320		11.3	
Y 4200 -250	 4 Hole M8 x13	250	620	370		12.3	
Y 4200 -300		300	720	420	13.3		

Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.

Example: Serial Connection Y 4200 S

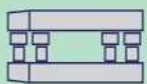
For valve inlet of serial connected cylinders, pls. specify options as 1's or 2's valves!

Order Code Y 6600..	Cylinder Measures $\varnothing$	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)			Technical Specifications
Y 6600 -25	d: 75 mm	25	190	165	(F) 6600 daN	12.1	Pressure Gas $N_2$ Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. $0^{\circ}C$ ve $+80^{\circ}C$ Max. Working Speed 1.8 m / s Piston Area (S) 44.18 $cm^2$
Y 6600 -38	d1:120 d2:112 mm	38	216	178		13.7	
Y 6600 -50	d3:115 mm	50	240	190		15.1	
Y 6600 -63	a: 3 mm	63	267	203.5		15.5	
Y 6600 -80	b: 8 mm	80	300	220		16.1	
Y 6600 -100	e: 5 mm	100	340	240		17.5	
Y 6600 -125	L2: 22.5	125	390	265		19.3	
Y 6600 -160	R:2.5	160	460	300		21.8	
Y 6600 -200	M:8	200	540	340		24.7	
Y 6600 -250	 4 Hole M10 x13	250	640	390		28.3	
Y 6600 -300		300	740	440	31.9		

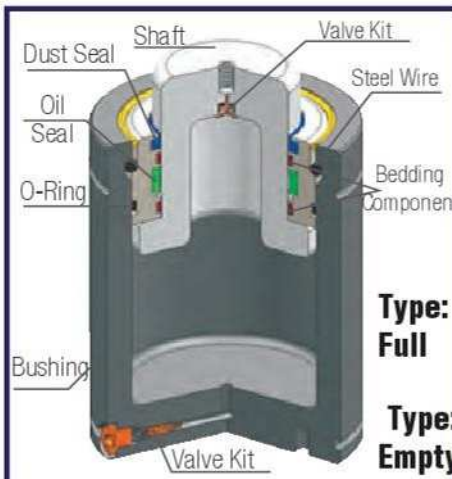
Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.

Example: Serial Connection Y 6600 S

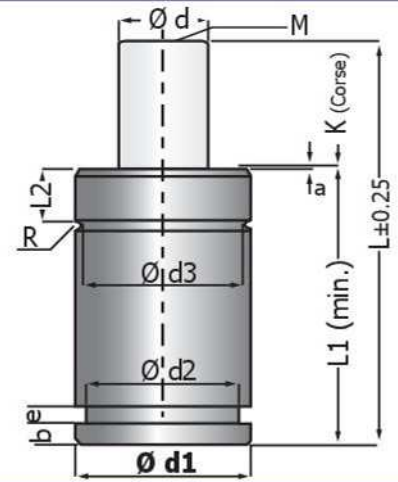
(daN) 1 Newton : 0.102 Kg.



Section  
Press  
Mould



Type: Full  
Type: Empty



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)			Technical Specifications
YO 200 - 5	d: 12 mm d1: 25	5	40	35	<b>(F)</b> 200 daN	0.09	Pressure Gas N <sub>2</sub> 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) 1.13 cm <sup>2</sup>
YO 200 - 10	d2 : 23 a : 1 mm	10	50	40		0.10	
YO 200 - 13	b-e-d3: - L2 : 8	13	56	43		0.10	
YO 200 - 16	R:1/M:6	16	62	46		0.11	
YO 200 - 19	Base M6	19	68	49		0.12	
YO 200 - 25	X3	25	80	55		0.13	
YO 200 - 32		32	94	62		0.16	

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)			Technical Specifications
YO 300 - 5	d: 16 mm	5	40	35	<b>(F)</b> 300 daN	0.17	Pressure Gas N <sub>2</sub> 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) 2.01 cm <sup>2</sup>
YO 300 - 10	d1:32	10	50	40		0.18	
YO 300 - 13	d2:28 mm d3:30 mm	13	56	43		0.19	
YO 300 - 16	a: 1 mm	16	62	46		0.20	
YO 300 - 19	Corse 5~16 b - e: -	19	68	49		0.22	
YO 300 - 25	b: 4 mm	25	80	55		0.25	
YO 300 - 32	e: 3.5 mm L2: 10.5	32	94	62		0.27	
YO 300 - 38	R:1	38	106	68		0.29	
YO 300 - 50	M:6	50	130	80		0.34	
YO 300 - 63	Bottom Connection Base	63	156	93		0.39	
YO 300 - 75		75	180	105		0.42	
YO 300 - 80	M8 X4	80	190	110		0.45	
YO 300 - 100		100	230	130		0.53	
YO 300 - 125		125	280	155	0.68		

**PED**  
97/23/EG

**Contd**  
117-120

(daN) 1 Newton : 0.102 Kg.

Serial :YO 300

Course ( 5~16) Course ( 9~125)

At slot, volume  
Ø +1.0  
+0.5

Bottom Screwed Coupling  
M6

BT 32

BY 32

**Cylinder Coupling Fastening**

Section Press Mould

Page  
**117**

# 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)		Technical Specifications
YO 500 - 5	d: 20 mm	5	40	35	0.25	Pressure Gas N <sub>2</sub> 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) 3.14 cm <sup>2</sup> <b>PEO</b> 97/23/EG
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	0.36	
YO 500 - 32	b: 4 mm	32	94	62	0.40	
YO 500 - 38	e: 3.5 mm	38	106	68	0.44	
YO 500 - 50	L2: 10.5	50	130	80	0.50	
YO 500 - 63	R:1	63	156	93	0.57	
YO 500 - 75	M:6	75	180	105	0.61	
YO 500 - 80		80	190	110	0.66	
YO 500 - 100		100	230	130	0.77	
YO 500 - 125		125	280	155	0.90	

**Cylinder Coupling Fastening**

Serial : YO 500

(daN) 1 Newton : 0.102 Kg.

Order YO 700..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Technical Specifications
YO 700 - 10	d: 24 mm	10	52	42	0.39	Pressure Gas N <sub>2</sub> 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) 4.52 cm <sup>2</sup> <b>PEO</b> 97/23/EG
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	0.58	
YO 700 - 38	e: 3.5 mm	38	108	70	0.62	
YO 700 - 50	L2: 14.5	50	132	82	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		80	192	112	0.93	
YO 700 - 100		100	232	132	1.04	
YO 700 - 125		125	282	157	1.28	

**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.

(daN) 1 Newton : 0.102 Kg.

Order SN 1000..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Technical Specifications
SN 1000 - 10	d: 30 mm	10	58	48	0.57	Pressure Gas N <sub>2</sub> 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 cm <sup>2</sup> <b>PEO</b> 97/23/EG
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	0.77	
SN 1000 - 38	e: 4.5 mm	38	114	76	0.83	
SN 1000 - 50	L2: 14.5	50	138	88	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		80	198	118	1.21	
SN 1000-100		100	238	138	1.43	
SN 1000-125		125	288	163	1.70	

**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 1000 S

Pls. specify valve inlet of specify serial connection cyclinders as with 1 or 2 valve options !

(daN) 1 Newton : 0.102 Kg.



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)		Technical Specifications
YO 1500 - 10	d: 36 mm	10	64	54	1.02	Pressure Gas N <sub>2</sub> 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) 10.18 cm <sup>2</sup> <b>PED</b> 97/23/EG
YO 1500 - 13	d1: 63	13	70	57	1.05	
YO 1500 - 16	d2: 58 mm	16	76	60	1.10	
YO 1500 - 19	d3: 59 mm	19	82	63	1.15	
YO 1500 - 25	a: 1 mm	25	94	69	1.25	
YO 1500 - 32	b: 8 mm	32	108	76	1.35	
YO 1500 - 38	e: 5 mm	38	120	82	1.44	
YO 1500 - 50	L2: 18	50	144	94	1.61	
YO 1500 - 63	R:2	63	170	107	1.81	
YO 1500 - 75	M:8	75	194	119	1.90	
YO 1500 - 80	2 Hole	80	204	124	2.06	
YO 1500-100		100	244	144	2.38	
YO 1500-125		125	294	169	2.86	

(F) 1500 daN

(daN) 1 Newton : 0.102 Kg.

For valve inlet of serial connected cyclinders, pls. specify options as 1's or 2's valves !

BT 63

BY 63

BY 63-A

BA 63

BA 63-A

Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding. For each model, protect pressure level.

Example: Serial Connection Y 1500 S

Order YO 2400..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Technical Specifications
YO 2400 - 10	d: 45 mm	10	65	55	1.47	Pressure Gas N <sub>2</sub> 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) 15.90 cm <sup>2</sup> <b>PED</b> 97/23/EG
YO 2400 - 13	d1: 75	13	71	58	1.52	
YO 2400 - 16	d2: 69 mm	16	77	61	1.58	
YO 2400 - 19	d3: 70 mm	19	83	64	1.65	
YO 2400 - 25	a: 1 mm	25	95	70	1.77	
YO 2400 - 32	b: 8 mm	32	109	77	1.93	
YO 2400 - 38	e: 5 mm	38	121	83	2.05	
YO 2400 - 50	L2: 18	50	145	95	2.30	
YO 2400 - 63	R:2	63	171	108	2.55	
YO 2400 - 75	M:8	75	195	120	2.75	
YO 2400 - 80	4 Hole	80	205	125	2.85	
YO 2400-100		100	245	145	3.28	
YO 2400-125		125	295	170	3.93	

(F) 2400 daN

(daN) 1 Newton : 0.102 Kg. dir.

BT 75

BY 75

BY 75-A

BA 75

BD 75

BA 75-A

Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding. For each model, protect pressure level.

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)			Technical Specifications
YO 4200 - 16	d: 60 mm	16	97	81	<b>(F)</b> 4200 daN	3.40	Pressure Gas N <sub>2</sub>
YO 4200 - 19	d1: 95	19	103	84		3.45	Max. Pressure (P) 150 Bar
YO 4200 - 25	d2: 88 mm d3: 90 mm	25	115	90		3.65	Min. Pressure 25 Bar
YO 4200 - 32	a: 1 mm b: 8 mm	32	129	97		3.82	Working Temp. 0°C ve + 80°C
YO 4200 - 38	e: 5 mm	38	141	103		4.00	Max. Working Speed 1.8 m / s
YO 4200 - 50	L2: 21 R:2	50	165	115		4.44	Piston Area (S) 28.27 cm <sup>2</sup>
YO 4200 - 63	M:8	63	191	128		4.95	<b>PED</b> 97/23/EC
YO 4200 - 75	4 Hole	75	215	140		5.20	
YO 4200 - 80		80	225	145		5.41	
YO 4200 - 100		100	265	165		6.00	
YO 4200 - 125		125	315	190		6.70	

Serial Connection: + 10 mm will be added to L length. During ordering, (S) should be added while coding.

Example: Serial Connection Y 4200 S

(daN) 1 Newton : 0.102 Kg.

(F) Force / Power (daN)

Order YO 6600..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)			Technical Specifications
YO 6600 - 16	d: 75 mm	16	107	91	<b>(F)</b> 6600 daN	6.60	Pressure Gas N <sub>2</sub>
YO 6600 - 19	d1: 120	19	113	94		6.65	Max. Pressure (P) 150 Bar
YO 6600 - 25	d2: 112mm d3: 115mm	25	125	100		6.82	Min. Pressure 25 Bar
YO 6600 - 32	a: 1 mm b: 8 mm	32	139	107		7.18	Working Temp. 0°C ve + 80°C
YO 6600 - 38	e: 5 mm	38	151	113		7.57	Max. Working Speed 1.8 m / s
YO 6600 - 50	L2: 22.5 R:2.5	50	175	125		8.18	Piston Area (S) 44.18 cm <sup>2</sup>
YO 6600 - 63	M:8	63	201	138		8.81	<b>PED</b> 97/23/EC
YO 6600 - 75	4 Hole	75	225	150		8.95	
YO 6600 - 80		80	235	155		9.10	
YO 6600 - 100		100	275	175		10.7	
YO 6600 - 125		125	325	200		12.5	

Serial Connection Base Valve

Example: Serial Connection Y 6600 S

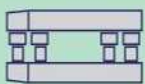
(F) Force / Power (daN)

Order YO 11800..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)			Technical Specifications
YO 11800 - 19	d: 100 mm	19	116	97	<b>(F)</b> 11800 daN	9.57	Pressure Gas N <sub>2</sub>
YO 11800 - 25	d1: 150	25	128	103		9.96	Max. Pressure (P) 150 Bar
YO 11800 - 32	d2: 142mm d3: 145mm	32	142	110		10.41	Min. Pressure 25 Bar
YO 11800 - 38	a: 1 mm b: 8 mm	38	154	116		10.81	Working Temp. 0°C ve + 80°C
YO 11800 - 50	e: 5 mm	50	178	128		11.59	Max. Working Speed 1.8 m / s
YO 11800 - 63	L2: 24.5 R:2.5	63	204	141		11.88	Piston Area (S) 78.54 cm <sup>2</sup>
YO 11800 - 75	M:8	75	228	153		12.21	<b>PED</b> 97/23/EC
YO 11800 - 80	4 Hole	80	238	158		12.43	
YO 11800 - 100		100	278	178		13.51	
YO 11800 - 125		125	328	203		15.14	

Serial Connection Base Valve

Example: Serial Connection Y 11800 S

(F) Force / Power (daN)



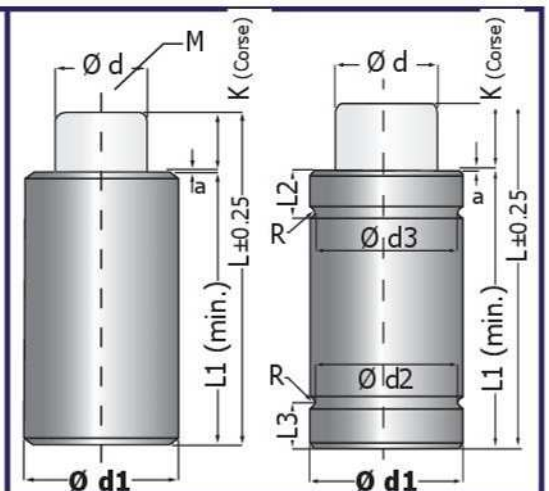
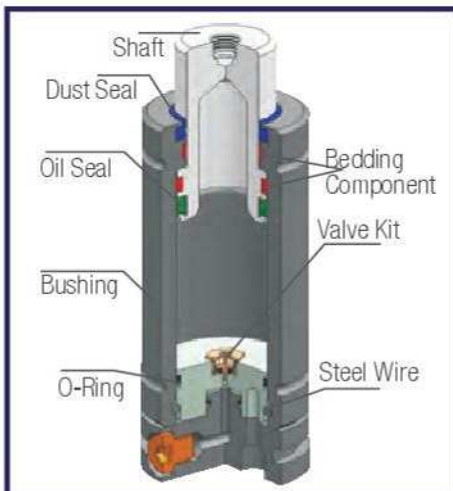
Section Press Mould



Pls. specify valve inlet of specify serial connection cylinders 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)			Technical Specifications
G 40 - 10	d: 14 mm	10	75	65	(F)	400 daN	Pressure Gas N <sub>2</sub> 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 cm <sup>2</sup>
G 40 - 15	d1: 25	15	90	75			0.18
G 40 - 25	a: 1 mm M:8	25	120	95			0.20
G 40 - 50		50	195	145			0.24
Cylinder Coupling Fastening			At Slot, Volume Ø +1.0 +0.5		Supported Volume Ø +1.0 +0.5	2 Hole	<p>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.</p>

Order G 75..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)			Technical Specifications
G 75 - 10	d: 19 mm	10	75	65	(F)	400 daN	Pressure Gas N <sub>2</sub> 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 cm <sup>2</sup>
G 75 - 15	d1: 32	15	90	75			0.18
G 75 - 25	a: 1 mm M:8	25	120	95			0.20
G 75 - 50		50	195	145			0.24
Cylinder Coupling Fastening			At Slot, Volume Ø +1.0 +0.5		Supported Volume Ø +1.0 +0.5	2 Hole	<p>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.</p>

Order G 100..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)			Technical Specifications
G 100 - 6	d: 20 mm	6	61	55	(F)	1000 daN	Pressure Gas N <sub>2</sub> 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 cm <sup>2</sup>
G 100 - 10	d1: 38	10	75	65			0.36
G 100 - 16	d2: 36mm d3: 36mm	16	100	84			0.41
G 100 - 25	a: 1 mm	25	135	110			0.48
G 100 - 32	L2: 9.5 L3: 10.5	32	167	135			0.58
G 100 - 40	R:1	40	195	155			0.62
G 100 - 50	M:8	50	230	180	0.68		
Cylinder Coupling Fastening			At Slot, Volume Ø +1.0 +0.5		Supported Volume Ø +1.0 +0.5	2 Hole	<p>BT 38 </p> <p>Pls. always mount Die Gas springs via threaded holes on base or example fixing components directly!</p>





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)			Technical Specifications
G 180 - 6	d: 30 mm	6	66	60	1800 daN	0.71	Pressure Gas N <sub>2</sub> 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) 12.57 cm <sup>2</sup>
G 180 - 10	d1: 50	10	80	70		0.78	
G 180 - 16	d2: 46mm d3: 46mm	16	106	90		0.91	
G 180 - 25	a: 1 mm	25	135	110		1.04	
G 180 - 32	L2: 13.5 L3: 14.5	32	162	130		1.12	
G 180 - 40	R:2	40	190	150		1.21	
G 180 - 50	M:8	50	220	170		1.33	

(F) Force / Power (daN)

(K) Course (Stroke)

(daN) 1 Newton : 0.102 Kg.

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 Base Valved Base

Order G 470..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)			Technical Specifications
G 470 - 10	d: 50 mm	10	80	70	4700 daN	1.85	Pressure Gas N <sub>2</sub> 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) 31.17 cm <sup>2</sup>
G 470 - 16	d1: 75	16	106	90		2.11	
G 470 - 25	d2: 70mm d3: 70mm	25	135	110		2.34	
G 470 - 32	a: 1 mm	32	167	135		2.54	
G 470 - 40	L2: 17 L3: 18	40	200	160		2.77	
G 470 - 50	R:2.5 M:8	50	240	190		3.06	

(F) Force / Power (daN)

(K) Course (Stroke)

BT 75

BY 75-A

BA 75

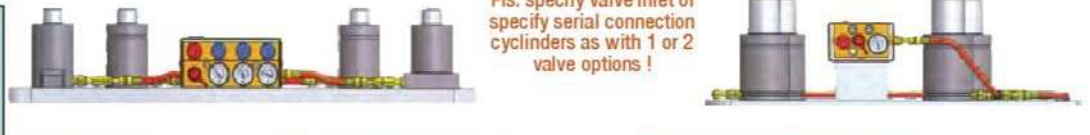
BD 75

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.

Serial Connection Adaptor Base Valved Base



Pls. specify valve inlet of specify serial connection cylinders 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)			Technical Specifications
<b>G 750 - 10</b>	d: 55 mm	10	90	80	<b>(F)</b> 7500 daN	2.94	Pressure Gas $N_2$ Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. $0^{\circ}C$ ve $+80^{\circ}C$ Max. Working Speed 1.8 m / s Piston Area (S) $50.27 \text{ cm}^2$
<b>G 750 - 16</b>	d1: 95	16	116	100		3.32	
<b>G 750 - 25</b>	d2: 90mm	25	145	120		3.73	
<b>G 750 - 32</b>	d3: 90mm	32	182	150		4.32	
<b>G 750 - 40</b>	a: 1 mm	40	210	170		4.72	
<b>G 750 - 50</b>	L2: 20	50	255	205		5.38	

BT 50

BY 50-A

BD 50

Solid Base 4 Hole

Serial Connection Adaptor

Valved Base

+ 20 mm will be added to L and L min. length. During ordering, (S) should be added while coding.

Order G 1200..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)			Technical Specifications
<b>G 1200- 10</b>	d: 70 mm	10	100	90	<b>(F)</b> 1200 daN	5.47	Pressure Gas $N_2$ Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. $0^{\circ}C$ ve $+80^{\circ}C$ Max. Working Speed 1.8 m / s Piston Area (S) $78.54 \text{ cm}^2$
<b>G 1200- 16</b>	d1: 120	16	126	110		6.07	
<b>G 1200- 25</b>	d2: 115mm	25	155	130		6.80	
<b>G 1200- 32</b>	d3: 115mm	32	187	155		7.60	
<b>G 1200- 40</b>	a: 1 mm	40	220	180		8.38	
<b>G 1200- 50</b>	L2: 21.5	50	260	210		9.39	

BT 120

BY 120 - A

BD 120

Solid Base 4 Hole

Serial Connection Adaptor

Valved Base

+ 20 mm will be added to L and L min. length. During ordering, (S) should be added while coding.



Pls. specify valve inlet of specify serial connection cylinders as with 1 or 2 valve options !



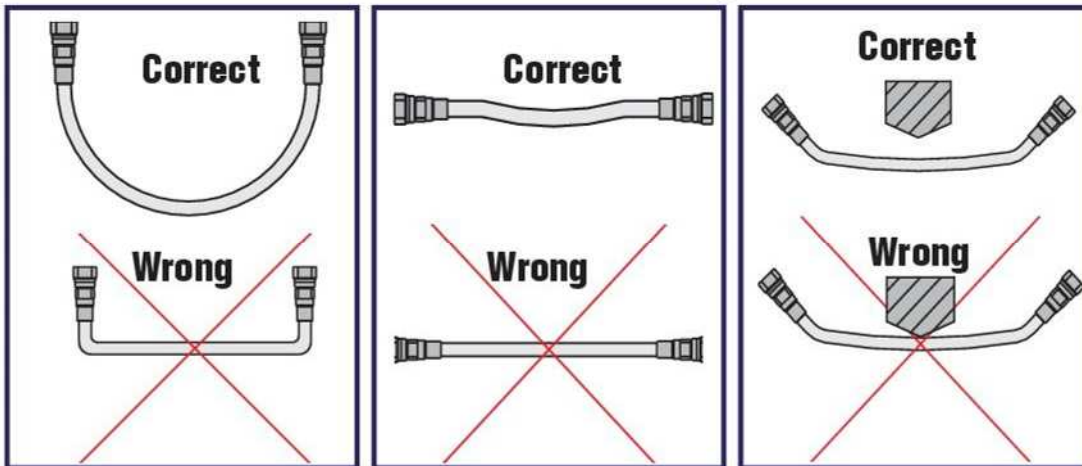


## SERIAL CONNECTION; HOSE ( JUNCTION ) SYSTEMS

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

Criteria in order to insert hoses in a correct way



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

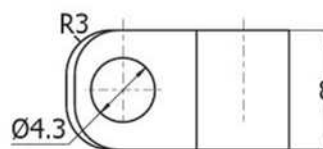
1200 Includes Die Gas cylinders.

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.

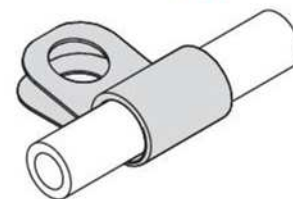
( Bending diameter is 13 mm)

Working Temp. : 40 ÷ + 100°C' dir.

HOSE CLIPS



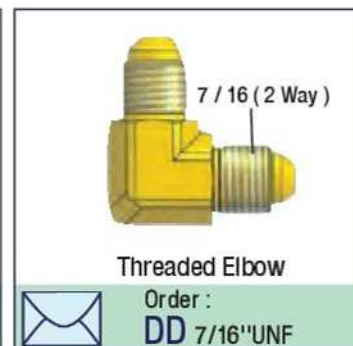
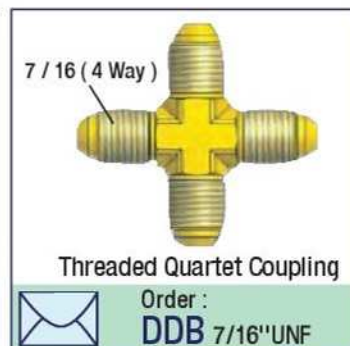
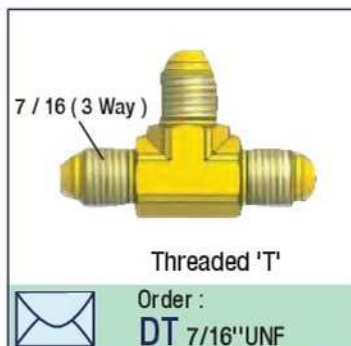
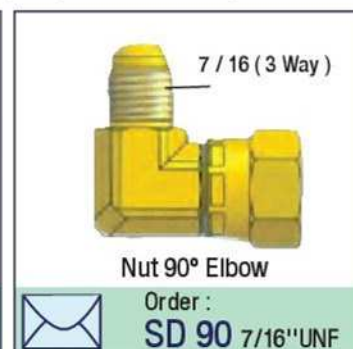
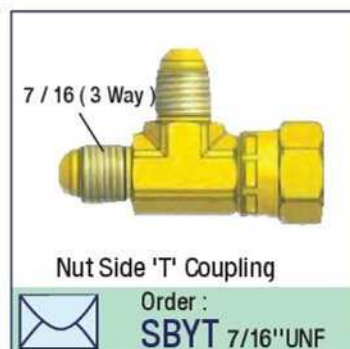
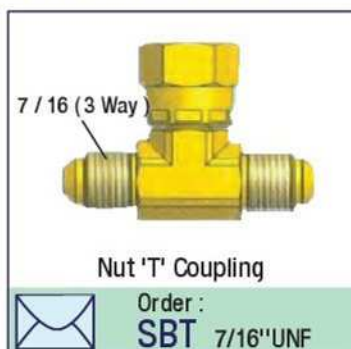
HK



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



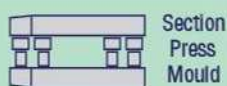
## PIPE COUPLERS / SEALING - TEFLON BAND WINKELL

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 - 200°C Heat Protective



Order	Packing
678.511.5	50 ml.
678.511.25	250 ml.

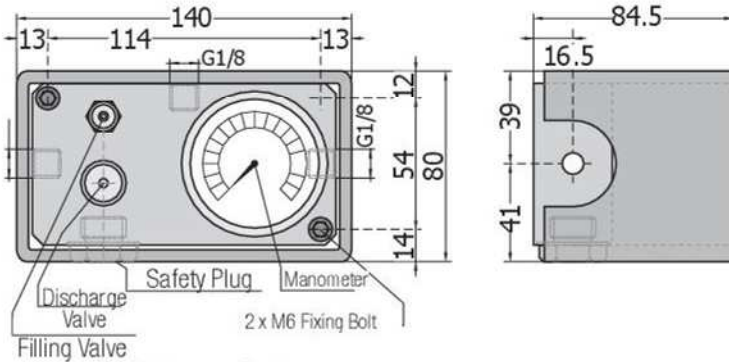
Page 124



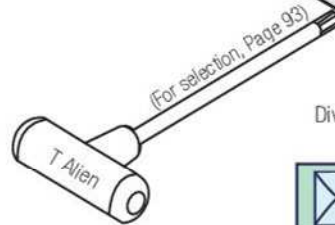
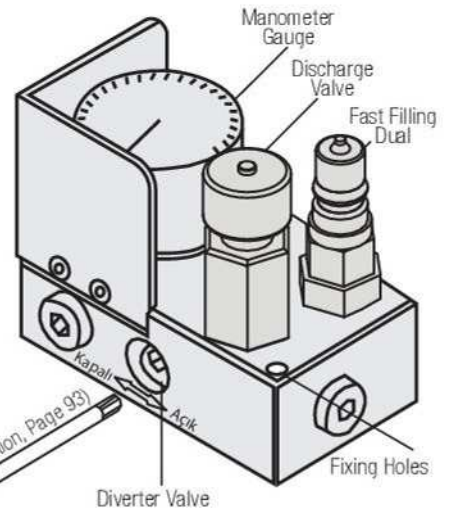


## SERIAL CONNECTION: CONTROL PANEL KPA

### Serial Connection Systems, Router Unit



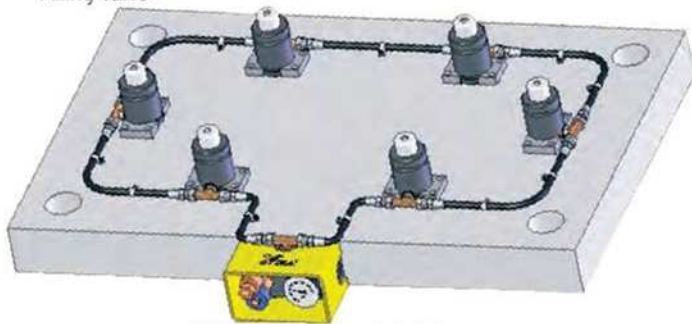
These standard products with wide connection and accessory options are used for all kind of applications that balancing tanks are used.



Order: **KPA**

Standard Control Panel to change pressure, to adjust and to control fastening system.

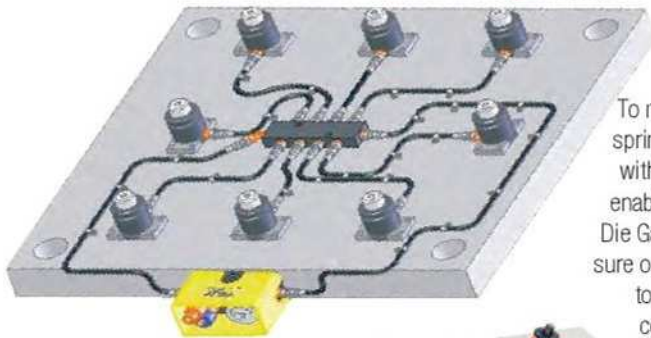
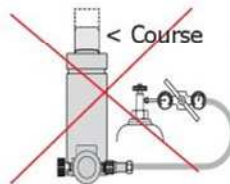
It is consisted from manometer connected, steel plate, filling and discharge valves, 3 Pieces Outlet and steel casing that safety disc can be connected when desired.



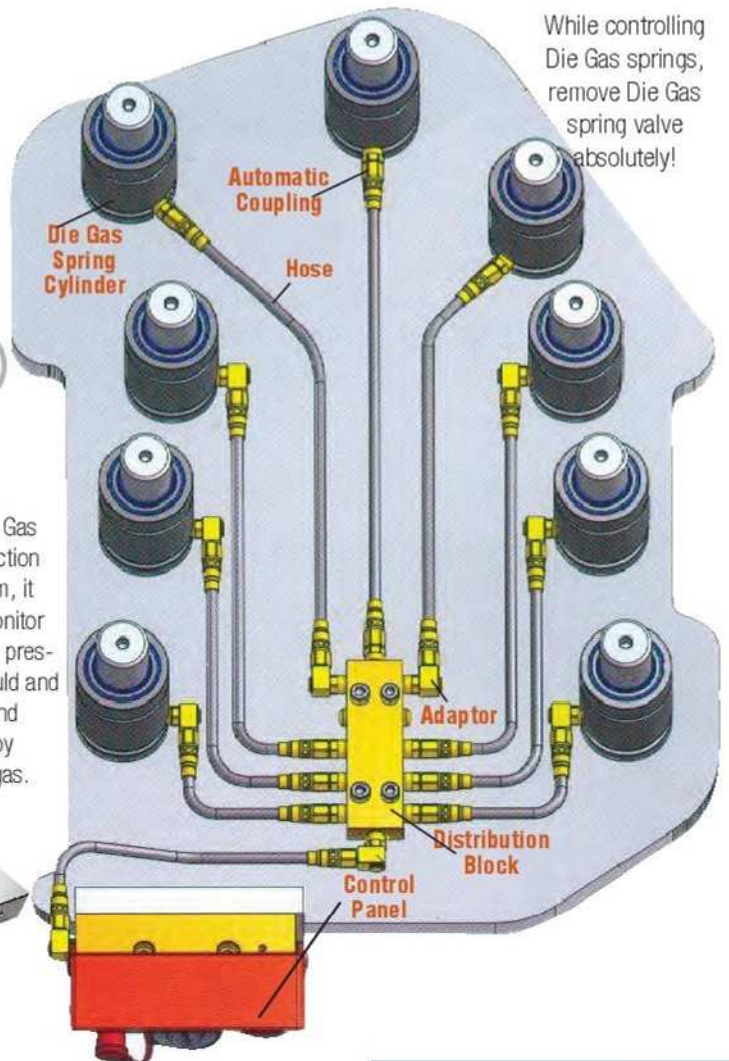
## SERIAL CONNECTION, PRACTICAL EXAMPLES



While 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.

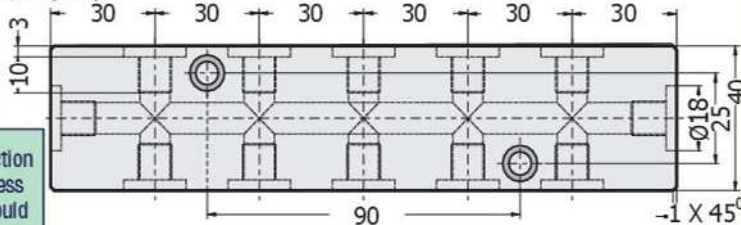
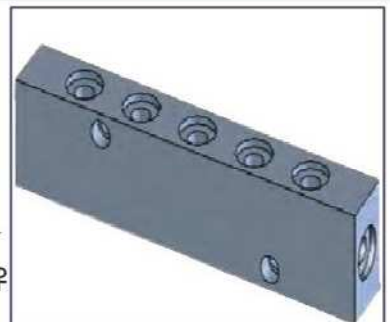
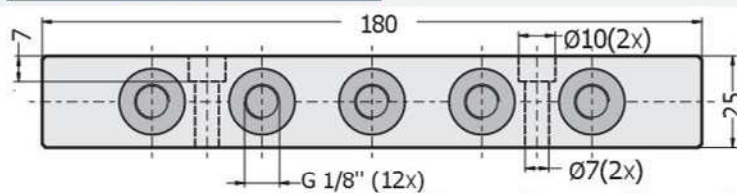
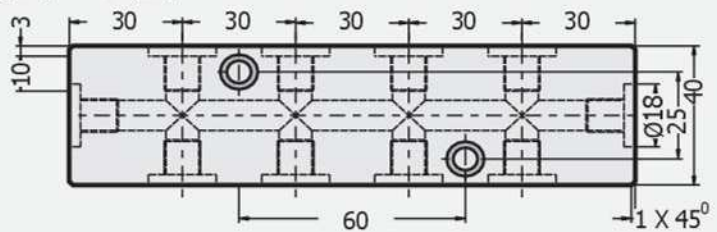
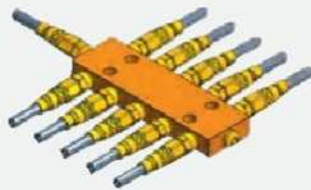
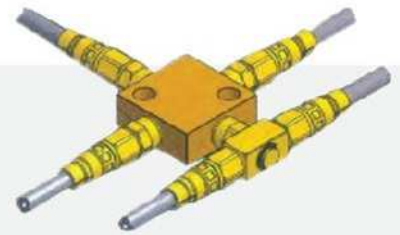
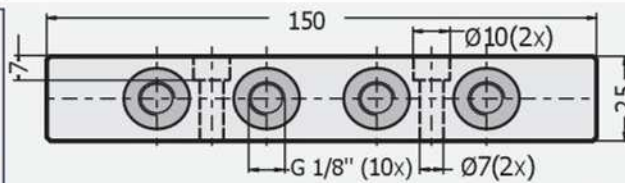
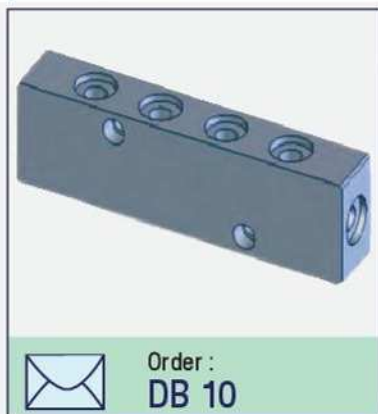
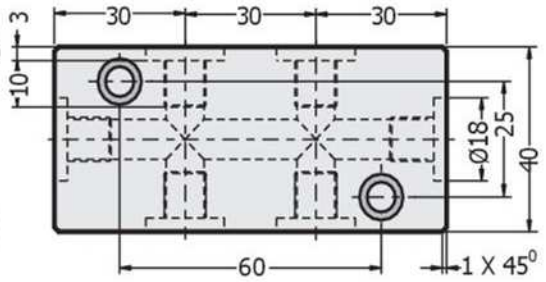
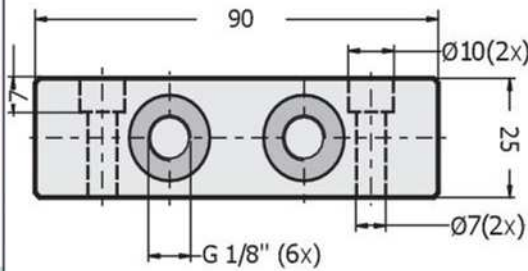
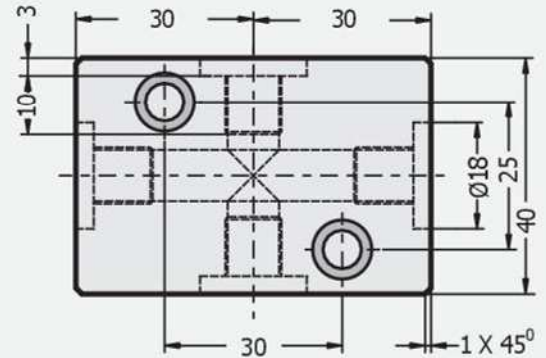
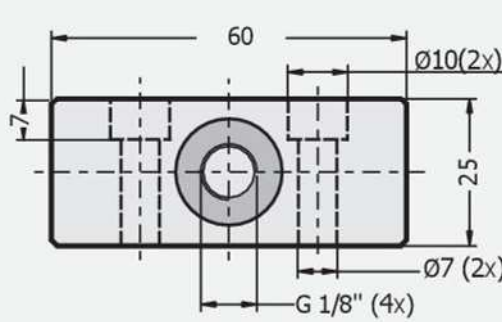
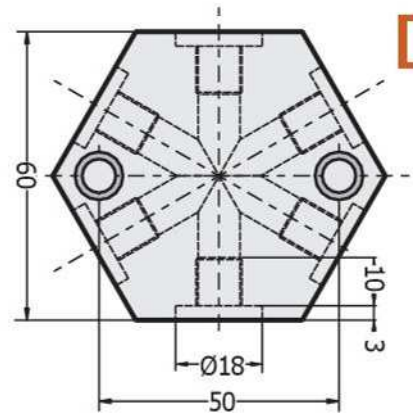
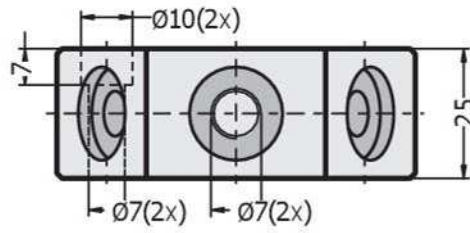
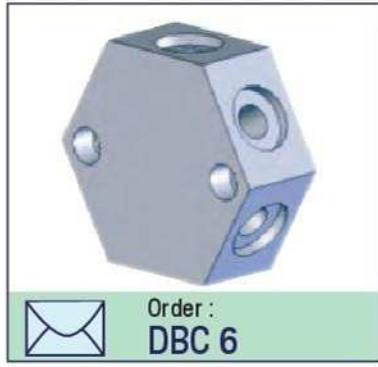


While controlling Die Gas springs, remove Die Gas spring valve absolutely!



# SERIAL CONNECTION: DISTRIBUTION BLOCKS

**DB**

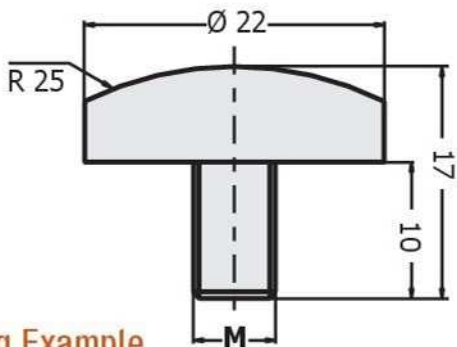


**BOTH** Produces  
Sells Affordable Prices

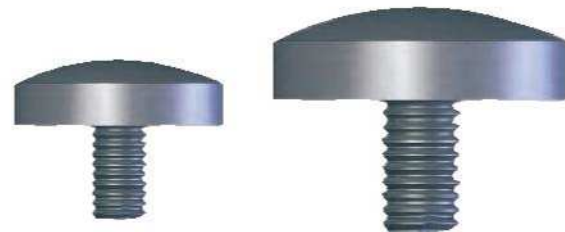
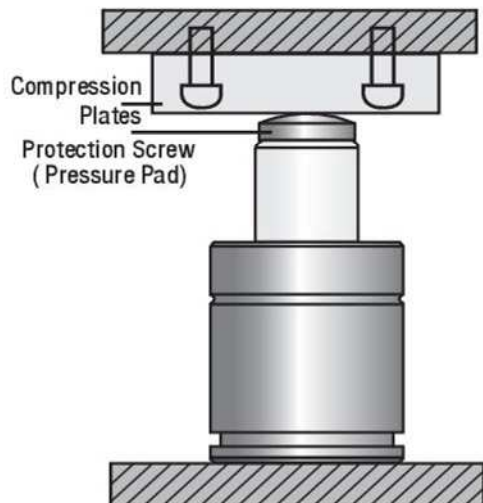
**GTH**

Page  
**126**





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

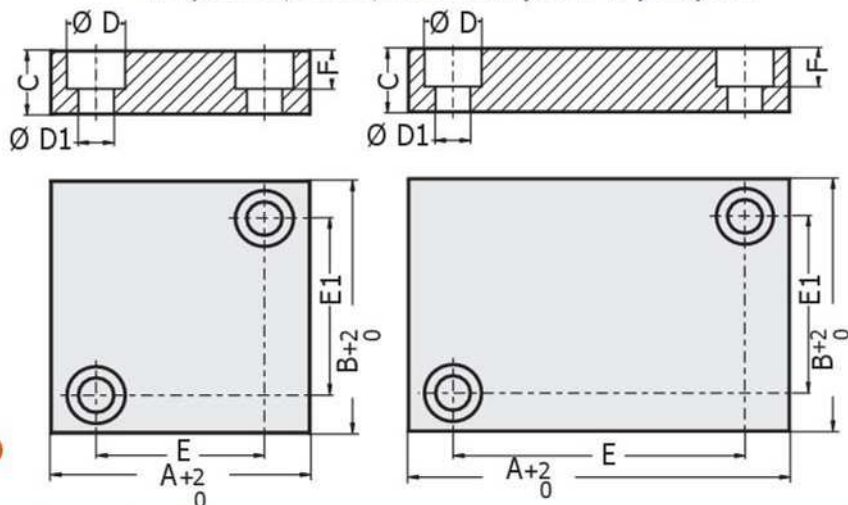
Material : 1.1731  
Superficially hardened

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

Section Press Mould

Page  
127



**G.113**

**COMPRESSION PLATE SHOCK DAMPENER**

**Shock Dampener / Noise Preventer**

Order	Die Gas Spring Force F: (daN)	d	d1	d2
<b>G.113.58</b>	750 - 1500	108	91	58
<b>G.113.92</b>	> 1500 - 6600	143	126	92
<b>G.113.122</b>	> 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.

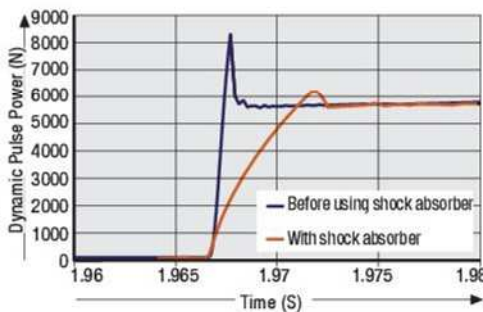
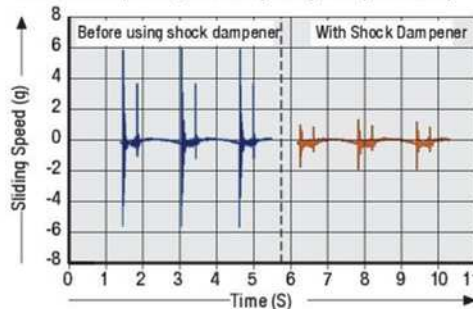
**Working Temperature :** Between 0°C and 80°C

**Recommended Stroke / Min :** 20

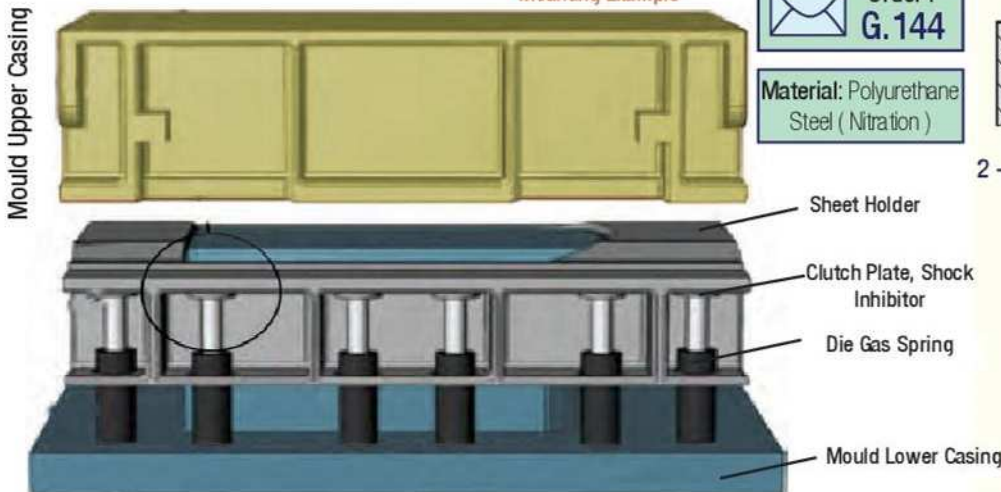
**Max. Stroke Speed :** 1.6 m/s

**Max. Shock Inhibitor Course :** 3 mm

Shock Dampener, Working Diagram (Function)



Mounting Example



Order : **G.144**

Material: Polyurethane Steel (Nitration)

**APPLICATION OF**

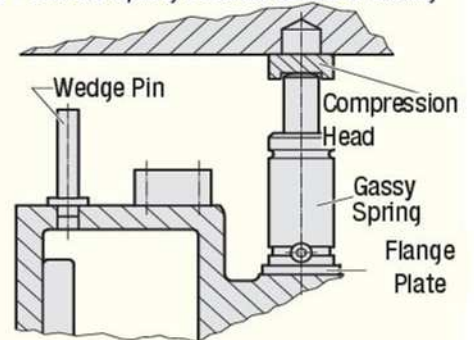
**Die Gas Springs facilitate storing and preparation of moulds for production .**

Using Die Gas Springs at great sheet mould is becoming increasingly popular. This system facilitates 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.

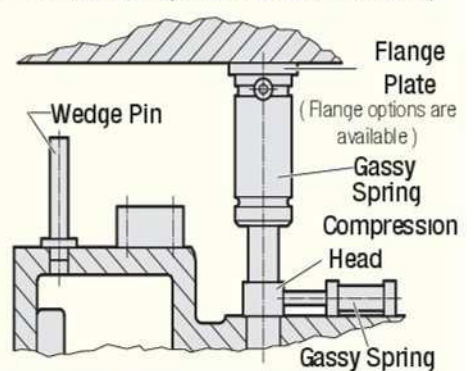
At application example 1 and 2, special compression head is shown, when these products are in mould press, before compressing, Die Gas Spring is placed to the place that piston will be pressed. During removing from press or storage, upper mould casing stays on Die Gas Springs. Wedge pins are for security 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.

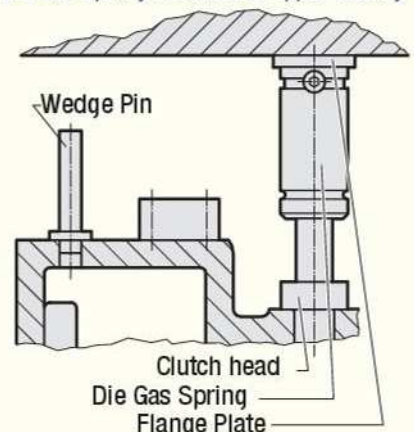
**1 - Die Gas Spring Mounted to Lower Casing**



**2 - Die Gas Spring Mounted to Lower Casing**



**2 - Die Gas Spring Mounted to Upper Casing**







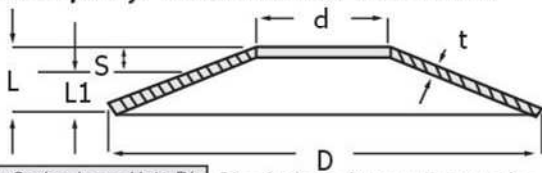
## DISC / DISH SPRINGS (Plate Springs)

DCY

### DISC / DISH SPRINGS

Short Springs Fixed With DIN 2093 Shaft

DCY



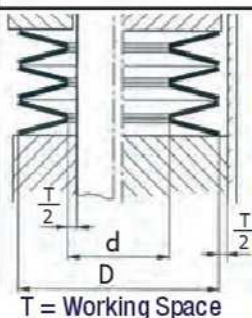
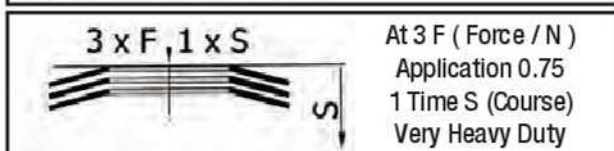
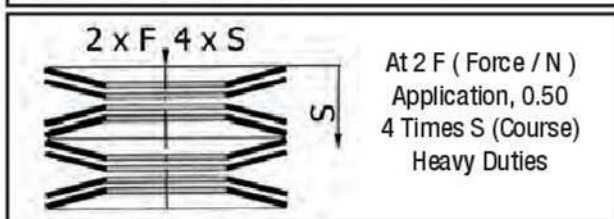
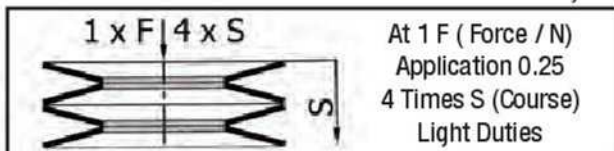
d: Spring Inner Hole Dia  
D: Outer Spring Dia.  
t: Spring Thickness  
L: Free length  
L1: Loading Length  
F max: Flex Force  
S: Flex Length Course / Motion

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.  $F = N / S = \text{mm} / \text{course}$

Dish Spring Array (Load Application) 1 Newton : 0.102 Kg.



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

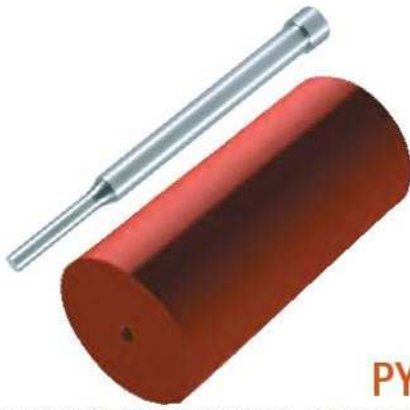
d	D	t	L	L1	F	Order
Ø	Ø	mm	mm	mm	Nw	
3.2	8	0.30	0.55	0.36	104	100 Pieces
		0.50	0.70	0.55	357	
4.2	8	0.40	0.60	0.45	209	100 Pieces Package
3.2	10	0.30	0.65	0.39	98	100 Pieces Package
		0.40	0.70	0.48	179	
4.2	10	0.50	0.75	0.56	294	100 Pieces Package
		0.60	0.85	0.66	502	
5.2	10	0.40	0.70	0.48	209	100 Pieces Package
		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	100 Pieces Package
		0.60	0.95	0.69	506	
6.2	12	0.50	0.85	0.59	326	100 Pieces Package
		0.60	0.95	0.69	551	
6.2	12.5	0.50	0.85	0.59	293	100 Pieces Package
		0.70	1.00	0.78	659	
7.2	14	0.50	0.90	0.60	279	100 Pieces Package
		0.80	1.10	0.87	796	
5.2	15	0.40	0.95	0.54	175	50 Pieces Package
		0.60	1.05	0.71	407	
6.2	15	0.50	1.00	0.63	289	50 Pieces Package
		0.70	1.10	0.80	577	
8.2	15	0.70	1.10	0.80	665	50 Pieces Package
		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	50 Pieces Package
		0.70	1.25	0.84	552	
8.2	18	0.80	1.30	0.92	582	50 Pieces Package
		1.00	1.40	1.10	1181	
9.2	18	0.70	1.20	0.83	566	50 Pieces Package
		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	50 Pieces Package
		1.00	1.55	1.14	1414	

d	D	t	L	L1	F	Order
Ø	Ø	mm	mm	mm	Nw	
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	50 Pieces Package
12.2	25	0.70	1.60	0.92	599	50 Pieces Package
		0.90	1.60	1.07	862	
10.2	28	0.80	1.75	1.04	661	50 Pieces Package
		1.00	1.90	1.23	1129	
14.2	28	0.80	1.80	1.05	801	50 Pieces Package
		1.00	1.80	1.20	1107	
16.3	31.5	1.25	2.15	1.48	1912	50 Pieces Package
		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	25 Pieces Package
		1.50	2.55	1.76	2982	
16.3	34	1.50	2.55	1.76	3153	25 Pieces Package
		2.00	2.85	2.21	5779	
14.3	40	1.50	2.75	1.81	2544	25 Pieces Package
		2.00	3.05	2.26	4766	
16.3	40	1.50	2.80	1.83	2748	25 Pieces Package
		2.00	3.10	2.28	5166	
20.4	40	2.00	3.10	2.28	5698	25 Pieces Package
		2.50	3.45	2.74	9384	
22.4	45	1.75	3.05	2.08	3644	25 Pieces Package
		2.50	3.50	2.75	7712	
20.4	50	2.00	3.50	2.38	4685	25 Pieces Package
		2.50	3.85	2.84	7915	
25.4	50	2.00	3.40	2.35	4760	25 Pieces Package
		2.50	3.90	2.85	9058	
30.5	60	3.00	4.10	3.28	11970	25 Pieces Package
		3.00	4.03	2.95	7293	
20.5	60	3.00	4.70	3.42	11563	25 Pieces Package
		3.00	4.70	3.42	13219	
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	10 Pieces Package
41	80	3.00	5.30	3.58	10512	10 Pieces Package
		5.00	6.70	5.42	33541	
41	100	5.00	7.75	5.69	32344	10 Pieces Package
		6.00	8.20	6.55	47995	



Order : DCY. d x D x t



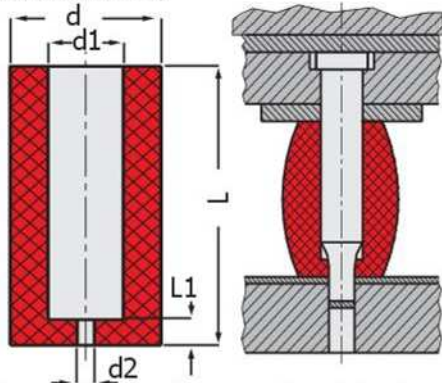


**PYB**

**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 modification on mould components, there is not any 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. Overspreads on polyurethane 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.

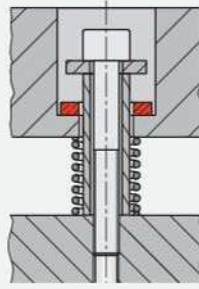
**Poliurethane Springy, Scraper/ Ejector-Bushes**

Order	d1 Ø	d Ø	d2 Ø	L1 mm	L mm	Punch Length
<b>PYB.445</b>	4.0	17	1.6	5.0	45	56 / 63
<b>PYB.655</b>	6.0	19				
<b>PYB.855</b>	8.0	21	3.0	5.0	55	63 71 80 90
<b>PYB.1055</b>	10	23				
<b>PYB.1355</b>	13	26				
<b>PYB.1655</b>	16	30	5.0	55	100	
<b>PYB.2071</b>	20	38				
<b>PYB.2550</b>	25	50				

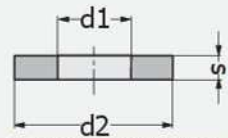
d2: (1.6 - 3.0 mm) (d1) While opening hole diameter / drilling, polyurethane (punch) bush should be applied and drilled in pressed (S max) position. Spring load is obtained while extending outwards.  
At S.max flexion, load coefficient data daN / Kg.

Da mm	17	19	21	23	26	30	38	50
Smax	60	65	65	70	90	110	140	310
	110	12	120	130	160	190	210	380
	-	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



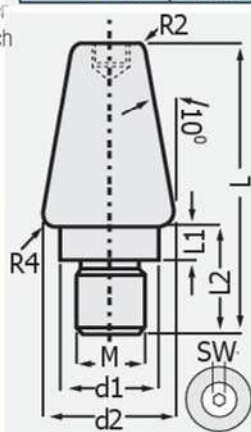
**POLYURETHANE SHIM ( Washers)**

**Shock / Noise / Vibration Inhibitor Shims**

Shock dampener washers are designed to minimize main problems at press mould during sheet processing.

d2	d1	s	d2	d1	s
Ø 16	6.5	3 mm	Ø 40	13.5	5 mm
	11	4 mm		17	6 mm
	8.5	3 mm		21	7 mm
Ø 20	11	4 mm	32	8 mm	
	13	5 mm	Ø 50	17	6 mm
Ø 25	10.5	3 mm		26	7 mm
	12	4 mm		32	8 mm
	14	5 mm		37	10 mm
Ø 32	13.5	3 mm	Ø 63	17	6 mm
	18	4 mm		32	10 mm
	21	5 mm	Ø 80	21	8 mm
	23.5	6 mm		42	10 mm
25	7 mm	Ø 100	21	10 mm	

Order : **PRP** (Hardness/Colour) x d1 x d2 x s



**POLYURETHANE DOWELS**

Polyurethane Springs, Centering Bolts, Threaded

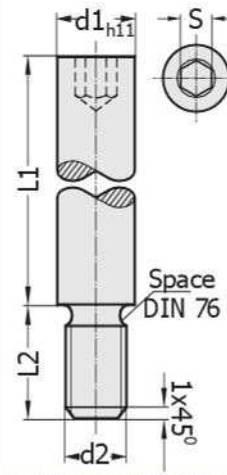
Cylindrical polyurethane springs cut in the desired dimensions is fixed and centered with centering bolts. Threaded model



**POLIURETHANE DOWELS**

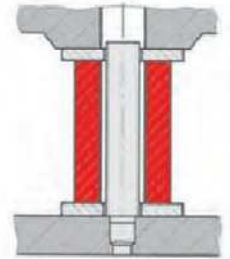
P. SPRING	M	L	d1	d2	L1	L2	SW
Ø 63	M12	56	19	28	8	26	6
		64	18	28	10	24	6
Ø 80	M16	68	22	32	10	28	6
Ø 100		74	22	32	10	34	8
Ø 125	M20	72	28	38	10	32	10
Ø 140		100	28	38	15	45	10

Order : **PSP**. M x L      Material : 1.0503 (CK 45)



**POLYURETHANE GUIDE PINS**

**PYP**

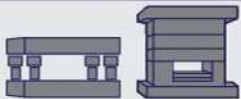


During guiding of polyurethane springs, countersunk allen head metric thread connected guide columns can be used as single spring as well as cluster by dividing springs.

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			
Ø 25 x 10.5	Ø 10 mm	50	M8	15 mm	5 Alien
		25			
		32			
		40			
Ø 32 /40 x 13.5	Ø 13 mm	50	M10	15 mm	6 Alien
		63			
		32			
		40			
		80			
Ø 50 /63 x 17	Ø 16 mm	50	M12	18 mm	8 Alien
		63			
		80			
		95			
		118			
		140			
Ø 80 /100 x 21	Ø 20 mm	40	M16	25 mm	10 Alien
		50			
		63			
		80			
		95			
		118			

See page 132 for support in mounting, shim selections

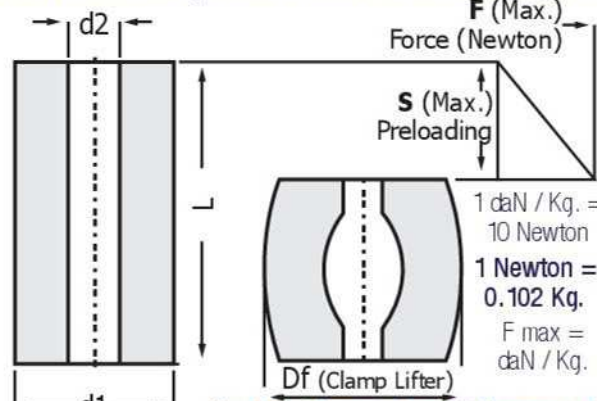
Order : **PYP**. d1xL1      Material : 1.7131 Hardness 58 - 62 HRC



Continuous Stock Product



## POLYURETHANE, MOULD COMPRESSION SPRINGS



PM...

## 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



d1 Ø	d2 Ø	L mm	d1 Ø	d2 Ø	L mm
16	Loaded 6.5	310	16	Loaded 6.5	310
20	Loaded 8.5	310	20	Loaded 8.5	310
25	Loaded 10.5	310	25	Loaded 10.5	310
32	Loaded 13.5	310	32	Loaded 13.5	310
40	Loaded 13.5	310	40	Loaded 13.5	310
50	Loaded 17	310	50	Loaded 17	310
63	Loaded 17	310	63	Loaded 17	310
80	Loaded 21	310	80	Loaded 21	310
100	Loaded 21	310	100	Loaded 21	310
125	Loaded 37	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.

Heat Resistance: Gradual increase at hardness under 70°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 effects 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.

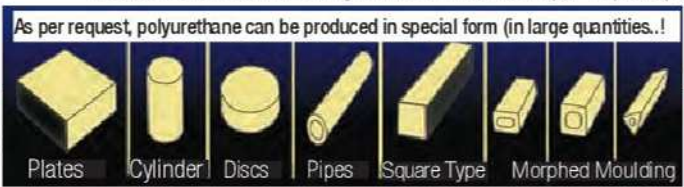
According to the flexion rate, selection of perforated polyurethane spring (Yellow / Red)

d1 Ø	L mm	d2 Ø	Smax = Lx%25			Smax = Lx%35			d1 Ø	L mm	d2 Ø	Smax = Lx%25			Smax = Lx%35		
			Smax	Fmax	Df	Smax	Fmax	Df				Smax	Fmax	Df	Smax	Fmax	Df
16	12	6.5	3.5	172	20	5.0	46	22	63	17	17	12	2950	80	16	1380	85
	16		4.8	178		6.5	45					20	1360				
	20		6.0	180		8.0	44					25.2	1300				
	25		7.5	185		10	43					32	1300				
20	16	8.5	4.8	250	25	6.5	67	27	80	21.0	21.0	32	5000	100	12.8	2100	108
	20		6.0	258		8.0	65					16.0	2080				
	25		7.5	260		10	62					20.0	2000				
	32		9.6	260		12.8	60					50	1280				
25	20	10.5	6.0	525	32	8.0	100	34	80	21.0	21.0	32	5000	100	12.8	2100	108
	25		7.5			95	10					95	25.2		1980		
	32		9.6			92	12.8					92	32.0		1960		
	40		12			95	16					95	40.0		1960		
32	32	13.5	9.6	630	40	12.8	250	44	100	21.0	21.0	32	9800	125	12.8	3900	135
	40		12	260		16	260					16.0	3750				
	50		15	650		20	260					20.0	3600				
	63		19	250		25.2	250					25.2	3400				
40	32	13.5	9.6	1100	50	12.8	470	54	100	21.0	21.0	32	11000	158	12.8	6600	170
	40		12	1150		16	440					16.0	6300				
	50		15	1200		20	430					20.0	6200				
	63		19	1200		25.2	430					25.2	6000				
50	32	17	9.6	1820	63	12.8	810	68	125	27.0	27.0	32	15000	158	12.8	6600	170
	40		12	1860		16	780					16.0	6300				
	50		15	1840		20	750					20.0	6200				
	63		19	1800		25.2	720					25.2	6000				
63	32	17	9.6	2800	80	12.8	1400	85	125	27.0	27.0	32	15800	158	12.8	6600	170
	40		12	1860		16	780					16.0	6300				
	50		15	1840		20	750					20.0	6200				
	63		19	1800		25.2	720					25.2	6000				
80	32	17	9.6	2800	80	12.8	1400	85	125	27.0	27.0	32	15800	158	12.8	6600	170
	40		12	1860		16	780					16.0	6300				
	50		15	1840		20	750					20.0	6200				
	63		19	1800		25.2	720					25.2	6000				
100	32	17	9.6	2800	80	12.8	1400	85	125	27.0	27.0	32	15800	158	12.8	6600	170
	40		12	1860		16	780					16.0	6300				
	50		15	1840		20	750					20.0	6200				
	63		19	1800		25.2	720					25.2	6000				
125	32	17	9.6	2800	80	12.8	1400	85	125	27.0	27.0	32	15800	158	12.8	6600	170
	40		12	1860		16	780					16.0	6300				
	50		15	1840		20	750					20.0	6200				
	63		19	1800		25.2	720					25.2	6000				
160	32	17	9.6	2800	80	12.8	1400	85	125	27.0	27.0	32	15800	158	12.8	6600	170
	40		12	1860		16	780					16.0	6300				
	50		15	1840		20	750					20.0	6200				
	63		19	1800		25.2	720					25.2	6000				

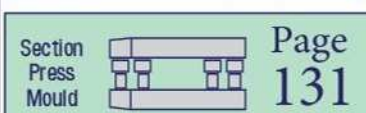
New Design: Polyurethane springs can be ordered as 310 mm in our sales system. In addition, it can be ordered as cut/short length from our stocks as per request ( By following the table).

Order PY...: B (Empty)-D (Full)  
Order 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)



Order : Short Length  
PM...Colour (S / K) d1 x L

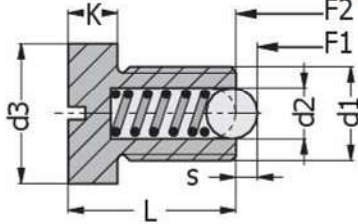




## SPRING EJECTOR

Fixable with screwdriver

**SBS**



It is for locking, compressing upwards and downwards. It can be dismantled with screwdriver.  
Heat Resistance Maximum : 250°C.

d1	L	s	d2	d3	F1	F2	K
<b>M6</b>	14	1	3.5	10	11	18	5
<b>M8</b>	16.5	1.5	4.5	13	18	31	5
<b>M10</b>	20	2	6	16	24	45	6
<b>M12</b>	22	2.5	8	18	26	49	7

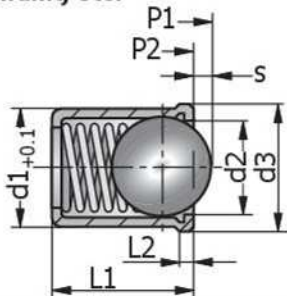
Order : **SBS** x d1  
Material : Steel Quality 5.8



## SPRING STOPS

For systems such as elevator and sliding etc.

**KBS**



Hole Mounting with Reamer

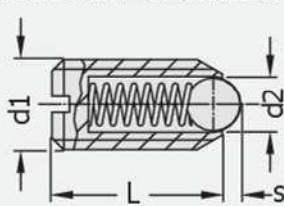
d1	L1	d2	d3	L2	s	P1(N)	P2(N)
<b>4</b>	5	3.0	4.6	1	0.90	2	5
<b>5</b>	6	4.0	5.6		1.00	4	7
<b>6</b>	7	5.0	6.5		1.50	6	12
<b>8</b>	9	6.5	8.5		1.80	6	12

Order : **KBS** x d1  
Material : Steel Quality 5.8

## SPRING STOPS

Fixable with screwdriver

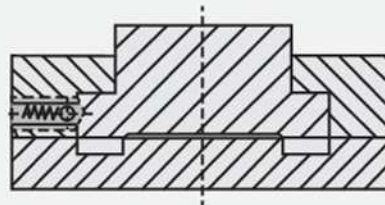
**BSM**



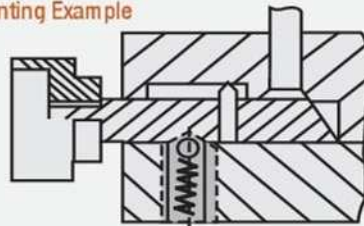
Usage Area:  
- Fixation  
- Pulling, pushing  
- Extractor  
- Compressing

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 250°



Mounting Example



## SPRING STOPS

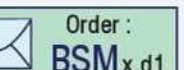
**BSM**

d1 Thread	L mm	S mm	d2 mm	Initial Force	Final Force
<b>M4</b>	9	08	2.5	6 Nw	12 Nw
<b>M5</b>	12	09	3.0	7 Nw	13 Nw
<b>M6</b>	14	1.0	3.5	9 Nw	15 Nw
<b>M8</b>	16	1.5	5.0	20 Nw	35 Nw
<b>M10</b>	19	2.0	6.0	25 Nw	45 Nw
<b>M12</b>	22	2.5	8.0	35 Nw	60 Nw
<b>M16</b>	24	3.5	10	65 Nw	110 Nw

1 Newton 0.102 Kg. 1daN / Kg = 10 Newton

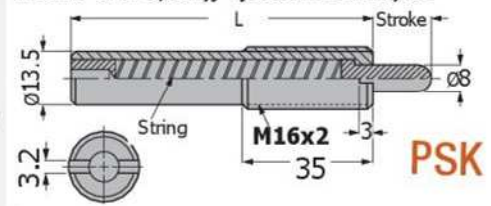
\* Don't exceed the force values.

Order : **BSM** x d1  
Material : 5.8 Steel Polished Hard Ball



## SPRINGY, BUSHING EJECTOR, SCREW

Fixable with Springy Ejector Mounting Kit



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**

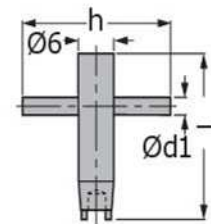
Stroke	L mm	Initial Force	Final Force
<b>20</b>	80	24 Nw	186 Nw
<b>40</b>	150	59 Nw	177 Nw
<b>60</b>	150	11 Nw	45 Nw
<b>80</b>	200	2 Nw	38 Nw

Order : **PSK** x Stroke  
Material : Pin 1.625 Hardness : 40 HRC



## SPRINGY EJECTOR MOUNTING KIT

**PMT**

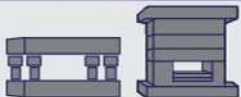


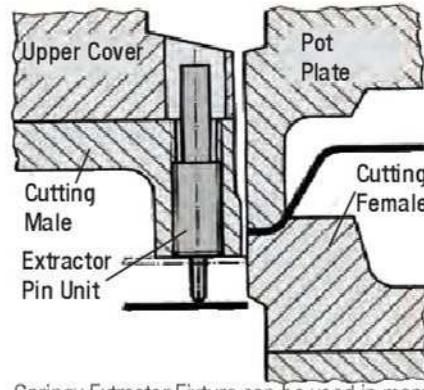
## Springy Ejector, Mounting Kit

**PMT**

Springy Ejector (M)	h mm	d Ø	d1 Ø	L mm
<b>M5 - M6</b>	40	6	3	40
<b>M8</b>	45	8	4	45
<b>M10</b>	45	10	4	45
<b>M12</b>	80	12	5	50
<b>M16</b>	70	16	8	52
<b>M24</b>	80	24	12	62
<b>M30</b>	100	30	15	73

Order : **PMT** d x L  
Material : 5.8 Steel Hardness : 36-40 HRC





## 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**

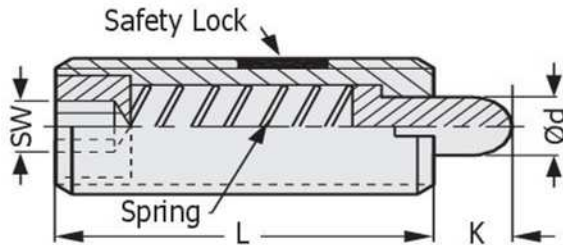
**Working Temperature:** From -30°C to +80°C

**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.

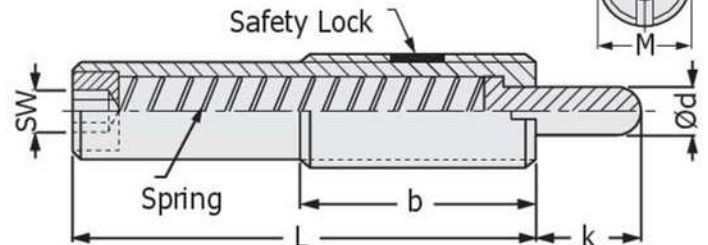
It is for locking, compressing upwards and downwards, the lock prevents the reaching of liquids and oils to the pin.

**PS2**

**Working Temperature:** From -30°C to +80°C

**Pin:** Polished Steel

Don't exceed force values specified in the table.



## SPRING EJECTORS

**PS1**

## SPRING EJECTORS

**PS2**

Serial	M Thread	k mm	L mm	d Ø	SW	Initial Force N (Kgf)	Final Force N (Kgf)
1	M3x0.5	1.5	10	1.0	0.8	0.4 (0.05)	2.9 (0.3)
2	M4x0.7	2.0	12	1.6	0.8	1.9 (0.2)	9.8 (1.0)
3	M5x0.8	3.0	20	2.0	1.5	3.9 (0.4)	19.6 (2.0)
4	M5x0.8	3.0	13	2.0	1.5	1.9 (0.2)	7.8 (0.8)
5	M5x0.8	3.0	20	2.0	1.5	1.9 (0.2)	9.8 (1.0)
6	M6x1.0	3.0	25	2.5	2.0	2.9 (0.3)	9.8 (1.0)
7	M6x1.0	3.0	25	2.5	2.0	7.8 (0.8)	29.4 (3.0)
8	M8x1.25	3.0	25	3.1	2.5	2.9 (0.3)	9.8 (1.0)
9	M8x1.25	3.0	25	3.1	2.5	7.8 (0.8)	29.4 (3.0)
10	M10x1.5	5.0	30	3.8	3.0	2.9 (0.3)	14.7 (1.5)
11	M10x1.5	5.0	30	3.8	3.0	9.8 (1.0)	49.0 (5.0)
12	M12x1.75	5.0	30	5.5	4.0	1.9 (0.2)	9.8 (1.0)
13	M12x1.75	5.0	30	5.5	4.0	9.8 (1.0)	49.0 (5.0)

Serial	M Thread	k mm	L mm	b mm	d Ø	SW	Initial Force N (Kgf)	Final Force N (Kgf)
14	M12x1.75	10	43	35	5.5	4	3.9 (0.4)	19.6 (2)
15	M12x1.75	10	43	35	5.5	4	6.8 (0.7)	39.2 (4)
16	M16x2.0	10	50	35	8	5	9.8 (1)	49.0 (5)
17	M16x2.0	10	50	35	8	5	19.6 (2)	98.0 (10)
18	M16x2.0	10	60	35	8	5	12.7 (1.3)	39.2 (4)
19	M16x2.0	10	60	35	8	5	26.4 (2.7)	78.4 (8)
20	M16x2.0	15	60	35	8	5	9.8 (1)	39.2 (4)
21	M16x2.0	15	60	35	8	5	14.7 (1.5)	78.4 (8)
22	M16x2.0	20	60	35	8	5	12.7 (1.3)	39.2 (4)
23	M16x2.0	20	85	35	8	5	16.6 (1.7)	78.4 (8)
24	M16x2.0	30	125	35	8	5	17.6 (1.8)	39.2 (4)
25	M16x2.0	30	125	35	8	5	19.6 (2)	78.4 (8)
26	M16x2.0	50	155	35	8	8	19.6 (2)	49.0 (5)
27	M16x2.0	50	155	35	8	5	29.4 (3)	98.0 (10)
28	M24x3.0	15	60	45	10	8	19.6 (2)	98.0 (10)
29	M24x3.0	15	60	45	10	8	39.2 (4)	196.1 (20)
30	M30x3.5	20	70	45	15	12	29.4 (3)	147.0 (15)
31	M30x3.5	20	70	45	15	12	49.0 (5)	294.1 (30)



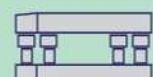
Order :  
**PS1. Serial -M**

Material : Bushing 1.7220  
Pin : 1.1273 / HRC 36-40



Order :  
**PS2. Serial -M**

Section  
Press  
Mould



Page  
**133**

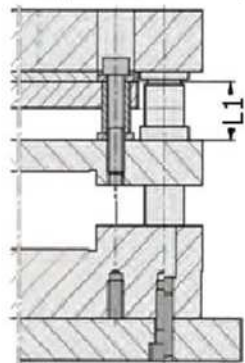
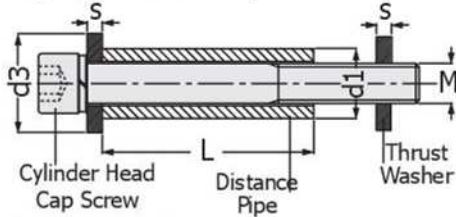


**G.71**

**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**

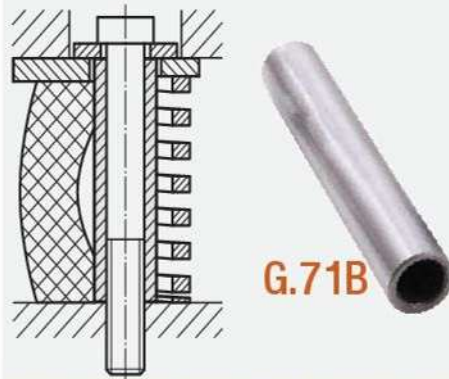
**INTERMEDIATE DISTANCE SAFETY BOLT**

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.

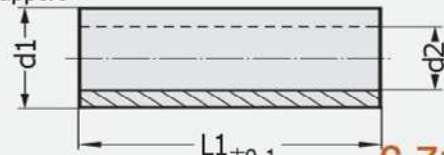
Order : **G.71** d1 x L1  
Material Pipe : 1.7131  
Hardness : 58±2 HRC

Page 134  
Section Press Mould  
Mould Component Production  
**GTH**



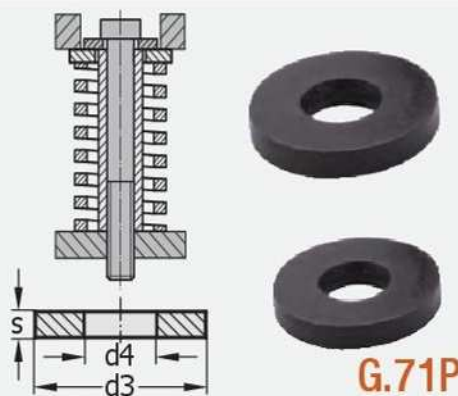
**G.71B**

**INTERMEDIATE DISTANCE SAFETY PIPE**  
Installation of press mould springs and inter support



**INTERMEDIATE DISTANCE SAFETY BOLT**

Order	d1	L1	d2
<b>G.71B.1329</b>	13	29	8.2
<b>G.71B.1339</b>		39	8.2
<b>G.71B.1349</b>		49	8.2
<b>G.71B.1359</b>		59	8.2
<b>G.71B.1369</b>		69	8.2
<b>G.71B.1529</b>	15	29	10.2
<b>G.71B.1539</b>		39	10.2
<b>G.71B.1549</b>		49	10.2
<b>G.71B.1559</b>		59	10.2
<b>G.71B.1569</b>		69	10.2



**G.71P**

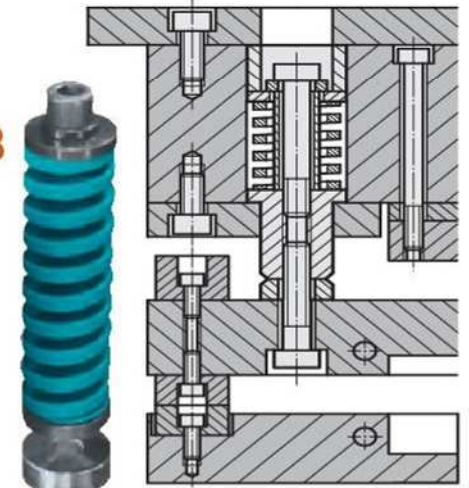
**INTERMEDIATE DISTANCE SAFETY BOLT**  
Installation of press mould springs and inter support

Order	d3	d4	s
<b>G.71P.18</b>	18	8.4	4
<b>G.71P.20</b>	20	10.5	4



**G.71Y**

**SPRING AND GAP DISTANCE PIPE**  
Assembly of spring and gap unit



**SPRING AND GAP DISTANCE PIPE G.71Y**

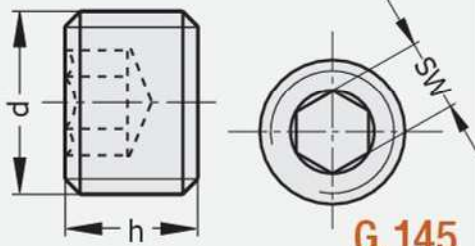
d1	L1	d2	d1	L1	d2
10	20	6.5	20	30	13
	25			40	
	30			50	
	32			63	
	40			80	
	50			100	
	63			125	
	80			140	
	100			160	
	100			200	
12	20	8.5	25	40	17
	25			50	
	30			63	
	40			80	
	50			100	
	63			125	
	80			140	
	100			160	
	125			200	
	140			250	
16	30	11	38	63	25
	40			80	
	50			100	
	63			125	
	80			140	
	100			160	
	125			200	
	140			250	
	160				

Order : **G.71Y** d1 x L1  
Material : 1.7131  
Hardness : 58±2 HRC



### SPRING COMPRESSOR SET SCREW

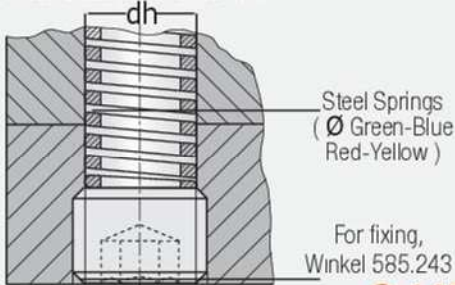
Adjustable Spring GUIDE SCREW (Ø10~40 mm)



**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.



Steel Springs  
(Ø Green-Blue  
Red-Yellow)

For fixing,  
Winkel 585.243

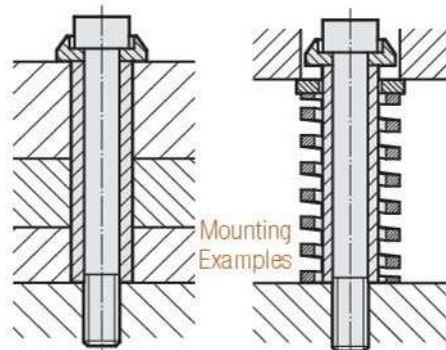
**G.145**

### SPRING CLAMPING SCREW

d Thread	Spring Dia.	dh Slot	h Len.	SW Alien
<b>M.12 x 1.5</b>	<b>10</b>	10.5	10	6
<b>M.14 x 1.5</b>	<b>12.5</b>	12.5	10	6
<b>M.18 x 1.5</b>	<b>16</b>	16.5	10	8
<b>M.22 x 1.5</b>	<b>20</b>	20.5	10	8
<b>M.28 x 1.5</b>	<b>25</b>	26.5	12	10
<b>M.35 x 1.5</b>	<b>32</b>	33.5	12	10
<b>M.42 x 1.5</b>	<b>40</b>	40.5	12	10

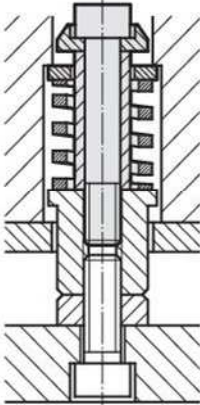
Order :  
**G.145 x d**

Material :  
1.0503 (C 45)

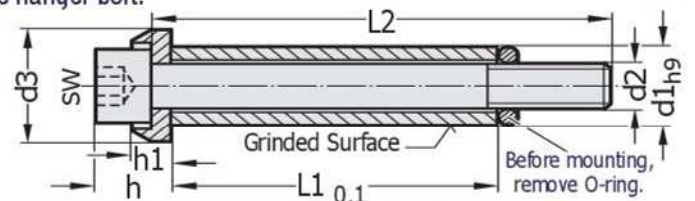


Mounting  
Examples

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<sup>2</sup> External 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

### SPRING FIXING /GUIDE SCREW **G.146**

d1 Ø	d2 M	L1 mm	L2 mm	d3 Ø	h mm	h1 mm
<b>15</b>	<b>M.10</b>	70	90	23	15	7.5
		80	100			
		90	110			
		100	120			
		120	140			

d1 Ø	d2 M	L1 mm	L2 mm	d3 Ø	h mm	h1 mm
<b>17.5</b>	<b>M.12</b>	40	60	27	18	9
		45	65			
		50	70			
		55	80			
		60	90			
		70	100			
		80	110			
		90	120			
		100	130			
		120	150			
140	180					

d1 Ø	d2 M	L1 mm	L2 mm	d3 Ø	h mm	h1 mm
<b>23</b>	<b>M.16</b>	50	80	34	24	11
		60	90			
		70	100			
		80	110			
		90	120			
		100	130			
		110	140			
		120	150			
		140	180			
		150	180			
160	200					

d1 Ø	d2 M	L1 mm	L2 mm	d3 Ø	h mm	h1 mm
<b>10</b>	<b>M.6</b>	20	35	15	10	5.5
		25	40			
		30	45			
		35	50			
		40	55			
		45	60			
		50	65			
		60	80			
		70	90			
		80	100			
90	110					

d1 Ø	d2 M	L1 mm	L2 mm	d3 Ø	h mm	h1 mm
<b>12.5</b>	<b>M.8</b>	30	45	19	13	6.5
		35	50			
		40	55			
		45	60			
		50	65			
		55	70			
		60	80			
		70	90			
		80	100			
		90	110			
100	120					

d1 Ø	d2 M	L1 mm	L2 mm	d3 Ø	h mm	h1 mm
<b>15</b>	<b>M.10</b>	30	50	23	15	7.5
		35	55			
		40	60			
		45	65			
		50	70			
		55	75			
		60	80			

Order :  
**G.146 .d2 x d1 x L1**

Material : Cylinder  
Head Cap Screw  
Pipe : 1.7131 (58 HRC)

Mould  
Components  
Production  
**GTH**

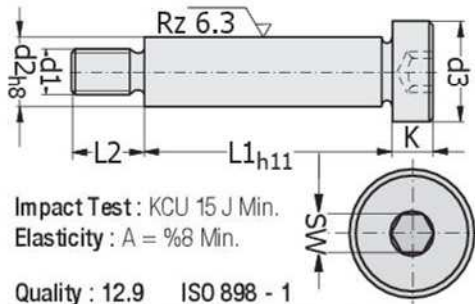


Page  
**135**



## GUIDE SCREWS Locking Component

**G.39**



Impact Test : KCU 15 J Min.  
Elasticity : A = %8 Min.

Quality : 12.9 ISO 898 - 1  
Heat Treated, High Strength Knurled  
Steel Head (Anti Slip)

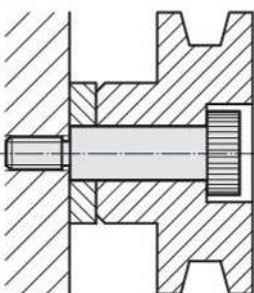
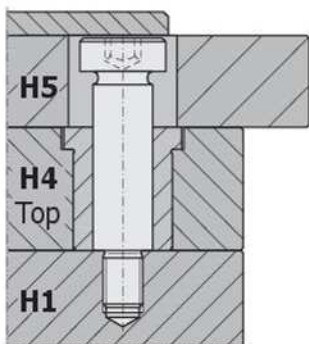
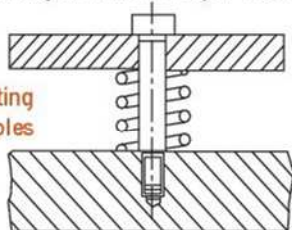
IN SPRING USE ( STEEL / POLIURETHANE SPRING)  
For precise and secure placement, also suitable to  
setting position.

**GUIDE SCREWS SHOULD BE USED.**

Our production is available in desired dimensions /  
materials and lengths.

Spring Working Area : h8 Voltage : 1100 N / mm<sup>2</sup>

Mounting  
Examples



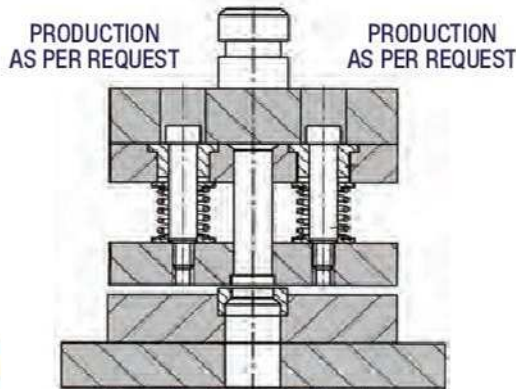
## LOCKING COMPONENT **G.39** GUIDE SCREWS

**G.39**

d2 Ø	L1 mm	d1 M	d3 Head	L2 mm	K Head	SW Alien	d2 Ø	L1 mm	d1 M	d3 Head	L2 mm	K Head	SW Alien
6	10	M5	10	9.5	4.5	3 Alien Tightening Torque Nm : 7	12	16	M10	18	16	8	6 Alien Tightening Torque Nm : 65
	12												
	16												
	20												
	25												
	30												
	35												
	40												
	45												
	50												
8	10	M6	13	11	5.5	4 Alien Tightening Torque Nm : 13	16	30	M12	24	18	11.0	8 Alien Tightening Torque Nm : 120
	12												
	16												
	20												
	25												
	30												
	35												
	40												
	45												
	50												
55													
60													
65													
70													
80													
90													
100													
120													
10	16	M8	16	13	7	5 Alien Tightening Torque Nm : 32	20	40	M16	30	22	14.0	10 Alien Tightening Torque Nm : 290
	20												
	25												
	30												
	35												
	40												
	45												
	50												
	55												
	60												
65													
70													
80													
90													
100													
120													
24	50	M20	36	27	16.0	12 Alien Tightening Torque Nm : 500	24	55	M20	36	27	16.0	12 Alien Tightening Torque Nm : 500
	60												
	65												
	70												
	80												
	90												
	100												
	120												







**YYH**

**YYS**

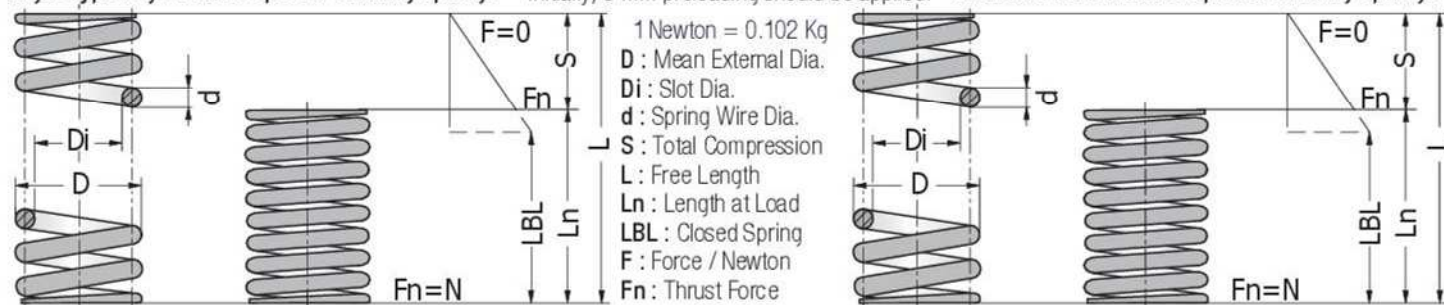
**ROUND WIRE STEEL SPRINGS**

**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.

Standard Performance Special Winding Springs



Force These 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. Working Temperature: 200°C. All these springs can be produced in the desired lengths and diameters.

**Light Type High Course Special Winding Springs YYH..**

**Standard Performance Special Winding Springs YYS..**

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

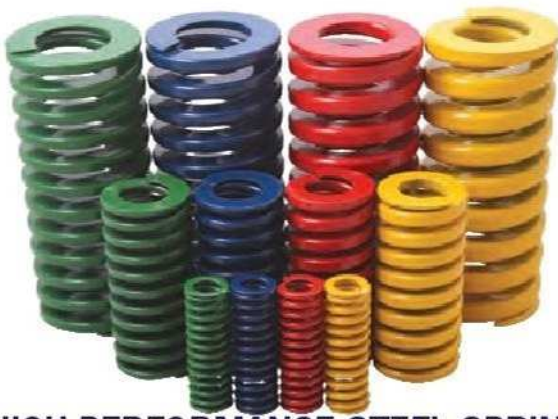
D	L	Di	d	S	Fn	Ln	LBL
13	55	8.5	1.5	25.2	112	25.3	12
15	50	9.5	2.0	21.2	250	25	9.5
16	40	10.5	2.0	17	220	20	7.0
18	85	12	2.3	37.4	260	41	14
19	50	11	3.0	13.6	480	34	8.5
20.5	90	9	4.5	15	1714	72.4	4.0
21	40	12	3.0	11.9	450	26	5.5
22	95	14.5	2.5	41.5	200	46.2	17
23	50	12.5	4.0	13.3	1160	34.4	6.5
26.5	24	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 : **YYH** .D x L  
Delivery As per Order

Material: Spring Steel  
Hardened

Production As Per Unit  
Order : **YYS** .D x L  
Delivery As per Order

Sayfa  
**137**



## 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 Criteria.

Continuous 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 descriptions,
  - \* 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 significant 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 guaranty dimensional compliance and sensitivity,
- Spring Load Coefficient Tolerances - Nominal Rate at All Springs + 10%.

## HIGH PERFORMANCE STEEL SPRINGS

### Rectangular, ISO 10243 Mechanical Import Mould Springs

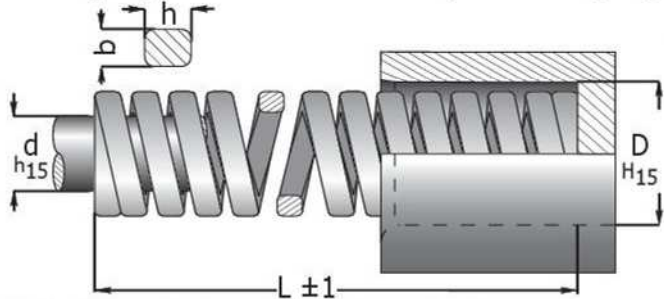
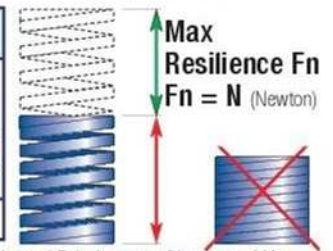


Table Values/Explanations of the Spring Pages

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	N / mm			mm x N	mm x N	mm x N	mm x N
mm	mm	mm					



Code	Colour Series	Wire Section	Colour	Load	Max. Resilience	No
AY			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			Silver	Ultra Heavy	15 % Length	Page: 144

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 reprocessing, spring thrust rate will be increased after reprocessing.
- \* Protects springs from abrasive activities.
- \* Don't exceed 250° C working temperature, while increasing to 120° C, significant loading decrease is not seen, at each 40° 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.

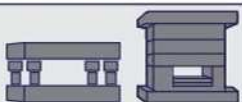
External diameter of spring, is smaller than slot diameter. Slot diameter should be greater. Internal diameter of spring is greater than pin diameter, pin diameter should be smaller. **In usage of precision mechanical spring; GUIDE SCREWS should be used.**

RoHS

°C 120 - -30  
°F 248 - 2

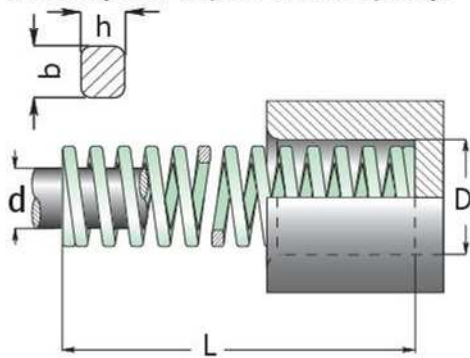
IX  
Y Z

CAD





**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:  $R \times (A.B.C.D) \times 1 \text{ Newton} = 0.102 \text{ Kg}$ .

For long life usage, shear stress on the basis of oscillation should be maximum 800 N/mm<sup>2</sup>. 400 N/mm<sup>2</sup> 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	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 30	Min. Clamping % 40	Max. Clamping % 50	Full Clamping Attention
b x h	mm	Nw.	mm	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	d	L	R	A	B	C	D	
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 30	Min. Clamping % 40	Max. Clamping % 50	Full Clamping Attention	
b x h	mm	Nw.	mm	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	

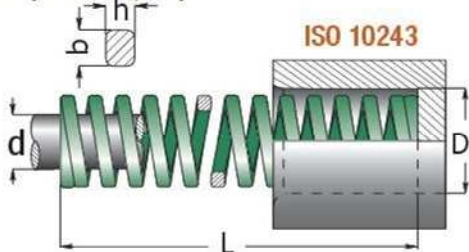
Technical Information!  
Page 138





## PERFORMANCE STEEL SPRING GREEN SPRING-Y

Light Load Spring



## Rectangular, Import Mould Spring, Light Load Spring **GREEN SPRING-Y**

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 25	Min. Clamping % 30	Max. Clamping % 40	Full Clamping Attention
b x h	mm	Nw.	mm	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	

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 25	Min. Clamping % 30	Max. Clamping % 40	Full Clamping Attention
b x h	mm	Nw.	mm	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	

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	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 25	Min. Clamping % 30	Max. Clamping % 40	Full Clamping Attention
b x h	mm	Nw.	mm	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

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
4 x 2.1	10	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
		305	4.0	76.3	91.5	122	157

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
8.1x4	20	203	22.7	50.8	60.9	81.2	102
		254	17	63.5	76.2	102	128
305	14.8	76.3	91.5	122	156		

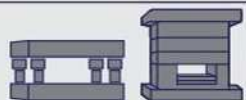
13	6.3	25	17.9	6.3	7.5	10	13.2
		32	16.4	8.0	9.6	12.8	18
		38	13.6	9.5	11.4	15.2	21
		44	12.1	11	13.2	17.6	24
		51	11.4	12.8	15.3	20.4	28.7
		64	9.3	16	19.2	25.6	35.8
		76	7.1	19	22.8	30.4	42.7
		89	5.4	22	26.7	35.6	50.4
		102	4.1	25	30.6	40.8	58.4
		2.4x1.4	305	1.4	76.3	91.5	122

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
5.4x2.7	12.5	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
305	7.0	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
11x5.3	25	254	35	63.5	76.2	102	130
		305	28.5	76.3	91.5	122	155

**Order :**  
YY (Green Spring) .D x L

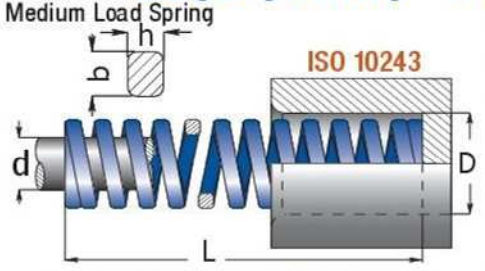
**Usage:** It is compatible with light load spring and especially injection mould systems and equipment designs.





## Rectangular, Import Mould Spring, Medium Load Spring **BLUE SPRING-M**

### 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:  $R \times (A.B.C.D) \times$

1 Newton = 0.102 Kg.

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 25	Min. Clamping % 30	Max. Clamping % 38	Full Clamping
b x h	mm	Nw.	mm	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
		76	17.8	19	22.8	28.5	36.3
3.2x2.0	305	4.8	76.3	91.5	114.4	141.6	

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 25	Min. Clamping % 30	Max. Clamping % 38	Full Clamping
b x h	mm	Nw.	mm	mm	mm	mm	mm
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
		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	

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 25	Min. Clamping % 30	Max. Clamping % 38	Full Clamping
b x h	mm	Nw.	mm	mm	mm	mm	mm
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	

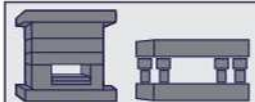
63	38	76	312	19	22.8	28.5	30.7
		89	260	22.3	26.7	33.4	36.5
		102	221	25.5	30.6	38.3	43.6
		115	187	28.8	34.5	43.1	48.9
		127	168	31.8	38.1	47.6	54.2
		152	136	38	45.6	57	65.7
		178	114	44.5	53.4	66.8	76.5
		203	100	50.8	60.9	76.1	88
		229	89.2	57.3	68.7	85.9	104
254	78.4	63.5	76.2	95.3	112		
11.5x9.1	305	64.7	76.3	91.5	114	134	



Order :  
MY (Blue Spring) .D x L

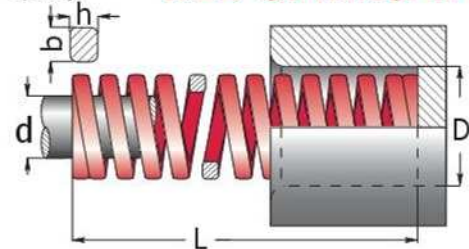
Usage: It is compatible with medium heavy load spring and especially injection mould systems and equipment designs.

Technical Information!  
Page 138





**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:  $R \times (A.B.C.D) \times 1 \text{ Newton} = 0.102 \text{ Kg.}$

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 20	Min. Clamping % 25	Max. Clamping % 30	Full Clamping Attention
b x h	mm	Nw.	mm	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

**Rectangular, Import Mould Spring Heavy Load Spring RED SPRING-K**

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 20	Min. Clamping % 25	Max. Clamping % 30	Full Clamping Attention
b x h	mm	Nw.	mm	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
		64	212	12.8	16	19.2	22.4
7.1x5.4	305	12.8	16	19.2	22.4		

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 20	Min. Clamping % 25	Max. Clamping % 30	Full Clamping Attention
b x h	mm	Nw.	mm	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	

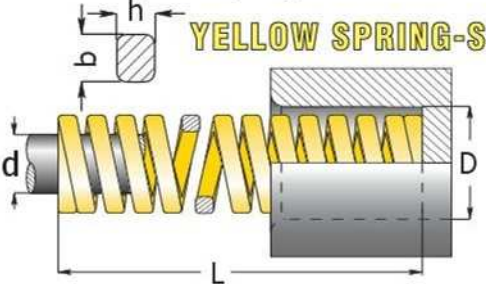
50	25	64	413	12.8	16	19.2	22.4
		76	339	15.2	19	22.8	26.5
		89	288	17.8	22.3	26.7	31.5
		102	245	20.4	25.5	30.6	37.6
		115	215	23	28.8	34.5	42.7
		127	192	25.4	31.8	38.1	47.5
		139	168	28	35	42	51.8
		152	154	30.4	38	45.6	57.8
		178	134	35.6	44.5	53.4	68.5
		203	117	40.6	50.8	60.9	77.6
254	89	50.8	63.5	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	



**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.

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 17	Min. Clamping % 20	Max. Clamping % 25	Full Clamping Attention
b x h	mm	Nw.	mm	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

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
		76	34.1	12.9	15.2	19	27.8
3.2X2.9							

**Rectangular, Import Mould Spring Extra Heavy Load Spring YELLOW SPRING-S**

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 17	Min. Clamping % 20	Max. Clamping % 25	Full Clamping Attention
b x h	mm	Nw.	mm	mm	mm	mm	mm
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
		152	39.0	25.8	30.4	38	50.4
4.1X3.8	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	36.8
		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
7.3X5.9	16	115	140	19.6	23	28.8	28.8
		127	124	21.6	25.4	31.8	31.8

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 17	Min. Clamping % 20	Max. Clamping % 25	Full Clamping Attention
b x h	mm	Nw.	mm	mm	mm	mm	mm
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	

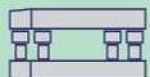
50	25	64	709	10.9	12.8	16	16
		76	572	12.9	15.2	19	19
		86	475	15.1	17.8	22.3	22.3
		102	405	17.3	20.4	25.5	25.5
		115	352	19.6	23	28.8	28.8
		127	316	21.6	25.4	31.8	31.8
		139	274	23.8	28	35	35
		152	239	25.8	30.4	38	38
		178	215	30.3	35.6	44.5	44.5
		203	187	34.5	40.6	50.8	50.8
254	153	43.2	50.8	63.5	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.

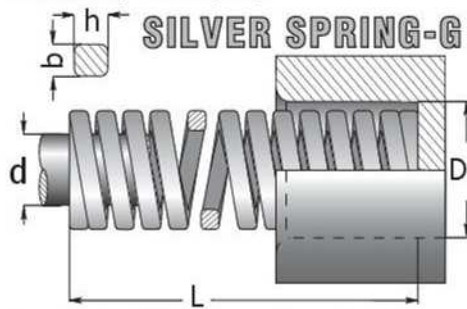
**Technical Information!**  
Page 138

**Section Press Mould**  **Page 143**



## PERFORMANCE STEEL SPRINGS

Ultra Heavy Load Spring



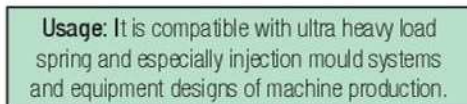
Short Stroke, High Power, Heavy Loadings  
By multiplying spring coefficient (R) with compression amount simply (mm) spring force value is reached. (N) Example:  $R \times (A.B.C.D) \times$

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



## Square, Import Mould Spring Ultra Heavy Load Spring SILVER SPRING-G

D	d	L	R	A	B	C	D
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 17	Min. Clamping % 20	Max. Clamping % 25	Full Clamping Attention
b x h	mm	Nw.	mm	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

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	d	L	R	A	B	C	D	
Outer Dia.	Inner Dia.	Spring Length	Load Rate	Long Life % 17	Min. Clamping % 20	Max. Clamping % 25	Full Clamping Attention	
b x h	mm	Nw.	mm	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	15.2	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

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	
		118x13.5	305	388	30.5	36.6	45.8	70





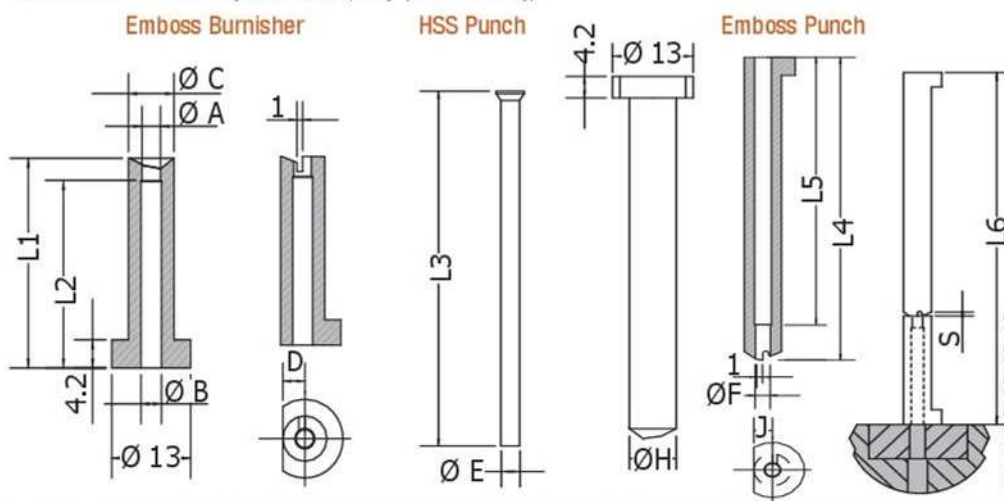
### Threading (Punch/Bushing) Kit For Perforated / Punched Holes

Order Code :  
**VYZ..**

### 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).

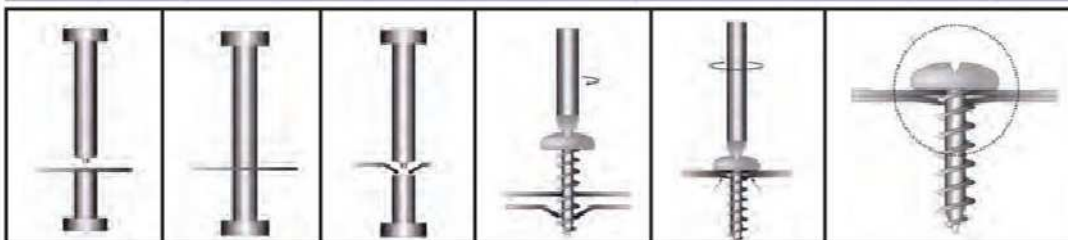


- Screw Diameter**  
**Thread Dimensions :**
- B 3.5
  - B 3.9
  - B 4.2
  - B 4.8
  - B 5.5
  - B 6.3

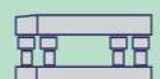
**Sheet Thickness ( S )**  
**It is compatible with**

- 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
<b>B3.5</b>	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
<b>B3.9</b>	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
<b>B4.2</b>	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
<b>B4.8</b>	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
<b>B5.5</b>	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
<b>B6.3</b>	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  Page 145

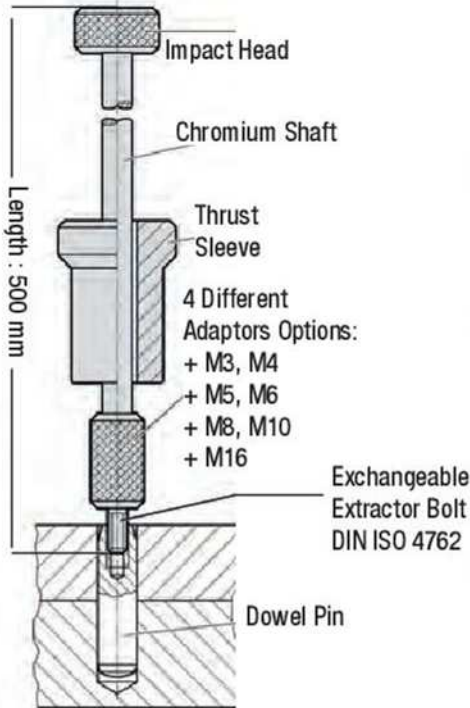


## PIN PULLER

### Complete Set Dowel Pin Puller

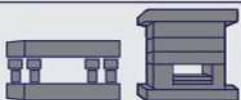
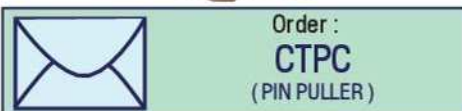
DIN EN ISO 8735 - ISO 8735

**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.



## PIN PULLER

### Mounting Example



Adaptor is inserted with installation.



Screwing is done on retaining pin.



With a small impact application, pin is removed.



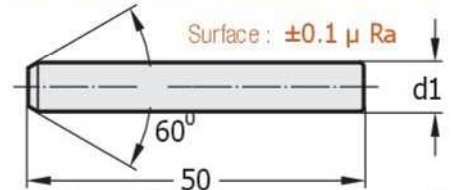
Extracted pin is removed from adaptor.



## PRECISE MEASUREMENT PIN KIT

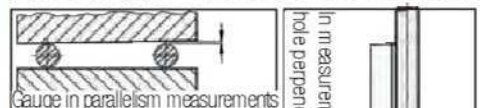
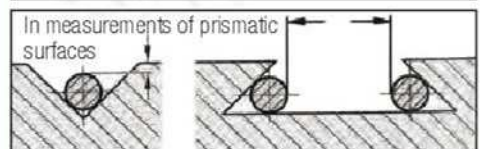
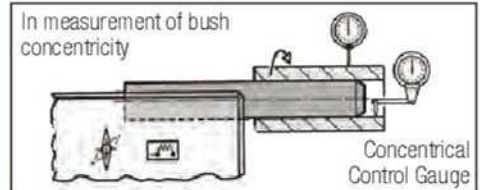
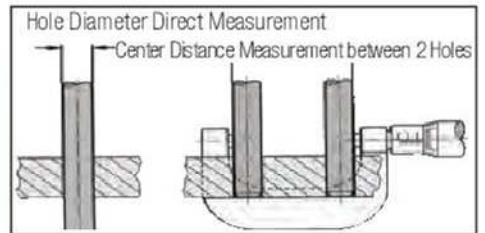
### Pin Control Gauge Kit **PKMS**

DIN 2269 - Dia. Tolerance :  $\pm 0.001 / 2$



**Small Set:** 91 Pieces Measurement / Control Pin Between  $\varnothing 1 - 10$  mm. In 0.1 mm stepped complete wooden box.

**Large Set:** 273 Pieces Measurement / Control Pin. Between  $\varnothing 1 - 10$  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.

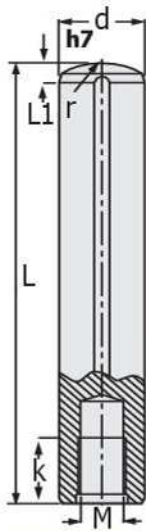


Material : HSS 1.3343  
Hardness : 62 - 44 HRC

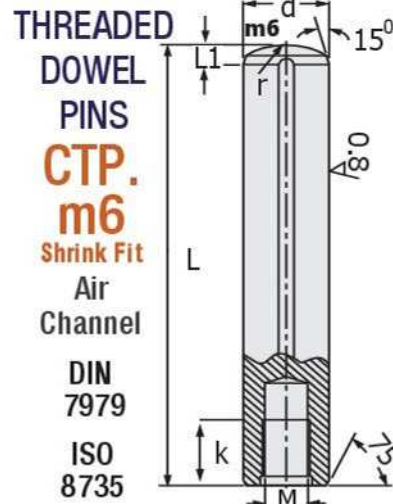
Order :  
**PKMS .1** Small Set  
**PKMS .2** Large Set

# 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**



(Dia.) Ø  
Shrink Fit  
Tolerance  
**m6**



Continuous Stocks

## THREADED DOWEL PINS

Air Channel DIN 7979 / ISO 8735

## CTP.h7

Hollow Ejector

d	L	L1	k	M	r
Ø 6 mm	20	2.1 mm	6 mm	M4	6
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
h7 0 -12	80				
	90				
	100				

d	L	L1	k	M	r	
Ø12 mm	50	3.8 mm	10 mm	M6	12	
	55					
	60					
	70					
	80					
	90					
	100					
	120					
	h7 0 -18					30
						35
40						
45						
50						
60						
70						
80						
90						
100						

d	L	L1	k	M	r
Ø14 mm	30	4 mm	12 mm	M8	14
	35				
	40				
	45				
	50				
	60				
	70				
	80				
	90				
	100				
h7 0 -18	120				
	140				

d	L	L1	k	M	r
Ø16 mm	30	4.7 mm	12 mm	M8	16
	35				
	40				
	45				
	50				
	60				
	70				
	80				
	90				
	100				
h7 0 -18	120				
	140				

d	L	L1	k	M	r
Ø20 mm	30	6 mm	16 mm	M10	20
	35				
	40				
	50				
	60				
	70				
	80				
	90				
	100				
	120				
h7 0 -21	150				

d	L	L1	k	M	r
Ø 8 mm	20	2.6 mm	8 mm	M5	8
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
80					
h7 0 -12	90				
	100				
	120				

d	L	L1	k	M	r
Ø10 mm	20	3 mm	10 mm	M6	10
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
80					
h7 0 -15	90				
	100				
	120				

d	L	L1	k	M	r
Ø12 mm	20	3.8 mm	10 mm	M6	12
	25				
	30				
	35				
	40				
h7	45				

d	L	L1	k	M	r
Ø 5 mm	20	1.7 mm	6 mm	M3	5
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
m6 +12 +4	80				

d	L	L1	k	M	r
Ø 6 mm	20	2.1 mm	6 mm	M4	6
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
m6 +15 +6	80				
	90				
	100				

d	L	L1	k	M	r
Ø 8 mm	20	2.6 mm	8 mm	M5	8
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
m6 +15 +6	80				
	90				
	100				
m6 +18 +7	120				

d	L	L1	k	M	r
Ø10 mm	20	3 mm	10 mm	M6	10
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
m6 +15 +6	80				
	90				
	100				
m6 +21 +8	120				

d	L	L1	k	M	r
Ø12 mm	20	3.8 mm	10 mm	M6	12
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
m6 +18 +7	80				
	90				
	100				
m6 +18 +7	120				

d	L	L1	k	M	r
Ø14 mm	30	4 mm	12 mm	M8	14
	35				
	40				
	45				
	50				
	60				
	70				
	80				
	90				
	100				
m6 +18 +7	120				
	140				

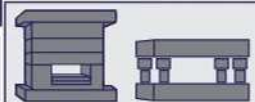
d	L	L1	k	M	r
Ø16 mm	30	4.7 mm	12 mm	M8	16
	35				
	40				
	45				
	50				
	60				
	70				
	80				
	90				
	100				
m6 +18 +7	120				
	140				

d	L	L1	k	M	r
Ø20 mm	30	6 mm	16 mm	M10	20
	35				
	40				
	50				
	60				
	70				
	80				
	90				
	100				
	120				
m6 +21 +8	150				

Order : **CTP.h7** .d x L

Material : 1.7131 ( 16MnCr 5 )  
Hardness : 60 -62 HRC Depth: 0.8

Order : **CTP.m6** .d x L

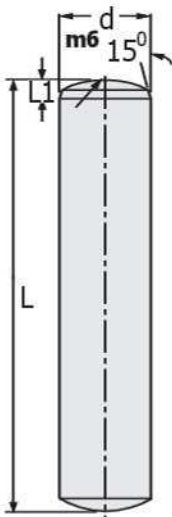


# 6325 DOWEL PINS

## DTP.m6 Shrink Fit

DIN  
6325  
ISO  
9734

Continuous Stocks

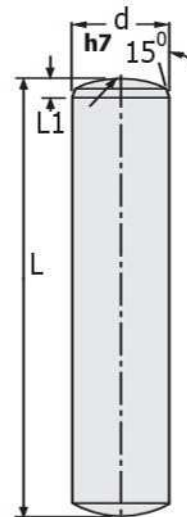


(Dia.) Ø  
Shrink Fit  
Tolerance  
**m6**



## 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**



Continuous Stocks

d	L	L1	r
Ø 3 mm	10	0.8 mm	3
	16		
	20		
	25		
	30		
m6 +8 +2	35		

d	L	L1	r
Ø 4 mm	10	1.0 mm	4
	16		
	20		
	25		
	30		
	35		
	40		
	45		
	50		
	55		
m6 +8 +2	60		

d	L	L1	r
Ø 5 mm	10	1.2 mm	5
	16		
	20		
	25		
	30		
	35		
	40		
	45		
	50		
	55		
	60		
m6 +8 +2	70		
	80		

d	L	L1	r
Ø 6 mm	10	1.5 mm	6
	16		
	20		
	25		
	30		
	35		
	40		
	45		
	50		
	55		
	60		
	70		
	80		
m6 +12 +4	90		
	100		

d	L	L1	r
Ø 8 mm	10	2.0 mm	8
	16		
	20		
	25		
	30		
	35		
	40		
	45		
	50		
	55		
	60		
m6 +15 +6	70		
	80		
	90		
	100		
	120		

d	L	L1	r
Ø 10 mm	20	2.5 mm	10
	25		
	30		
	35		
	40		
	45		
	50		
	55		
	60		
	70		
	80		
	90		
	100		
m6 +15 +6	120		
	140		

d	L	L1	r
Ø 12 mm	20	3.0 mm	12
	25		
	30		
	35		
	40		
	45		
	50		
	55		
	60		
	70		
	80		
	90		
	100		
	120		
	140		
m6 +18 +7	160		

d	L	L1	r
Ø 14 mm	30	3.5 mm	14
	35		
	40		
	45		
	50		
	60		
	70		
	80		
	90		
	100		
m6 +18 +7	120		
	140		

d	L	L1	r
Ø 16 mm	30	4.0 mm	16
	35		
	40		
	45		
	50		
	60		
	70		
	80		
	90		
	100		
	120		
	140		
	m6 +18 +7		

d	L	L1	r			
Ø 20 mm	30	5.0 mm	20			
	35					
	40					
	45					
	50					
	55					
	60					
	70					
	80					
	90					
	100					
	120					
	140					
	160					
	m6 +21 +8					

# 6325 DOWEL PINS

## DIN 6325 ISO 9734

d	L	L1	r
Ø 5 mm	10	1.2 mm	5
	16		
	20		
	25		
	30		
	35		
	40		
	45		
	50		
	55		
	60		
h7 0 -12	70		
	80		

d	L	L1	r
Ø 6 mm	10	1.5 mm	6
	16		
	20		
	25		
	30		
	35		
	40		
	45		
	50		
	55		
	60		
	70		
	80		
	90		
	100		
h7 0 -12			

d	L	L1	r
Ø 8 mm	10	2.0 mm	8
	16		
	20		
	25		
	30		
	35		
	40		
	45		
h7 0 -15	50		
	60		

d	L	L1	r
Ø 8 mm	40	2.0 mm	8
	45		
	50		
	55		
	60		
	70		
	80		
	90		
	100		
	120		
	h7 0 -15		

d	L	L1	r
Ø 10 mm	20	2.5 mm	10
	25		
	30		
	35		
	40		
	45		
	50		
	55		
	60		
	70		
	80		
	90		
	100		
h7 0 -15	120		
	140		

d	L	L1	r
Ø 12 mm	20	3.0 mm	12
	25		
	30		
	35		
	40		
	45		
	50		
	55		
	60		
	70		
	80		
	90		
	100		
	120		
	140		
h7 0 -18			

d	L	L1	r
Ø 14 mm	30	3.5 mm	14
	35		
	40		
	45		
	50		
	60		
	70		
	80		
	90		
	100		
	120		
h7 0 -18	140		

d	L	L1	r
Ø 16 mm	30	4.0 mm	16
	35		
	40		
	45		
	50		
	60		
	70		
	80		
	90		
	100		
	120		
	140		
	h7 0 -18		

d	L	L1	r
Ø 20 mm	30	5.0 mm	20
	35		
	40		
	45		
	50		
	55		
	60		
	70		
	80		
	90		
	100		
	120		
	140		
	160		
	h7 0 -21		



Order :  
DTP.m6 .d x L

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



Polyamide Signing Cassette

Cassette Inner, Letter / Counter Parts

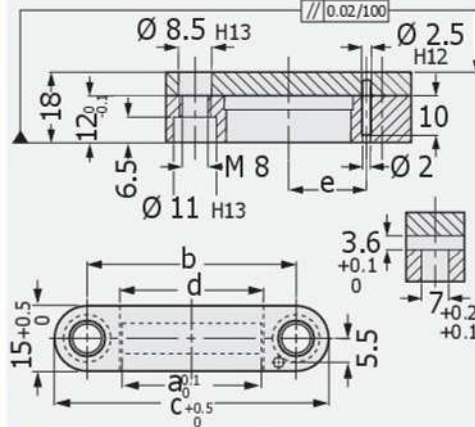
Precision Surface Special Mould Parts

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 with 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

Reference : PSA E24.64. 100.G



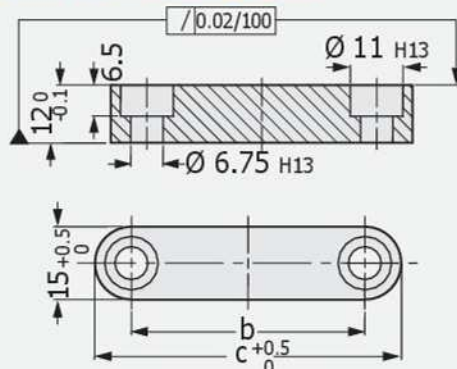
Piece	a	b	c	d	e
4	16	32	47	17	12
6	24	40	55	25	-
8	32	48	63	33	20
10	40	56	71	41	24

Order : ZTP . C. Pieces



## PUNCH SUPPORT PLATE ZDP

Reference : PSA E24.64. 100.G



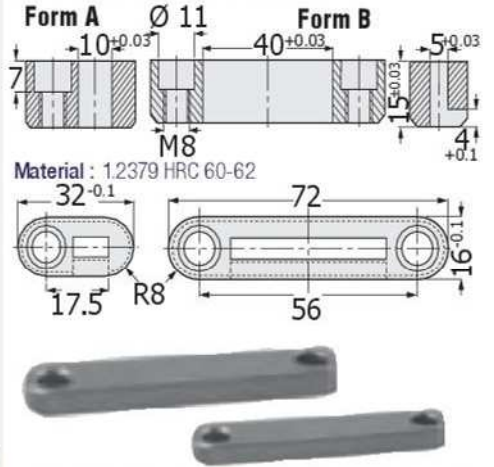
Piece	b	c
4	32	47
6	40	56
8	48	63
10	56	70

Order : ZDP . C. Piece



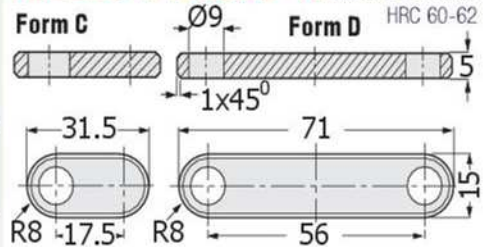
## PUNCH HOLDERS

Reference : FORD WDX20 - 70



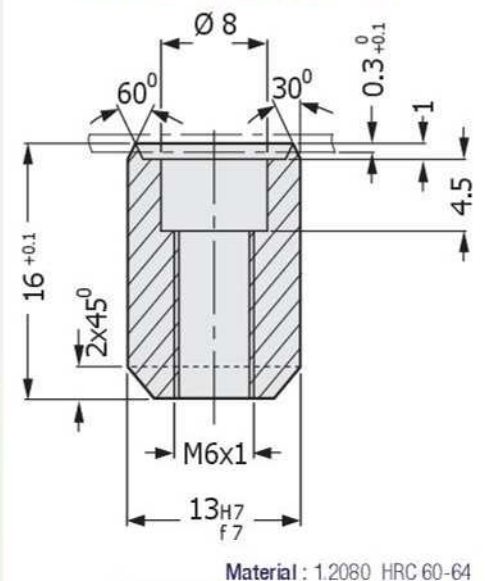
## PUNCH SUPPORT PLATE ZDF

Reference : FORD WDX20 - 70 Material : 1.0503 HRC 60-62



## POSITION TRACE PUNCH KZF

Reference : FORD WDX20 - 70

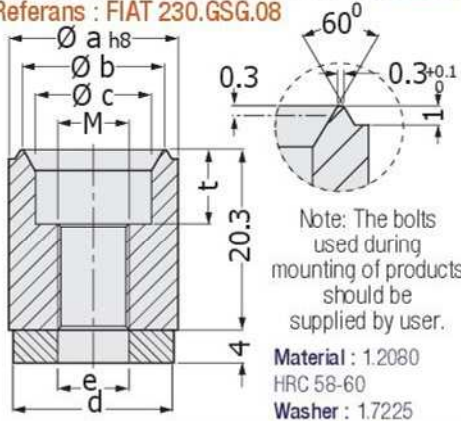


Section Press Mould Page 149



### POSITION TRACE PUNCH **KZG**

Referans : FIAT 230.GSG.08

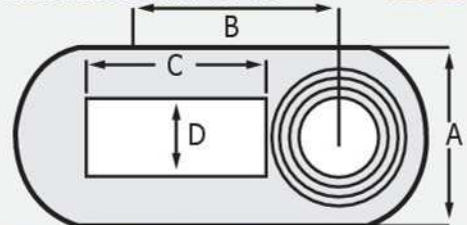


a	b	c	M	t	d	e
25	18	16	M10	12	24	9
19	16	13	M8	8	18	8

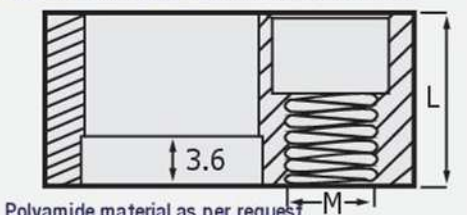
Order : **KZG.a**



### MARKING HOLDER **MTG**



Material : Ck 45 Hardness : Without heat treatment

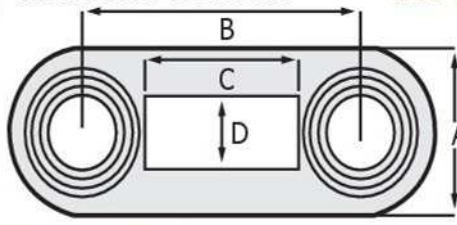


A	B	L	C	D	Ad.	M
14.90	6.0	12.0	4.10	7.10	1	M6
	10.0		8.10		2	
	14.0		12.10		3	
	18.0		16.10		4	
	22.0		20.10		5	

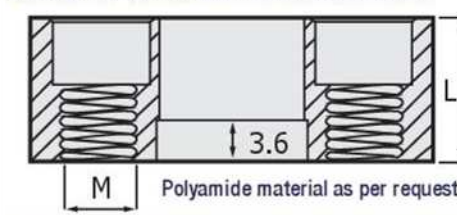
Order : **MTG.AxB**



### MARKING HOLDER **MTU**



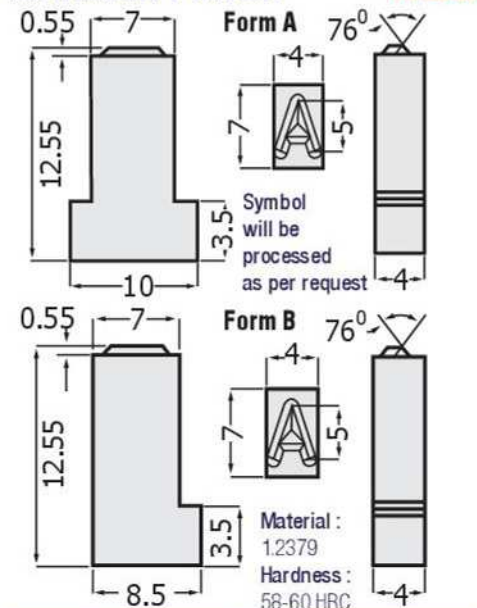
Material : Ck 45 Hardness : Without heat treatment



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**

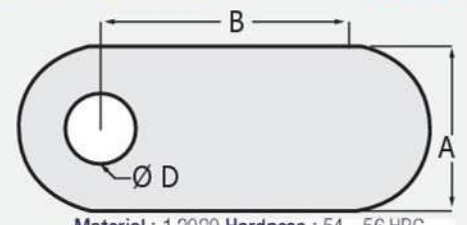
### MARKING PUNCH **MZG**



Order : **MZG.Form.Symbol**  
When ordering, symbol should be determined.



### CRUSH PLATE **MEG**



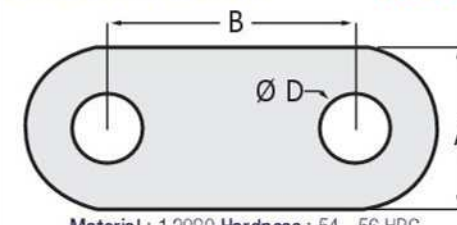
Material : 1.2080 Hardness : 54 - 56 HRC

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**

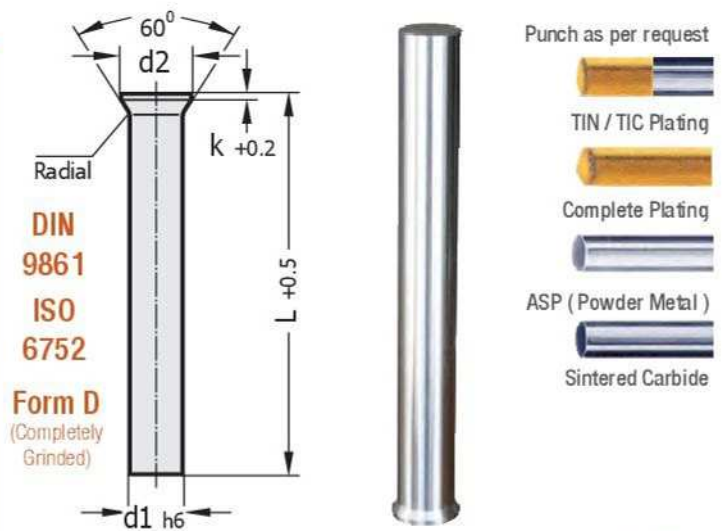
# HSS COUNTERSUNK PUNCH

HBZ..

d1	L	d2	k
10	71	12	1.0
	80		
	100		
	125		
10.5	71	13.5	1.0
	80		
	100		
	125		
11	71	13.5	1.0
	80		
	100		
	125		
11.5	71	14	1.0
	80		
	100		
	125		
12	71	14	1.0
	80		
	100		
	125		
12.5	71	15	1.0
	80		
	100		
	125		
13	71	15	1.5
	80		
	100		
	125		
13.5	71	16	1.5
	80		
	100		
	125		
14	71	16	1.5
	80		
	100		
	125		
14.5	71	17	1.5
	80		
	100		
	125		
15	71	17	1.5
	80		
	100		
	125		
16	71	18	1.5
	80		
	100		
	125		
17	71	19	1.5
	80		
	100		
	125		
18	71	21	1.5
	80		
	100		
	125		
19	71	21	1.5
	80		
	100		
	125		
20	71	22	1.5
	80		
	100		
	125		

d1	L	d2	k
6.6	71	9.0	1.0
	80		
	100		
6.7	71	9.0	1.0
	80		
	100		
6.8	71	9.0	1.0
	80		
	100		
6.9	71	9.0	1.0
	80		
	100		
7.0	71	9.0	1.0
	80		
	100		
	125		
7.1	71	9.0	1.0
	80		
	100		
	125		
7.2	71	9.0	1.0
	80		
	100		
	125		
7.3	71	9.0	1.0
	80		
	100		
	125		
7.4	71	10	1.0
	80		
	100		
	125		
7.5	71	10	1.0
	80		
	100		
	125		
7.6	71	10	1.0
	80		
	100		
	125		
7.7	71	10	1.0
	80		
	100		
	125		
7.8	71	10	1.0
	80		
	100		
	125		
7.9	71	10	1.0
	80		
	100		
	125		
8.0	71	10	1.0
	80		
	100		
	125		
8.1	71	10	1.0
	80		
	100		
	125		
8.2	71	10	1.0
	80		
	100		
	125		
8.3	71	10	1.0
	80		
	100		
	125		
8.4	71	10	1.0
	80		
	100		
	125		
8.5	71	11	1.0
	80		
	100		
	125		
8.6	71	11	1.0
	80		
	100		
	125		
8.7	71	11	1.0
	80		
	100		
	125		
8.8	71	11	1.0
	80		
	100		
	125		
8.9	71	11	1.0
	80		
	100		
	125		
9.0	71	11	1.0
	80		
	100		
	125		
9.5	71	12	1.0
	80		
	100		
	125		

d1	L	d2	k
4.1	71	5.5	0.5
	80		
	100		
4.2	71	5.5	0.5
	80		
	100		
4.3	71	5.5	0.5
	80		
	100		
4.4	71	5.5	0.5
	80		
	100		
4.5	71	6.0	0.5
	80		
	100		
	125		
4.6	71	6.0	0.5
	80		
	100		
	125		
4.7	71	6.0	0.5
	80		
	100		
	125		
4.8	71	6.0	0.5
	80		
	100		
	125		
4.9	71	6.0	0.5
	80		
	100		
	125		
5.0	71	6.5	0.5
	80		
	100		
	125		
5.1	71	6.5	0.5
	80		
	100		
	125		
5.2	71	6.5	0.5
	80		
	100		
	125		
5.3	71	6.5	0.5
	80		
	100		
	125		
5.4	71	7.0	0.5
	80		
	100		
	125		
5.5	71	7.0	0.5
	80		
	100		
	125		
5.6	71	7.0	0.5
	80		
	100		
	125		
5.7	71	7.0	0.5
	80		
	100		
	125		
5.8	71	7.0	0.5
	80		
	100		
	125		
5.9	71	7.0	0.5
	80		
	100		
	125		
6.0	71	8.0	1.0
	80		
	100		
	125		
6.1	71	8.0	1.0
	80		
	100		
	125		
6.2	71	8.0	1.0
	80		
	100		
	125		
6.3	71	8.0	1.0
	80		
	100		
	125		
6.4	71	8.0	1.0
	80		
	100		
	125		
6.5	71	9.0	1.0
	80		
	100		
	125		



# 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. **Continuous 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 remedies 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.

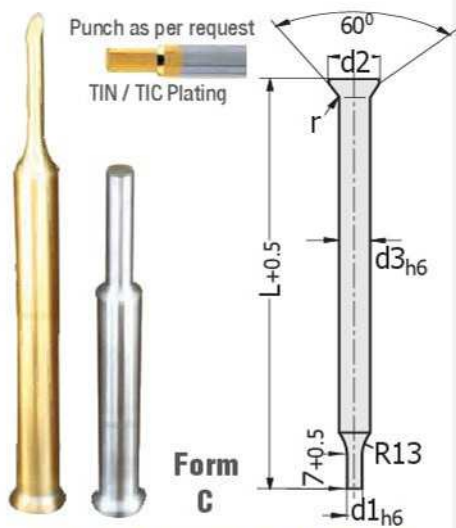
d1	L	d2	k
3.0	71	4.5	0.5
	80		
	100		
	125		
3.1	71	4.5	0.5
	80		
	100		
	125		
3.2	71	4.5	0.5
	80		
	100		
	125		
3.3	71	4.5	0.5
	80		
	100		
	125		
3.4	71	4.5	0.5
	80		
	100		
	125		
3.5	71	5.0	0.5
	80		
	100		
	125		
3.6	71	5.0	0.5
	80		
	100		
	125		
3.7	71	5.0	0.5
	80		
	100		
	125		
3.8	71	5.0	0.5
	80		
	100		
	125		
3.9	71	5.0	0.5
	80		
	100		
	125		
4.0	71	5.5	0.5
	80		
	100		
	125		

d1	L	d2	k
1.8	71	2.8	0.5
	80		
	100		
1.9	71	2.8	0.5
	80		
	100		
2.0	71	3.0	0.5
	80		
	100		
	125		
2.1	71	3.2	0.5
	80		
	100		
	125		
2.2	71	3.2	0.5
	80		
	100		
	125		
2.3	71	3.5	0.5
	80		
	100		
	125		
2.4	71	3.5	0.5
	80		
	100		
	125		
2.5	71	3.5	0.5
	80		
	100		
	125		
2.6	71	4.0	0.5
	80		
	100		
	125		
2.7	71	4.0	0.5
	80		
	100		
	125		
2.8	71	4.0	0.5
	80		
	100		
	125		
2.9	71	4.0	0.5
	80		
	100		
	125		

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
	80		
	100		
1.1	71	2.0	0.5
	80		
	100		
1.2	71	2.2	0.5
	80		
	100		
1.3	71	2.2	0.5
	80		
	100		
1.4	71	2.5	0.5
	80		
	100		
1.5	71	2.5	0.5
	80		
	100		
1.6	71	2.5	0.5
	80		
	100		
1.7	71	2.5	0.5
	80		
	100		

Order : HBZ.. d1 x L

Section Press Mould Page 151



## HSS HB. STEPPED-PUNCHES DIN 9861 Form C **HKZ..**

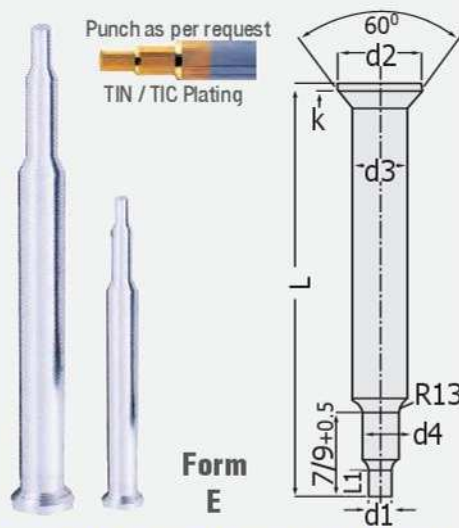
According to DIN 9861 Norm, there is limitation for casing and cutting diameter. In this norm, while casing diameter for countersunk stepped punch is 3 mm, cutting diameter can be maximum 2.95 mm. They have robustness and long term cutting power in stepped punches of press moulds.

### Countersunk Stepped-Punch

d1	L	d3	d2	r			
0.8	71	2 mm	3 mm	0.4			
	80						
1.0	71						
	80						
1.2	71						
	80						
1.5	71				2.5 mm	3 mm	0.4
	80						
1.6	71						
	80						
1.8	71						
	80						

1.0	71	3 mm	4.5 mm	0.6			
	80						
1.5	71						
	80						
1.8	71						
	80						
2.2	71				3 mm	4.5 mm	0.6
	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 preferred for thin work pieces and light works.

### Countersunk Double Stepped Punch

d1	d4	d3	d2	L	L1
1.0	1.4	∅ 3.0	4.5 mm	71	2 mm
1.2	1.6				
1.5	1.8				
1.7	2.1				
2.2	2.6				
2.5	2.8				

1.6	2.2	∅ 4.0	5.5 mm	71	2.5 mm
1.8	2.3				
2.3	2.8				
2.6	3.0				
3.0	3.5				
3.2	3.7				

2.4	3.0	∅ 5.0	6.5 mm	71	3 mm
2.8	3.5				
3.2	4.0				
3.6	4.2				
4.2	4.6				
4.5	4.8				

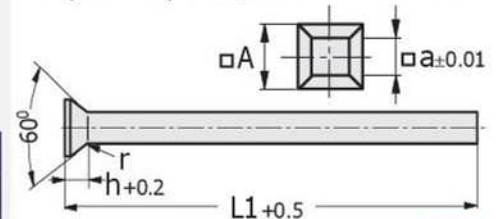
2.5	3.2	∅ 6.0	8 mm	71	3 mm
3.0	3.8				
3.5	4.2				
4.0	4.8				
4.5	5.3				
5.0	5.5				
5.5	5.8				

For your special requests, pls. specify technical drawing in table or your technical data details and also characteristics of punch to be used.

Order : Special Production As Per Request  
**H2K.** d1 x d4 x d3 x L x L1



## HSS FORMED PUNCHES As per request, SLOT-Form DA

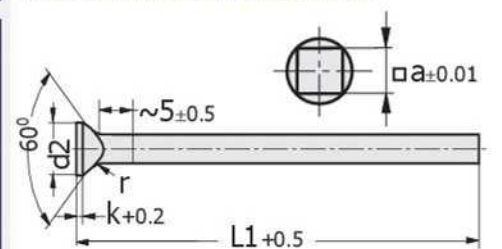


### Forged head - Square Form **HFK**

a	L1	□A	h	a	L1	□A	h
1.0	71	1.8	1.2	7.0	71	9.0	2.8
2.0		3.0	1.4	8.0		10.0	
3.0		4.5	1.8	9.0		11.0	
4.0		5.5	1.8	10.0		12.0	
5.0		6.5	1.8	11.0		13.0	
6.0		8.0	2.2	12.0		14.0	

Order : **HFK** a x L1

## HSS FORMED PUNCHES



### Square Type - Round Form **HFY**

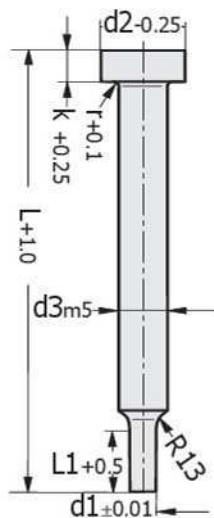
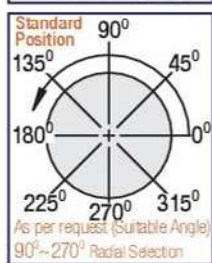
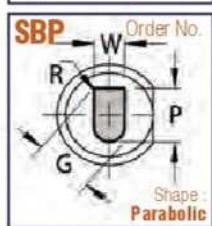
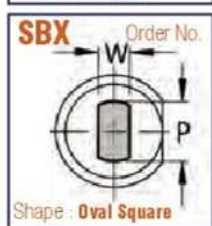
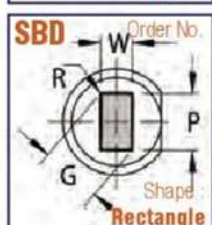
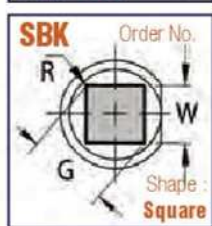
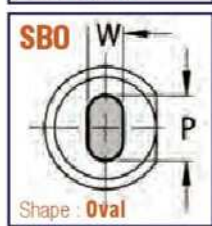
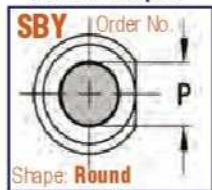
a	L1	d2	k	a	L1	d2	k
1.0	71	1.8	0.5	7.0	71	10.5	1.0
2.0		3.0		8.0		12.0	
3.0		4.5		9.0		13.5	
4.0		6.0		10.0		15.0	
5.0		7.5		11.0		16.5	
6.0		9.0		12.0		18.0	

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

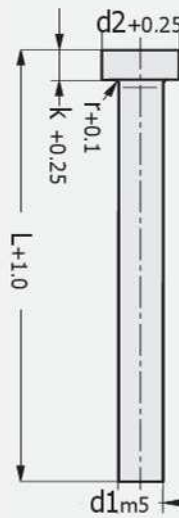


### DIN ISO 8020 B

Punch As Per Request

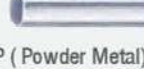
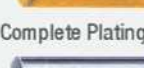
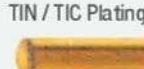


### Shapes



### DIN ISO 8020 A

Punch As Per Request



### 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   
 X P/W

### SBY - SBO - SBK - SBD - SBA - SBM - SBX - SBP

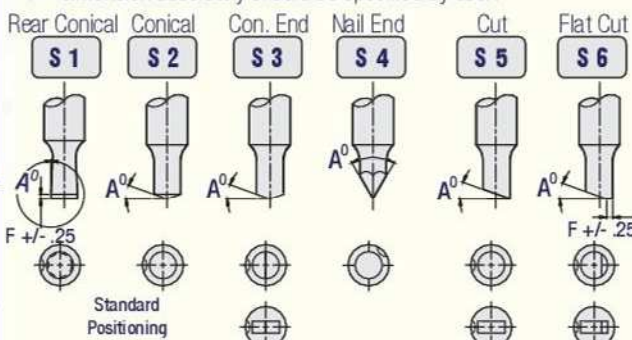
Order Ø d3	Head Ø d2	Ø d1 Shape		Standard L1	Alternative L1		L Len. mm
		SBY Round P	Other Shapes W G/P		Min.	Max.	
SB.04	6	1.6 ~ 3.99	1.6 - 4.0	8	10	-	50
SB.05	8	1.6 ~ 4.99	1.6 - 5.0	13	10	-	
SB.06	9	1.6 ~ 5.99	1.6 - 6.0	13	10	-	60
SB.08	11	2.5 ~ 7.99	2.5 - 8.0	19	13	-	
SB.10	13	3.2 ~ 9.99	3.2 - 10	19	13	25	71
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	80
SB.20	23	10 ~ 19.99	8.0 - 20	19	13	25	
SB.25	28	12 ~ 24.99	9.0 - 25	19	13	25	90
SB.32	35	16 ~ 31.99	10 - 32	25	19	30	
SB.40	43	30 ~ 39.99	14 - 40	25	19	30	100

Standard Tolerances   
 Round P+0.1   
 Shape P,W ± 0.1

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 incorrect 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.

### Continuous Stocks

### DIN ISO 8020 A Cylinder 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.

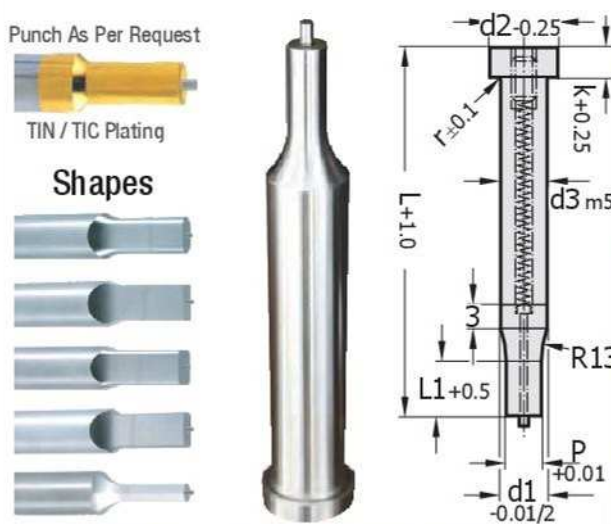
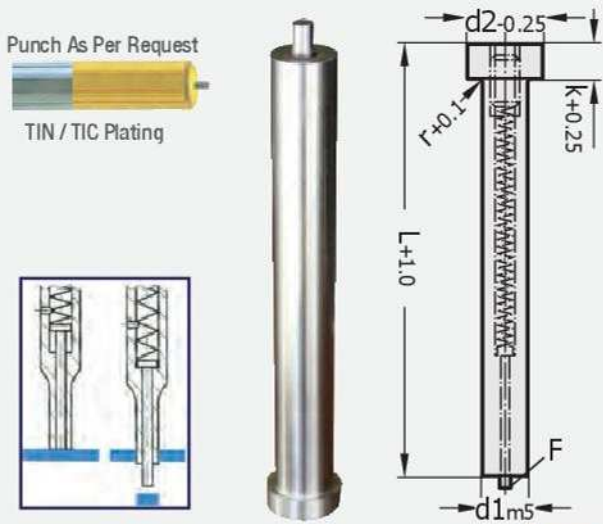
Also, TIN / TIC Plating completely or partially ( by providing resistance against heat and friction on external layer, it remedies problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin). For harder work pieces, ASP (Powder Metal) and for very hard and abrasive work pieces, sintered carbide punches are preferred.

d1	L	d2	k	r	d1	L	d2	k	r
10	71	13	5	0.40	2.0	71	5.0	3	0.20
	80								
	100								
	125								
13	71	16	5	0.40	3.0	71	5.0	3	0.20
	80								
	100								
	125								
16	71	19	5	0.40	4.0	71	6.0	3	0.20
	80								
	100								
	125								
20	80	23	5	0.40	5	71	8.0	5	0.25
	100								
	125								
	160								
25	80	28	5	0.40	6.0	71	9.0	5	0.25
	100								
	125								
	160								
32	80	35	5	0.40	8.0	71	11	5	0.25
	100								
	125								
	160								

Order: **SBZ.**   
 d1 x L

Section Press Mould





## 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 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 remedies 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.

## HSS EJECTOR PIN-AH TYPE (CYLINDRICAL HEAD) PUNCHES SFZ

d1	L	d2	F	k	r
5.0	71	8	2	5 mm	0.3
6.0		9	3		
8.0		11	4		
10		13	5		
13		16	5		
16		19	6		
20	Lenght Selection As Per Request	23	6	5 mm	0.4
25		28	6		
32		35	6		

Order: **SFZ** d1 x L Production As Per Request

## STEPPED EJECTOR PINS PUNCHES

At your stepped-punch orders, you can order with punch code - dimensions specified in adjacent punch shape tables and technical 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		Standard L1	Alternative L1		L Len. mm
		SFY Round P	Other Shapes W G/P		Min.	Max.	
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	-	
SF.08	11	3.2 ~ 7.99	3.2 - 8.0	19	13	19	
SF.10	13	4.5 ~ 9.99	4.5 - 10	19	13	25	80
SF.13	16	6.0 ~ 12.99	6.0 - 13	19	13	25	90
SF.16	19	8.0 ~ 15.99	7.5 - 16	19	13	25	100
SF.20	23	10 ~ 19.99	8.0 - 20	19	13	25	120
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  $\pm 0.1$  From P to d3  
 Shape P,W ± 0.1  $\pm 0.2$  From P to d3  
 Standard position of flat surface is 0°, as per request can be preferred from 90° to 270°.

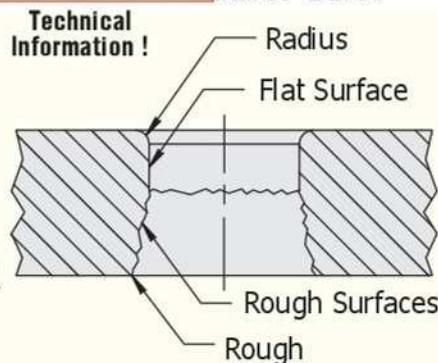
## DEFINITION OF CAVITY BETWEEN PUNCH AND MOULD

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 insufficient 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 significantly 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.

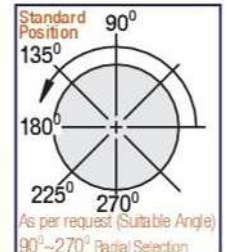
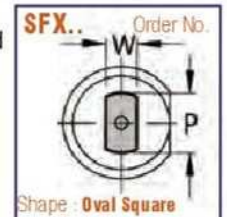
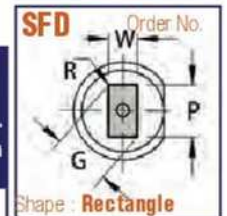
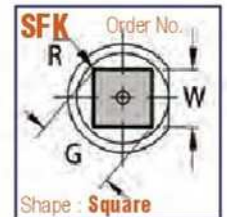
Punches used in press mould should be mounted in perpendicular position as 90° completely. All of guide plates and female mould hole axials should be

created completely grinded, with reamer and precision.



Material	Soft	Hard
Aluminium	% 10	% 12
Bronze /Copper	% 6	% 8
Low Carbon Steel	% 10	% 12
High Carbon Steel	% 18	% 20

## Formed Punch Shapes



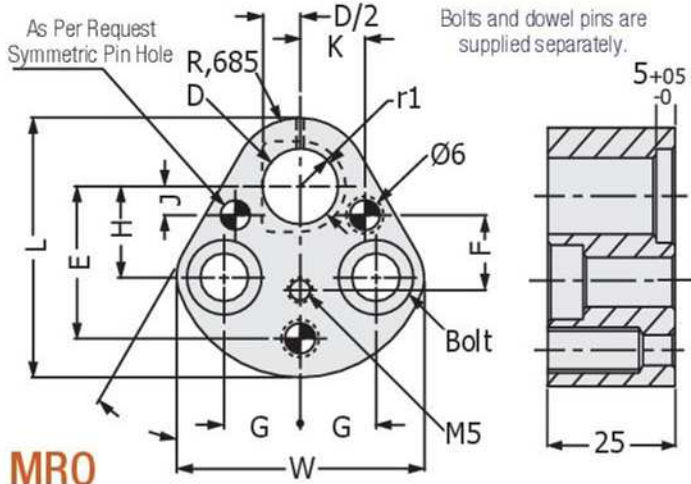
## MRO-MRN BOLSTER PLATES FOR PUNCH HOLDERS



Order	Code	t
<b>MRO/MRN.10</b>	018	1.80
<b>MRO/MRN.13</b>	030	3.00
<b>MRO/MRN.16</b>	031	3.18
<b>MRO/MRN.20</b>	047	4.75
<b>MRO/MRN.25</b>	060	6.00
<b>MRO/MRN.32</b>	063	6.35
Example Order: Retainer Code (MRO - MRN) MAX.018	100	10
	130	13

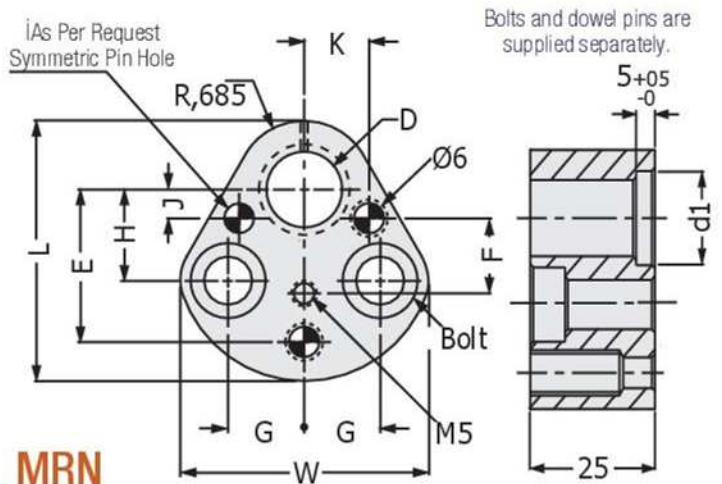


### TRIANGLE HOLDER for CAP SHAPED PUNCHES



**MRO**

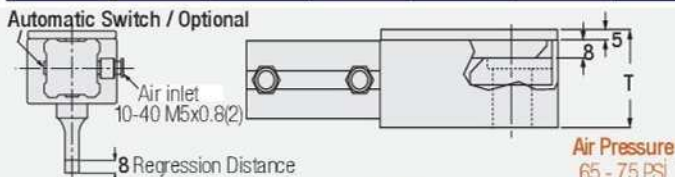
### TRIANGLE HOLDER for CAP ROUND PUNCHES



**MRN**

Holder for Cap Shaped Punches		Order No. <b>MRO</b>				
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

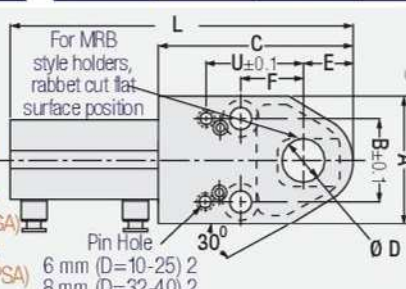
Holder for Cap Round Punches		Order No. <b>MRN</b>				
Dimension	MRN 10	MRN 13	MRN 16	MRN 20	MRN 25	MRN 32
Ø D	10	13	16	20	25	32
d1	14	17	20	24	29	36
Ø L	44.5	50.8	54	60.3	69.9	69.9
W	39.9	48.3	51.6	58.2	66.5	66.5
R	9.5	12.7	14.3	17.5	22.2	22.2
H	19.05	19.05	19.05	19.05	23.82	23.82
J ±0.1	7.5	6.5	6.0	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 Punches Order: **MRB x D**

Ø D	L	A	B	C	E	F	T	U	Bolt
<b>10</b>		46							M8
<b>13</b>	128	49	30	73	18	25		41	M10
<b>16</b>							45		
<b>20</b>	155	58	38	90	23	29		45	
<b>25</b>									M12
<b>32</b>	208	80	56	125	33	38	55	60	

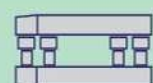
Air Pressure: 65 - 75 PSI  
Min. Pressure: 3.2 Kgf/cm<sup>2</sup> (45 PSA)  
Max. Pressure: 10.2 Kgf/cm<sup>2</sup> (145 PSA)



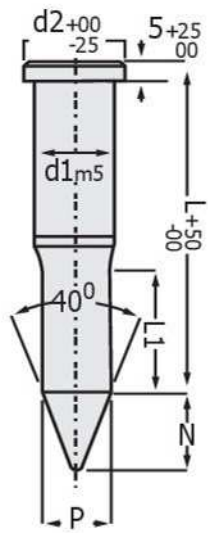
**PNEUMATIC PUNCH HOLDER**  
For Capped Round Punches  
For HSS SB. Punches **MRC**  
For Shaped Punches **MRB**

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.)

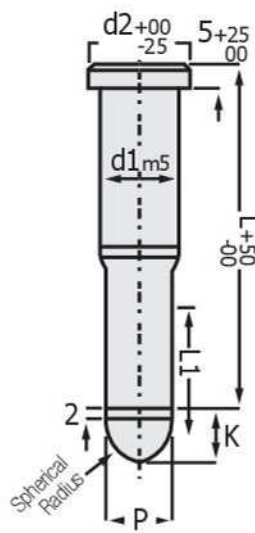
Section  
Press  
Mould



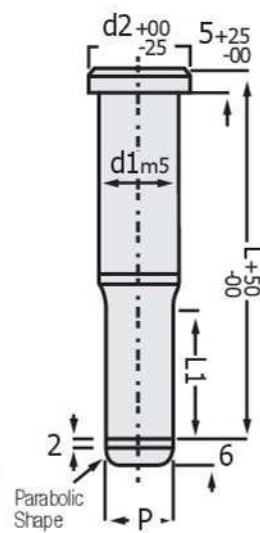
Page  
**155**



**SPK**



**SPX**



**SPP**

**CONICAL END, PILOT PINS**

**Conical End, Cylinder 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	$P_{-0.00}^{+0.01}$		,01	From P to d1
-------	---------------------	--	-----	--------------

**SPHERICAL END, PILOT PINS**

**Spherical End, Cylinder 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 tolerance is valid.

**PARABOLIC END, PILOT PINS**

**Parabolic End, Cylinder Head Guides**

**Standard Tolerances**

Round	$P_{-0.00}^{+0.01}$		,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**

**Parabolic and Spherical Shaped, Cylinder Head Pilot Pins**

**SPX / SPP**

Ø d1	Ø d2	Conical Ø P	N mm	Ref. P	L1 mm	L
10	13	4.85 ~ 10	8	5.6	Standard Alternative 19 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

Ø d1	Ø d2	Conical Ø P	Standart L1	Alternative L1 min. max	L
4	7	1.55 ~ 4	8	10 -	50
5	8	1.55 ~ 5	13	10 -	
6	9	1.55 ~ 6	13	10 -	
8	11	2.45 ~ 8	19	13 -	
10	13	3.15 ~ 10	19	13 25	
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	

Order : **SPK**  
As Per Request

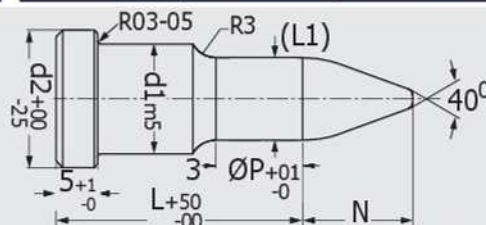
Material :  
HSS 1.3343  
HRC 60 -63



**SMK**  
Pointed End

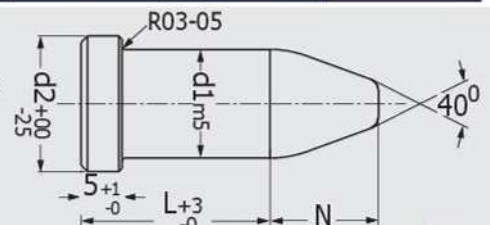


**SMX**  
Spherical End



**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	22
6	3.30 ~ 5.99	6	9.0	25
8	4.10 ~ 7.99	7	11.0	28
10	4.80 ~ 9.99	8	13.0	35
13	6.25 ~ 12.99	10	16.0	
16	9.85 ~ 15.99	15	19.0	
20	13.50 ~ 19.99	20	23.0	
25	17.20 ~ 24.99	25	28.0	
32	20.80 ~ 31.99	30	35.0	



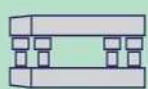
**Spherical Compact Pilot Pin SMX**

d1	N	d2	L
3.01 ~ 4.0	4	7	20
4.01 ~ 5.0	5	8	22
5.01 ~ 6.0	6	9	25
6.01 ~ 8.0	7	11	28
8.01 ~ 10	8	13	35
10.01 ~ 13	10	16	
13.01 ~ 16	15	19	
16.01 ~ 20	20	23	

**COMPACT PILOT PINS**

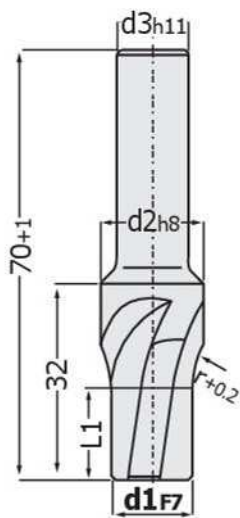
Pointed End & Spherical End  
Compat, Capped Pilot Pins

Page  
156



Section  
Press  
Mould



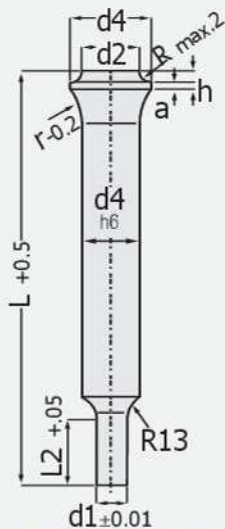


### CONICAL HEAD BURR

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			
4.5 ~ 4.9	6.4	6.4	10		
5.0 ~ 4.4	7.4	7.4			
5.5 ~ 5.9	8.5	8.5	12	12	
6.0	9.5	10			
6.5 ~ 7.0	10.5				
7.5 ~ 8.0	11.5				
8.5 ~ 9.0	13.5				
9.5 ~ 10	14.5				
10.5 ~ 11	15.5				
11.5 ~ 12	16.5				
12.5 ~ 13	17.5				
13.5 ~ 14	18.5				15
14.5 ~ 15	19.5				
15.5 ~ 16	20.5				
16.5 ~ 17	21.5				
17.5 ~ 18	22.5				
18.5 ~ 19	23.5				
19.5 ~ 20	25.5				



### CONICAL HEAD STEPPED

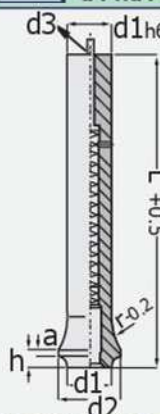
HSS Perforator  
"U" Shape ( Bottle Necked ) Shape D

**UKZ**

d1	L	d4	L2	d2	h
0.8 ~ 2.9	71	3	10	4.5	3
1.0 ~ 3.9		4		5.5	
1.2 ~ 4.9		5		7.0	
1.6 ~ 5.9	71	6	13	9.0	4
2.5 ~ 7.9		8		11	
4.0 ~ 9.9		10		14	
5.0 ~ 12.9	80	13	17	17	
8.0 ~ 15.9		16		20	
12 ~ 19.9		20		25	

Order : **UKZ**  
d1 x d4 x L

Material : HSS  
1.3343 - HRC 64



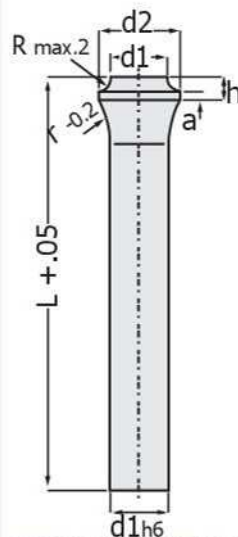
### EJECTOR, SPRINGY CONICAL HEAD

**UFZ**

d1	L	d2	d3	r	h	a
6.0	71	9.0	4	10	4	1.5
8.0		11	5	12		
10		14	5	15		
13	17	6				
16	20	6				
20	100	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	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	1	
3.0 ~ 3.4		4.5				
3.5 ~ 3.9		5.0	8	3	1	
4.0 ~ 4.4		5.5				
4.5 ~ 4.9		6.0				
5.0 ~ 5.4		7.0	10	5	3	1.5
5.5 ~ 5.9		8.0				
6.0 ~ 6.4	9.0					
6.5 ~ 7.0	80	10	12	4	1.5	
7.5 ~ 8.0		11				
8.5 ~ 9.0	100	13	15	4	1.5	
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

Order : **UFT**  
d1

Material : HSS  
1.3343 DIN 9861 D

Order : **UFZ**  
d1 x L

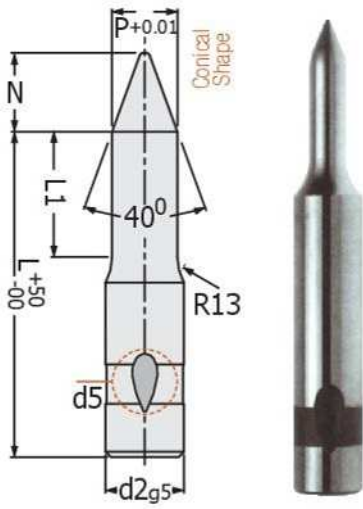
Material : HSS  
1.3343 - HRC 64

Production  
As Per  
Request

Section  
Press  
Mould



Page  
157

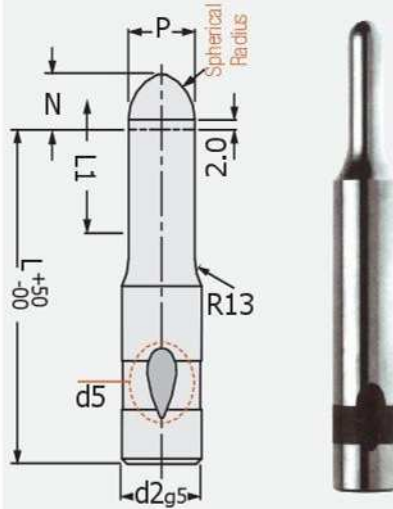


**Ball Lock - CONICAL, PILOT PIN**  
Light Duty, Ball-Lock, Conical End  
Guide Pins

**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

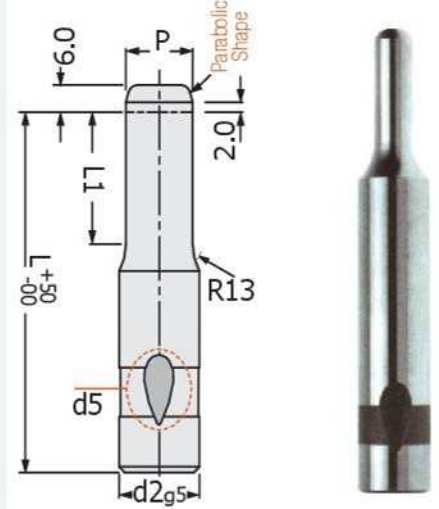


**Ball Lock - SPHERICAL, PILOT PIN**  
Light Duty, Ball-Lock, Spherical End  
Guide Pins

**BPX**

It is length of L pilot pin except end.  
2 mm 's length is guided to punch before punch contacting sheet.

	P	N
	≤ 10 mm	8 mm
10.1 mm	- 15 mm	12 mm
	> 15 mm	15 mm



**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



**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	140

**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	
13		9.9 ~ 12.9	19	10	
16		12.9 ~ 15.9	25	15	
20		15.9 ~ 19.9	25	15	
25		19.9 ~ 24.9	25	20	
32		24.9 ~ 31.9	25	25	

**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	
13		5.0 ~ 13	19	10	
16		8.0 ~ 16	19	15	
20		12 ~ 20	19	20	
25		16 ~ 15	19	25	

Note : P / L As Per Request

Order: **BPK**  
d2 x P x L

Material: **HSS 1.3343**  
HRC 60 -62 ±2

Note : Other lengths are produced as per order.

Order: **BPX**  
d2 x P x L

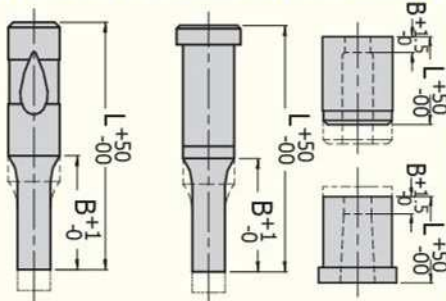
Material: **HSS 1.3343**  
HRC 60 -62 ±2

Note : Other lengths are produced as per order.

Order: **BPP**  
d2 x P x L

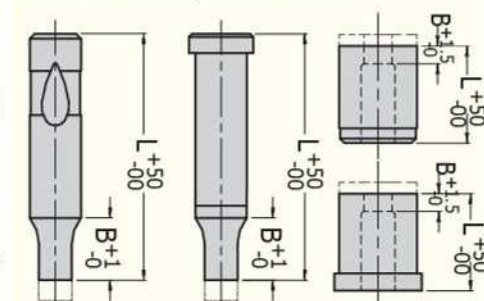
Material: **HSS 1.3343**  
HRC 60 -62 ±2

**ALTERNATIVE OPTION INFORMATION : Intervals out of punch center.**

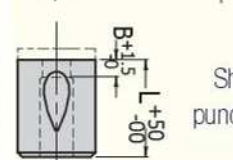


Even that total length of punch and punch bush are shortened, Shortening total length is fixed "B" L1 dimension. This situation is not valid for rabbit, overall flat, perforated or ball lock punch bushes.

B : Main Dimension

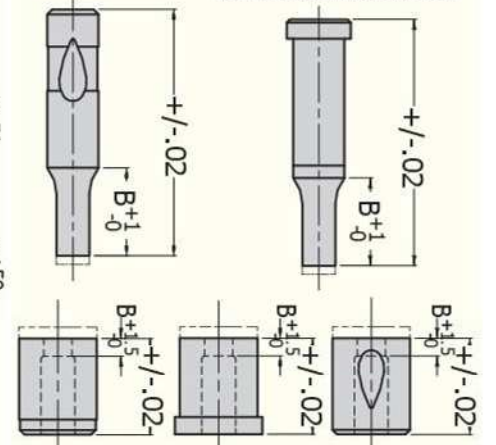


Shortening of punch or punch bush decreases "B" dimension or cutting length.



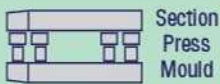
B : Shortened Dimension

**Technical Information!**



It provides ±0.2 sensitivity at normal length.

Note: It is removed Max 5 Chips.

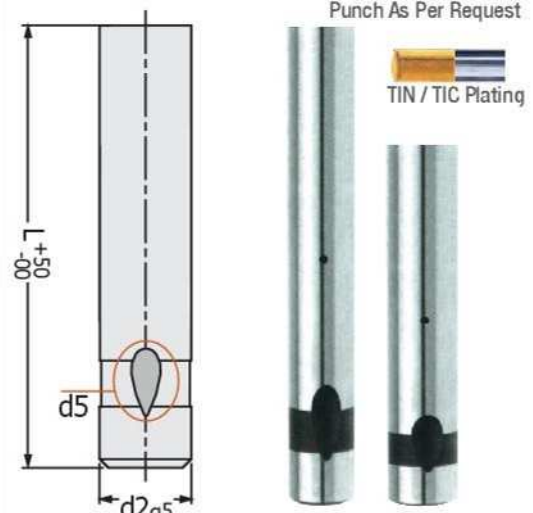
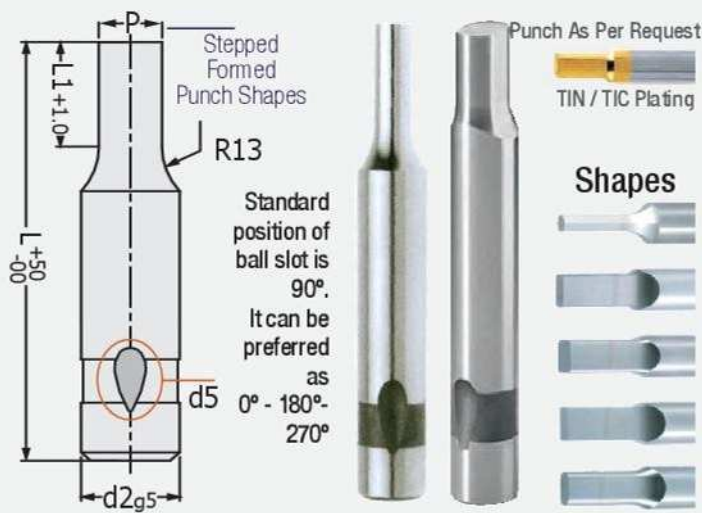
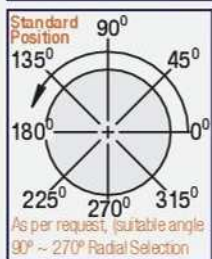
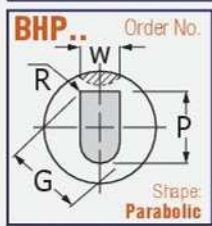
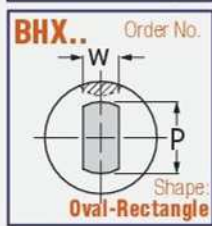
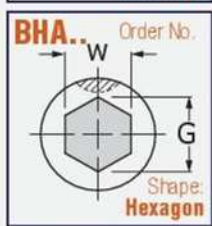
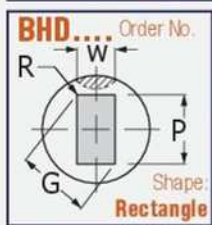
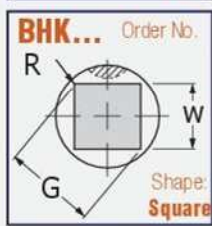


X1

X2

X3

**Formed Punch Shapes**



**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 )



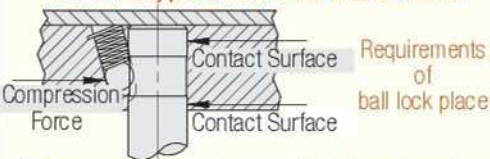
For tolerances, refer Page 160. Other lengths are produced as per order.

**BHY - BHO - BHK - BHD - BHA - BHM - BHX - BHP Stepped Ball Lock Punches According to Their Shapes**

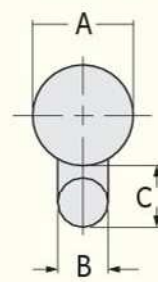
Order Ø d2	Ball Slot d5	Ø d1 Şekil		Standard L1	Alternative L1		L Length mm
		BHY Round P	Other Shapes W G/P		Min.	Max.	
BH.06	6	2.5 ~ 5.9	2.2 - 5.9	13	10	-	63
BH.10	8 mm	2.5 ~ 9.9	2.5 - 9.9	19	10	19	
BH.13		5.0 ~ 12.9	4.5 - 12.9	19	13	25	71
BH.16		8.0 ~ 15.9	6.0 - 15.9	19	13	25	80
BH.20		12 ~ 19.9	8.0 - 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.**



**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		
38		
40		

**BALL LOCK PUNCHES**

For Light Loads, LIGHT DUTY Ball - Lock Punches

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 remedies 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**

d2	d5	L
Ø 20 mm	8 mm	63
		71
		80
		100
		125
Ø 25 mm	8 mm	150
		175
		200

d2	d5	L
Ø 10 mm	8 mm	63
		71
		80
		100
		110
Ø 13 mm	8 mm	120
		150
		175
		200

d2	d5	L
Ø 20 mm	8 mm	63
		71
		80
		100
		125
Ø 25 mm	8 mm	150
		175
		200

d2	d5	L
Ø 32 mm	8 mm	63
		71
		80
		100
		125
Ø 38 mm	8 mm	150
		175
		200

d2	d5	L
Ø 6 mm	6 mm	63
		71
		80
		100
		125

d2	d5	L
Ø 10 mm	8 mm	63
		71
		80
		100
		110
Ø 13 mm	8 mm	120
		150
		175

d2	d5	L
Ø 16 mm	8 mm	63
		71
		80
		100
		125
Ø 20 mm	8 mm	150
		175
		200

d2	d5	L
Ø 25 mm	8 mm	63
		71
		80
		100
		125
Ø 32 mm	8 mm	150
		175
		200

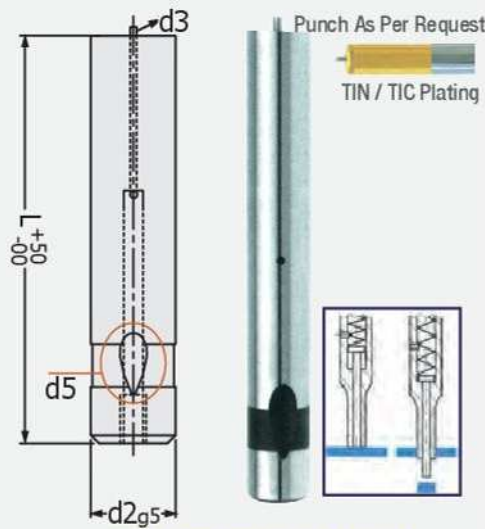
Note: Other lengths are produced as per order.

Order : **BHZ** d2 x L

Material : HSS 1.3343 HRC 60 -62



Section Press Mould Page 159



### 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 remedies 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**

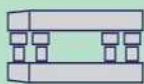
d2	d5	d3	L
Ø 6 mm	6 mm	Ø 3	63
			71
			80
			90
			100
Ø 10 mm	8 mm	Ø 3	63
			71
			80
			90
			100
Ø 13 mm	8 mm	Ø 5	63
			71
			80
			90
			100
Ø 16 mm	8 mm	Ø 5	63
			71
			80
			90
			100
Ø 20 mm	8 mm	Ø 6	63
			71
			80
			90
			100
Ø 25 mm	8 mm	Ø 6	63
			71
			80
			90
			100
Ø 32 mm	8 mm	Ø 6	71
			80
			90
			90
			100
Ø 38 mm	8 mm	Ø 6	80
			90
			90
			90
			100

Note: Other lengths are produced as per order.

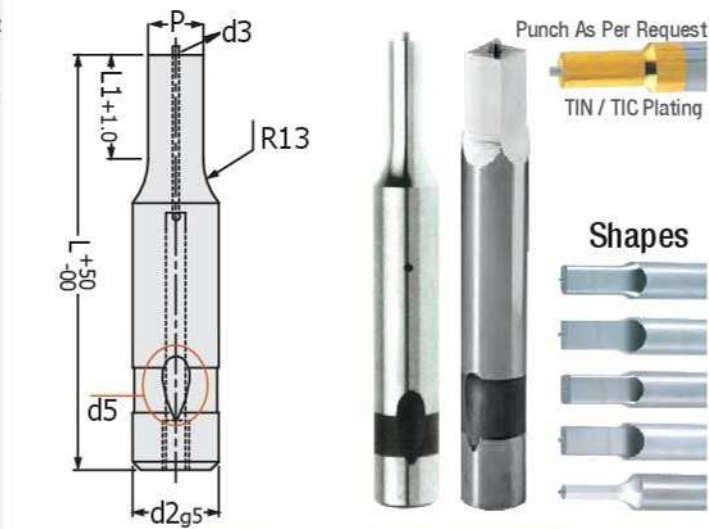
Order: **BFZ**  
d2 x L

Material:  
HSS 1.3343  
HRC 60-62

Page 160



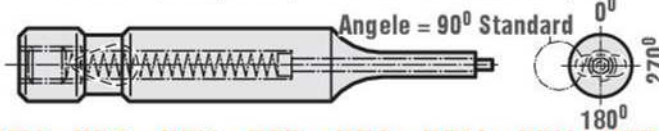
Section Press Mould



### 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	Ball Slot Ø d2	Pin Ø d3	Ø d1 Shape		Standard L1	Alternative L1		L Len. mm
			BFY Round P	Other Shapes W G/P		Min.	Max.	
BF.06	6	3	2.5 ~5.9	2.2 -5.9	13	10	-	63
BF.10	8 mm	4	2.5 ~9.9	2.5 -9.9	19	10	19	
BF.13		5	5.0 ~12.9	4.5 -12.9	19	13	25	
BF.16		5	8.0 ~15.9	6.0 -15.9	19	13	25	
BF.20		6	12 ~19.9	8.0 -19.9	19	13	25	
BF.25		6	16 ~24.9	10 -24.9	19	13	25	
BF.32	6	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

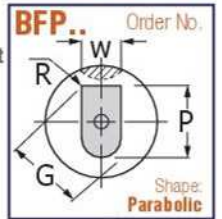
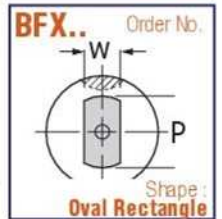
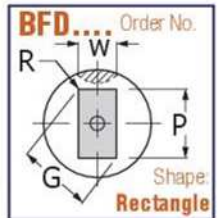
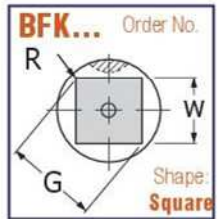
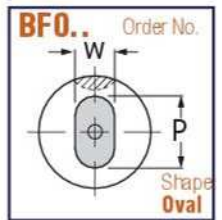
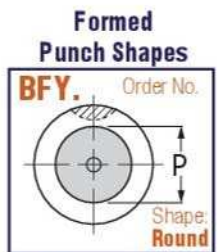
In case that P is equal d2, P= d2 casing tolerance is valid. It can be used in places where L1 = 10 P or W < 2. 20 mm.

**XP** Punch Dimension Intervals (Alternatives)  
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, -0.0	⊙ 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°. It can be preferred as 0° - 180° - 270°.

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**

**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.

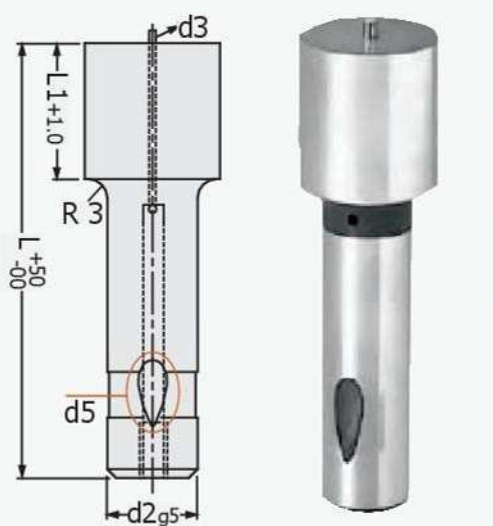
Shape: **Oval Square**

**BGP..** Order No.

Shape: **Parabolic**

Standard Position 90° 135° 45° 180° 225° 270° 315°

As per request (Suitable Angle) 90°-270° Radial Selection



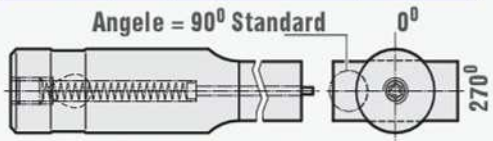
**WIDE END, EJECTOR / SPRINGY PUNCHES**  
 Light Duty, Cutting Edge, Wider Than Casing, Ball - Lock, Ejector / Springy Punch  
 Angle = 90° Standard



Casing and External Dia. are precision grinded  
 Order: **BGY**  
 $d2 \times P \times L1 \times L$   
 Material: HSS 1.3343 HRC 60-62

**Ejector / Springy, Punches, Round End, Wider Than Casing BGY**

Order	Ball $\varnothing d2$	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	



Light Duty Ejector / Springy, Punches 180° Ball-Lock, Wider Than Casing, Shaped  
**BGO - BGK - BGD - BGA - BGM - BGX - BGP**

Order	Ball $\varnothing d2$	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 lengths 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.

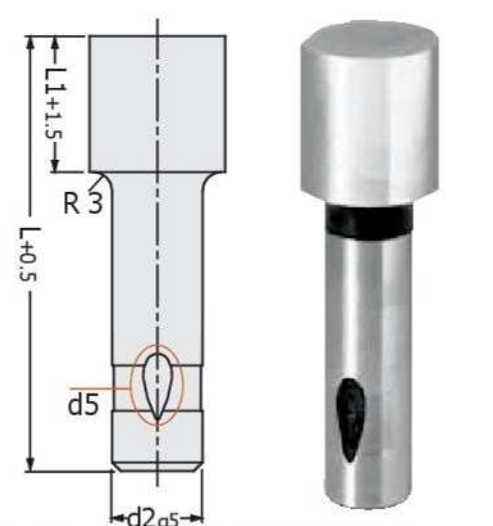
Shape: **Oval Square**

**BKP..** Order No.

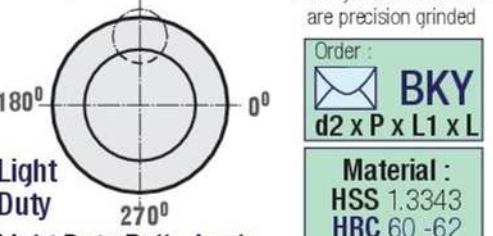
Shape: **Parabolic**

Standard Position 90° 135° 45° 180° 225° 270° 315°

As per request (Suitable Angle) 90°-270° Radial Selection



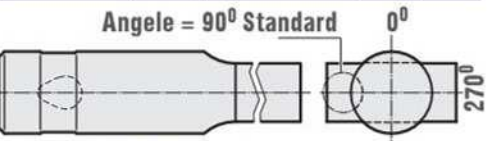
**Ball Lock, WIDE END PUNCHES**  
 Light Duty, Cutting Edge, Wider Than Casin, Ball - Lock Punches  
 Angle = 90° Standard



Casing and External Dia. are precision grinded  
 Order: **BKY**  
 $d2 \times P \times L1 \times L$   
 Material: HSS 1.3343 HRC 60-62

**Light Duty Ball - Lock Round End, Wider Than Casing BKY**

Order	Ball $\varnothing d2$	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	

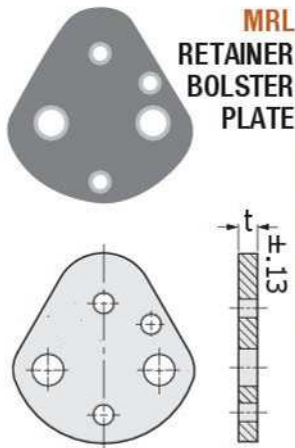


Light Duty Ball - Lock 180° Wider Form Than Casing, Shaped Punches  
**BKO - BKK - BKD - BKA - BKM - BKX - BKP**

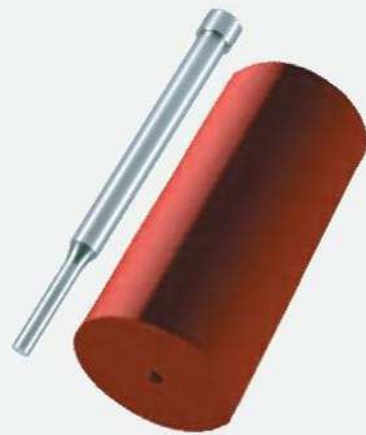
Order	Ball $\varnothing d2$	Shaped W-GP Min. Max.	L1 Min. Max.	L
BK.10	8 mm	3.0 ~ 25	16	80 90 100
BK.13		5.0 ~ 32	20	
BK.16		6.5 ~ 38	25	
BK.20		8.0 ~ 40	25	
BK.25		10 ~ 44	25	
BK.32		11.5 ~ 50	32	
BK.40		14 ~ 63	32	

Section Press Mould Page 161

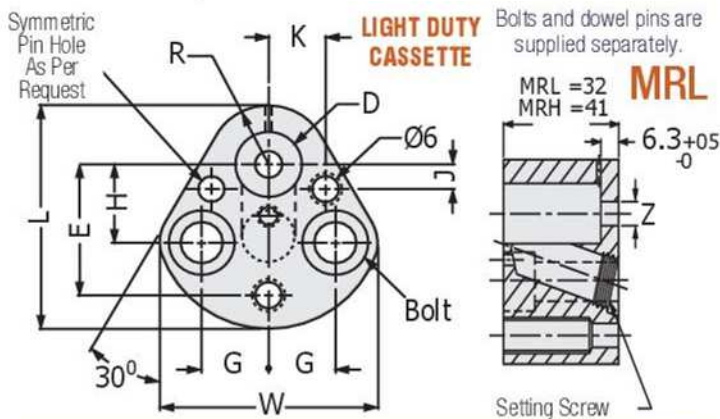
## BOLSTER PLATE FOR BALL LOCK RETAINERS



Order	Code	t
<b>MRL.10.MAX</b>	018	1.80
<b>MRL.13.MAX</b>	030	3.00
<b>MRL.16.MAX</b>	031	3.18
<b>MRL.20.MAX</b>	047	4.75
<b>MRL.25.MAX</b>	060	6.00
<b>MRL.32.MAX</b>	063	6.35
<b>MRL.40.MAX</b>	063	6.35
Order Example: Retainer Code ( MRL )		
MAX.018	100	10
	130	13



## FOR LIGHT DUTY, BALL-LOCK TRIANGLE RETAINER

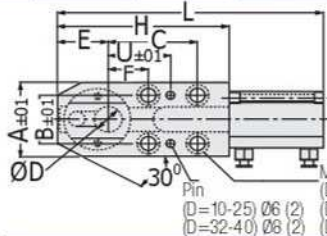


For Light Duty, Ball Lock Triangle Retainers		Order No. <b>MRL</b>				
Dimensions	MRL 06	MRL 10	MRL 13	MRL 16	MRL 20	MRL 25
<b>Ø D</b>	06	10	13	16	20	25
<b>E ±0.1</b>	23.000	26.924	29.972	31.750	33.528	40.640
<b>G</b>	11.10	11.12	14.27	15.87	17.47	19.84
<b>Ø L</b>	41.3	44.5	50.8	54.0	60.3	69.9
<b>W</b>	37.8	39.9	48.3	51.6	58.2	66.5
<b>R</b>	8.0	9.5	12.7	14.3	17.5	22.2
<b>H</b>	19.00	19.05	19.05	19.05	19.05	23.82
<b>J ±0.1</b>	8.00	9.00	12.00	13.50	16.50	22.00
<b>K ±0.1</b>	8.00	9.00	12.00	13.50	16.50	22.00
<b>Z</b>	3	6	6	6	6	6
<b>Bolt</b>	M6	M8	M8	M8	M10	M12



## BALL LOCK TWO POSITION PNEUMATIC PUNCH RETAINERS

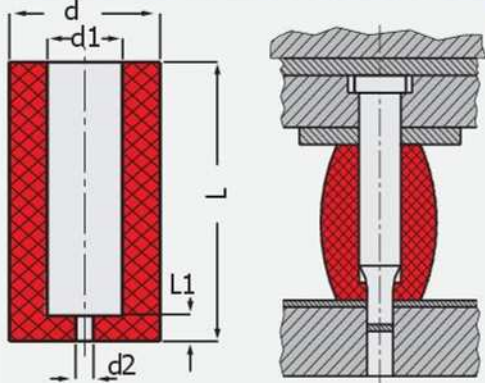
Thanks to its powerful block structure, there is no need for extra security.



D	L	A	B	C		E		F		H	U		Bolt
				Poz. A	Poz. B	Poz. A	Poz. B	Poz. A	Poz. B		Poz. A	Poz. B	
<b>MRA10</b>	161	46	30	-	-	28	16	21	33	93.5	37	49	M8
<b>MRA13</b>	172.5	50	30	-	-	28	16	25	37	100	41	53	M10
<b>MRA16</b>	177	50	30	-	-	31	19	25	37	104.5	41	53	M10
<b>MRA20</b>	191.5	58	38	-	-	32.5	20.5	29	41	113.5	45	57	M10
<b>MRA25</b>	206.5	58	38	-	-	35	23	29	41	123.5	45	57	M10
<b>MRA32</b>	260	80	56	100	112	38	26	38	50	152	60	72	M12
<b>MRA40</b>	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 Automotive Standards. B Position is provided that punch is 12 mm closer to cutting edge.

## POLYURETHANE PUNCH SCRAPERS **PYB**



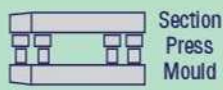
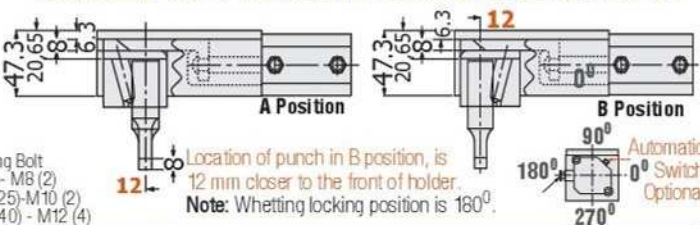
**Continuous Stock Product**  
In mould that polyurethane scraper is used, there is no need for dismantling scraper plate to make repair, whetting and modification on mould components, there is not any slightest effect on precision parts, it is excellent for all painted / anodized, plastic plated and 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.

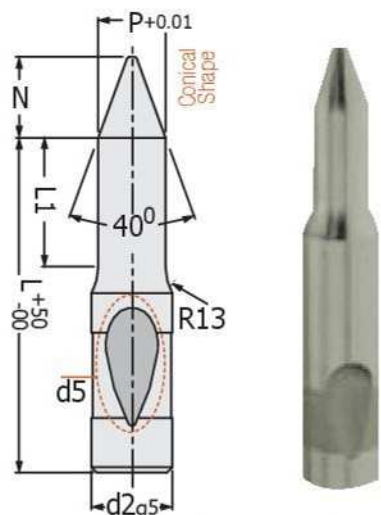
### Polyurethane Springy, Scraper /Ejector Bushes

Order	d1 Ø	d Ø	d2 Ø	L mm	L1 mm	Punch Length
<b>PYB.445</b>	4.0	17	1.6	5.0	55	45 / 56 / 63
<b>PYB.655</b>	6.0	19				63 / 71 / 80 / 90
<b>PYB.855</b>	8.0	21	3.0	5.0	55	100
<b>PYB.1055</b>	10	23				
<b>PYB.1355</b>	13	26				
<b>PYB.1655</b>	16	30				
<b>PYB.2071</b>	20	38				
<b>PYB.2550</b>	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



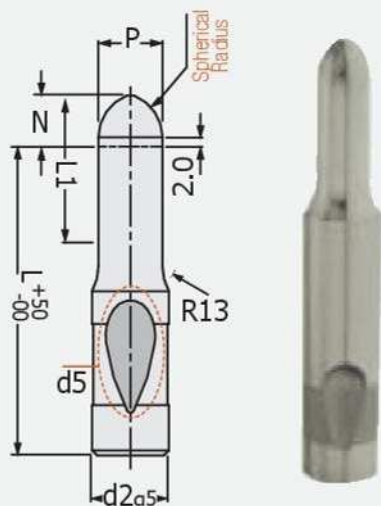


**Ball Lock - CONICAL, PILOT PIN**  
**HEAVY DUTY, Ball - Lock, Conical**  
**Guide Pins** **BAPK**

If P dimension is lower than reference P dimension specified in Table,  $N = 1.2P$  is minimum. In case that P is equal to d1,  $P = d1$  casing tolerance is valid.

Standard Tolerances

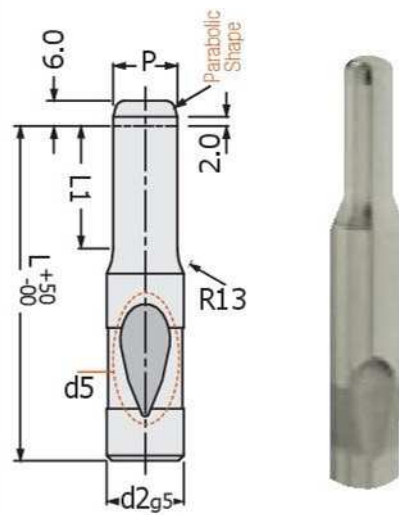
Round  $P_{-0.01}^{+0.01}$  **,01** From P to d2



**Ball Lock - SPHERICAL, PILOT PIN**  
**HEAVY DUTY, Ball - Spherical, Conical**  
**Guide Pins** **BAPX**

It is length of L pilot pin except the end. 2 mm length is guided to punch before punch contacting sheet.

	P		N	
	< 10 mm	- 15 mm	8 mm	12 mm
10.1 mm	> 15 mm	> 15 mm	15 mm	15 mm



**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,  $N = 1.2P$  is minimum. In case that P is equal to d1,  $P = d1$  casing tolerance is valid.

Standard Tolerances

Round  $P_{-0.01}^{+0.01}$  **,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	80 100 125
13	12 mm	9.9 ~ 12.9	19	10	80 100 125 140 150
16		12.9 ~ 15.9	25	15	
20		15.9 ~ 19.9	25	20	
25		19.9 ~ 24.9	25	25	
32		24.9 ~ 31.9	25	30	
40		31.9 ~ 39.9	30	40	

**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	71 80 100 125
16		8 ~ 16	19	10	
20		12 ~ 20	19	10	
25		16 ~ 25	19	10	
32		24 ~ 32	19	10	
40		30 ~ 40	25	10	

**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	71 80 100 125
16		8 ~ 16	19	
20		12 ~ 20	19	
25		16 ~ 25	19	
32		24 ~ 32	19	
40		30 ~ 40	25	

Note : P / L Selection as per request

Note: Other lengths are produced as per order.

Note: Other lengths are produced as per order.

Order : **BAPK**  
**d2 x P x L**

Material :  
**HSS 1.3343**  
**HRC 60 -62 ±2**

Order : **BAPX**  
**d2 x P x L**

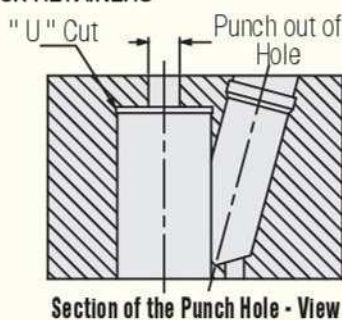
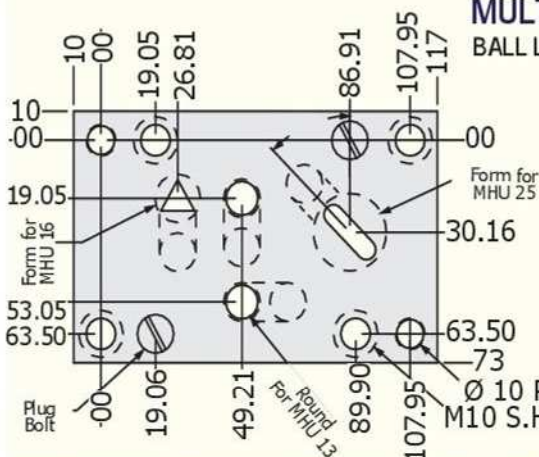
Material :  
**HSS 1.3343**  
**HRC 60 -62 ±2**

Order : **BAPP**  
**d2 x P x L**

Material :  
**HSS 1.3343**  
**HRC 60 -62 ±2**

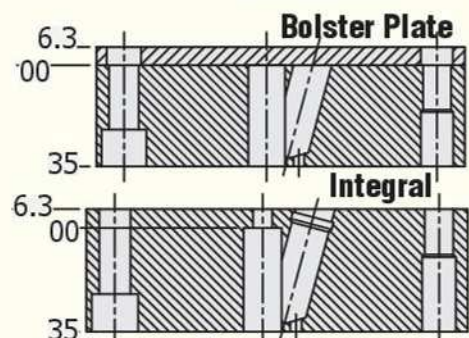
**MULTI HOLE, BALL LOCK SPECIAL RETAINERS**

**BALL LOCK RETAINERS**



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

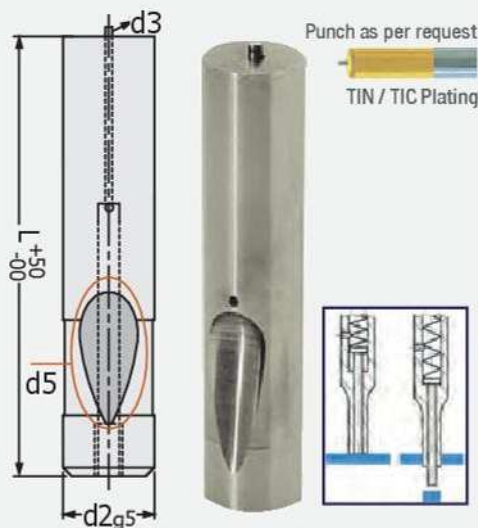
Hardened bolster plates of multi hole ball lock holders are shown in two different examples as traditional and integral holder in technical drawings, the point that should be considered is measuring of retainer starting from the left upper corner and that zero starting point is positioned correctly on 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	R adial Tol.
R.....	+5 <sup>0</sup>
F.....	+0 <sup>5</sup>

Section Press Mould





### 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 remedies 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

d2	d5	d3	L
Ø 13 mm	12 mm	Ø 5	71
			80
			90
			100
Ø 16 mm	12 mm	Ø 5	71
			80
			90
			100

d2	d5	d3	L
Ø 20 mm	12 mm	Ø 6	71
			80
			90
			100
Ø 25 mm	12 mm	Ø 6	80
			90
			100
			110

d2	d5	d3	L
Ø 32 mm	12 mm	Ø 6	80
			90
			100
			110
Ø 40 mm	12 mm	Ø 6	80
			90
			100
			110

d2	d5	d3	L
Ø 25 mm	12 mm	Ø 6	80
			90
			100
			110
Ø 32 mm	12 mm	Ø 6	80
			90
			100
			110

d2	d5	d3	L
Ø 40 mm	12 mm	Ø 6	80
			90
			100
			110

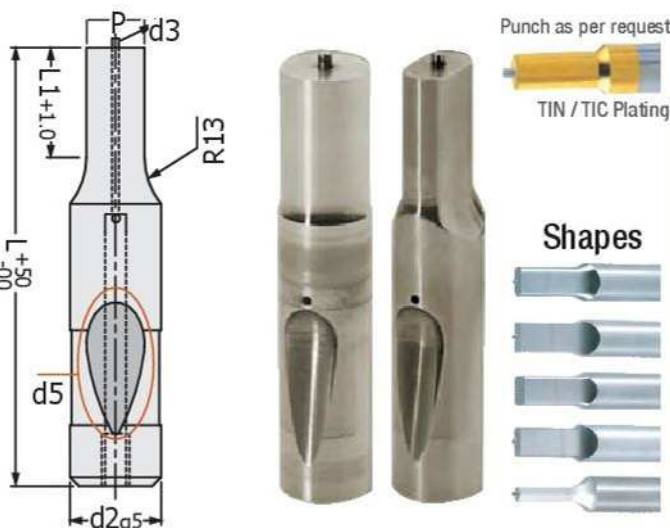
d2	d5	d3	L
Ø 25 mm	12 mm	Ø 6	80
			90
			100
			110
Ø 32 mm	12 mm	Ø 6	80
			90
			100
			110

Casing and external diameters are precision grinded and hardened.

Note: Other lengths are produced as per order.

Order: **BAFZ**  
d2 x L

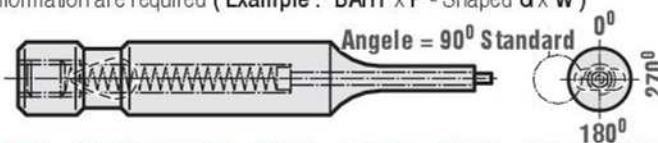
Material: **HSS 1.3343**  
**HRC 60-62**



### 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 - BAFO - BAFA - BAFM - BAFX - BAFF**  
Stepped-Ejector Pins/ Springy Punches According to Their Shapes

Order	Ball Slot Ø d2	Pin Ø d3	Ø d1 Shape		Standard L1	Alternative L1		L Len. mm
			BAFY Round P	Other Shapes W G/P		Min.	Max.	
BAF.10	10	4	2.5 ~ 9.98	2.5 - 10	19	10	19	71 80 90 100 110 125
BAF.13	12	5	5.0 ~ 12.98	4.5 - 13	19	13	25	
BAF.16		5	8.0 ~ 15.98	6.0 - 16	19	13	25	
BAF.20	6	12 ~ 19.98	8.0 - 20	19	13	25		
BAF.25	6	16 ~ 24.98	10 - 25	19	13	25		
BAF.32	6	24 ~ 31.98	12 - 32	19	13	25		
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

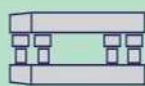
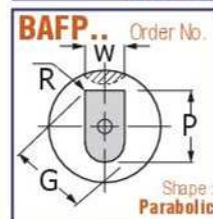
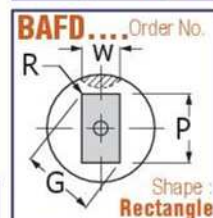
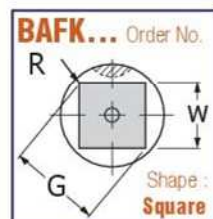
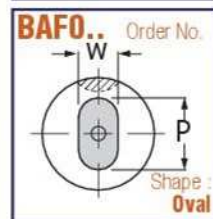
**XP** Punch Measurement Intervals (Alternatives)  
"P" or "W" should be according to standards specified in catalogue. The values in catalogue are valid for cutting length and total length. They are valid for increased "L1" length and decreased total length "L".

Standard Tolerances	
Round P +0.1, -0.0	⊙ 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°. It can be preferred as 0° - 180° - 270°.

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.

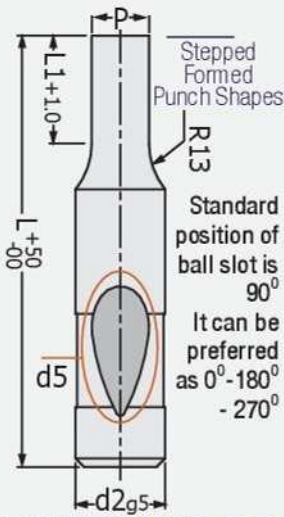
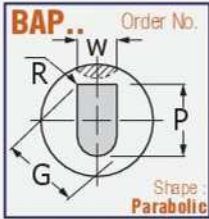
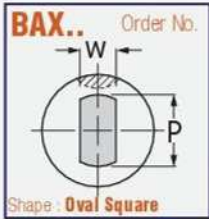
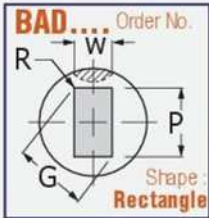
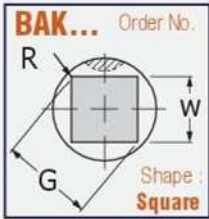
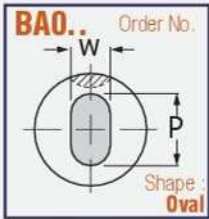
### Formed Punch Shapes



Section Press Mould



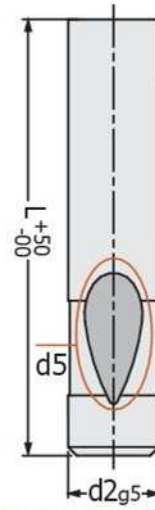
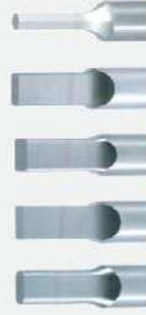
**Formed Punch Shapes**



Punch As Per Request



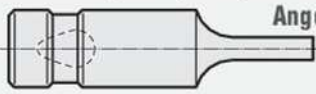
**Shapes**



**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 )



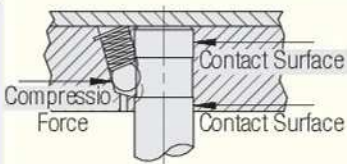
For tolerance, refer Page 164. Other lengths are produced as per order.

**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		Standard L1	Alternative L1		L Len. mm
		BAY Round P	Other Shapes W G/P		Min.	Max.	
BA.10	10	2.5 ~ 9.98	2.5 - 10	19	10	19	71
BA.13	12 mm	5 ~ 12.98	4.5 - 13	19	13	25	
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
							125

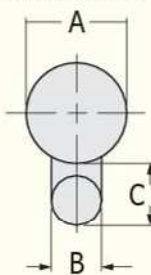
In case that P is equal d2, P= d2 casing tolerance is valid. It can be used in places where L1 = 10 P' or W < 2. 20 mm

**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	8	11
10		
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, HEAVY DUTY, Ball-Lock Punches

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 remedies 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**

d2	d5	L	d2	d5	L
Ø 10 mm	10 mm	71	Ø 25 mm	12 mm	80
		80			90
		100			100
		125			110
		150			125
Ø 13 mm	12 mm	71	Ø 32 mm	12 mm	80
		80			90
		90			100
		100			110
		125			125
Ø 16 mm	12 mm	71	Ø 40 mm	12 mm	80
		80			90
		90			100
		100			110
		125			125
Ø 20 mm	12 mm	71	Ø 40 mm	12 mm	80
		80			90
		90			100
		100			110
		110			125
Ø 20 mm	12 mm	125	Ø 40 mm	12 mm	150
		150			170
		165			190
		170			

Note: Other lengths are produced as per order.

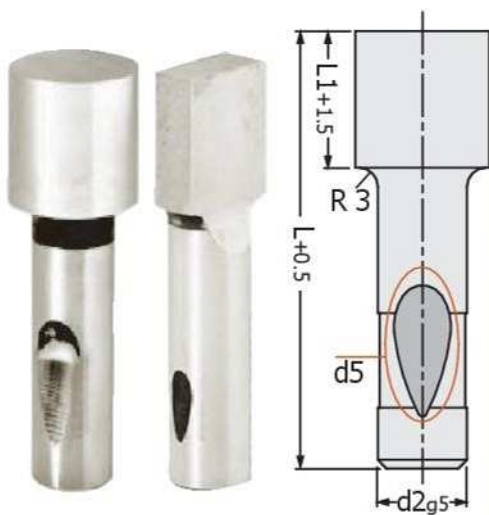
Material :  
HSS 1.3343  
HRC 60 -62

Order : **BAZ**  
d2 x L

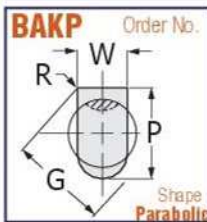


Section Press Mould





**Formed Punch Shapes**



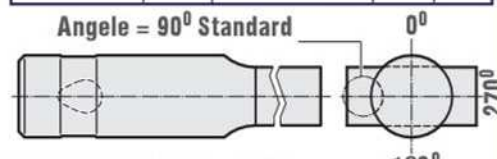
**Ball Lock, WIDE END PUNCH**  
**HEAVY DUTY, Cutting Edge Wider Than Casing Ball - Lock Punches**  
 Angle = 90° Standard  
 Casing and External Dia. are precision grinded



Order: **BAKY**  
 d2 x P x L1 x L  
 Material: HSS 1.3343  
 HRC 60-62

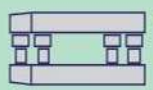
**HEAVY DUTY HEAVY DUTY Ball - Lock Round End, Wider Than Casing**

Order Ø d2	Ball d5	Round P		L1 Min. Max.	L
		Min.	Max.		
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		

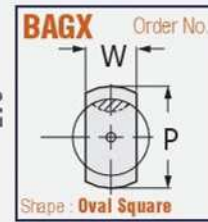
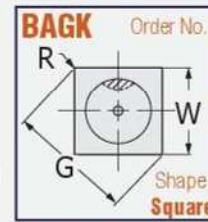


**HEAVY DUTY Ball - Lock**  
**Wider Formed Than Casing Shaped Punches**  
 BAKO - BAKK - BAKD - BAKA - BAKM - BAKX - BAKP

Order Ø d2	Ball d5	Shaped W-GP		L1 Min. Max.	L
		Min.	Max.		
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**



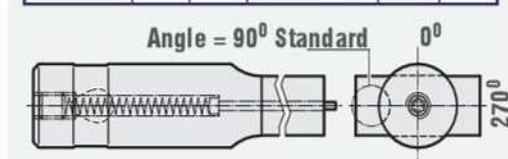
**WIDE END, EJECTOR / SPRINGY PUNCH**  
**HEAVY DUTY Cutting Edge Wider Than Casing Ball - Lock, Ejector / Springy Punch**  
 Angle = 90° Standard  
 Casing and External Dia are precision grinded



Order: **BAGY**  
 d2 x P x L1 x L  
 Material: HSS 1.3343  
 HRC 60-62

**HEAVY DUTY HEAVY DUTY Ejector / Springy, Punches Round End, Wider Than Casing**

Order Ø d2	Ball d5	Pin d3	Round P		L1 Min. Max.	L
			Min.	Max.		
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		



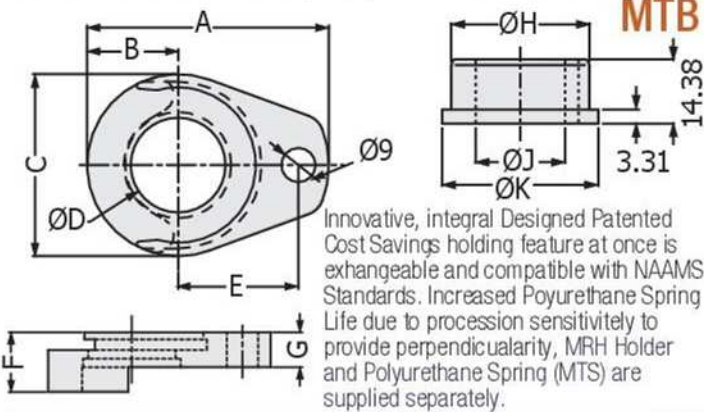
**HEAVY DUTY, Ejector / Springy, Punches**  
**Ball Lock wider Than Casing, Shaped**  
 BAGO - BAGK - BAGD - BAGA - BAGM - BAGX - BAGP

Order Ø d2	Ball d5	Pin d3	Shaped W-GP		L1 Min. Max.	L
			Min.	Max.		
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		

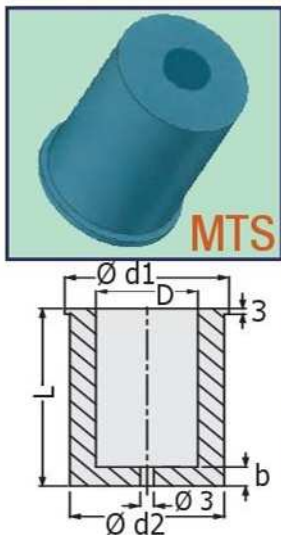
Other Lengths are produced as per order.



**SCRAPER RETAINERS FOR PUNCHES WIDER THAN CASING**  
It is used with MRH Heavy Duty Ball Lock Retainers.



Retainer For Wide End Punch Scrapers							Order No. <b>MTB</b>
Punch Ø	MTB 10	MTB 13	MTB 16	MTB 20	MTB 25	MTB 32	
Casing P/G	15.75	19.75	24.75	31.75	39.75	39.75	
<b>A</b>	53.18	58.60	63.75	73.86	83.63	83.63	
<b>B</b>	18	20.5	24	31	36	36	
<b>C</b>	36	41	48	62	72	72	
<b>D</b>	16	20	25	32	40	40	
<b>E</b>	26.93	29.97	31.75	33.53	40.64	40.64	
<b>F</b>	17	17	17	17	17	18	
<b>G</b>	10	10	10	10	10	10	
<b>H</b>	15.75	19.75	24.75	31.70	39.70	39.70	
<b>J</b>	10	13	16	20	25	32	
<b>K</b>	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.	



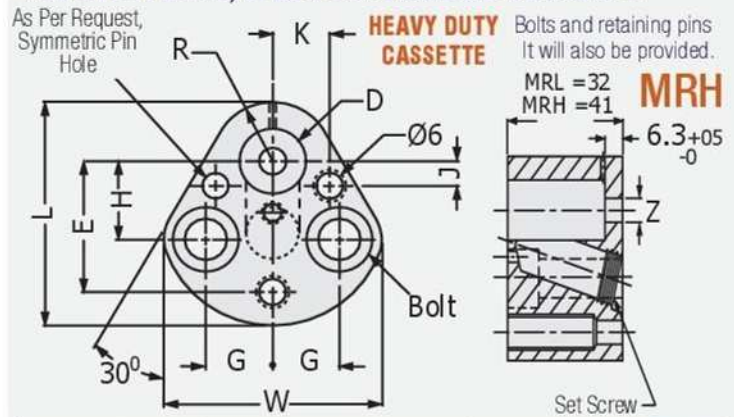
**POLYURETHANE PUNCH MTS**  
**SCRAPERS FOR MTB RETAINERS**

Holder Order	Punch Length	Punch	L	D	d1	d2	b
<b>MTB 10</b>	80	10	43	15.75	31	28	6
	100	10	63	15.75	31	28	6
<b>MTB 13</b>	80	13	43	19.75	36	33	7
	100	13	63	19.75	36	33	7
<b>MTB 16</b>	80	16	43	24.75	43	40	7
	100	16	63	24.75	43	40	7
<b>MTB 20</b>	80	20	43	31.75	55	50	7
	100	20	63	31.75	55	50	7
<b>MTB 25</b>	80	25	43	39.75	65	60	8
	100	25	63	39.75	65	60	8
<b>MTB 32</b>	80	32	43	39.75	65	60	8
	100	32	63	39.75	65	60	8

Exchangeable and Compatible with NAAMS Standards  
Material: Polyurethane 95 Shore-A

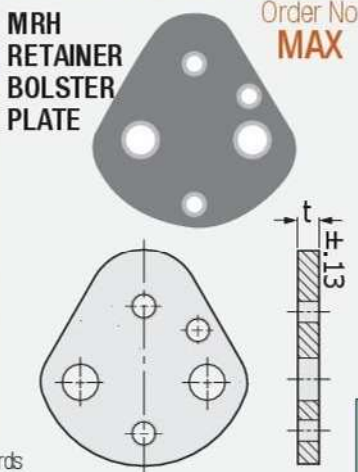


**FOR HEAVY LOAD, BALL-LOCK TRIANGLE RETAINERS**



Heavy Load, Triangle Retainers for Ball Lock							Order No. <b>MRH</b>
Dimension	MRH 10	MRH 13	MRH 16	MRH 20	MRH 25	MRH 32	MRH 40
<b>Ø D</b>	10	13	16	20	25	32	40
<b>E ±0.1</b>	26.924	29.972	31.750	33.528	40.640	40.640	43.993
<b>G</b>	11.12	14.27	15.87	17.47	19.84	19.84	24
<b>Ø L</b>	44.5	50.8	54	60.3	69.9	69.9	77.4
<b>W</b>	39.9	48.3	51.6	58.2	66.5	66.5	77.8
<b>R</b>	9.5	12.7	14.3	17.5	22.2	22.2	26
<b>H</b>	19.05	19.05	19.05	19.05	23.82	23.82	27
<b>J ±0.1</b>	7.5	6.5	6.0	5.0	7.0	7.0	10
<b>K ±0.1</b>	9.0	12	13.5	16.5	22	22	26
<b>Z</b>	6	6	6	6	6	6	6
Bolt	M8	M8	M8	M10	M12	M12	M12

**BOLSTER PLATES FOR BALL LOCK RETAINERS**



Order	Code	t
<b>MRH.10.MAX</b>	018	1.80
<b>MRH.13.MAX</b>	030	3.00
<b>MRH.16.MAX</b>	031	3.18
<b>MRH.20.MAX</b>	047	4.75
<b>MRH.25.MAX</b>	060	6.00
<b>MRH.32.MAX</b>	063	6.35
Order Example: Retainer Code (MRH)	100	10
<b>MAX.018</b>	130	13

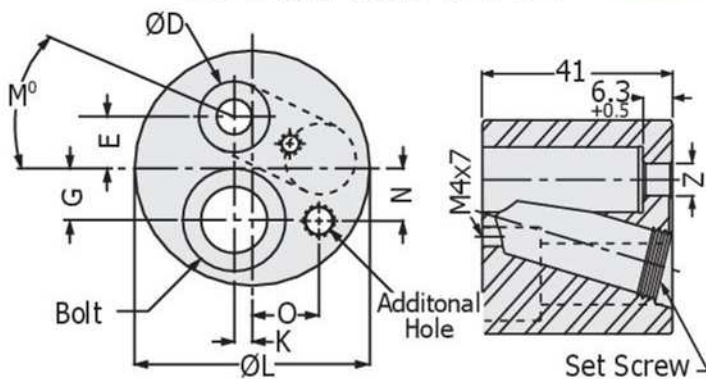
## Economic Heavy Duty Round Type



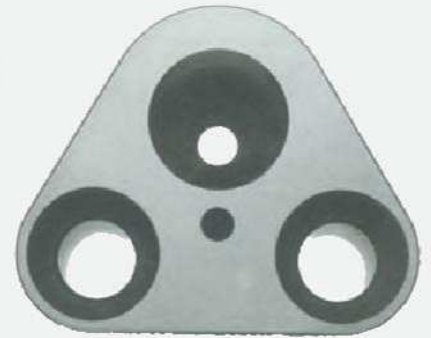
### ROUND RETAINERS FOR HEAVY LOADS

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**



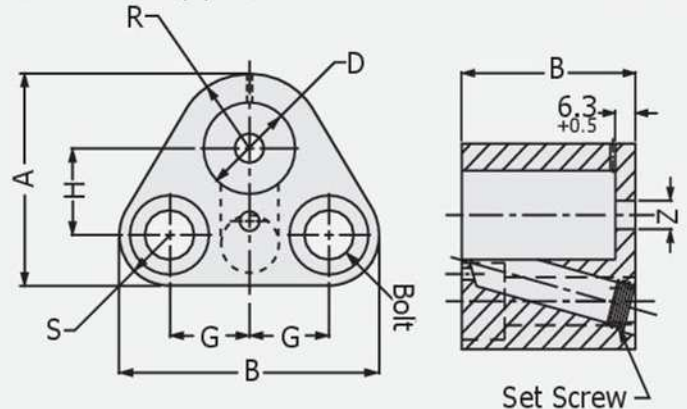
## Heavy Duty Small Dimensions



### 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**

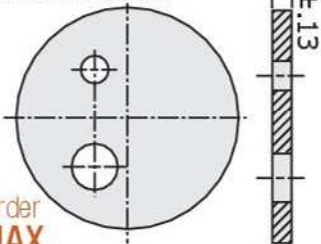
Dimensions	MRR 10	MRR 13	MRR 16	MRR 20	MRR 25	MRR 32	MRR 40
Ø D	10	13	16	20	25	32	40
Ø L	38.1	41.3	44.5	57.2	63.5	76.2	82.6
E	9.86	9.25	9.10	12.20	12.51	15.67	15.39
G	7.10	9.17	11.07	14.30	17.50	20.83	23.55
K	2.65	3.18	1.93	-	-	-	-
M	20.5 <sup>0</sup>	26 <sup>0</sup>	33.5 <sup>0</sup>	30 <sup>0</sup>	30 <sup>0</sup>	30 <sup>0</sup>	30 <sup>0</sup>
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

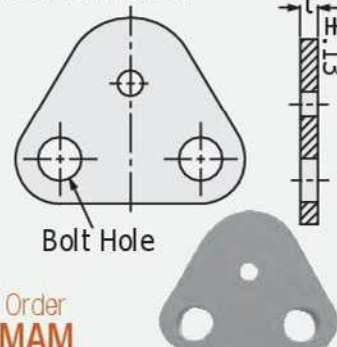


Order **MAX**

Order	Code	t
<b>MRR.10.MAX</b>	018	1.80
<b>MRR.13.MAX</b>	030	3.00
<b>MRR.16.MAX</b>	031	3.18
<b>MRR.20.MAX</b>	047	4.75
<b>MRR.25.MAX</b>	060	6.00
<b>MRR.32.MAX</b>	063	6.35
<b>MRR.40.MAX</b>	100	10
Order Example Retainer Code (MRR) MAX.018	130	13

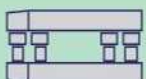
#### BOLSTER PLATES FOR BALL LOCK RETAINERS

##### MRM RETAINER BOLSTER PLATE



Order **MAM**

Order	Code	t
<b>MRM.10.MAM</b>		
<b>MRM.13.MAM</b>	030	3.00
<b>MRM.16.MAM</b>		
<b>MRM.20.MAM</b>	060	6.00
<b>MRM.25.MAM</b>		
<b>MRM32.MAM</b>	100	10
<b>MRM.40.MAM</b>		
Order Example Retainer Code (MRM) MAM.030	130	13



Section Press Mould



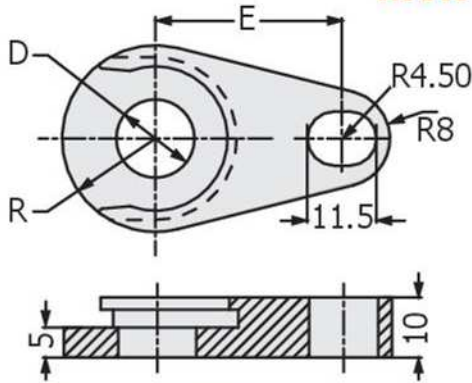


## FOR PUNCH SCRAPERS **MTR / MTM / MTP** RETAINERS

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, Retaining Feature At Once, Innovative Integral Design.

### PUNCH SCRAPER RETAINERS

#### **MTR**

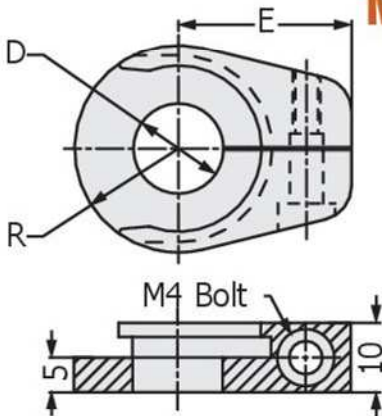


\* IT IS USED WITH **MRH** RETAINERS.

Order	D	R	E
<b>MTR 10</b>	10	13	28
<b>MTR 13</b>	13	15.5	31
<b>MTR 16</b>	16	18	32.9
<b>MTR 20</b>	20	20.5	34.8
<b>MTR 25</b>	25	24	39.8
<b>MTR 32</b>	32	31	41.3
<b>MTR 40</b>	40	36	45

### PUNCH SCRAPER RETAINERS

#### **MTM**

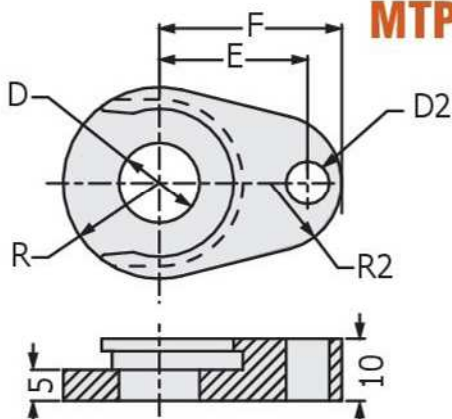


\* IT IS USED WITH **MRM** RETAINERS.

Order	D	R	E
<b>MTM 10</b>	10	13	22.5
<b>MTM 13</b>	13	15.5	25
<b>MTM 16</b>	16	18	27.5
<b>MTM 20</b>	20	20.5	30
<b>MTM 25</b>	25	24	35.5
<b>MTM 32</b>	32	31	37.5
<b>MTM 40</b>	40	36	42.3

### PUNCH SCRAPER RETAINERS

#### **MTP**

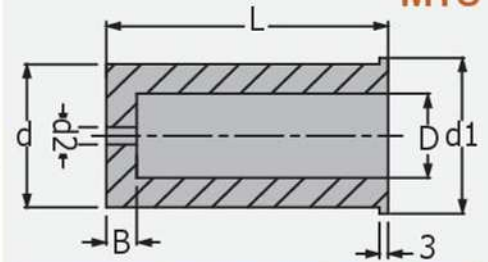


\* IT IS USED WITH **MRM** RETAINERS.

Order	D	R	E	F	D2	R2
<b>MTP 10</b>	10	13	21	26.5	7	10
<b>MTP 13</b>	13	15.5	23.9	29.4	7	11
<b>MTP 16</b>	16	18	24.5	30	7	12.8
<b>MTP 20</b>	20	20.5	29	36	9	11.8
<b>MTP 25</b>	25	24	33.5	40.5	9	12.9
<b>MTP 32</b>	32	31	40.6	49.3	9	8
<b>MTP 40</b>	40	36	44	53	9	8



## POLYURETHANE PUNCH SCRAPER **MTS**



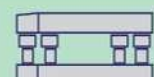
Heavy Load Ball Lock Punch Length	Light Load Ball Lock Punch Length	Recommended Scraper Length "L"
<b>80</b>	<b>71</b>	<b>43</b>
<b>90</b>	<b>80</b>	<b>52</b>
<b>100</b>	<b>90</b>	<b>63</b>
<b>110</b>	<b>100</b>	<b>72</b>

While ordering, pls. specify punch scraper length, product code. Example: 43 x MTS.L

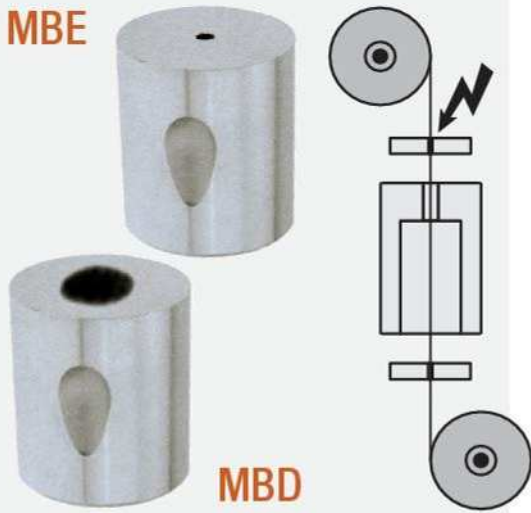
Punch Casing	D	d	L	d1	d2	B
<b>10</b>	Ø 9.75	Ø 18	44	Ø 21	1.6	6 mm
			54			
			64			
			74			
<b>13</b>	Ø 12.75	Ø 23	44	Ø 26	3	6 mm
			54			
			64			
			74			
<b>16</b>	Ø 15.75	Ø 28	44	Ø 31	3	6 mm
			54			
			64			
			74			
<b>20</b>	Ø 19.75	Ø 33	44	Ø 36	3	7 mm
			54			
			64			
			74			
<b>25</b>	Ø 24.75	Ø 40	44	Ø 43	3	7 mm
			54			
			64			
			74			
<b>32</b>	Ø 31.70	Ø 50	44	Ø 55	3	7 mm
			54			
			64			
			74			
<b>40</b>	Ø 39.70	Ø 60	44	65	3	8 mm
			64			



Section Press Mould

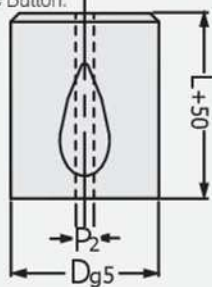


**MBE**



**MBD**

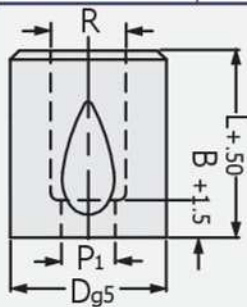
**BALL LOCK FLAT MATRIX**  
Automotive Standard Capless Bushes **MBE**  
External Diameter and Bottom Surface Grinded **MBD**  
Die Button.



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
<b>MBE.13.L</b>	<b>13</b>	1.2	32 mm *Lengths are produced as per order.
<b>MBE.16.L</b>	<b>16</b>	1.6	
<b>MBE.20.L</b>	<b>20</b>	2.0	
<b>MBE.25.L</b>	<b>25</b>	2.4	
<b>MBE.32.L</b>	<b>32</b>	2.4	
<b>MBE.38.L</b>	<b>38</b>	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**

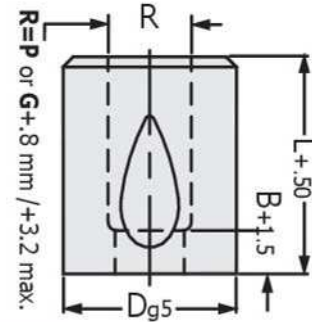
Order	Ø D	B	R	P1	L
<b>MBD.13.L</b>	<b>13</b>	4.0	5.8	1.2	32 mm *Lengths are produced as per order.
<b>MBD.16.L</b>	<b>16</b>	5.0	8.0	1.6	
<b>MBD.20.L</b>	<b>20</b>	5.0	11.9	2.0	
<b>MBD.25.L</b>	<b>25</b>	6.0	16	3.6	
<b>MBD.32.L</b>	<b>32</b>	6.0	20	4.4	
<b>MBD.38.L</b>	<b>38</b>	8.0	27	5.6	

Shapes :

**MBY- MBO- MBK**  
**MBD- MBA- MBM**  
**MBX- MBP**



**BALL LOCK FORMED MATRIX**  
Automotive Standard Capless Bushes **MB.**



Standard Tolerances	
Round P +0.1, -0.00	⊙ 0.1 From P to d2
Shape P, W, G ± 0.1	⊙ 0.2 From P to d2

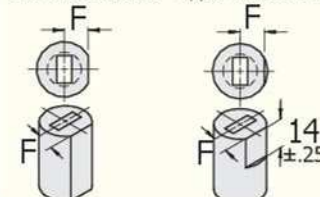
Standard position of ball lock is 90°. It can be preferred as 0° - 180° - 270°

**MBY - MBO - MBK - MBD - MBA - MBM - MBX - MBP**  
Ball Lock Punch Matrixes According To Their Shapes

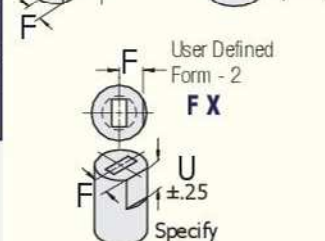
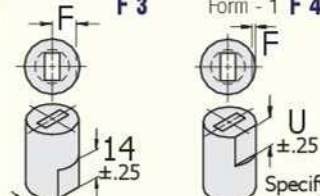
Order No	Casing D	B mm	R Shape Max.	Ø R Shape			L Len. mm
				MBY Round P	Other Shapes W Min.	Shape G / P Max.	
<b>MB...13</b>	13	4	6.0	<b>1.6 - 5.0</b>	1.6	5.0	32 mm *Lengths are produced as per order.
<b>MB...16</b>	16	5	8.0	<b>3.2 - 7.2</b>	2.0	7.2	
<b>MB...20</b>	20	5	12	<b>4.0 - 11</b>	2.5	11	
<b>MB...25</b>	25	6	16	<b>8.0 - 15</b>	4.0	15	
<b>MB...32</b>	32	6	20	<b>11 - 19</b>	5.0	19	
<b>MB...38</b>	38	8	27	<b>16.5 - 26</b>	6.5	26	

**POSITIONING** Ball Lock Punch Bushes

**F 1** One Sided Discrete **F 2** Upper Surface Discrete



**F 3** Bottom Surface Discrete **F 4** User Defined Form - 1

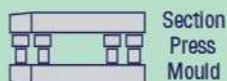
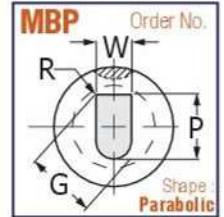
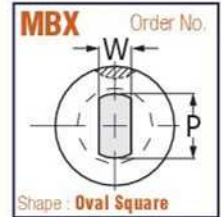
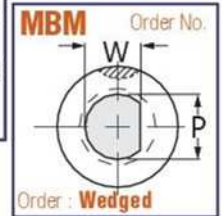
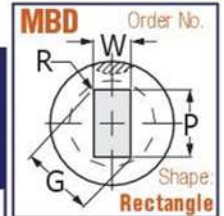
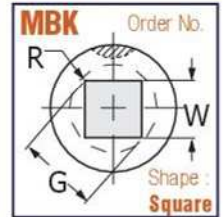
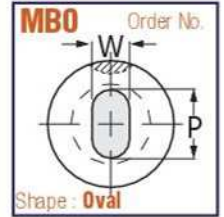
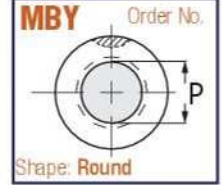


**Technical Information!**

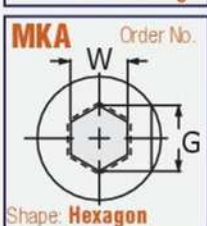
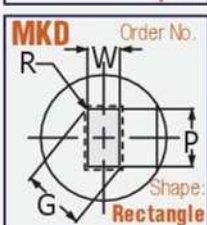
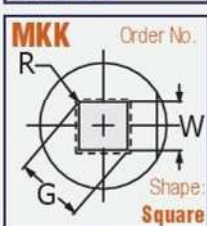
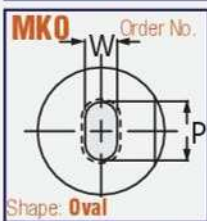
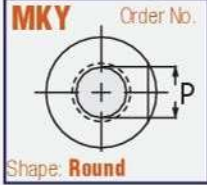
Locking Punch Bushes: F1 - F2 - F3 using for "F" Dimension are given at next table. F x Dimension are defined by user. While ordering, cut surface dimension "F" and "U" should be specified.

Casing Dia.	"F"
<b>10</b>	4.0
<b>13</b>	5.5
<b>16</b>	7.0
<b>20</b>	8.5
<b>22</b>	9.5
<b>25</b>	11
<b>32</b>	14
<b>38</b>	17
<b>40</b>	18
<b>45</b>	20.5
<b>50</b>	23
<b>56</b>	26
<b>63</b>	29.5
<b>71</b>	33.5
<b>76</b>	35.5
<b>85</b>	40
<b>90</b>	42.5
<b>100</b>	47.5

**Formed / Bush MATRIX Shapes**

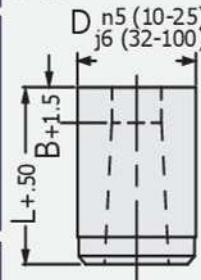


**Formed / Bush MATRIX Shapes**



**EXTRA LIFE BUSH CONICAL - FLAT Conical Inner Flat Bush**

Conical Standard: Per edge at round is 1°. At shaped is 1-1/2°



**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°. It can be preferred as 0° - 180° - 270°.

For positioning system, refer Page 170.

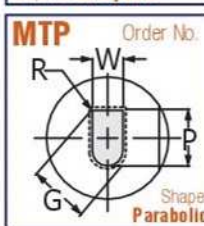
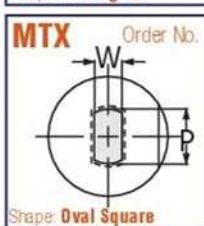
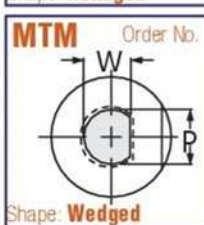
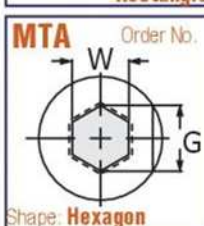
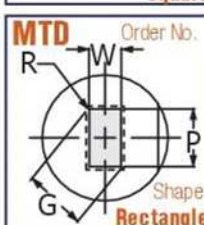
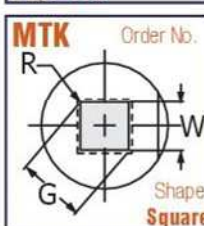
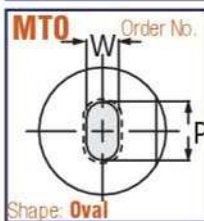
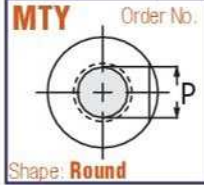
Order Ø d2	Casing D	Overhanging Len. " B "			
		Standard	Alternative Length		
		A	B	C	
MK..10	10	4	8	-	3
MK..13	13	5	8	-	3
MK..16	16	5	8	-	3
MK..20	20	5	12	20	3
MK..22	22	6	12	20	3
MK..25	25	6	12	20	3
MK..32	32	6	12	20	3
MK..38	38	8	12	20	3
MK..40	40	8	12	20	3
MK..45	45	8	12	20	3
MK..50	50	8	12	20	3
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**

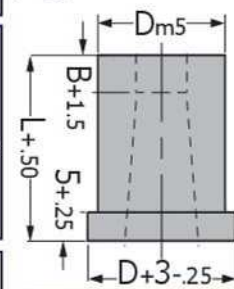
Order Ø d2	Full Length L	Round Type P	Shaped	
			W Min.	GP Max.
MK..10	22	1.6 - 5.0	1.6	5.0
MK..13		3.0 - 7.2	1.8	7.2
MK..16		5.0 - 8.8	2.5	8.8
MK..20		5.0 - 11	3.2	11
MK..22		7.5 - 14	4.0	14
MK..25		9.5 - 16.5	4.8	16.5
MK..32		13 - 20	5.5	20
MK..38	16 - 26	6.4	26	
MK..40	16.6 - 26	6.4	26	
MK..45	25	22 - 31	7.5	31
MK..50	28	24 - 34	8.0	34
MK..56	30	26 - 38	8.5	38
MK..63	32	30 - 43	9.0	43
MK..71	35	34 - 48	9.5	48

**Formed / Bush MATRIX Shapes**



**EXTRA LIFE GUIDE BUSH-CONICAL BUSH Inner Guide Bush**

Conical Standard: Per edge at round is 1°. At shaped is 1-1/2°



**Shapes : MTY- MTO- MTK MTD- MTA- MTM MTX- MTP**



Standard Tolerances Round P +0.1, -0.0	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°. It can be preferred as 0° - 180° - 270°

For positioning system, refer Page 170.

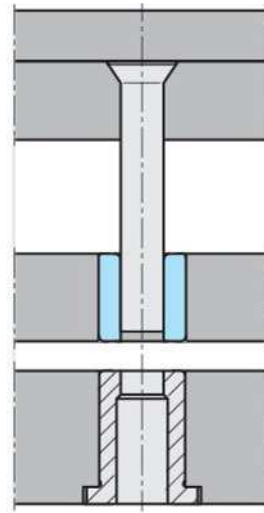
Order Ø d2	Casing D	Overhanging Len. " B "			
		Standard	Alternative Length		
		A	B	C	
MT..10	10	4	8	-	3
MT..13	13	5	8	-	3
MT..16	16	5	8	-	3
MT..20	20	5	12	20	3
MT..22	22	6	12	20	3
MT..25	25	6	12	20	3
MT..32	32	6	12	20	3
MT..38	38	8	12	20	3
MT..40	40	8	12	20	3
MT..45	45	8	12	20	3

**Extra Life Conical, Guide Bush**

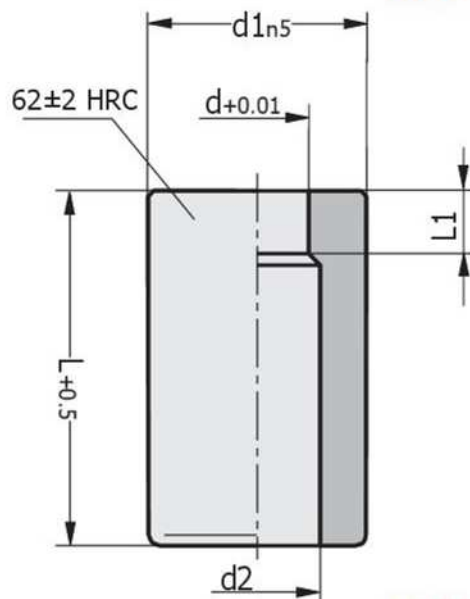
**MTY - MTO - MTK - MTD MTA - MTM - MTX - MTP**

Order Ø d2	Full Length L	Round Type P	Shaped	
			W Min.	GP Max.
MT..10	22	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





**PUNCH BUSHES / DIE BUTTONS**  
ISO 8977 Shape A Flat Bush **MDZ**



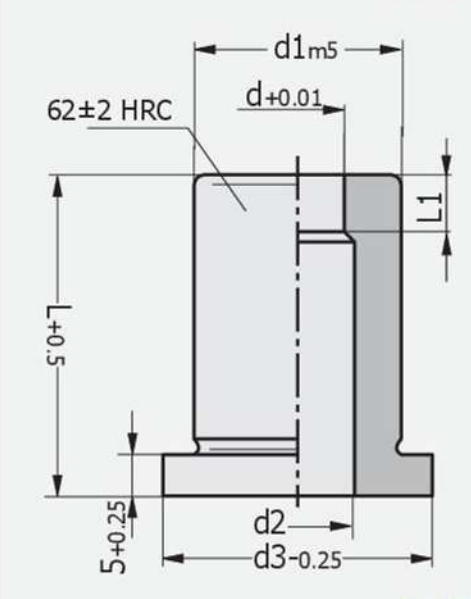
**Shape A Flat Bush / Die Buttons MDZ**

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**



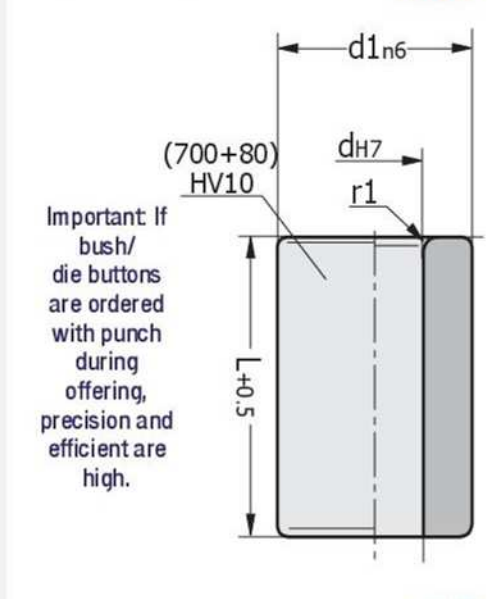
**Shape B Guide Bush / Die Buttons MSZ**

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**

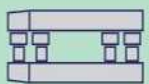


**Bushes For Punch Kits MZD**

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



Section  
Press  
Mould



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
<b>VCF 600</b>	380 x 130 mm	220 V 0.7 KW	12000	45°	0 - 3 mm	3.7 Kg



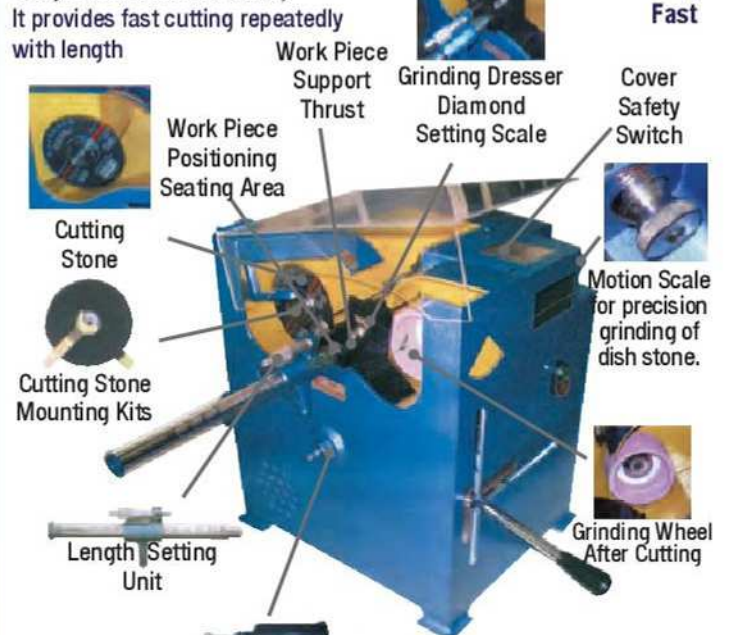
Order  
**PKM.1**  
Ø 1 - 24 mm Cylindrical Parts, In Length Setting



### 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 Kw.
- 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.**



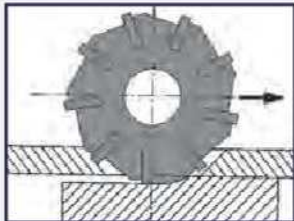
**It provides recycling of rejected material.** System Lubricant Grease Nipple



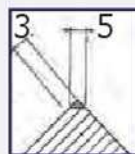
Order  
**VCF 700**

### HAND TYPE, TRAVELER / MOBILE, UNIVERSAL CHAMFERING

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

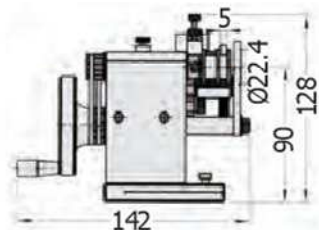
Order	Machine Dimensions	Motor Voltage	Cycle R.P.M	Corner Radius	Chamfer Capacity	Weight
<b>VCF 700</b>	360 x 200 mm	220 V 0.7 KW	3500	15°-45°	0 - 7 mm	13 Kg



Weight: 3.1 Kg.

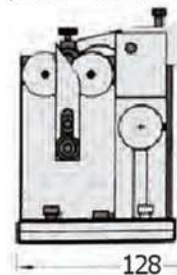
Order **VPGA**

### 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  $\varnothing$  0.5 - 10 mm



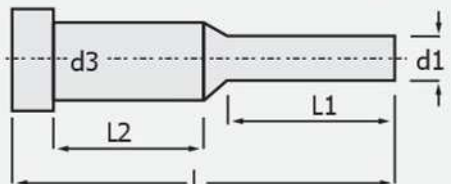
It is suitable to be used at processing and grinding of small diameters and short pins serially.

### Motor Type PIN FORM PROCESSING EQUIPMENT



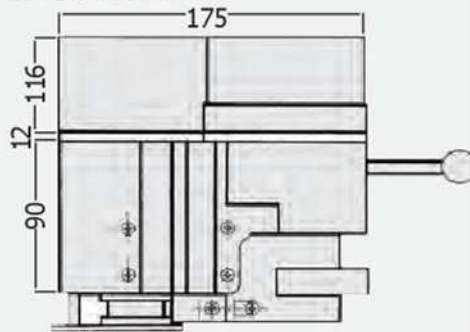
Weight: 7.1 Kg.

Order **VPGM**



#### Pin Processing Information :

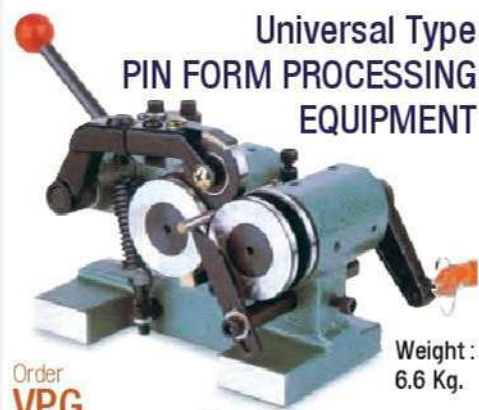
Pin Full Length (L) ..... 20 - 120 mm  
 Minimum Pin Connecting Length (L2) .. min.22 mm  
 Pin Grinding Length (L1)..... 5 - 35 mm  
 Pin Connecting Diameter (d3) .....  $\varnothing$  2 ~ 25 mm  
 Pin Grinding Diameter (d1) .....  $\varnothing$  0.5 ~ 25 mm  
 Grinding Sensitivity ..... 0.01 mm  
 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

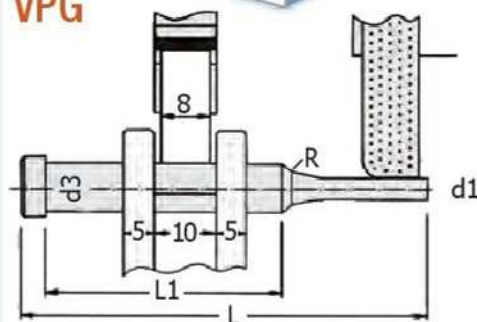
Inclined Mouth Whetting  
 Multi Stepped Whetting  
 Cylindrical Channel Whetting  
 Conical Form Whetting

### Universal Type PIN FORM PROCESSING EQUIPMENT



Weight: 6.6 Kg.

Order **VPG**



#### Working System:

Bench Grinding **Manual** System Equipment

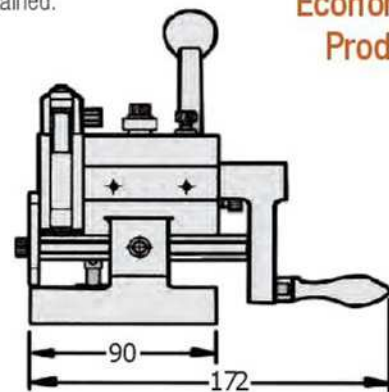
\* It is used in cylindrical or stepped form grinding operations of ejector pins - punch and EDM Work Pieces surface on grinding machine.

**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**

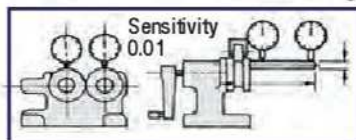
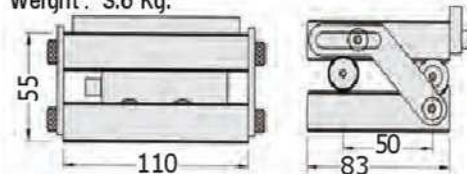


### SINE - ANGULAR TABLE For Pin Forming Equipments

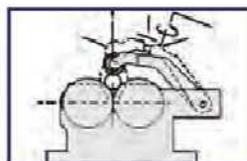
Order **VSP-S**



Weight: 3.6 Kg.



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.



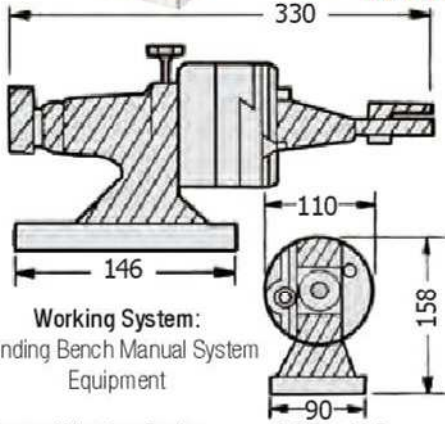
Before starting grinding, ensure that all support and Guide Screws are tightened.





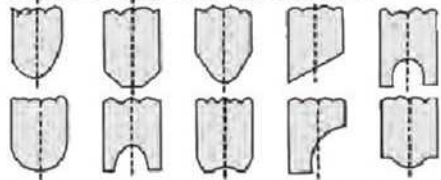
## STONE FORMING EQUIPMENT

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. ....  $\varnothing$  250 mm
- Turning Angle.....  $4 \times 90^\circ = 360^\circ$
- 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



It is for whetting stones in grinding machines.

**TDE**



Order	Type
<b>TDE.030</b>	0.30 Carat
<b>TDE.050</b>	0.50 Carat
<b>TDE.075</b>	0.75 Carat
<b>TDE.100</b>	1.0 Carat
<b>TDE.150</b>	1.5 Carat
<b>TDE.200</b>	2.0 Carat
<b>TDE.300</b>	3.0 Carat

Functional Equipment In Surface Grinding

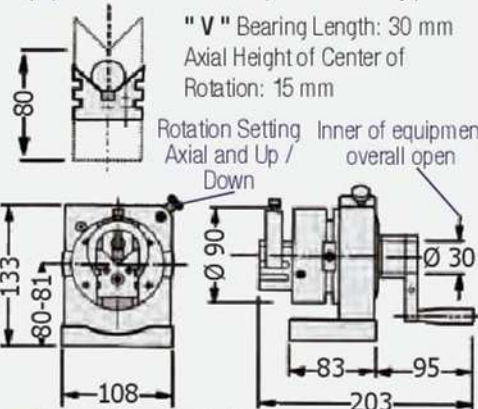


Mould Pins EDM Processing Kits

## PIN FORMING EQUIPMENT

Connecting Bearing Open **V-PS**

Step Creation at Long Ejector Pins  
Equipment inner "V" is open in bearing parallel.



Some of Pin / Punch Forms



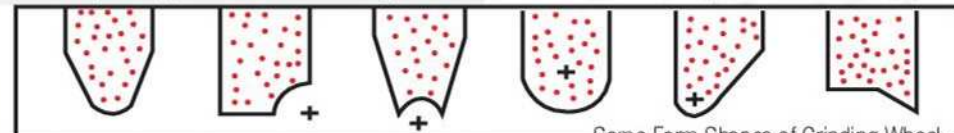
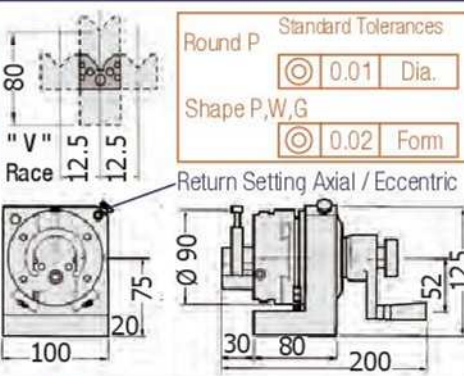
Technical Data: It is similar for both product.

- d1 : Pin Connecting Dia. ....  $\varnothing$  4 -  $\varnothing$  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.**  $15^\circ \pm 5^\circ$
- Max. Stone Grinding Machine Stone Dia.....  $\varnothing$  200 mm
- Equipment Surface and Angle / Scale Hardness **63 HRC**
- Total Weight of Equipment **10 - VPS 02 9 Kg.**



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 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  $360^\circ$  Angular Return Motion and Eccentric (Up/ Down) Motions processing practicality.



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





## BALANCE STAND

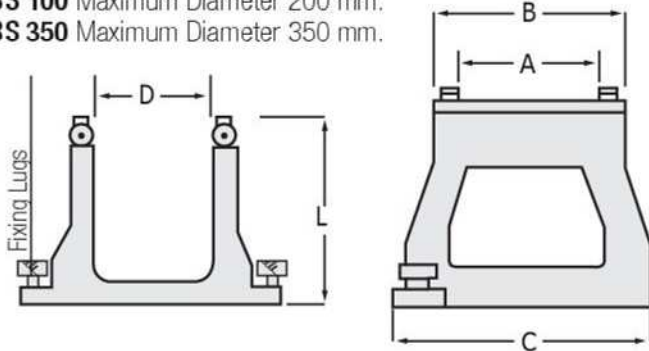
**LBS 100**  
**LBS 350**

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.
<b>LBS -100</b> Ø 200	137	152	225	110	175	8.8
<b>LBS - 350</b> Ø 350	160	180	260	125	235	15.1

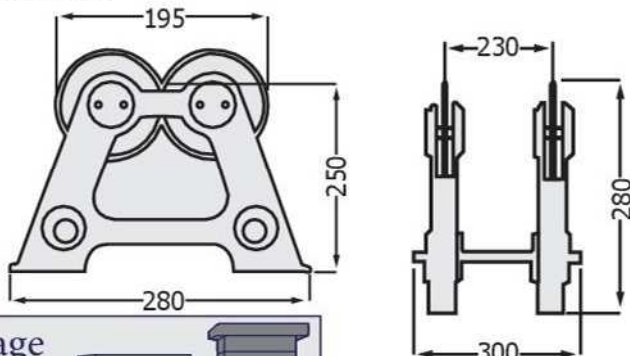


## PRECISION BALANCE MEASURING STAND

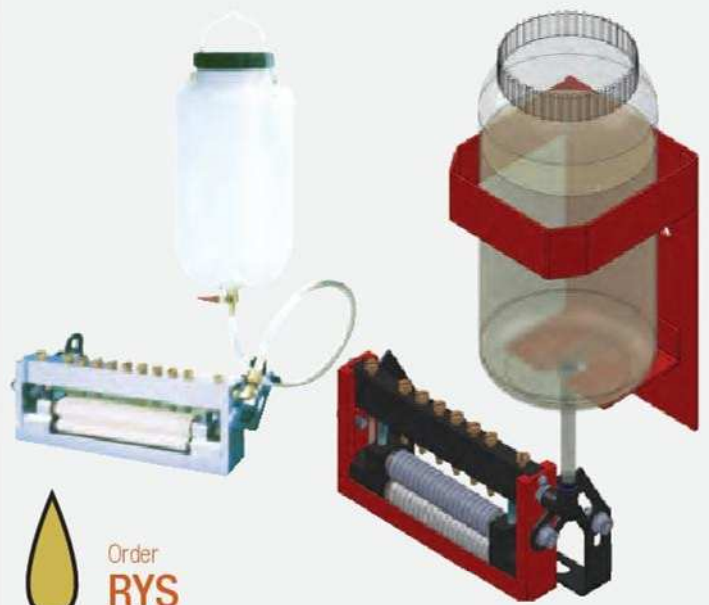
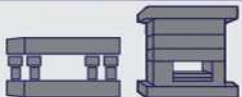
Order **WBS 300**

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.



Page  
176



Order  
**RYS**

## ROLLER, SHEET BAND LUBRICANTS

Sheet width capacity from 50 mm to 1600 mm



Drop Lubrication Nozzles On Rollers

### 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
<b>RYS 50</b>	0.50 mm	1.0	2.0	Drop Roller Lubrication
<b>RYS 100</b>	0.100 mm			
<b>RYS 150</b>	0.150 mm			
<b>RYS 300</b>	0.300 mm	3.0	6.0	
<b>RYS 500</b>	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.



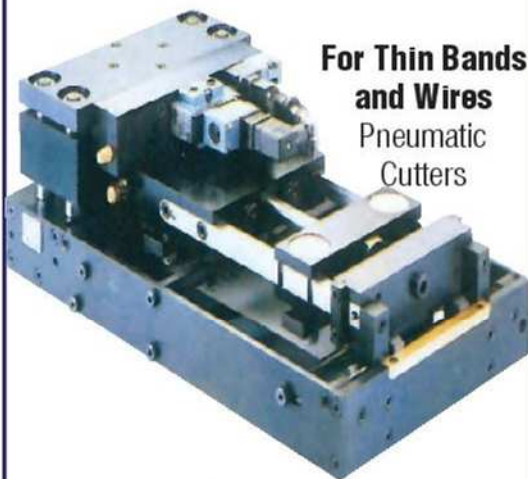
## THE MOST SUITABLE AND HIGH PRECISION IMPORT DRIVER TYPES



**Rectifier Drivers**  
Especially For Narrow Bands



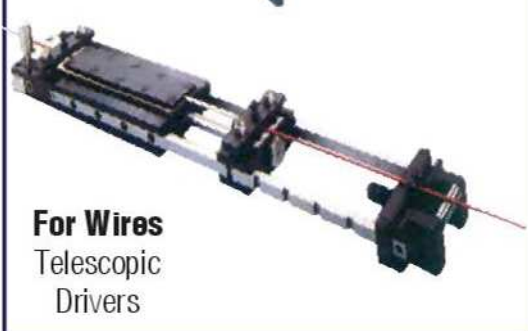
**For Strip Bands and Wires Rectified Drivers**



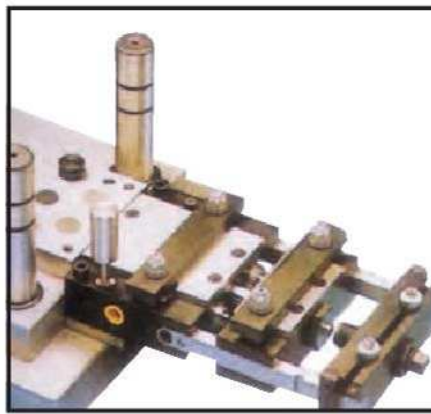
**For Thin Bands and Wires Pneumatic Cutters**



**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.

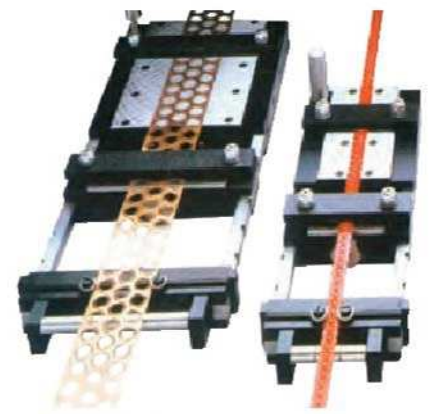
**Input Roller :** By inserting roller driver input, friction on band can be decreased.

**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	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	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	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

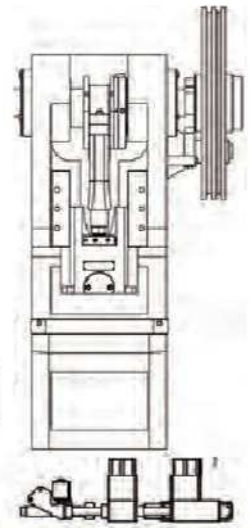
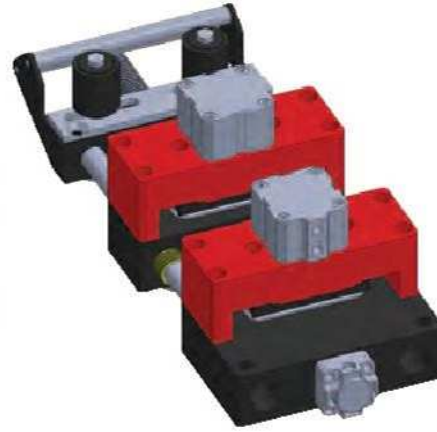
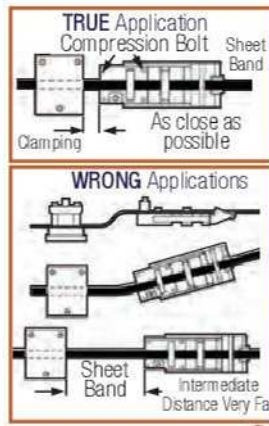
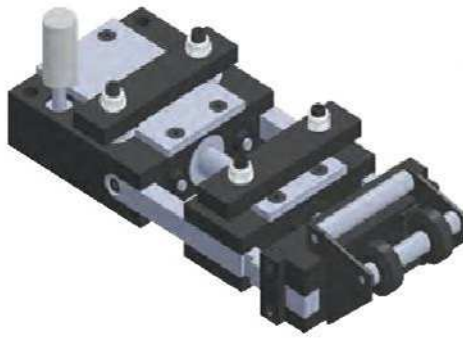
Standard Accessories ; O-Ring Kit

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.



Section Press Mould



## 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 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



## 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 4 140 material.

### Heavy Type Drivers ( Domestic Production ) Economic Type

### Pneumatic Sheet Drivers ( Domestic Production ) Economic Type

Order No	Max. Sheet Width	Pitch Step	Sheet/Band Thickness	Number of Stroke	Clamping Power	Clamping Power	Power	Air Consumption	Unit Weight					
Type	mm	mm	mm	Minute	Kg.	Kg.	Kg.	Liter / Minute	Kg.					
AY 050	From 0 50	From 0 50	From 0 1.90	Stroke 280	Fixed Lug	Movable Lugs	Pulling Force	50	3.9					
AY 100	From 0 50	From 0 100	From 0 1.80	Stroke 200										
AY 150	From 0 50	From 0 150	From 0 1.50	Stroke 160										
CY 050	From 0 100	From 0 50	From 0 1.70	Stroke 210										
CY 100	From 0 100	From 0 100	From 0 1.50	Stroke 160										
CY 150	From 0 100	From 0 150	From 0 1.40	Stroke 120										
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										
DY 150	From 0 150	From 0 150	From 0 1.20	Stroke 130										

**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 duct, should absolutely be 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.

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)

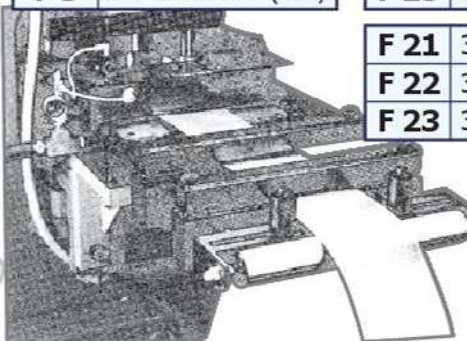
E 21	2 x 300 x 100 (mm)
E 22	2 x 300 x 200 (mm)
E 23	2 x 300 x 300 (mm)

E 31	2 x 400 x 100 (mm)
E 32	2 x 400 x 200 (mm)
E 33	2 x 400 x 300 (mm)

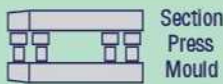
E 41	2 x 500 x 100 (mm)
E 42	2 x 500 x 200 (mm)
E 43	2 x 500 x 300 (mm)

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



For precision and wasteless production roller sheet lubricant can be used.





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 )

Servo Drivers providing ideal solutions up to 1.5 mm sheet thickness

**Economic Model**

Production up to 1000 mm as per request

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.

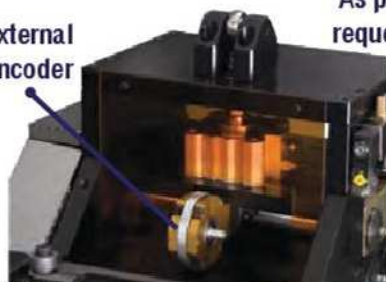
### Standard Features:

- \* 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 Trigrel threaded
- \* 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

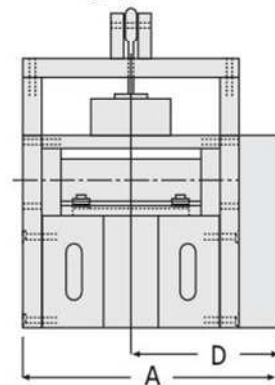
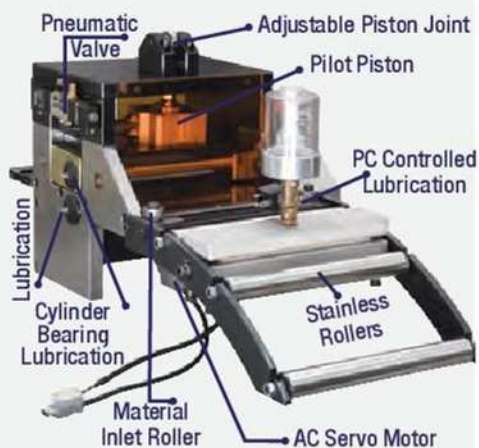
- \* Roll unloader / Rectifier and Driver Press Synchron Movement External Encoder
- \* Foldable front rollers are preferred after 300 Cycles.
- \* Guides between driver and mould

External Encoder

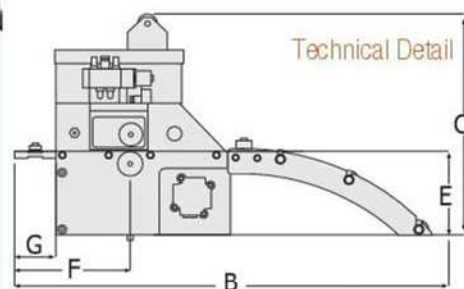


As per request

Standard Measurement Scale



Unit View



Technical Detail

### Servo Drivers Economic Type

Order No	Max. Band Width	Sheet/Band Thickness	Roller Dia.	Max. Band Speed
Tip	mm	mm	Ø	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



Page 179



## 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;

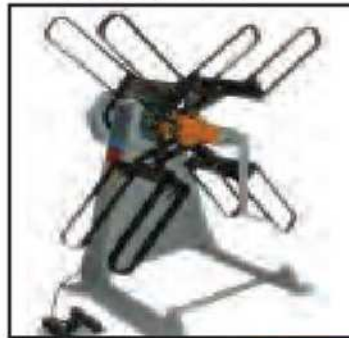
- \* Pneumatic top and bottom Stamping System
- \* Brake Work System
- \* Speed Control System
- \* Conical Extrusion hub can be added as per request.

## ROLL SHEET SLIDING SYSTEMS Mechanic System Sheet Roll Openers



Model : Motor Type

**AGM500M**



Model : Brake Type

**AGM750M**



1500 Kg Capacity

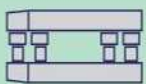
**AGM1500M**



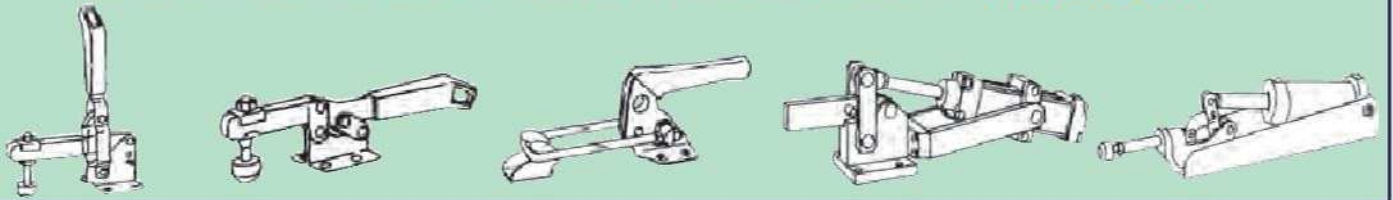
2500 Kg Capacity

**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					
<b>AGM500M</b>	20 - 300	300	550	1300	<b>500</b>	★		Optional, As Per Request
<b>AGM500LM</b>				1600	<b>500</b>	★		
<b>AGM500F</b>				1300	<b>500</b>		★	
<b>AGM750M</b>				1300	<b>750</b>	★		
<b>AGM750LM</b>				1600	<b>750</b>	★		
<b>AGM750F</b>				1300	<b>750</b>		★	
<b>AGM1500M</b>	20 - 400	350	550	1300	<b>1500</b>	★		
<b>AGM1500LM</b>				1600	<b>1500</b>	★		
<b>AGM1500F</b>				1300	<b>1500</b>		★	
<b>AGM2500M</b>	30 - 500	400	550	1300	<b>2500</b>	★		
<b>AGM2500LM</b>				1600	<b>2500</b>	★		
<b>AGM2500F</b>				1300	<b>2500</b>		★	
<b>AGM3000M</b>	30 - 600	450	600	1300	<b>3000</b>	★		
<b>AGM3000LM</b>				1600	<b>3000</b>	★		
<b>AGM3000F</b>				1300	<b>3000</b>		★	



# "Material Fasteners" RIGHT SOLUTION ! Fixtures...



Fast - Quality Assurance ( Certificated ) Flexible - Pratic Fasteners

DOMESTIC MANUFACTURE



**STANDART**  
Perpendicular  
Type Galvanic  
Plated

Order Model  
**800..**  
( 0-1-2-3  
4-5-6 )

## BASED TYPE PERPENDICULAR FASTENERS



Horizontal 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		B	A	Screw	gr
	F1	F2				
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



Base  
Types

Model:  
800/P-2

INOX / STAINLESS Perpendicular Coupling

Model 800/P

Order 800 / P	( kN ) Force		B	A	Screw	gr
	F1	F2				
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



Taban  
Tipleri

Model:  
800/L-4

METAL SHEET Type Perpendicular Coupling

Model 800/L

Order 800 / L	( kN ) Force		B	A	Screw	gr
	F1	F2				
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 )



**METAL SHEET**  
Perpendicular  
Type Galvanic  
Plated

Order Model  
**800/L..**  
( 2-3-4-5 )



Section  
Press  
Mould

Page  
**181**

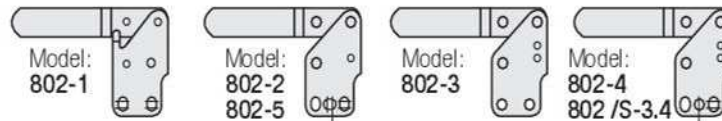
**VERTICAL FOOT Perpendicular Type Galvanic Plated**



Order Model **802..** (1-2-3-4-5)

**VERTICAL FOOT PERPENDICULAR FASTENERS**

Base Types



Transverse Arm As Per Request

**LOCKING Vertical Foot Perpendicular Type**

Order Model **802/S..** (3-4)

**VERTICAL FOOT Perpendicular Coupling**

Model 802

Order 802	( kN ) Force		B	A	M	gr
	F1	F2				
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

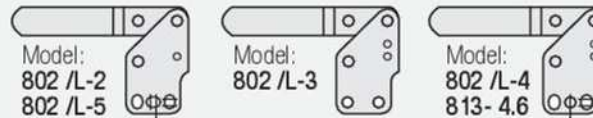
**LOCKED Vertical Foot Perpendicular Coupling**

Model 802/S

3	1.8	2.5	210	105	M8x45	400
4	2.0	3.0	255	140	M8x65	630

**VERTICAL FOOT PERPENDICULAR FASTENERS**

Base Types



**HEAVY DUTY Cast Steel Vertical Footed Perpendicular Type**



Order Model **813..** (4-6)

**METAL SHEET Vertical Foot Perpendicular Type Galvanic Plated**



Order Model **802/L..** (2-3-4-5)

**SHEET Vertical Foot Perpendicular Coupling**

Model 802/L

Order 802/L	( kN ) Force		B	A	M	gr
	F1	F2				
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

**MODÜLER BAĞLAMA HAREKETLİ / DİK AYAKLI**

**Modular Welded Movable Perpendicular Foot**



Order Model **811..** (4-6)

**Modular Coupling Accessories**



**Modular Welded Vertical Foot**



Order Model **810..** (4-6)

**MODULAR Coupling Movable Footed**

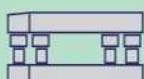
Model 810

Order 810	Force F1 (kN)	B	A	Connecting Angle $\alpha - \beta - \gamma$	gr
6	11.0	145	105		1.600

**MODULAR Coupling Vertical Footed**

Model 811

4	7.0	142	82	q:190°	970
6	11.0	182	106		1.750



### Side Mounted Perpendicular Type Galvanic Plated



Order Model **803..**  
(1-2-3-4-5)

### SIDE MOUNTED PERPENDICULAR FASTENERS



### SIDE MOUNTED Perpendicular Coupling Model 803

Order 803	( kN ) Force		B	B	Bolt	gr
	F1	F2				
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



### METAL SHEET Type Side Mounted Model 803/L

Order 803/L	( kN ) Force		B	B	Bolt	gr
	F1	F2				
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		Control Movement				Arm Stop		Kg
	F1	F2	min.		max.		Ver. max.	Hor. min.	
			min.	max.	min.	max.			
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

Specifications: It is replaced with two equipment in profile drilling and sealing processes.

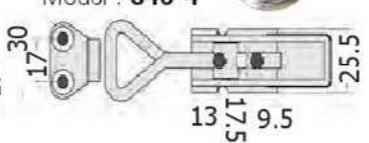
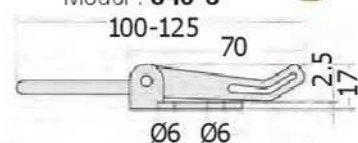
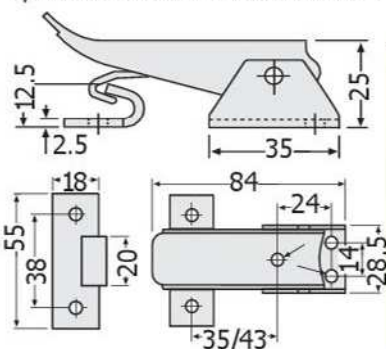
Order Model **860..**  
(2-3)



### LIGHT CHUCKS ( Catch hook can be adjusted. )



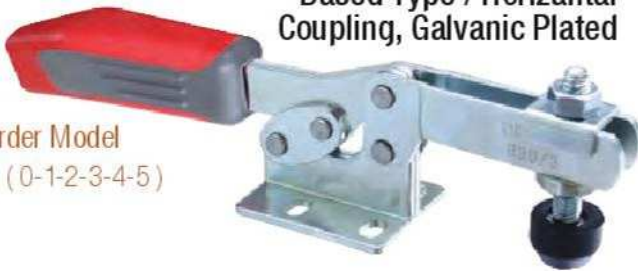
It provides to close mini mould - cabinet - tank covers and similar parts.



# HORIZONTAL FASTENERS Vertical Arm 90°

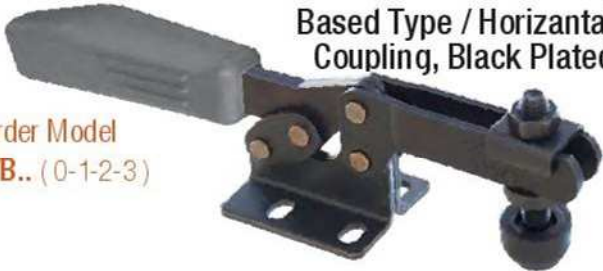
## Based Type / Horizontal Coupling, Galvanic Plated

Order Model  
830.. (0-1-2-3-4-5)



## Based Type / Horizontal Coupling, Black Plated

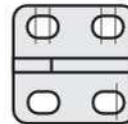
Order Model  
830/B.. (0-1-2-3)



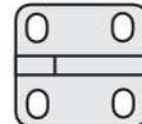
### Base Types

In connected Status,  
Arm in horizontal  
position

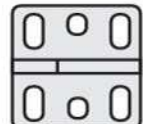
Operating Handle  
works in opposite  
direction as per  
clamping arm.



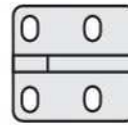
830-830/B  
Size : 0



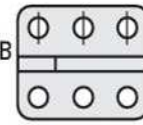
830-830/B  
Size : 1



830-830/B  
Size : 2/4



830-830/B  
Size : 3



830-830/B  
Size : 5

## HORIZONTAL Fasteners

## Model 830-830/B

Order 830	( kN ) Force		A	B	Bolt	gr
	F1	F2				
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 Horizontal Coupling - Galvanise Plated

Order Model  
830/S.. ( 4 )



Safety Locked, horizontal 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 Horizontal Fasteners

## 830/S

Order 830/S	( kN ) Force		A	B	Bolt	gr
	F1	F2				
4	2.0	3.0	74	293	M8x65	700

## INOX / Complete Stainless - Based Model Horizontal Fastener

Order Model  
830/P.. (0-1-2-3)



In chemistry / food sector and hygienic places, at outdoors, machines under heavy climatic conditions, anti magnetic resistant to corrosion and acids ( None Magnetic Susceptibility )

## 830/P

Order 830/P	( kN ) Force		A	B	Bolt	gr
	F1	F2				
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

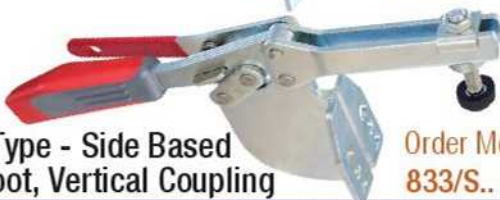
## Side Based Angular Foot Horizontal Coupling

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		A	B	Bolt	gr
	F1	F2				
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

Order Model  
832..  
(0-1-2-3-4-5)



## PERPEN. FOOTED Horizontal Coupling

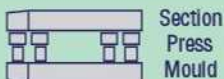
Order Model  
832/S .. ( 4 )



## LOCKING Type Perpendicular Footed Horizontal Coupling

Order 832 832/S	( kN ) Force		A	B	Bolt	gr
	F1	F2				
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

Technical details in  
Model 832-833 are same.





# 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	M10x40	Kg
	F1	F2				
4	15.0	15.0	166	190		2.0
5	15.0	15.0	172	269		2.50

Removable, Angular Footed Sheet, Direct mounting to walls

## LONG Model, BUSHING TYPE Pull-Push Fasteners

Order Model 841.. ( 0-1-2-3-5 )

Handle can be turned to connecting surface in every angle position.



Elbowed lever arm transfer rate prevents opening which makes automatic locking.

Order 841	( kN ) Force		A	B	M4X20	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

Horizontal Vertical Usage

## HEAVY TYPE Pull - Push Fasteners

Order Model 842/SC ( 5 )

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.

Crank Shaft and lever arm work in same direction.

Order 842/SC	( kN ) Force		A	B	M10X40	gr
	F1	F2				
5	3.0	3.0	166	190	M10X40	950

Anchorage pillar as per request  
Order Model 841/A



Direct Fixing to Sheet Walls, Threaded face

## SHORT TYPE Pull - Push Fasteners

Order Model 844.. ( 2-3-5 )



Order 844	( kN ) Force		A	B	M6X35	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

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	M8x35	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

Horizontal 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	M10X50	gr
	F1	F2				
5	12.0	12.0	95	185	M10X50	1.800

Pls. request catalogue for technical details.



Page 185



Order Model  
**826/CE**  
(4-6-8)

**HEAVY DUTY  
PNEUMATIC  
PER. TYPE  
INTEGRATED  
COUPLING**

This perpendicular pneumatic coupling set is in bench quality, it can be integrated to transfer lines or special machines and is together with dual motion pneumatic cylinder.



Order Model  
**816/C**

**HEAVY DUTY  
PNEUMATIC  
PERP. TYPE  
MECHANIC  
BLOCK**

Order <b>826/CE</b>	kN ↑ Force			Ax B	Air Inlet	Cylinder		Kg
	F1 ↓ F2	← F5	Diagram			Strok	Piston	
<b>4</b>	6 - 9	0.75		172 x 340	G 1/4"	74 mm	Ø 40	5.1
<b>6</b>	12 - 18	1.00		195 x 286		87 mm	Ø 50	7.3
<b>8</b>	20 - 30	1.80		272 x 470		120	Ø 63	16.8



**DOUBLE ACTION  
PNEUMATIC PER.  
TYPE HORIZONTAL/  
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 horizontal 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 <b>600</b>	kN ↑ Force			Ax B	Air Inlet	Cylinder		gr
	F1 ↓ F2	← F5	Diagram			Strok	Piston	
<b>2</b>	1 - 1.2	0.3		170 x 130	M 5	42 mm	Ø 25	800
<b>3</b>	1.4 - 2.5	0.5		205 x 160	G1/8	52 mm	Ø 32	1100
<b>4</b>	2 - 3	0.75		260 x 220	G1/8	62 mm	Ø 40	1600



Order Model  
**825/CE**  
(4-6-8)

**Mechanic Block**

**HEAVY DUTY  
PNEUMATIC  
PER. TYPE  
HORIZONTAL  
CYLINDER  
MOVABLE  
CONNECTED**

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 <b>825/CE</b>	kN ↑ Force			B	Cylinder		Kg
	F1 ↓ F2	← F5	Diagram		Strok	Piston	
<b>4</b>	6 - 9	0.75		122 x 416	80 mm	Ø 40	5.5
<b>6</b>	12 - 18	1.00		147 x 480	100 mm	Ø 50	7.8
<b>8</b>	20 - 30	1.80		196 x 580	125 mm	Ø 63	17.80



Order Model  
**620/K** (1-2-3-4)

**DOUBLE ACTION  
PNEUMATIC  
HORIZONTAL TYPE  
MOTION  
CONTROLLED**

Horizontal pneumatic fasteners is in bench quality, it can be integrated to transfer lines or special machines. Its opening and closing can be controlled electronically. Double action, pneumatic cylinder can be mounted replaceably.

Order <b>620/K</b>	kN ↑ Force			B	Diagram	Cylinder		gr
	F1 ↓ F2	← F5	Diagram			Strok	Piston	
<b>1</b>	0.8 - 1.1	0.10		52 x 175	M5X30	34mm	Ø 16	610
<b>2</b>	1.0 - 1.2	0.30		64 x 200	M6X35	41mm	Ø 25	870
<b>3</b>	1.4 - 2.5	0.50		85 x 250	M8	52mm	Ø 32	1160
<b>4</b>	2.0 - 3.0	0.75		100 x 290	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 <b>650</b>	kN ↑ Force			B	Cylinder		Kg
	F1 ↓ F2	← F3	Diagram		Stroke	Piston	
<b>3</b>	4 - 2.5	0.75		85 x 320	100 mm	Ø 40	2.0
<b>5</b>	10 - 5	1.00		115 x 340	100 mm	Ø 50	3.5
<b>7</b>	25	1.00		150 x 533	125 mm	Ø 63	7.7

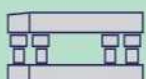


Order Model  
**620/Y** (1-2-3-4)

**IN DOUBLE  
ACTION  
PNEUMATIC  
HORIZONTAL  
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 <b>620/Y</b>	kN ↑ Force			B	Diagram	Cylinder		gr
	F1 ↓ F2	← F5	Diagram			Stroke	Piston	
<b>1</b>	0.8 - 1.1	0.19		55 x 195	M5X30	34mm	Ø 20	630
<b>2</b>	1.0 - 1.2	0.30		65 x 220	M6X35	41mm	Ø 25	800
<b>3</b>	1.4 - 2.5	0.50		90 x 250	M8	52mm	Ø 32	1200
<b>4</b>	2.0 - 3.0	0.75		105 x 320	45-65	62mm	Ø 40	2000



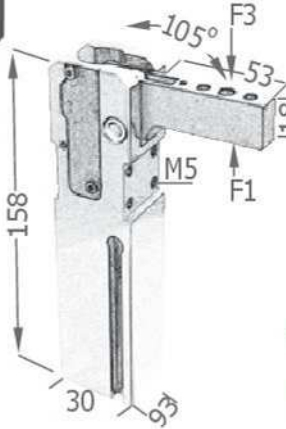
Section  
Press  
Mould

Thanks to magnetic piston, motion control is ensured. Varnished heat threaded cast metal casing is galvanised and passivated. Steel arm and rod.



**PNEUMATIC  
DOUBLE ACTION  
PERPENDICULAR  
FASTENERS**

Order Model  
**628 M/20**

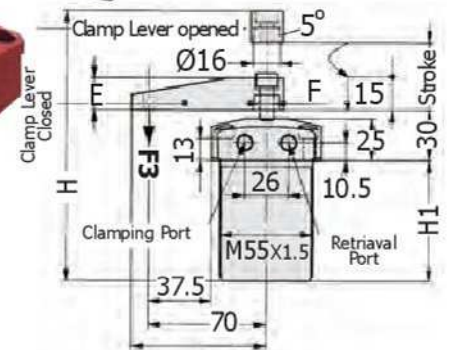
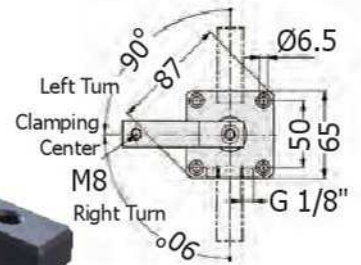


**CYLINDER CASING THREADED,  
PNEUMATIC DOUBLE ACTION  
ROTARY FASTENER**

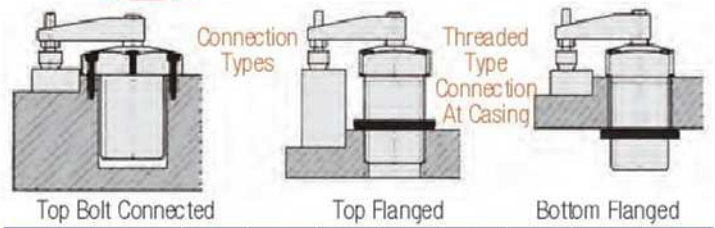
Order  
Model  
**629/40**  
R / L  
**LEFT/RIGHT**



Threaded  
Casing  
M55x1.5



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 threaded.



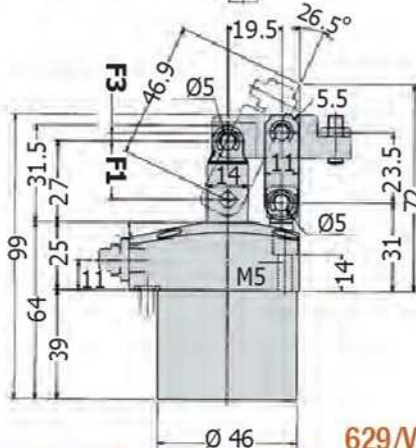
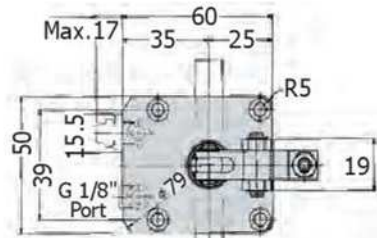
Order	Force ( Nm )		Piston Dia.	Air Inlet	gr
	F1 ↓	F3 ↑			
<b>628</b>					
<b>M20</b>	Clamping 15	Holding 54	146 x158	Ø 20 G 1.8"	550

Order	Return Direction	F3 (kN)	H mm	H1 mm	E mm	F Ø	Piston Ø	Stroke mm	gr
<b>629 R/L</b>									
<b>40</b>	Right	0.45	152	73	19	M8	40	30	800
<b>40</b>	Left		164	80	25.5	M10			

Order  
Model  
**629/V**



**CYLINDER / HINGED  
PNEUMATIC  
DOUBLE ACTION  
PERPENDICULAR  
FASTENER**

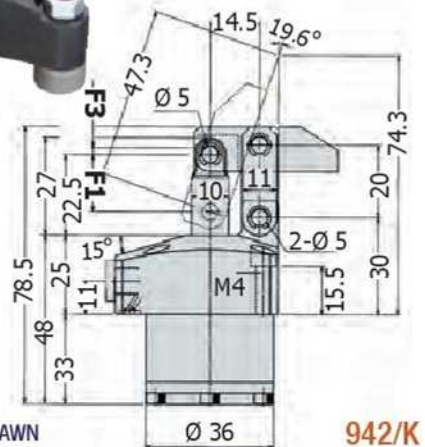
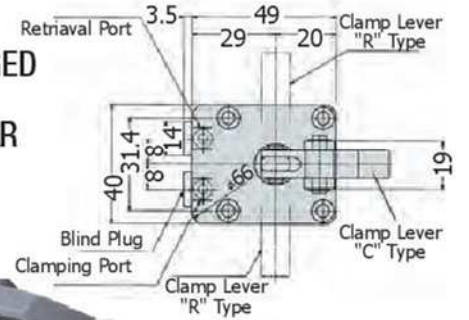


**629/V**

Order	Full Stroke	Clamping F1	Locking F3	Max. Pressure	Max. Heat	Cylinder Cap.		Dia. Ø	gr
						Clamp	Back		
<b>25</b>	23	20	3	1.0 Bar	0-70 Degree	18.5	40	46	400

**CYLINDER / HINGED  
HYDRAULIC  
PERPENDICULAR  
FASTENER**

Order Model  
**942 K / 25**

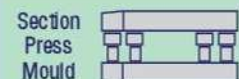


DOUBLE ACTION - AESTHETIC DRAWN

**942/K**

Order	Full Stroke	Clamping F1	Locking F3	Max. Pressure	Max. Heat	Used Fluid	Dia Ø	gr
<b>25</b>	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.



Page  
**187**



### 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		Diagram		gr
	F1	Setting Range	A	B	
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, conventional oil resistant, plastic handle, hook arm can be shortened as partial motion.

Order 847/K	( kN ) Force		Diagram		gr
	F1	Setting Range	A	B	
3	2.0	-	38	242	295



### LOCK HOOK FASTENER SUITABLE TO HORIZONTAL/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		Diagram		gr
	F1	Setting Range	A	B	
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 prevents 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.

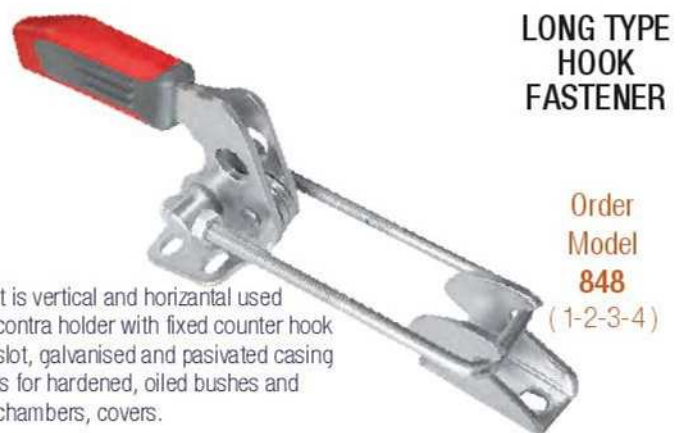
Order 847/S	( kN ) Force		Diagram		gr
	F1	Setting Range	A	B	
5	3.0	12	36	230	300



Order Model  
848/P (1-2-3-4)

Similar to Model 848, is produced completely from stainless material.

Order 848/P	( kN ) Force		Diagram		gr
	F1	Setting Range	A	B	
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

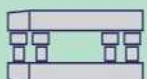


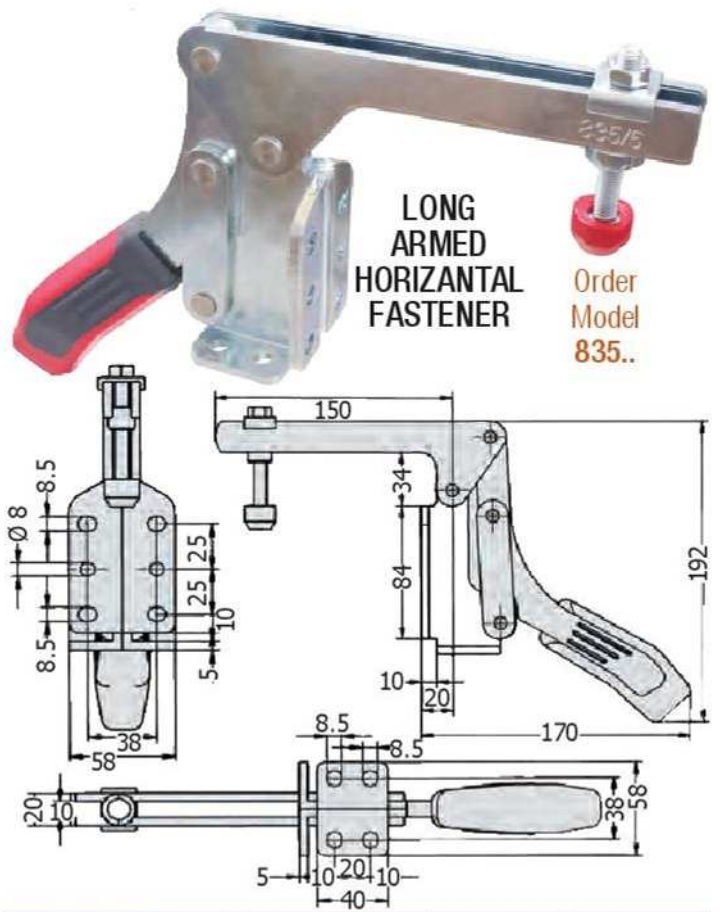
### LONG TYPE HOOK FASTENER

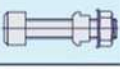

Order Model  
848 (1-2-3-4)

It is vertical and horizontal used contra holder with fixed counter hook slot, galvanised and pasivated casing is for hardened, oiled bushes and chambers, covers.

Order 848	( kN ) Force		Diagram		gr
	F1	Setting Range	A	B	
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





Order <b>835</b>	( kN ) Force			
	F1	F2		
<b>Length : 5</b>	2.50	5.00	M8 x 65	1.560



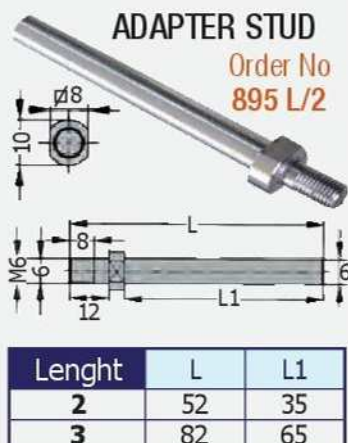
Length	A	B	C	E	L
<b>2</b>	12	6.5	9	12	48
<b>3</b>	15	9.5	12	15	78



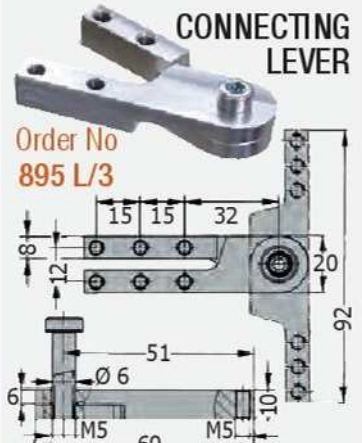
Length	A	B	C	E
<b>2</b>	12	6.5	9	12
<b>3</b>	15	8.5	12	15

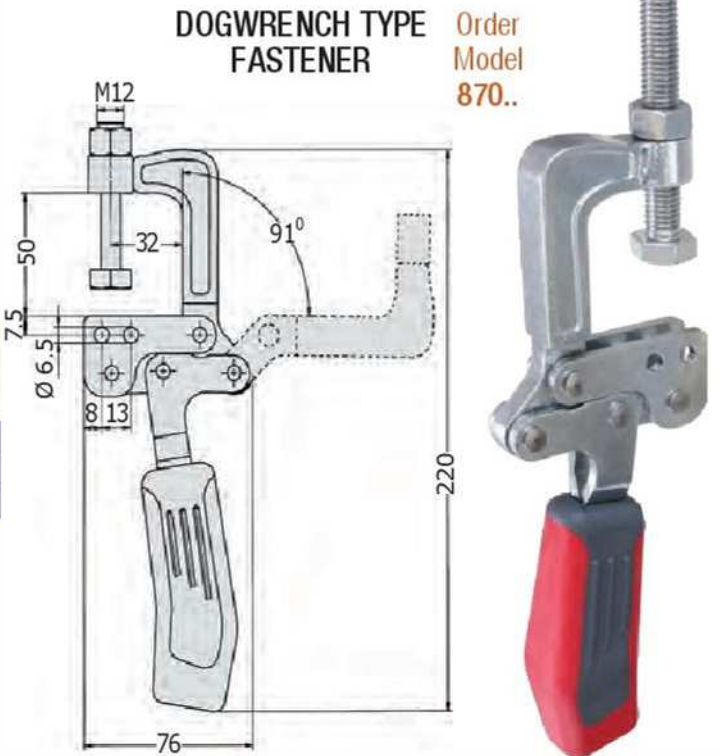
Length	L	L1	L2	L3	L4
<b>2</b>	127	110	35	48	75
<b>3</b>	167	150	45	73	105



Length	L	L1
<b>2</b>	52	35
<b>3</b>	82	65



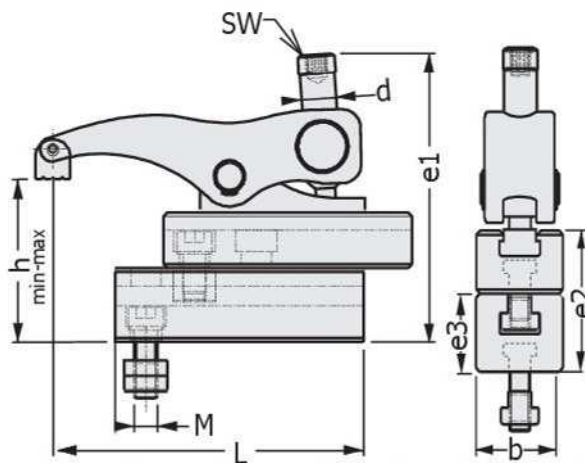
Length	L	L1
<b>2</b>	52	35
<b>3</b>	82	65



Order <b>870</b>	( kN ) Force			
	F3			
<b>Length : 4</b>	4.00		M12 x 80	600

Complete presentation with pressure bolt, protective rubber, double color handle and dogwrench unit.





Clamping Forces: Product 1130 ( Bottom Supported ) 2000 Kgf  
 Clamping force Product 1150 ( Bottom Supported ) 2500 Kgf  
 for 1 Unit Product 1160 ( Bottom Supported ) 5500 Kgf

Usage information / advantages are similar with Page 191

### Sliding Combine Slide Lug SPARE EQUIPMENT



Upper Lug / Casing  
Clamp Block

Clamping Block: Forged Steel 42 CrMo  
Hardened : 38 - 42 HRC

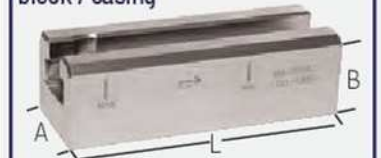
Order No		Lug Height Motion h
1130-060	14-22	0 ~ 60
1150-062	18-28	0 ~ 62
1160-2080	22-36	20 ~ 80

## SLIDING 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.

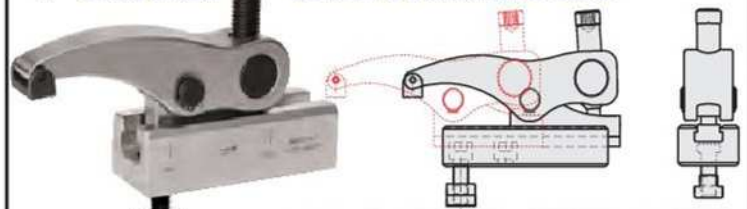
Order No		m	Height h		e1	e2	d	Wrench SW	L	b	e3	kg
1130-014 DT	M 12	14	Min. 45 Max. 105	Min. 0 Max. 60	158 mm	83 mm	M 18	 10 mm	130 mm	48 mm	45 mm	4.0 kg
1130-016 DT												
1130-018 DT												
1130-020 DT												
1130-022 DT												
1150-118 DT	M 16	18	Min. 48 Max. 110	Min. 0 Max. 62	173 mm	90 mm	M 20	 12 mm	140 mm	55 mm	48 mm	5.4 kg
1150-120 DT												
1150-122 DT												
1150-124 DT												
1150-128 DT												
1160-222 DT	M 20	22	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												
1160-228 DT												
1160-232 DT												
1160-236 DT												
1160-236 DT												

### Sliding slide kit for clamping block / casing



Order No		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

## "T" CHANNEL SLIDE COMBINED LUG

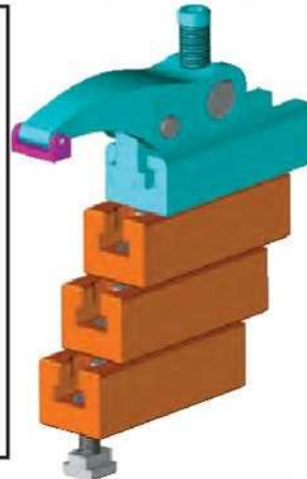


Order No : 1130 T - 1150 T - 1160 T

"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.

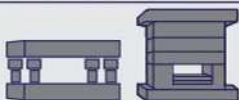


### Bottom Support Team ( In lifting ), according to work piece dimension



Order No		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

"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 ).



Slide is fixed, then upper casing is placed on slide and fixed.

According 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	Thread	Length
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

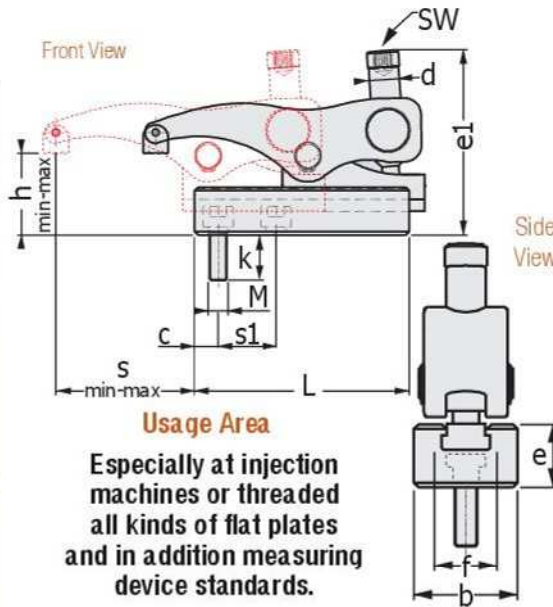


ESP Transverse  
Cylinder Clamping  
Lug  
1130 - 1150 - 1160

### 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	<b>M12</b>	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	<b>M16</b>	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	26	2000 kgf	2.6 kg
1150-116 M	<b>M16</b>	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	<b>M18</b>	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	30	2500 kgf	3.8 kg
1150-120 M	<b>M20</b>	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	30	2500 kgf	3.8 kg
1160-220 M	<b>M20</b>	From 20	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	<b>M22</b>	From 20	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	38	5500 kgf	8.9 kg
1160-224 M	<b>M24</b>	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	44	5500 kgf	8.9 kg
1160-230 M	<b>M30</b>	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	55	5500 kgf	8.9 kg

**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 chagement - By bridging hole or "T" Channel Distance, extension of connecting area ( Strengthening) is provided.



1 Bottom slide is made suitable to work piece and fixed.



2 Upper casing is slid to slide, it is brought to position on work pieces.



3 Fix upper bolt of lug to work piece.



4 Connecting system is completed

## 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

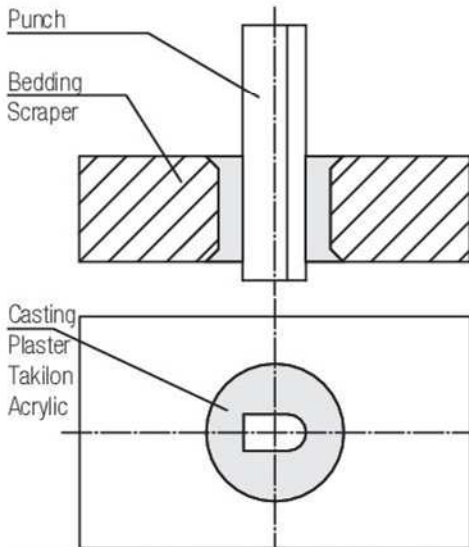
**Application :** It should be castable consistency.

Specified data are in 23°C 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 agents/silicon) 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 verticality. 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 levelling at mould and casting works.

**Definition :** Polinat 8021 is two component not-solvent, poliurethane base, electrical insulation and casting resin.

**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 significant 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 condensators as well as to prevent noise 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 obtaining 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



Page 42 Sliding Plate, Special Cut, Self Lubricating



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



Page 45 Ball Cage, Bronze Bush Kit With Retaining Ring



Page 54 Sliding Guide Plate, Hollow, Self Lubricating

SECTION: Injection Mould, Standard Components

INDEX





GTH

G.60

G.59

Page 71 Locking Cone, Precision Locating, Support Washer



G.130

G.130G

Page 74 Injection Mould Slide Locating, Oil Groove / Self Lubricating



G.131 /1-2-3-4-5

Page 74 Injection Mould Locating Blocks



G.127

Page 75 Injection Mould Square Lock Group Block



G.128

Page 75 Injection Mould Square Block Locating



G.129

Page 76 Injection Mould Locating Cone Block



G.132

Page 76 Injection Mould Long Locating Block



G.124

Page 77 Injection Mould Non Resettable Production Counter



G.142

Page 78 Injection Mould Tube, Non Resettable Production Counter



Page 79 Percussion Sets Letter- Thumbwheel Switch Sets



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



Page 93 Deformed Thread Repair Kit



Page 94 Modular Mould Coupling Sets



Page 95 Mould Clamping 'T' Footing Stud



Page 96 Mould Clamping, Plain Stud, Nut - Washer



Page 96 Mould Clamping Key Edged Stud, Toothed



Page 129 Disc / Plate Dish Springs DIN 2093



Page 132 Ball, Spring, Shoulder Screw, Core Pins



Page 135 Spring Compressing Precision Adjust Toothed Plug



G.39

Page 136 Guide Screws, Shoulder Element



GTH

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



Page 148 Dowel Pins, 6325



Page 173 Hand Type/Traveller Chamfering Machine



Page 173 Pin Cutting, Face Grinding Machine



Page 174 Pin Forming / Stepped Processing Device Universal Type



Page 174 Pin Forming / Stepped Processing Device Motor Type



Page 176 Precision, Balance Gauge Stand, Table Type



Page 181 Chucks, Accurate Solution Fixtures



Page 190 Slide Combined Shoe In 'T' Grooves



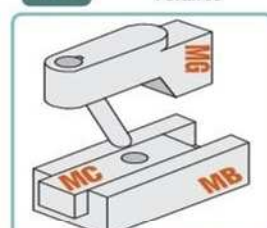
Page 191 Slide Combined Shoe in Toothed Plate



Page 192 Mould and Manufacturing Chemicals



Page 200 Pls.Mould / Identification Standard Elements



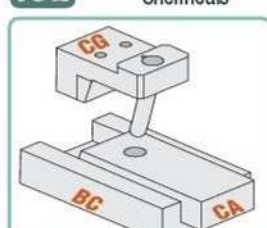
Page 202 Mini, Core Combination



Page 203 Slide / Undercut Units



Page 204 Ready Core and Wedge



Page 205 Standard, Core Combination



Page 206 Angle Core Pin and Bush Combination



Page 207 Compact Cores, Side Hollow



Page 208 Core Retainer and Mould Lock



Page 209 Core Retainer and Accessories



Page 210 Flexible Inner Core & Length Extension Kit



Page 211 Flexible Inner Core & Length Cutting Device



Page 212 Inner Core Housing and Angular Bush

**SECTION: Injection Mould, Standart Components**

**INDEX**



Page 212 Parallel Inner Core and Plated Inner Core



Page 213 2/4 Flexible Inner Core



Page 214 Calibrated / Fixed Core Retainer, Pin



Page 215 Angular / Core Slide Housing



Page 216 Perpendicular Core and Replacement Block



Page 217 Core Coupling and Per. Core End



Page 218 Ready Perpendicular Core Complete Unit



Page 219 Ready Perpendicular Core and Blocks



Page 220 Special Flex Core Order Example



Page 220 Magnetic Disc and Shock Absorber



Page 221 Injection Mould Mould Counter



Page 222 Ejector Plate Accelerator



Page 222 Dual Ejector Plate Opening System



Page 223 Dual Ejector Plate Fast Opening Sys.



Page 223 Dual Plate Ejector System



Page 224 Modular Plate Retainer



Page 224 Adjusted Plate Grooving Stroke Limiter



Page 225 Stepped / Locked Plate Grooving



Page 225 Stepped Plate Opening Unit



Page 226 Core Limiter and Intermediate Reducer



Page 227 Headless Ejector Atm. Retainer



Page 227 Ejector, Accelerator Gear Unit



Page 228 High Temperature, Date Stamp Inner



Page 228 Multi Stamp Combined Block



Page 229 Pneumatic, Ejector Valve Unit



Page 229 Fast, Pneumatic Valve Ejector Unit



Page 230 Inj. Cold Runner Deflection



Page 230 Two-Way Pneumatic Valve Unit



Page 231 Press Mould Stamping



Page 231 Injection Mould Cable Retainer



Page 232 Injection Mould Recycling Tablets



Page 233 Injection Mould Calendar-Date Stamps



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



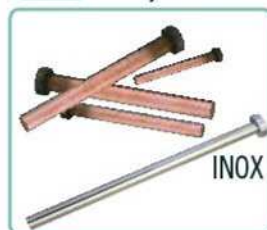
Page 252 Metal Injection Plate Ejector, Oxidation



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



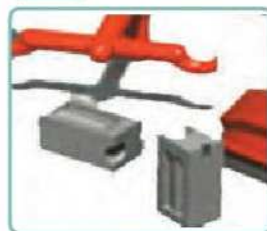
Page 257 Metal Injection Ejector Sleeves



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, Standard Types

## SECTION: Injection Mould, Standart Components

INDEX

Index 

Page 197



Page 262 Heat Insulation Plates Mould Heat Meter



Page 263 Pls. Raw Material Separators Colour Change



Page 264 Mould Assembly Pliers, Deburring



Page 265 Runner Cutting with Heat Controlled



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



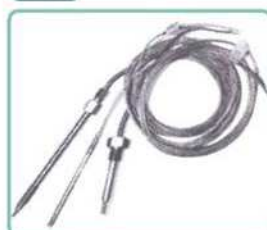
Page 271 Hot Runner Nozzle, Assembly Cleaning Gaskets



Page 272 Hot Runner Clamp & Cartridge 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



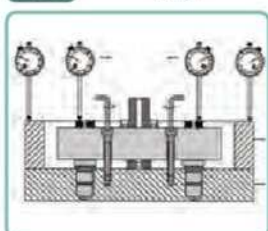
Page 281 Hot Runner Standard Nozzle Series



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

**SECTION: Injection Mould, Standart Components**

**INDEX**

Index



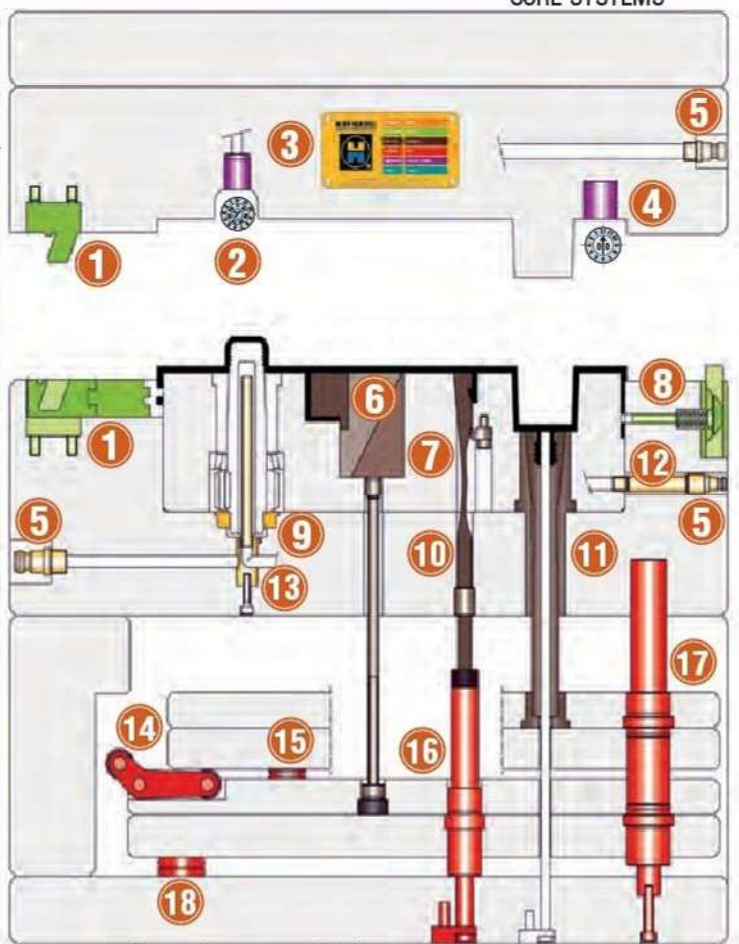
Page 199

# PLASTIC INJECTION MOULD STANDARD SYSTEMS

## CORE SYSTEMS

<b>1</b>		Slide Core Unit <b>SU</b> Page 203
<b>2</b>		Code: Combined Mould Calendar <b>FD</b>
<b>3</b>		Code: Coloured Mould ID Manual Writing <b>CP</b>
<b>4</b>		Code: Mould Calendar Changeable Hub <b>FP</b>
<b>5</b>		Code: Automatic Cooling Water Coupling <b>BR</b>
<b>6</b>		Code: Core Plate Changeable <b>ID</b> Page 219
<b>7</b>		Code: Perpendicular Core External Contact <b>DHO</b> Page 219
<b>8</b>		Code: Compact Orifice Core <b>UA</b> Page 207
<b>9</b>		Code: Cooling Disc With Gearbox <b>SB</b>

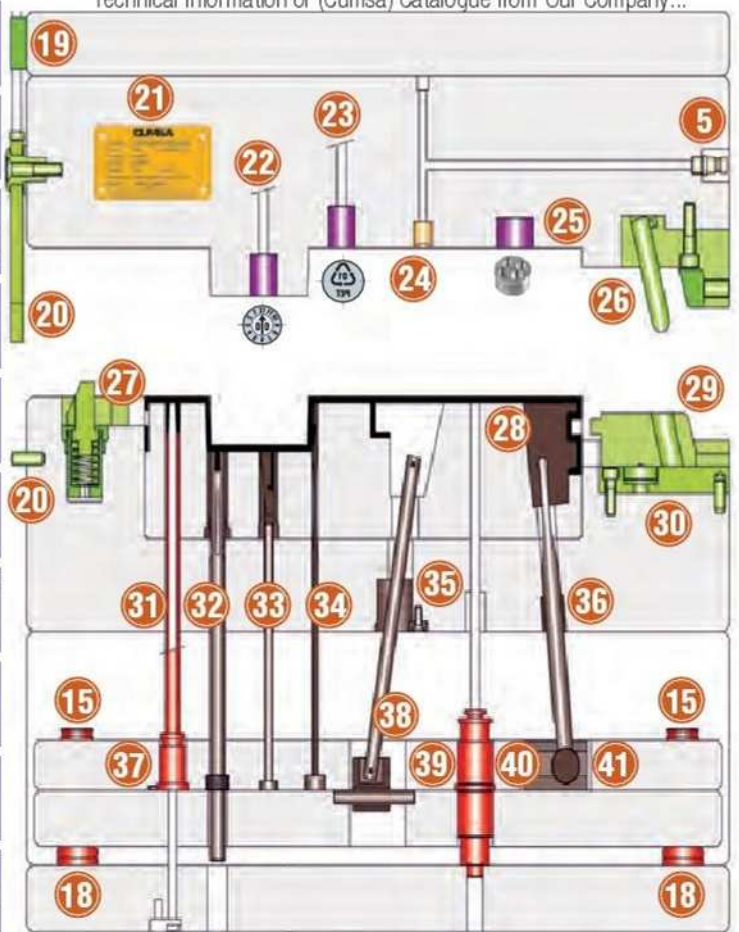
<b>10</b>		Flexible Inner Core <b>PX</b> Page 211
<b>11</b>		Automatic Flexible Inner Core <b>PE</b>
<b>12</b>		Code: Mould Coupling Intermediate Extender Length Extension <b>TH</b>
<b>13</b>		Code: Cooling Tube Copper 2 Way With Gearbox <b>TB</b>
<b>14</b>		Code: Ejector Plate Accelerator <b>EP</b> Page 222
<b>15</b>		Code: Magnetic Pin Stops <b>TM</b> Page 220
<b>16</b>		Code: Perpendicular Core Limiter <b>LR</b> Page 226
<b>17</b>		Code: Double Plate Ejector System <b>DX</b> Page 222
<b>18</b>		Code: Ejector Plate Shock Absorber <b>TA</b> Page 220



For products not available in our catalogue, please request Technical Information or (Cumsa) Catalogue from Our Company...

<b>19</b>		Code: Safety Lock Extender <b>AB</b> Page 208
<b>20</b>		Code: Mould Safety Lock <b>BS</b> Page 208
<b>21</b>		Code: LazerWriting Mould ID Label <b>PI</b>
<b>22</b>		Code: Mould Calendar Max. 150° <b>FA</b> Page 228
<b>23</b>		Code: Recycling Symbol Seals <b>IR</b>
<b>24</b>		Code: Pneumatic Ejector Valve <b>VA</b> Page 229
<b>25</b>		Code: Block Calendar <b>BM</b> Page 228
<b>26</b>		Code: Core Thrust Plate <b>CG</b> Page 204
<b>27</b>		Code: Side Hole Core <b>UC</b> Page 207
<b>28</b>		Code: Movable Core Head <b>IF</b> Page 214

<b>29</b>		Code: Mini Core Holder <b>CA</b> Page 205
<b>30</b>		Code: Core Housing <b>BC</b> Page 205
<b>31</b>		Code: Pipe Ejector Plain Ejector Without Cap <b>TE</b>
<b>32</b>		Code: Quartet Inner Core <b>EE</b> Page 213
<b>33</b>		Code: Bush Per. Core <b>PS</b> Page 216
<b>34</b>		Code: Inner Core Flat Type <b>PF</b> Page 212
<b>35</b>		Code: Angular Guide Bush <b>CI</b> Page 212
<b>36</b>		Code: Shaft Core Pin <b>VI</b> Page 215
<b>37</b>		Code: Flat Ejector Retainer <b>BA</b> Page 227
<b>38</b>		Code: Inner Core Slide Bearing <b>SD</b> Page 212



Page 200		Section Injection Mould
----------	---	-------------------------

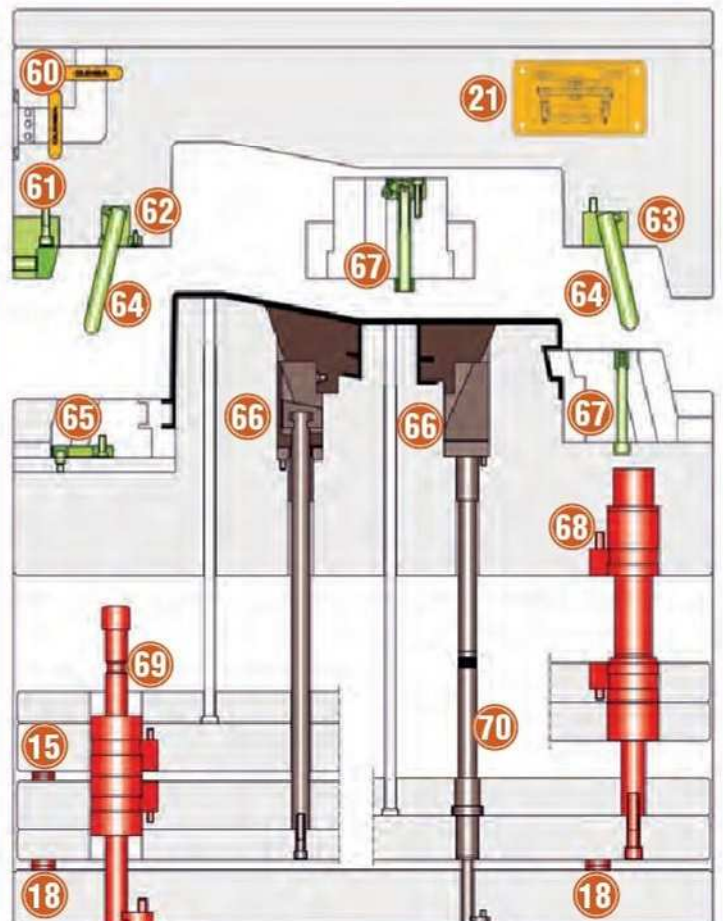
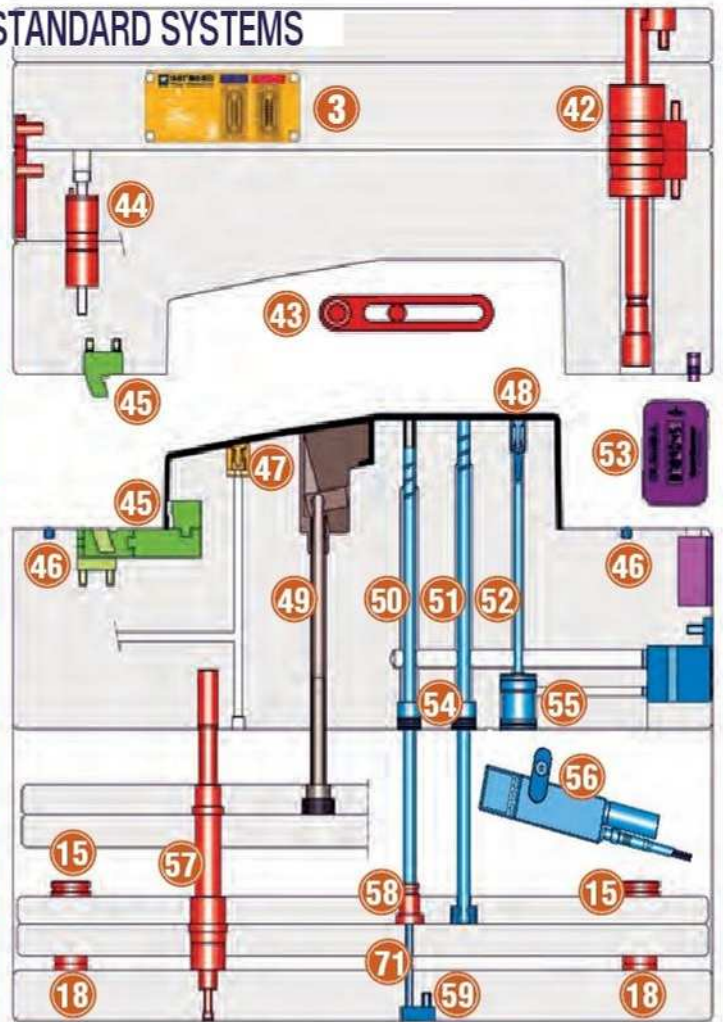
<b>39</b>		Code: Ejector Plate Accelerator <b>AE</b> Page 227
-----------	---	--

<b>40</b>		Code: Angular Slide Housing <b>BD</b> Page 215
-----------	--	--

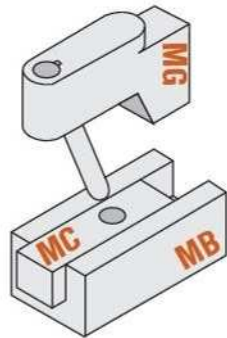
<b>41</b>		Code: Fixed Core BD Slide <b>DF</b> Page 214
-----------	---	--



# PLASTIC INJECTION MOULD STANDARD SYSTEMS



For products not available in our catalogue, please request Technical Information or (Cumsa) Catalogue from Our Company...

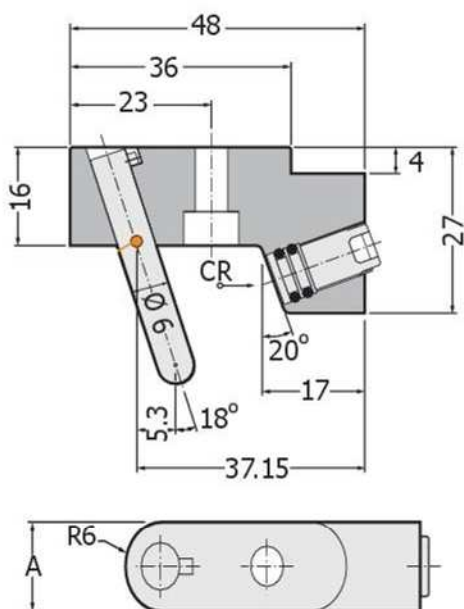


## STANDARD CORE COMBINATION MINI GUIDE

**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.

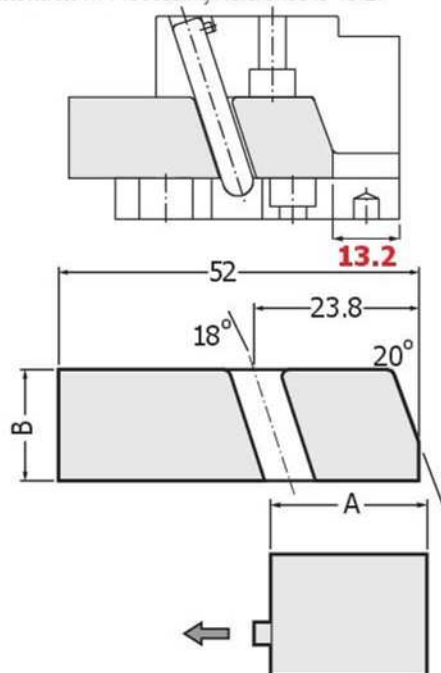


## STANDARD CORE COMBINATION MINI SLIDE

**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.

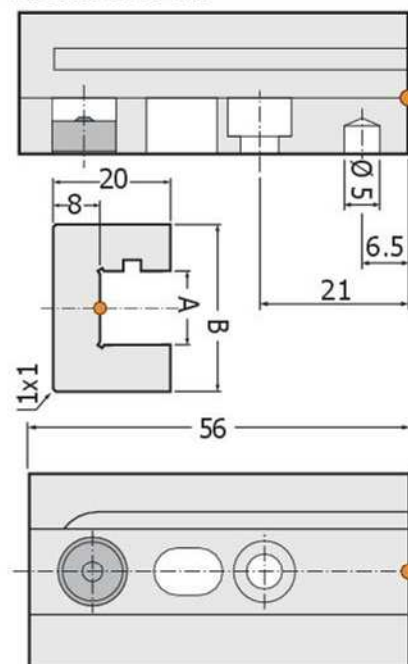


## STANDARD CORE COMBINATION MINI HOUSING

**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)
<b>MG.12 1648</b>	12	50.000
<b>MG.20 1648</b>	20	90.000

### MINI SLIDE MC

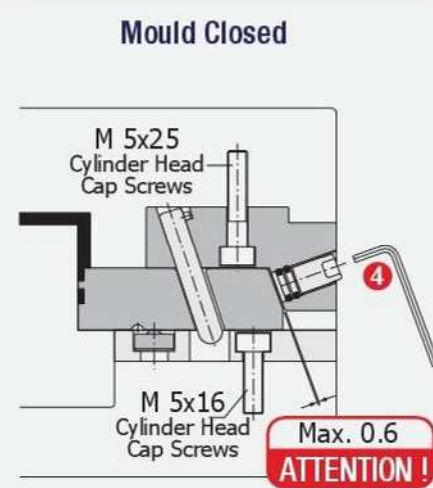
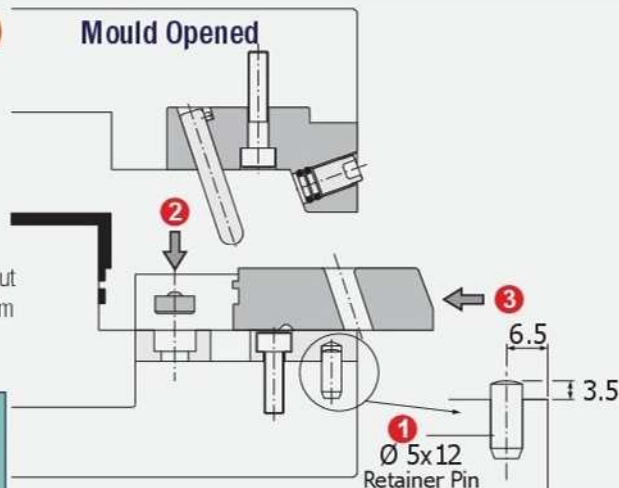
Order Reference	A mm	B mm
<b>MC.12 1252</b>	12.5	12
<b>MC.12 1652</b>	12.5	16
<b>MC.20 1252</b>	20.5	12
<b>MC.20 1652</b>	20.5	16

### MINI CASING MB

Order Reference	A mm	B mm
<b>MB.12 2056</b>	12.5	28
<b>MB.20 2056</b>	20.5	36

## ASSEMBLY (CONNECT) and OPERATING

- Determine the position of Mini Housing (MB) and mount it.
- Please insert Magnetic Retainer into hole.
- Insert Mini Slide (MC)
- While mould is closed, please adjust Mini Slide (MC) to maximum 0.6 mm



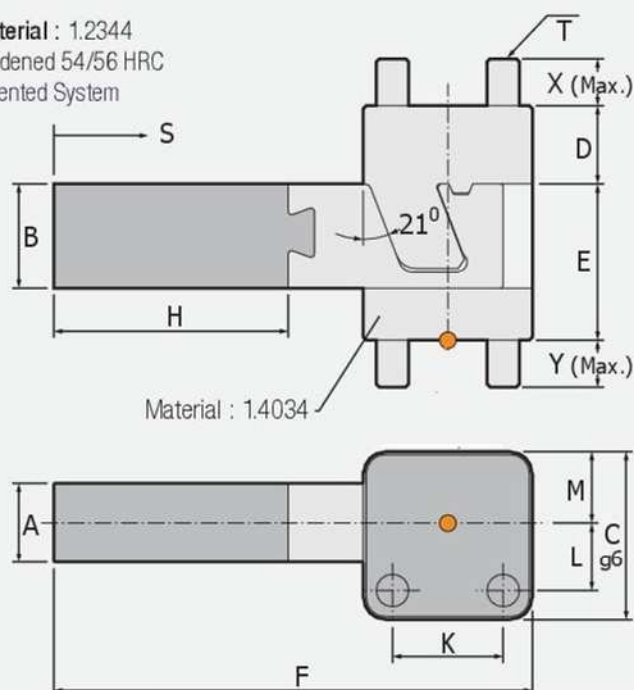


## SLIDE CORE UNIT

### Bottom Hole Forming, (Engraving) Processing Core Group

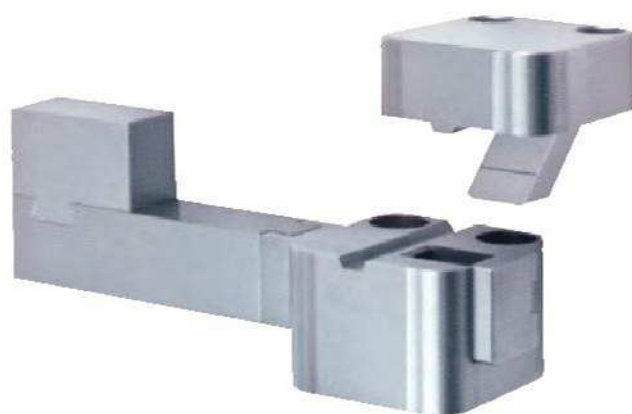
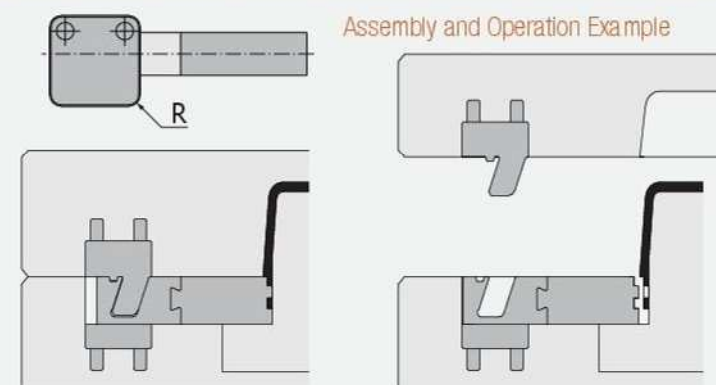
Demountable External Core Unit **Max. 5mm Stroke Distance 3 Pieces Compact System.** All surfaces are precisely grinded 90° perpendicularly. Ideal Structure for Injection Mould Internal/External Details, Mould Consisted Movable and 2 Different Slider Inserts, Flexibility Provided related with its property.

Material : 1.2344  
Hardened 54/56 HRC  
Patented System



Order	A	B	C	D	E	F	H
<b>SU.08 1220</b>	8.2	12	20	10	18	60	32
<b>SU.12 1626</b>	12.2	16	26	12	24	73	36
<b>SU.16 2032</b>	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

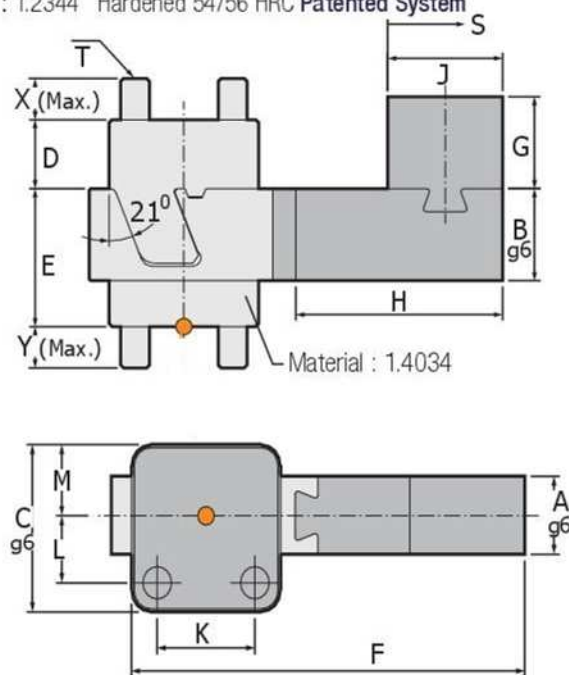


## SU SLIDE HIDDEN CORE UNIT

### Bottom Hidden (Core) Forming (Cavity) Processing Core Group

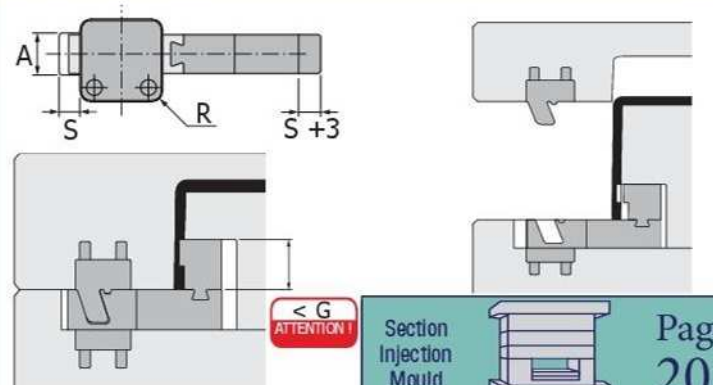
In contrast to Normal Core, provides reverse motion, **5 mm Stroke Mini Product is ideal for production of internal nails.** Forming of slide from 2 parts, provides easily process possibility the desired nail form, All processes are made 90° perpendicularly to mould parting surface.

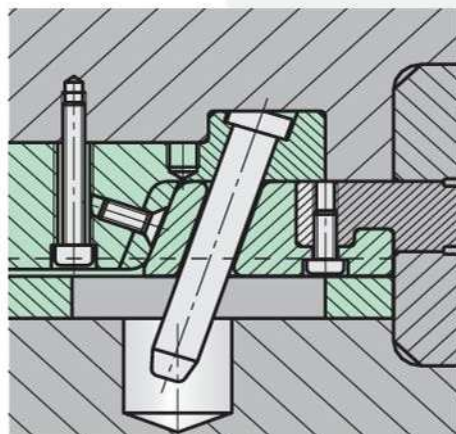
Material : 1.2344 Hardened 54/56 HRC Patented System



Order	A	B	C	D	E	F	G
<b>UU.08 1220</b>	8.2	12	20	10	18	53	12
<b>UU.12 1626</b>	12.2	16	26	12	24	64	16
<b>UU.16 2032</b>	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





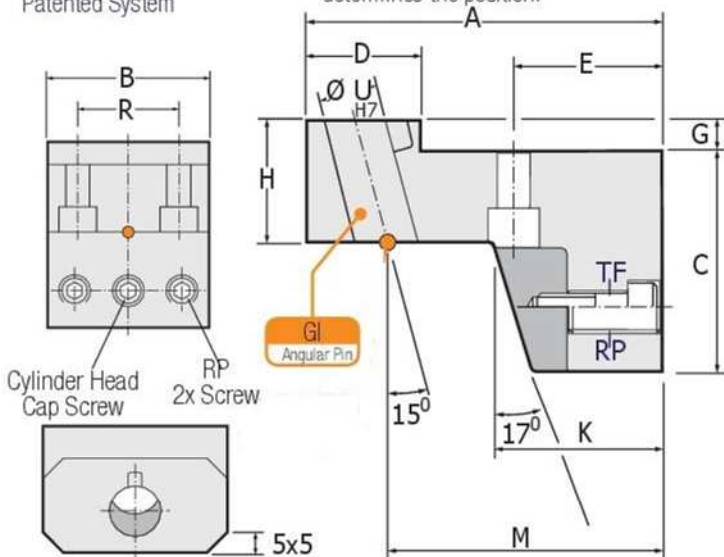
## READY CORE GUIDE UNIT

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 90° perpendicular surfaces are precisely processed.

**Material :** 1.2312  
Improved 1.080 N/mm<sup>2</sup>  
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
<b>CG.60 3035</b>	60	30	35	25	23	6	23
<b>CG.60 4035</b>	60	40	35	25	23	6	23
<b>CG.75 4049</b>	75	40	49	30	32	7	27
<b>CG.86 4857</b>	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

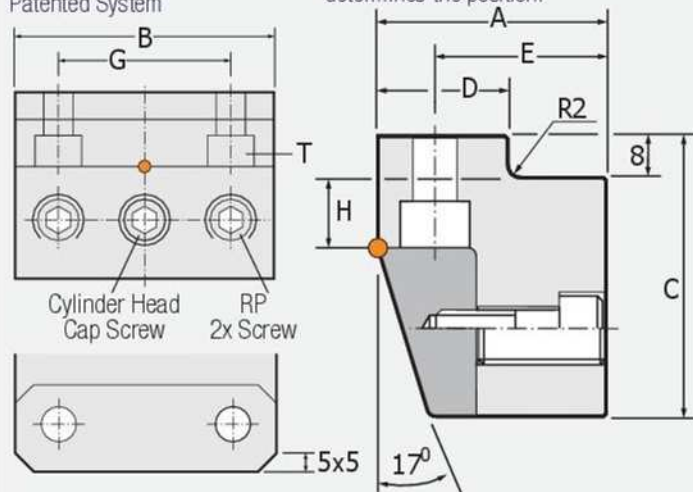
## READY CORE THRUST BLOCK

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 90° perpendicular surfaces are processed with precision.

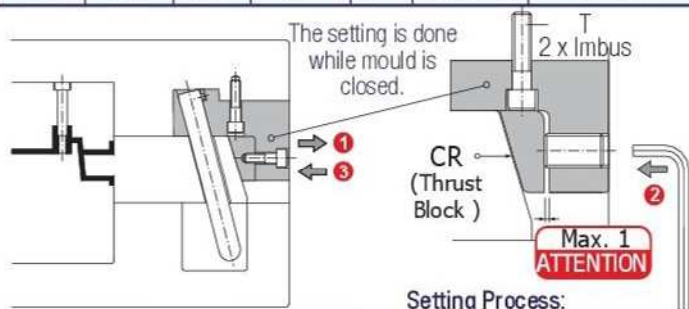
**Material :** 1.2312  
Improved 1.080 N/mm<sup>2</sup>  
Patented System

Two retaining pins on the outer are fixed thrust block. The intermediate screw determines the position.

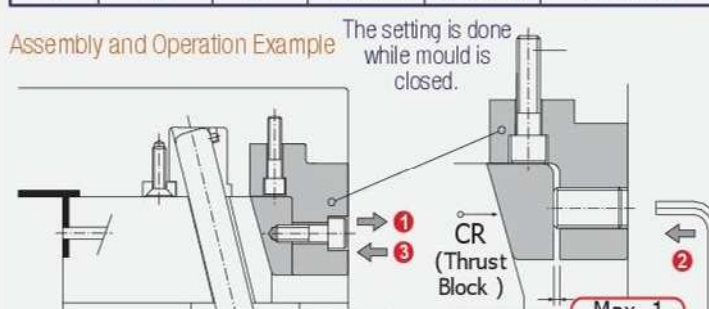


Order	A	B	C	D
<b>CR.40 3840</b>	40	38	40	25
<b>CR.45 4849</b>	45	48	49	28
<b>CR.52 6052</b>	52	60	52	32
<b>CR. 52 6852</b>	52	68	52	32
<b>CR.52 7556</b>	52	75	56	32

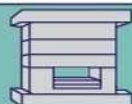
E	G	H	T	RP	CR (N)
30	22	12	M8x30	101020	320.000
35	28	16	M10x35	121025	480.000
40	35	16	M10x35	141030	750.000
40	45	16	M10x35	141030	750.000
40	50	16	M10x35	141030	750.000

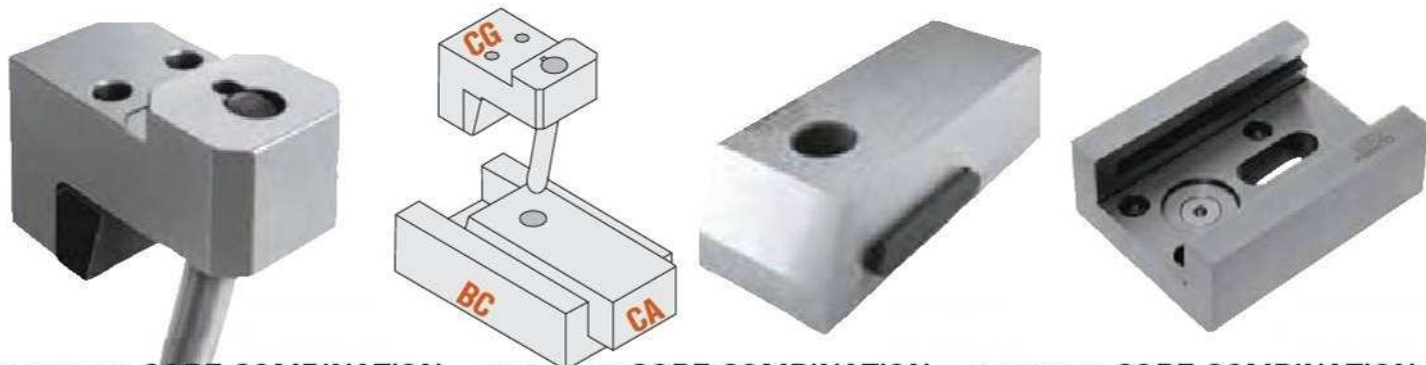


**Setting Process:**  
1- Unbolt TF ( Bolt)  
2- Tight RP ( Screw)  
3- Lock TF.



**Setting Process:**  
1- Unbolt TF ( Bolt)  
2- Tight RP ( Screw)  
3- Lock TF.





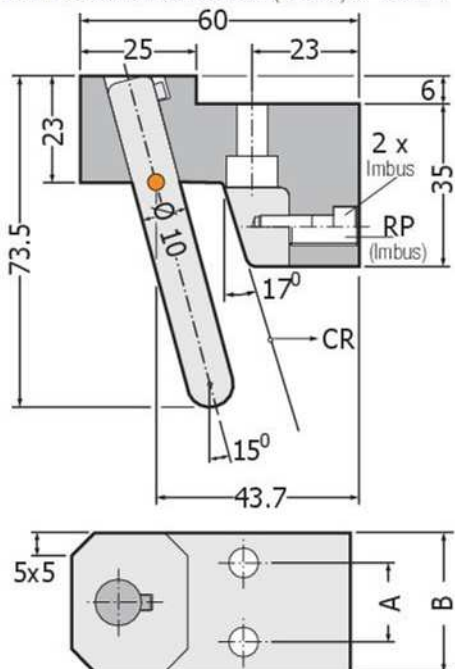
## STANDARD CORE COMBINATION PIN CORE GUIDE **CG**

**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<sup>2</sup>  
Patented System

**Attention!!!** Standard Stroke (Motion) is 12 mm.



## CORE GUIDE **CG**

Order	A	B
<b>CG.60 3075</b>	17	30
<b>CG.60 4075</b>	22	40

CR (N)	RP	Angular Pin
180.000	081015	GI.010075
320.000	101015	GI.010075

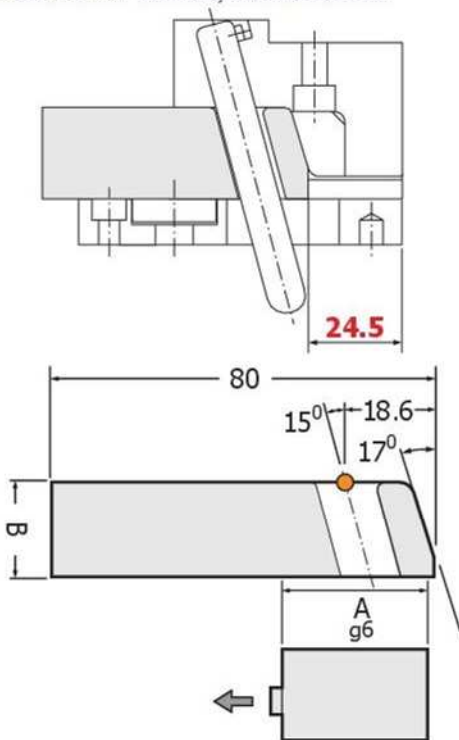
## STANDARD CORE COMBINATION CORE SLIDE **CA**

**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



## CORE SLIDE **CA**

Order	A	B
<b>CA.32 2080</b>	32	20
<b>CA.32 2480</b>	32	24
<b>CA.42 2080</b>	42	20
<b>CA.42 2480</b>	42	24

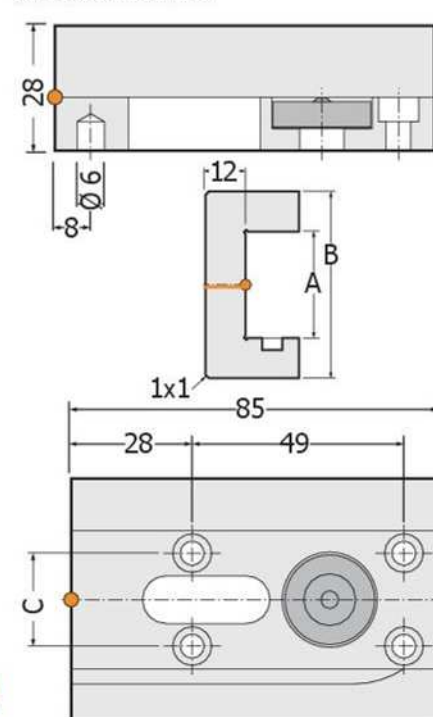
## STANDARD CORE COMBINATION CORE HOUSING **BC**

**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.

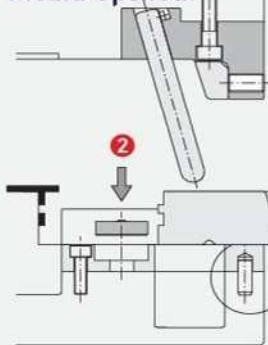
**Material :** 1.2510 Patented System  
Hardened 54/56 HRC



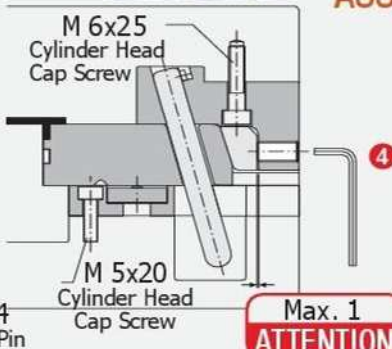
## CORE HOUSING **BC**

Order	A	B	C
<b>BC.32 2885</b>	32	56	21.5
<b>BC.42 2885</b>	42	66	26.5

### Mould Opened



### Mould Closed



### 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.

**Max. 1 ATTENTION**

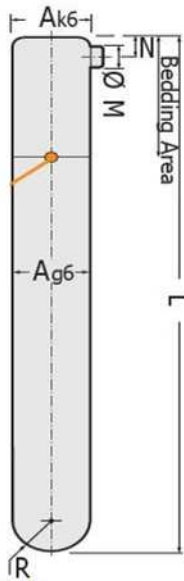




## STANDARD CORE COMBINATION ANGULAR PIN

**Angular Pin:** This pin, works compatibly with each core set in Cumsa Serie.

**Material :** 1.7242 **Hardness :** 60 HRC



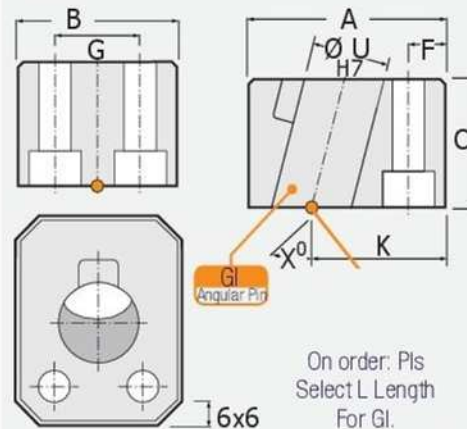
On order :  
Inform  
Length Size.



## STANDARD CORE COMBINATION GI ANGULAR PIN RETAINER BG

**Angular Pin Retainer:** It is same with round angularpin retainer (GR). **However, it is 15° or 20°.** 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<sup>2</sup>

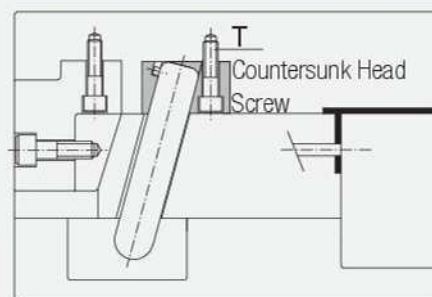


On order: Pls  
Select L Length  
For GI.

## ANGULAR PIN RETAINER BG

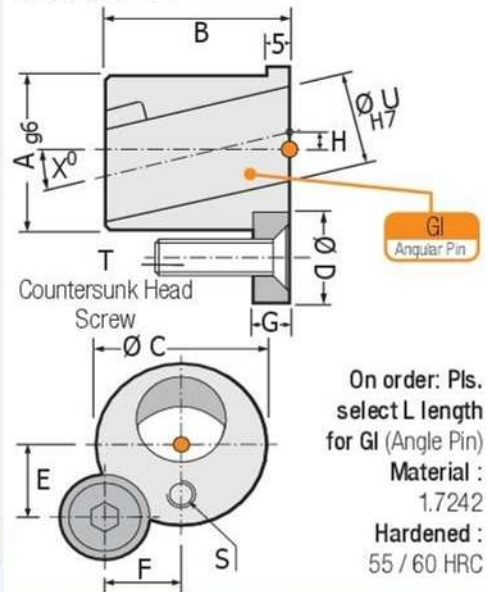
Order	A	B	C	F
<b>BG.423016-15</b>	42	30	30	7.5
<b>BG.504020-15</b>	50	40	36	9
<b>BG.554024-15</b>	55	40	40	9
<b>BG.655028-15</b>	65	50	45	12
<b>BG.423016-20</b>	42	30	30	7.5
<b>BG.504020-20</b>	50	40	36	9
<b>BG.554024-20</b>	55	40	40	9
<b>BG.655028-20</b>	65	50	45	12

G	K	T	U	X
15	28	M6x35	Ø 16	15°
22	34	M8x40	Ø 20	
22	38	M8x45	Ø 24	
26	45	M10x50	Ø 28	
15	28	M6x35	Ø 16	20°
22	34	M8x40	Ø 20	
22	38	M8x45	Ø 24	
26	45	M10x50	Ø 28	



## 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° or 15°.



On order: Pls.  
select L length  
for GI (Angle Pin)  
**Material :**  
1.7242  
**Hardened :**  
55 / 60 HRC

Order	A	B	C	D	E
<b>GR.182622-10</b>	18	26	22	12	10.8
<b>GR.222826-10</b>	22	28	26	16	11
<b>GR.283432-10</b>	28	34	32	16	13
<b>GR.344038-10</b>	34	40	38	20	17
<b>GR.424546-10</b>	42	45	46	20	19.5
<b>GR.465050-10</b>	46	50	50	20	21
<b>GR.182622-15</b>	18	26	22	12	10.8
<b>GR.222826-15</b>	22	28	26	16	11
<b>GR.283432-15</b>	28	34	32	16	13
<b>GR.344038-15</b>	34	40	38	20	17
<b>GR.424546-15</b>	42	45	46	20	19.5
<b>GR.465050-15</b>	46	50	50	20	21

F	G	H	S	T	U	X°
7.5	6	3.8	M5x5	M5x16	10	10°
11		4	M6x6	M6x16	12	
13		5			16	
17	5.5	M8x6	M8x20	20		
19.5	6			24		
21	7			28		
7.5	6	3.8	M5x5	M5x16	10	15°
11		4	M6x6	M6x16	12	
13		5			16	
17	5.5	M8x6	M8x20	20		
19.5	6			24		
21	7			28		

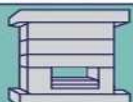
## ANGULAR PIN

Order	A	Bedding Area
<b>GI.010.. L</b>	10	≈ 25
<b>GI.012.. L</b>	12	≈ 30
<b>GI.016.. L</b>	16	≈ 35
<b>GI.020.. L</b>	20	≈ 40
<b>GI.024.. L</b>	24	≈ 45
<b>GI.028.. L</b>	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

CORE Systems

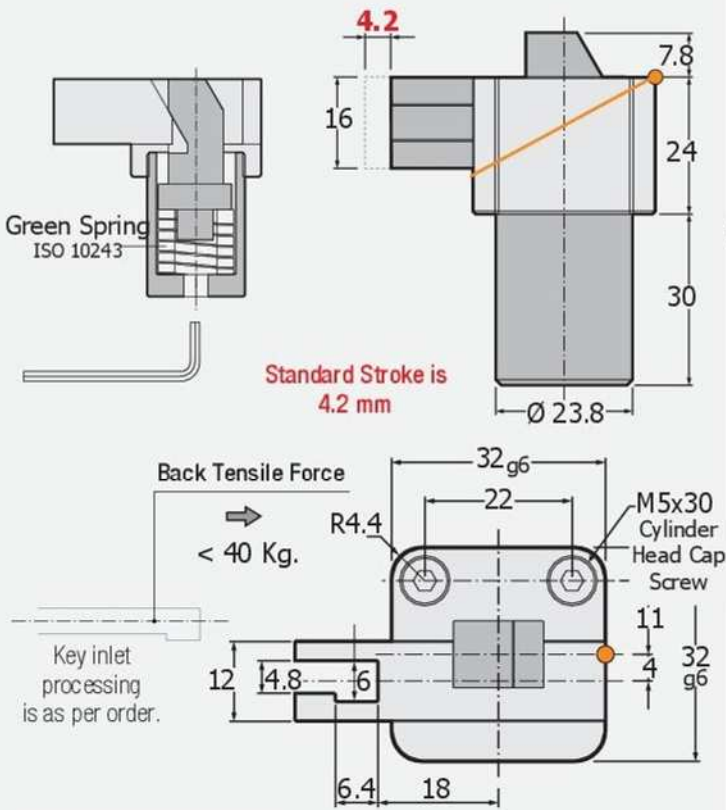




## READY CORE, SIDE HOLLOW

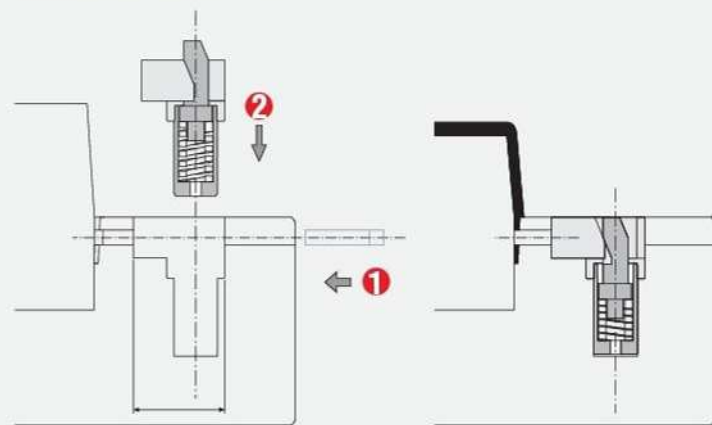
Injection Plastic Mould is to Create Side Hole.

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



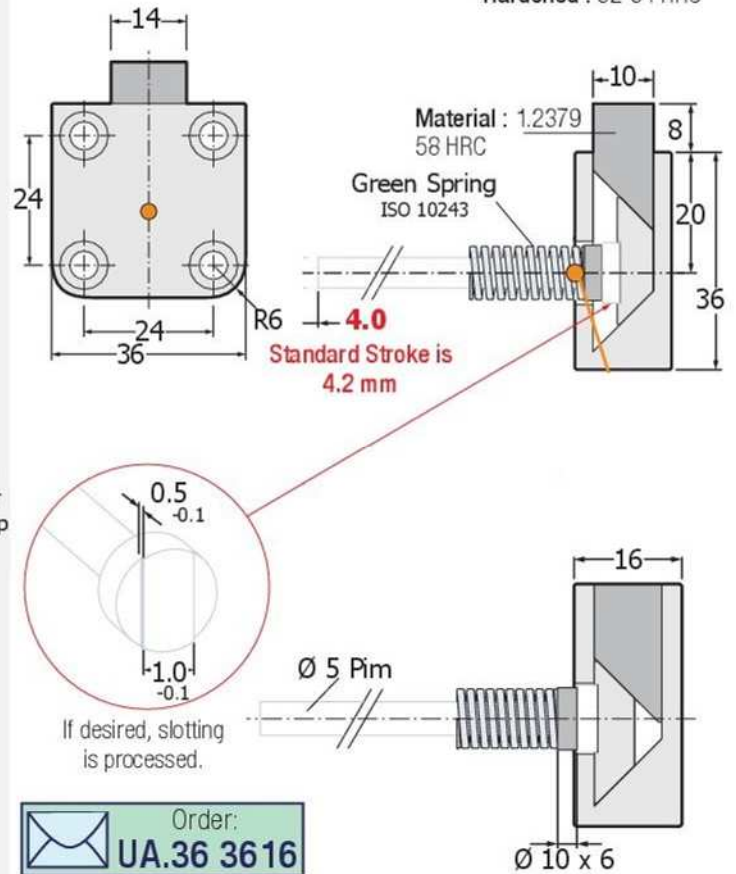
## UC COMPACT CORE UNIT

Spring / Pin Loaded Compact Core / Hole Unit.

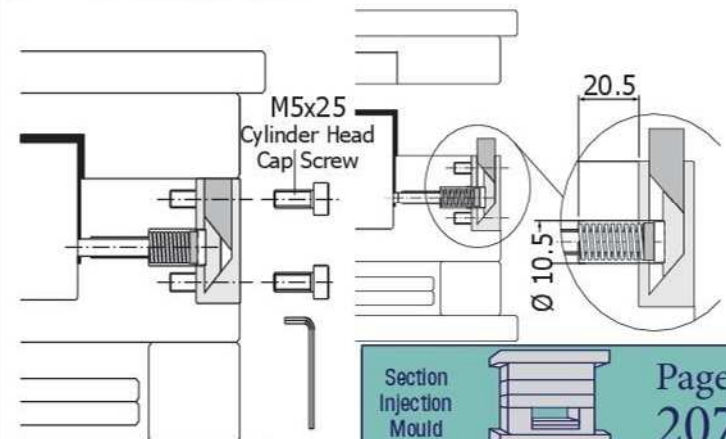
It reduces slot processing and assembly costs.

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**

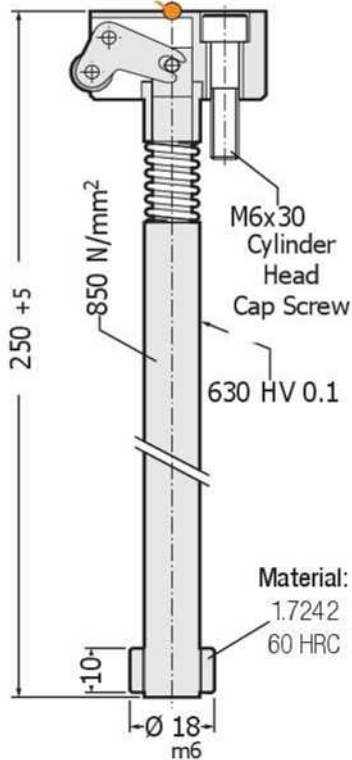
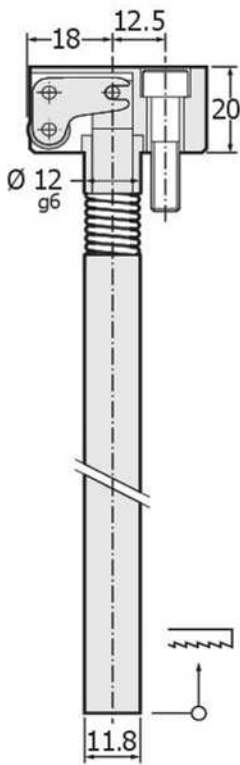
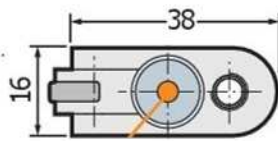




## AUTOMATIC CORE RETAINER RA

It is ready standard solution for moulders. It is worked easily and smoothly without requiring large loads. This Core retainer has 2000 Kg. load capacity.

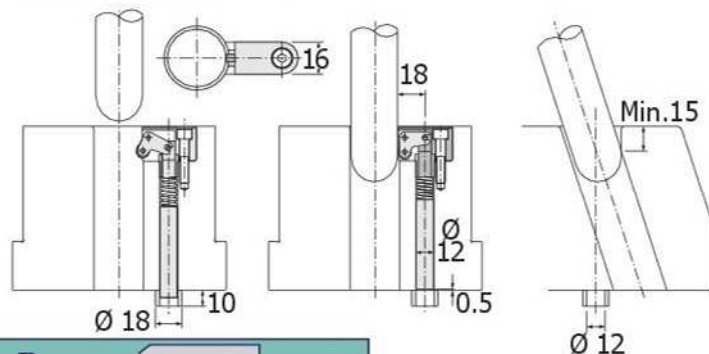
Material : 1.2510  
Hardened : 56 HRC



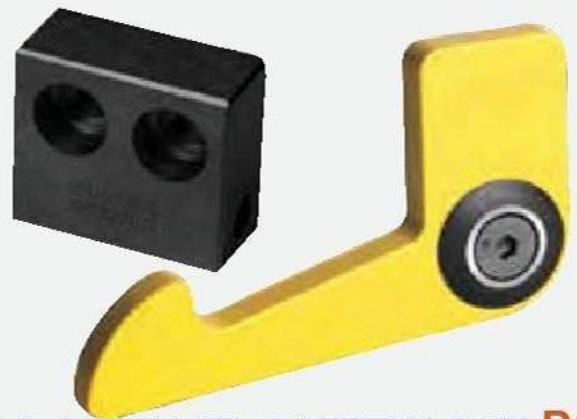
Material:  
1.7242  
60 HRC

Order:  
**RA.16 3812**

Pin Size: It should be 0.5 shorter than core height.



Page  
**208**



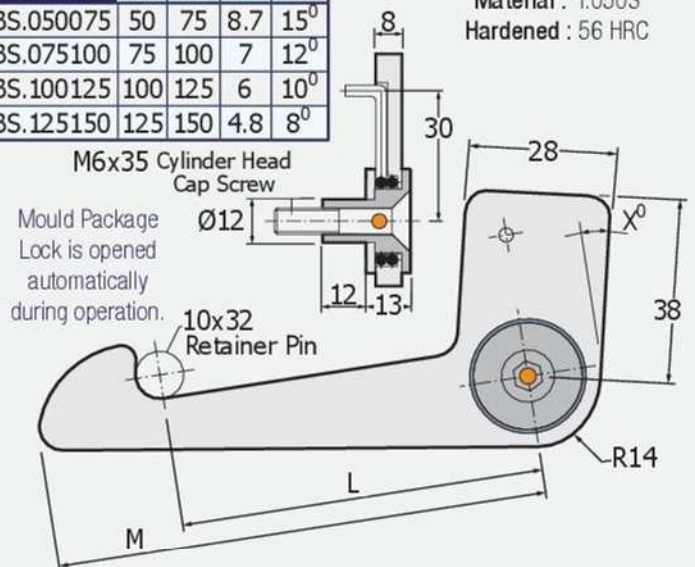
## MOULD PACKAGE, SAFETY LOCK BS

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°
BS.075100	75	100	7	12°
BS.100125	100	125	6	10°
BS.125150	125	150	4.8	8°

Material : 1.0503  
Hardened : 56 HRC



## MOULD SAFETY LOCK INTERMEDIATE EXTENDER AB

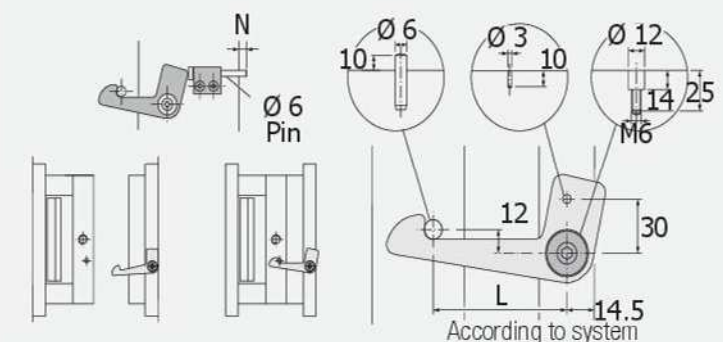
It is used for thick plate moulds.

Extender Unit: It is used in spaces that mould plate is thicker than 120 mm.

Material : 1.0503



Order:  
**AB.302613**



## Injection Plastic Mould CORE Systems

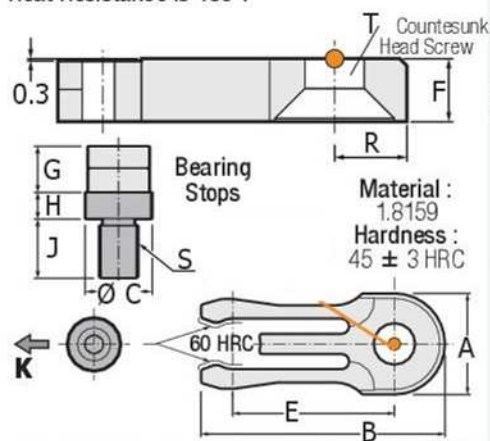




## STOPPER CORE RETAINER RCM

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<sup>0</sup>.

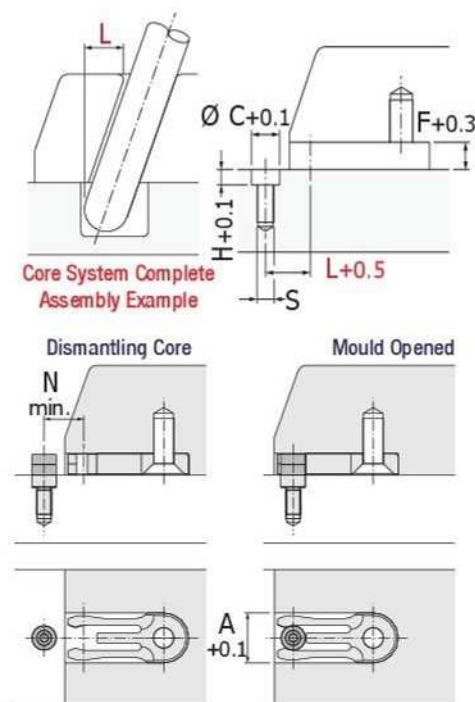


## STOPPER CORE HOLDER RCM

Order	A	B	C	E	F	G
<b>RCM.16 3808</b>	16	38	8	25	7.7	7.6
<b>RCM.20 4810</b>	20	48	10	32	8.7	8.6
<b>RCM.24 5712</b>	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

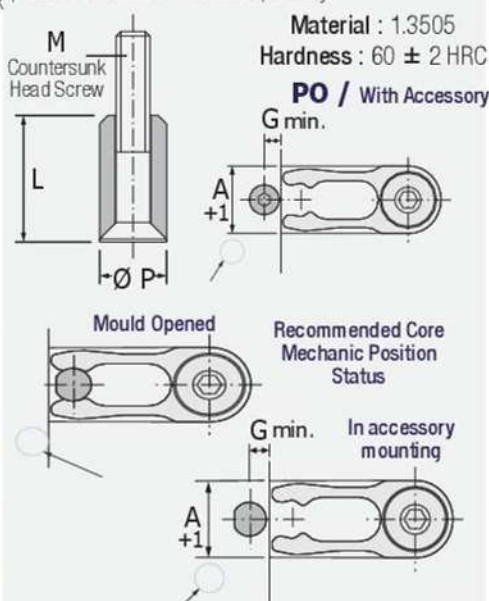
K : Forcing to release safety



## RETAINER ACCESSORIES PO

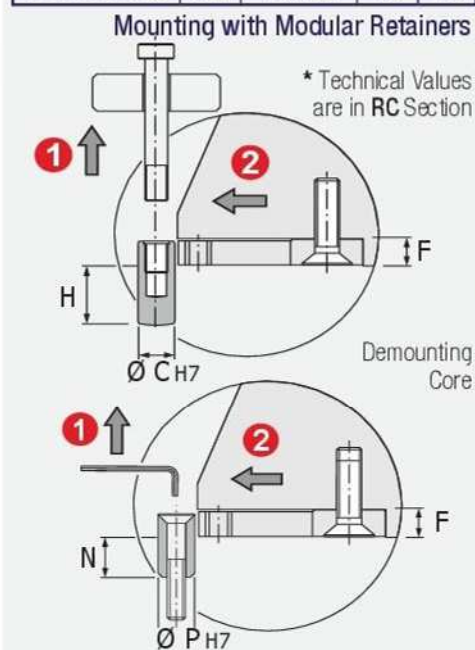
Optional belonging to RC Retainer (As per order) Bush-Countersunk Bolt Set

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

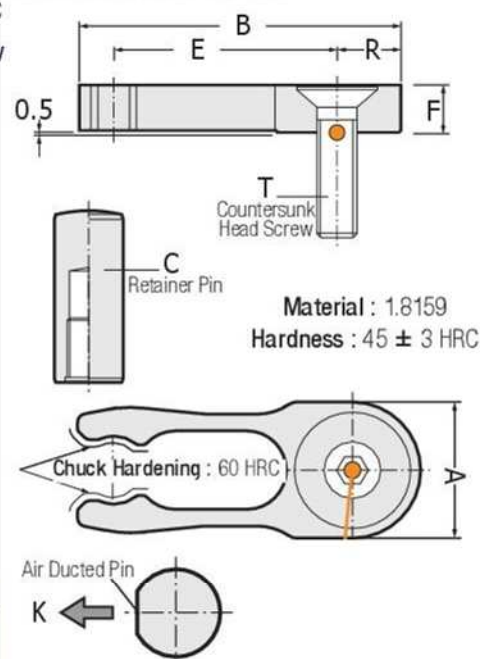
Order	L	M	N	P
<b>PO.120320</b>	12	M3x20	7.5	6
<b>PO.150425</b>	15	M4x25	10	8
<b>PO.200530</b>	20	M5x30	13	10
<b>PO.250635</b>	25	M6x35	16	12
<b>PO.340850</b>	34	M8x50	23	16



## 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<sup>0</sup>dir.



" K " is the approximate load value required to disengage from retainers.

## CORE RETAINER RC

Order	A	B	C	E	F
<b>RC.123006</b>	12	30	6x20	21	5
<b>RC.164008</b>	16	40	8x20	28	6
<b>RC.205010</b>	20	50	10x24	34	8
<b>RC.246012</b>	24	60	12x32	42	10
<b>RC.328012</b>	32	80	16x40	56	12
<b>RC.328016</b>	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

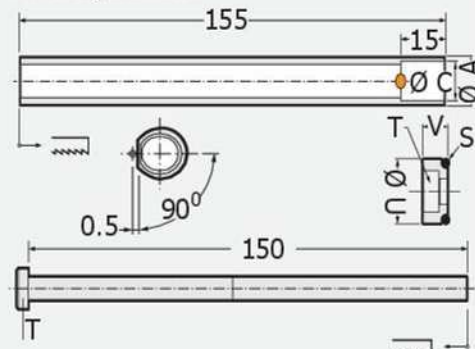




## LENGTH EXTENSION SET AP

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.

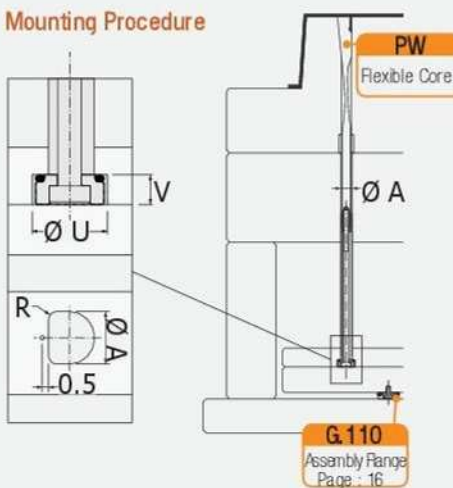


## FLEXIBLE CORE L. EXTENSION SET

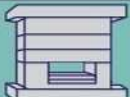
Order	A	C	R
AP. 08 06 15	8	6	1.25
AP. 10 08 15	10	8	2.0
AP. 12 10 15	12	10	2.5

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

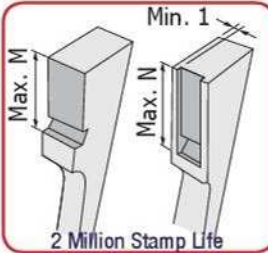
### Mounting Procedure



## Injection Plastic Mould EJECTOR systems



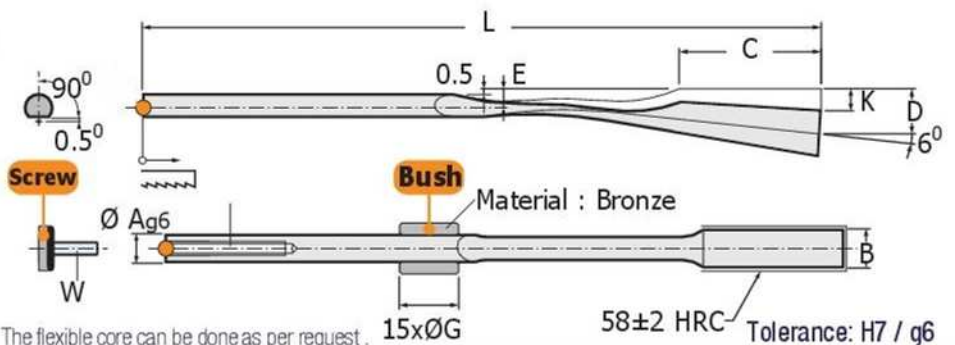
After setting core, pls. process 0.1 mm from end section to make pushing effortlessly.



## FLEXIBLE INNER CORE (Radial Motion, Bedding, Threaded) PW

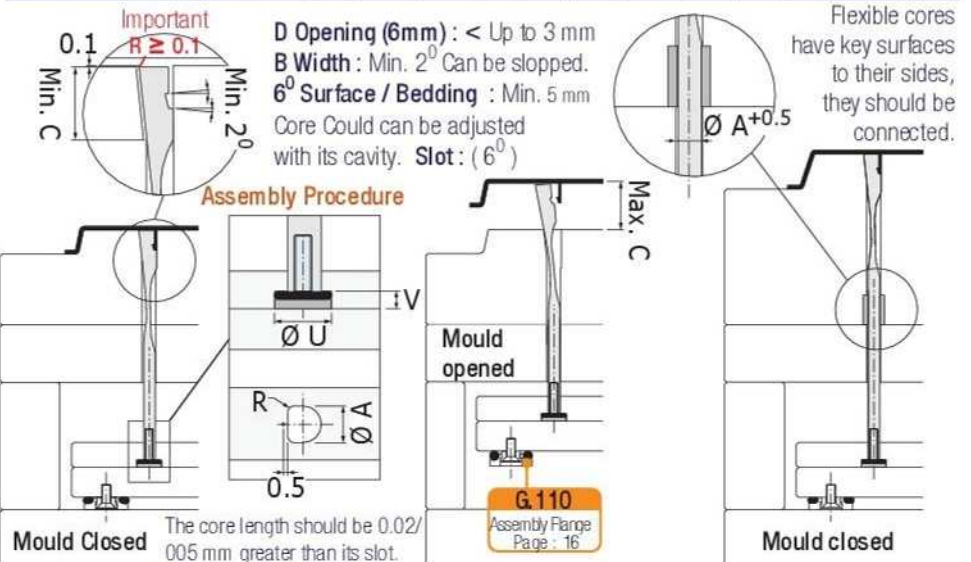
The required area for mounting is very small, it requires area as much as ejector pin. Excluding the desired form of operation, there is no need for any processing, grinding or hardening processes. Due to that parting surface is 90°, mounting procedure is easy, it eliminates the needs of complex mechanic 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.

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	-	-	140	18	21	2.0	M5 x 36	14	6	M5 x 16	
PW.081025		10.2	30	11.2	4.5	12	4.5	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													



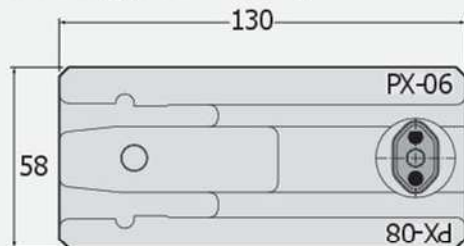


**CX**

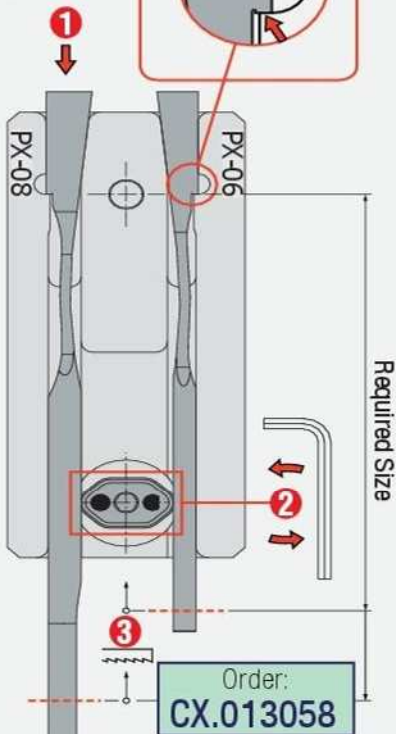
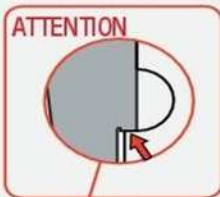
### "PX" LENGTH CUTTING DEVICE

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.

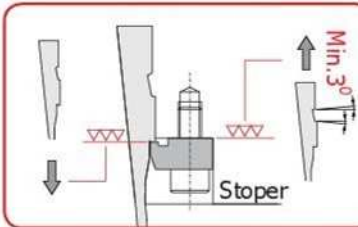
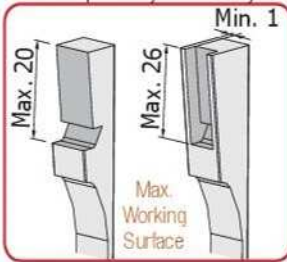
- 1 For 6 or 8 mm flexible core, place in slot of the device corresponding to the related product. Pls. be sure that is in correct position. By retaining core supportively, bring to cutting position.
- 2 Pls. tight flat/flap or round core with Alien Key in related slot.
- 3 According to the desired length 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.

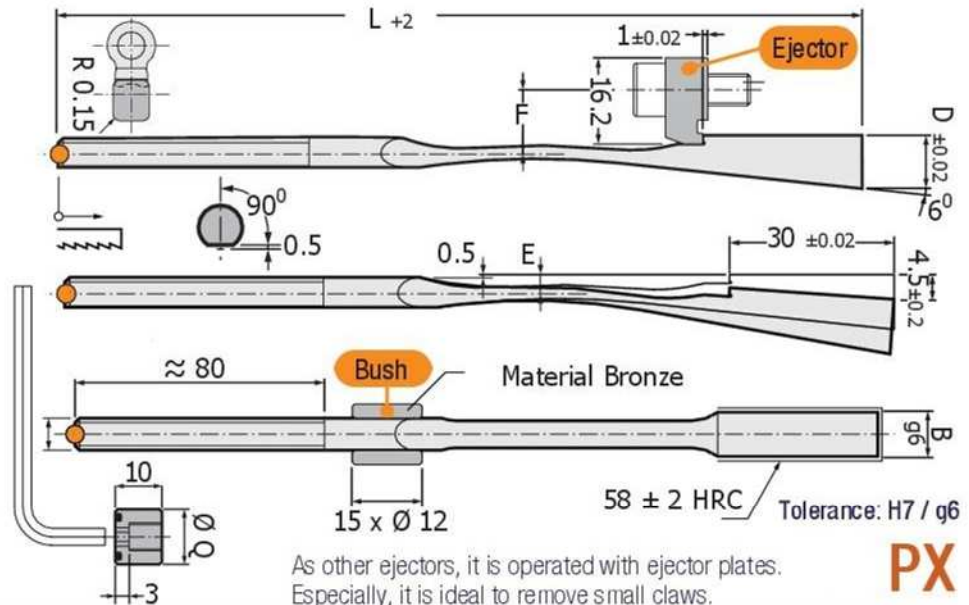


All sharp corners, are simplified by appropriate Radius. Doing cutting processes by CX Device is recommended. Basic fixing system are available in three lengths. **Working Temperature is 150°**  
Material: 1.8159 Hardness: 45 +3 HRC (We don't recommended welding / covering processes.



### 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.



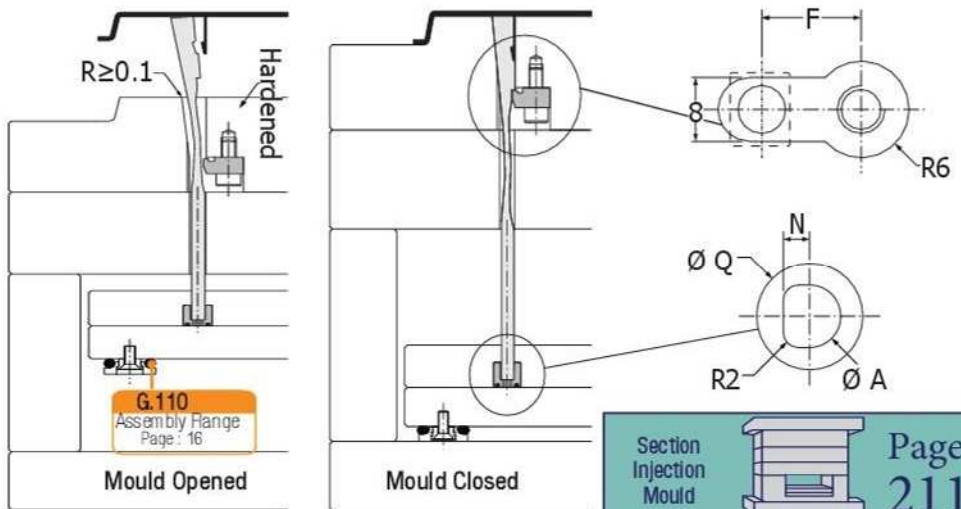
As other ejectors, it is operated with ejector plates. Especially, it is ideal to remove small claws.

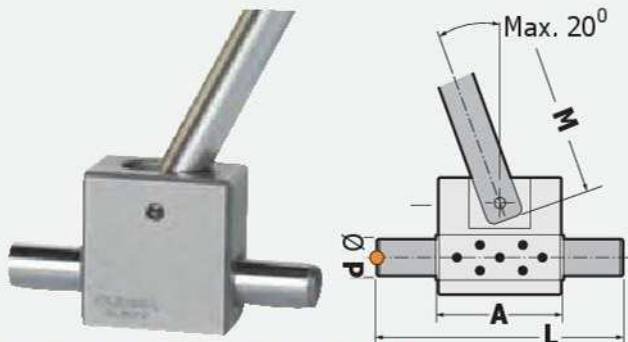
**PX**

Order	A	B	D	E	F	L=175	L=250	L=325	N	Q
						Bush	Bush	Bush		
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

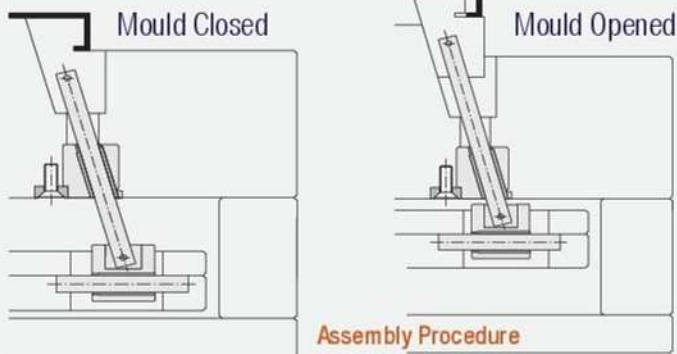
It is used in internal motion that requires pushing in different angles. Self lubricating bush facilitates operating.

Maximum weight that inner core housing can be lifted.

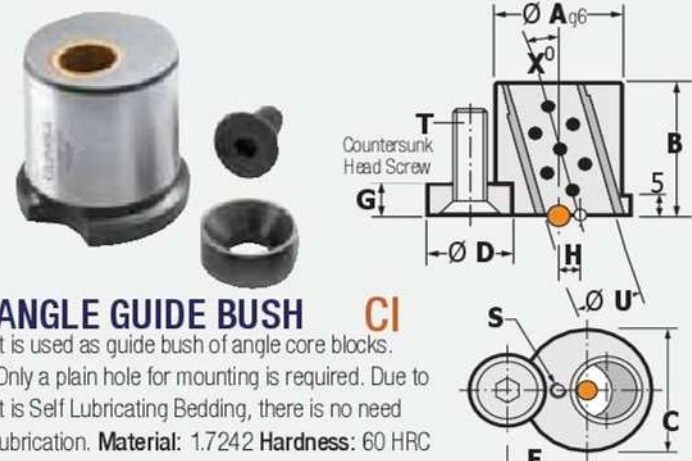
SD.322010 - 320 kg  
SD.382412 - 420 kg  
SD.452816 - 680 kg.

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



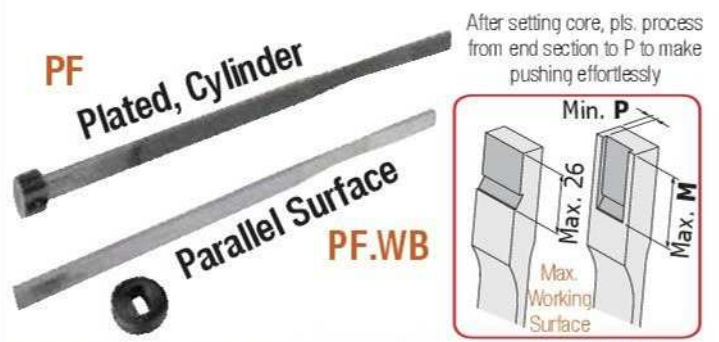
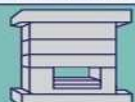
Assembly Procedure



### 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	

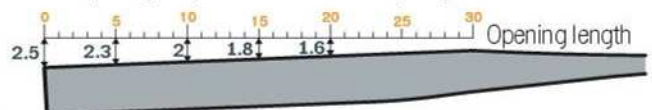


After setting core, pls. process from end section to P to make pushing effortlessly

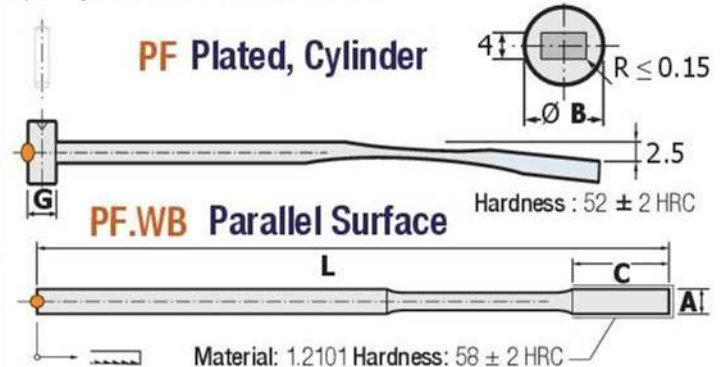
### FLEXIBLE, PLATED INNER CORE PARALLEL SURFACE FLEXIBLE INNER CORE PF PF.WB

**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.

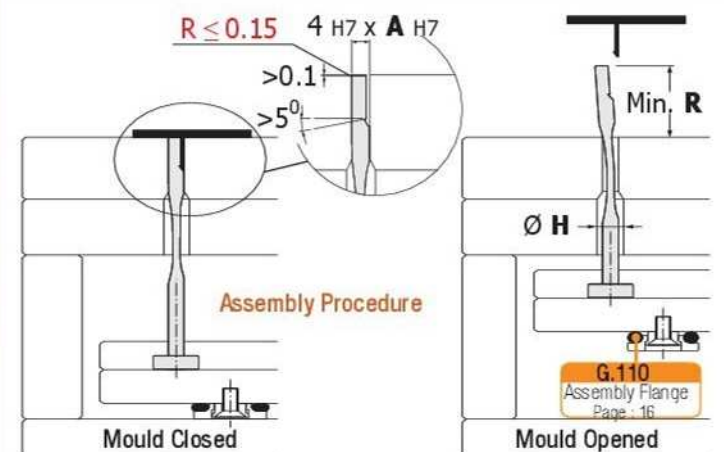
**Maximum Opening Length** With a radial motion Opening at the end of stroke is 2.5 mm



**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	24	6	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					



Assembly Procedure



## DUAL FLEXIBLE INNER CORE UNIT

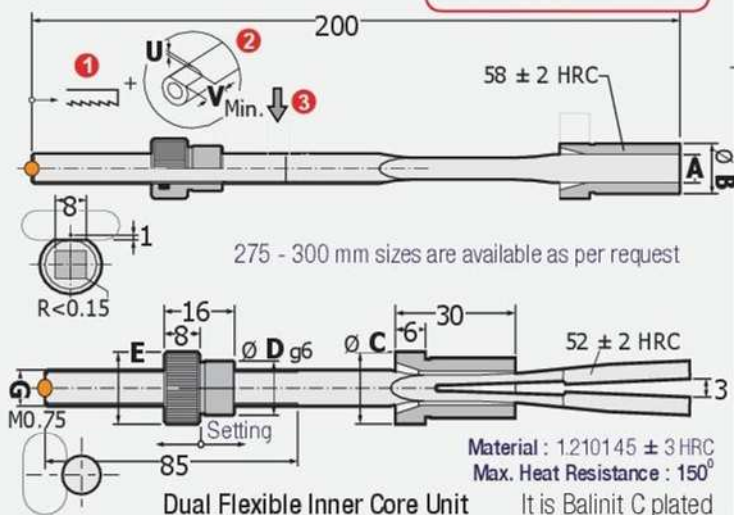
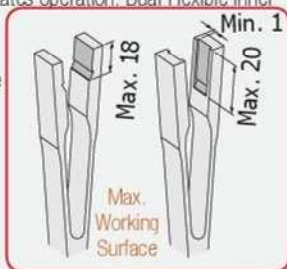
ED

It is very useful for the removal of small claws

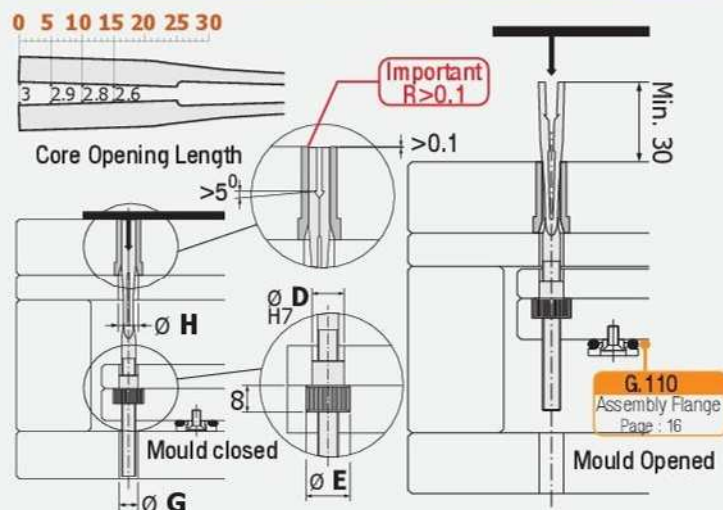
The running in of double flexible inner core has been made and length setting can be done easily. Its mounting and processing are very easy, it processes 90° to part surface.

**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.



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		
ED.128200	12	16	18	16	20	8	15	15	



## QUARTET FLEXIBLE INNER CORE UNIT

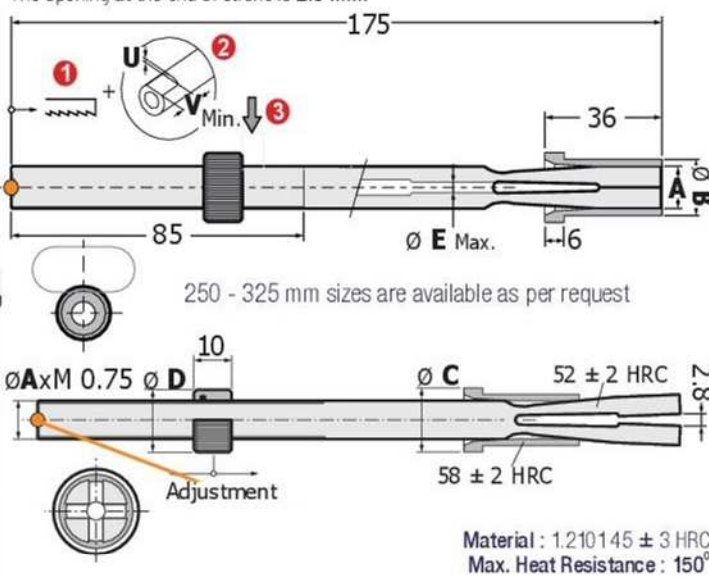
EE

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 90° 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.

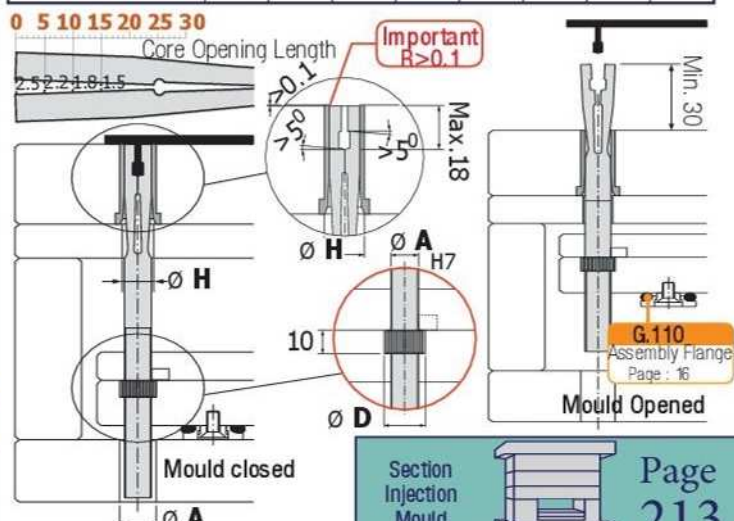
The opening at the end of stroke is 2.8 mm.



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		
EE.124175	12	16	18	18	4	15	15	
EE.168175	16	20	22	22	8	19	1.0	20



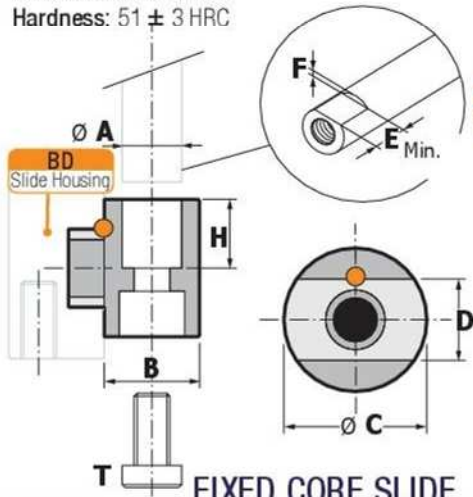


## Ejector Plate Angular Pin Systems FIXED CORE SLIDE DF

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.

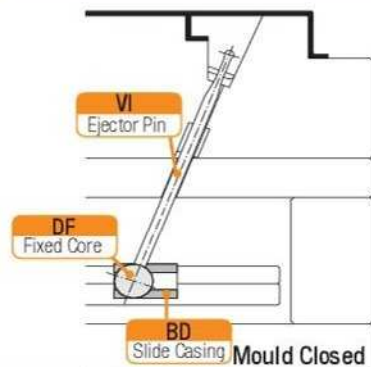
Material : INOX 1.4034  
Hardness: 51 ± 3 HRC



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

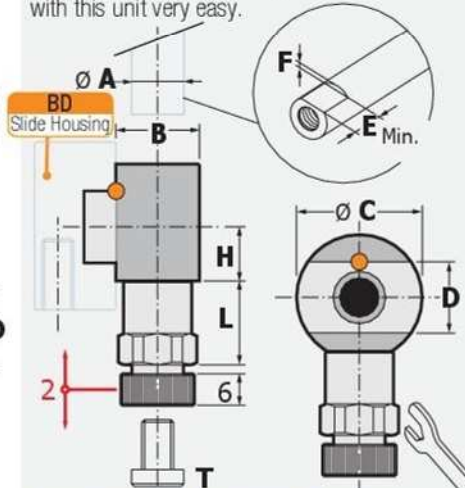


Mould Closed

## 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.

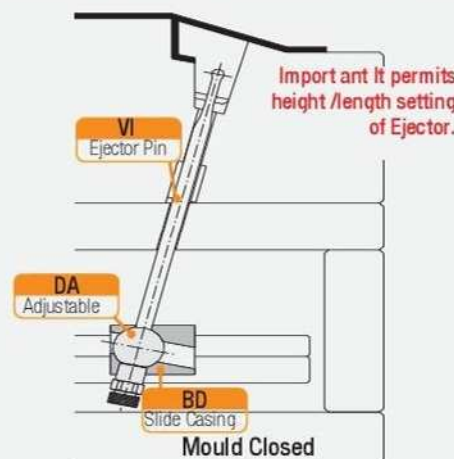


ADJUSTABLE CORE SLIDE

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



Mould Closed

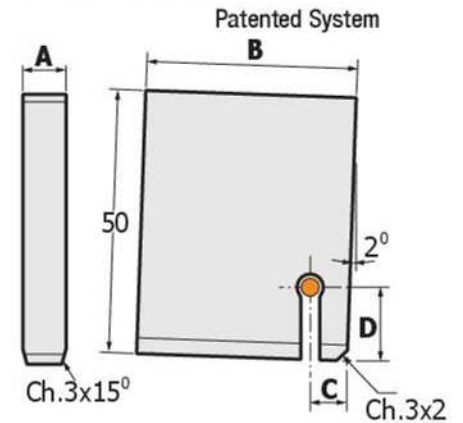


## Ejector Plate Angular Pin Systems MOVABLE CORE HEAD IF

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.

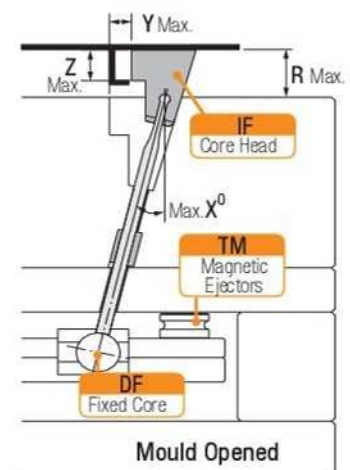


PROCESSABLE FIXED CORE HEAD

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

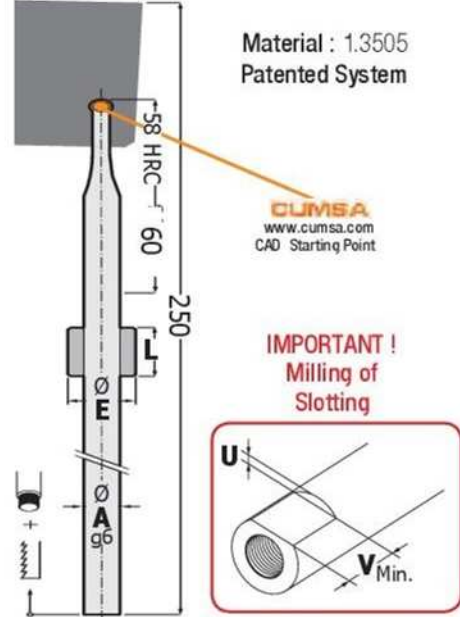


Mould Opened



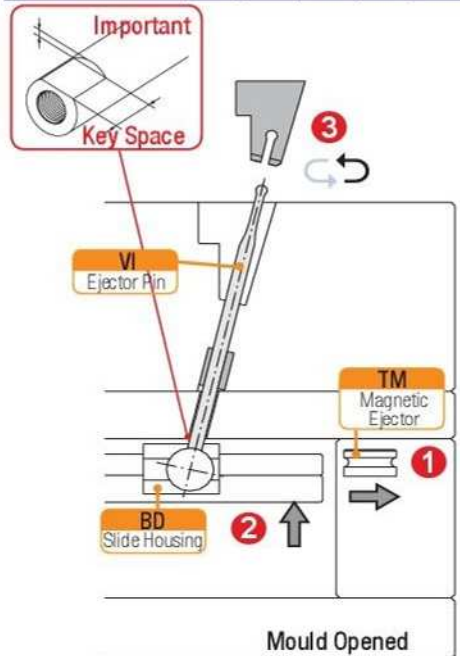
## Ejector Plate Angular Pin Systems EJECTOR PIN, BUSH VI

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.



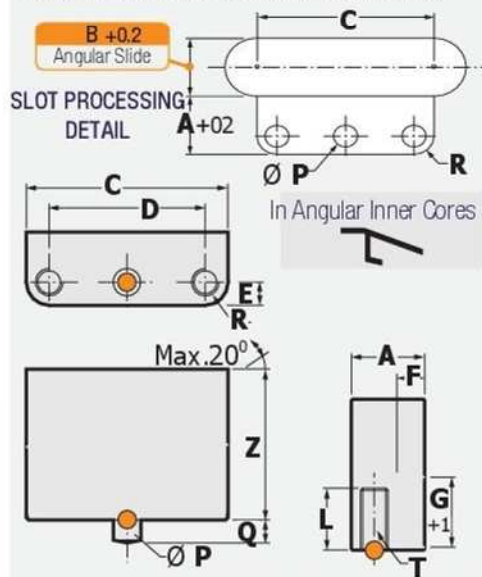
## CORE PIN, BUSH SET

Order	A	E	L	U	V
<b>VI. 064200</b>	6	10	15	0.5	12
<b>VI. 085200</b>	8	12	20	0.5	12
<b>VI.106200</b>	10	14	20	0.5	14
<b>VI. 127200</b>	12	16	20	1.0	14



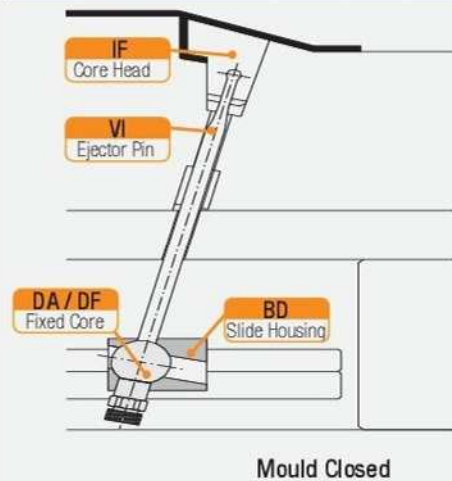
## Ejector Plate Angular Pin Systems ANGLE SLIDE HOUSING BD

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.



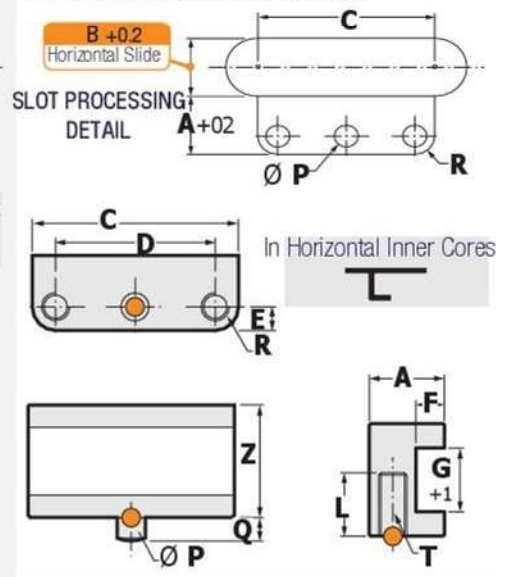
Order	A	C	D	E	F
<b>BD. 122836</b>	12	36	28	4	4.8
<b>BD. 143866</b>	14	66	42	4	6.3
<b>BD. 163240</b>	16	40	30	5	6.3
<b>BD. 204060</b>	20	60	44	5	8.3
<b>BD. 254672</b>	25	72	56	7	10.3
<b>BD. 315890</b>	31	90	74	8	13.3

G	L	P	Q	R	T	Z
11.5	10	5	5	4	M5	28
11.5	10	5	5	4	M5	38
13.5	12	6	5	5	M6	32
19	15	6	5	5	M6	40
21	18	8	5	6	M8	46
28	18	10	8	8	M10	58



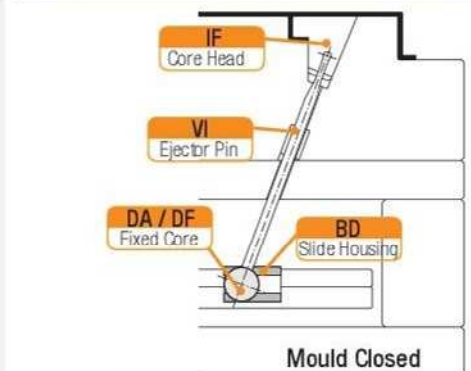
## Ejector Plate Angular Pin Systems HORIZONTAL SLIDE HOUSING BD

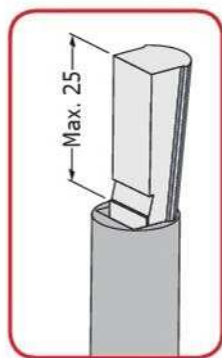
It can be worked/processed with horizontal inner cores. Can be used as horizontal core slide for inner cores. The casing and slide are from different materials, provides processability with smooth motion. Horizontal and adjustable slide housing.



Order	A	C	D	E	F
<b>BD. 122036</b>	12	36	28	4	4.8
<b>BD. 142266</b>	14	66	42	4	6.3
<b>BD. 162440</b>	16	40	30	5	6.3
<b>BD. 203260</b>	20	60	44	5	8.3
<b>BD. 253872</b>	25	72	56	7	10.3
<b>BD. 314890</b>	31	90	74	8	13.3

G	L	P	Q	R	T	Z
11.5	10	5	5	4	M5	20
11.5	10	5	5	4	M5	22
13.5	12	6	5	5	M6	24
19	15	6	5	5	M6	32
21	18	8	5	6	M8	38
28	18	10	8	8	M10	48

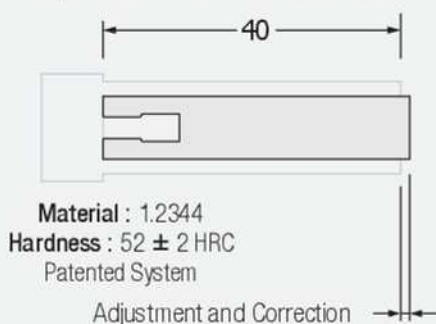




## Perpendicular Ejector Core Systems REPLACEMENT BLOCK **RP**

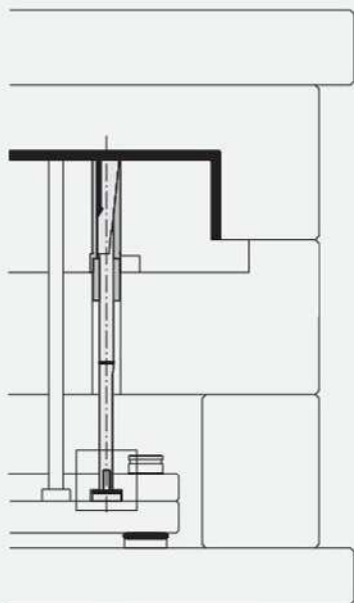
They are used with Mechanical Perpendicular Cores (PS) and they are for adjustments and corrections.

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

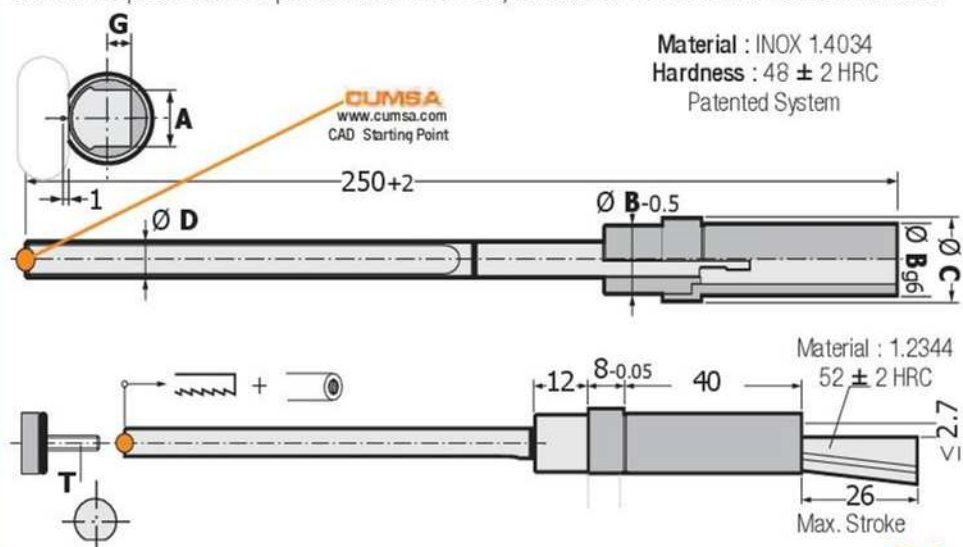
Order	For Per. Core PS
<b>RP. 064000</b>	PS. 062250
<b>RP. 084000</b>	PS. 082250
<b>RP. 104000</b>	PS. 102250
<b>RP. 124000</b>	PS. 122250



## Maximum Operation Length

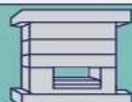
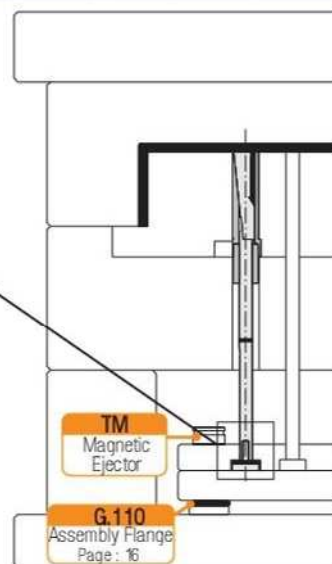
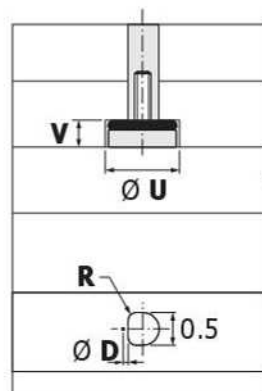
## MECHANICAL PERPENDICULAR CORES / STANDARD MECHANICAL CORE **PS**

**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.

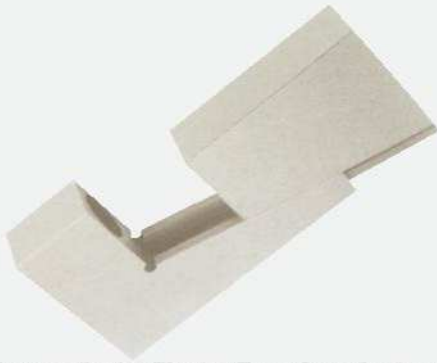


## MECHANICAL PERPENDICULAR CORES / STANDARD MECHANICAL CORE **PS**

Order	A	B	C	D	G	R	T	U	V
<b>PS. 06 22 50</b>	6.2	10	12	6	3.4	1.25	M4x16	12	5
<b>PS. 08 22 50</b>	8.2	12	14	6	4	1.25	M4x16	12	5
<b>PS. 10 22 50</b>	10.2	14	16	8	4.2	2	M5x16	14	6
<b>PS. 12 22 50</b>	12.2	16	18	8	4.2	2	M5x16	14	6







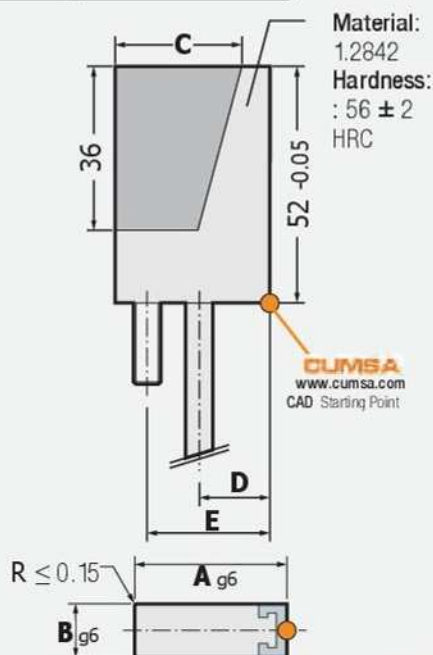
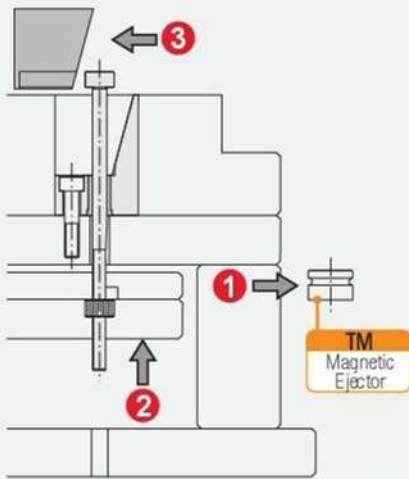
### Perpendicular Ejector Type Core Systems

#### 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.



#### PROFILE LIFTING BLOCK **PV**

Order	A	B	C	D	E
<b>PV. 34 12 52</b>	34	12	28	15.5	27
<b>PV. 36 16 52</b>	36	16	30	16.5	29
<b>PV. 38 20 52</b>	38	20	32	17.5	31
<b>PV. 40 24 52</b>	40	24	34	18.5	33

" PV " Profile Block should be ordered separately.

During order, pls. determine the desired "L" length...



### Perpendicular Ejector Type Core Systems

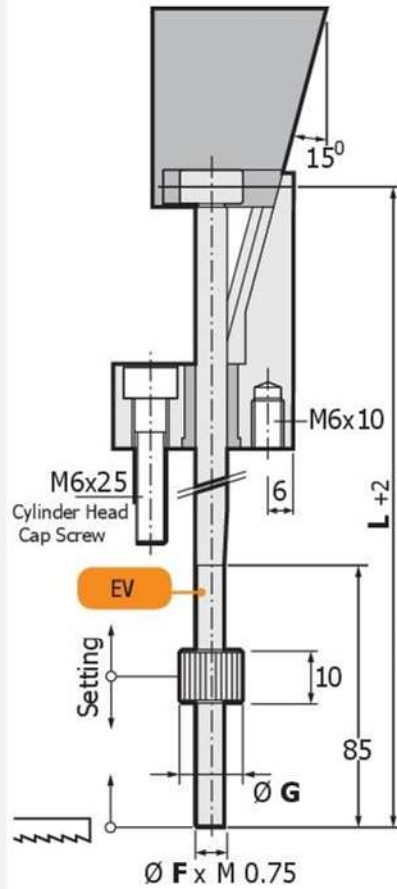
#### MECHANIC PERPENDICULAR HOUSING (Core Connection Shaft) **EV**

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 90° perpendicular to ejector plate.

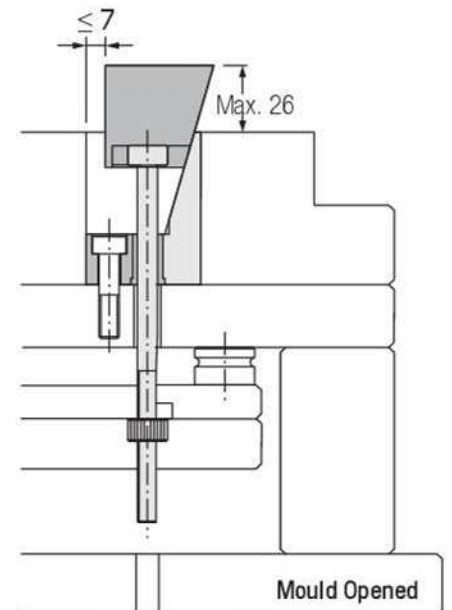
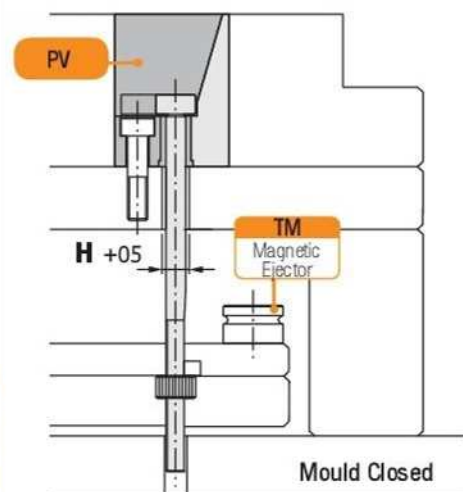
" PV " Profile Block should be ordered separately.



#### PERPENDICULAR LIFTING SPECIAL CORE **EV**

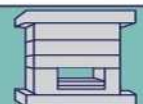
Order	F	G	H	L	
<b>EV. 006. (L)</b>	6	12	6.5	150	225
<b>EV. 008. (L)</b>	8	14	8.5	150	225
<b>EV. 010. (L)</b>	10	16	10.5	150	225
<b>EV. 012. (L)</b>	12	18	12.5	150	225

During order, pls. determine the desired "L" length...

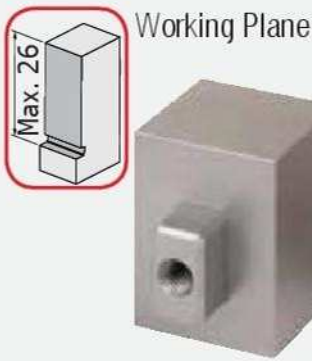


### EJECTOR Systems

Section Injection Mould

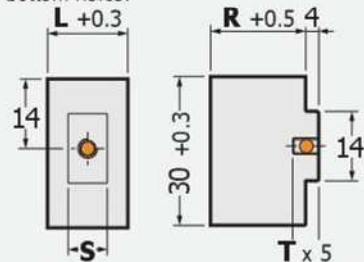






## CORE BLOCK ID

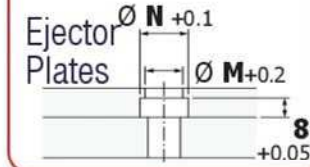
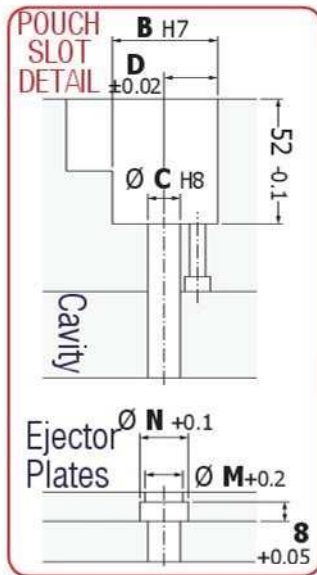
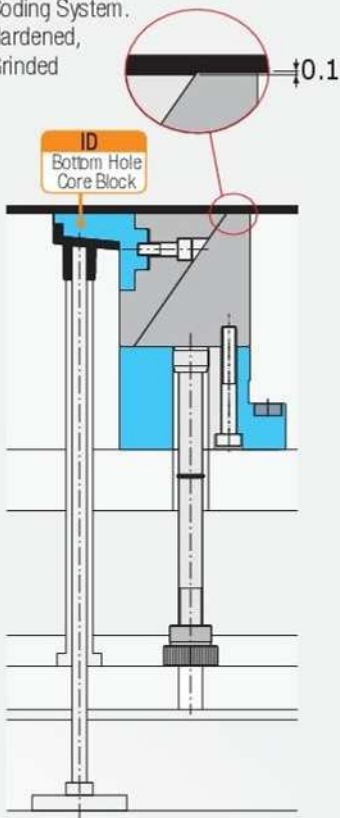
In forming of Inner Core Holes  
**ID Block** : It is used along with "DHO"  
 Perpendicular Core Unit for hidden  
 bottom holes.



Optional (As per request) Core Block

Order	L	R	S	T
ID.121730		17		
ID.122630	12.2	26	6	M4
ID.161730		17		
ID.162630	16.2	26	8	M5
ID.201730		17		
ID.203030	20.2	30	10	M6
ID.241730		17		
ID.243030	24.2	30	10	M6

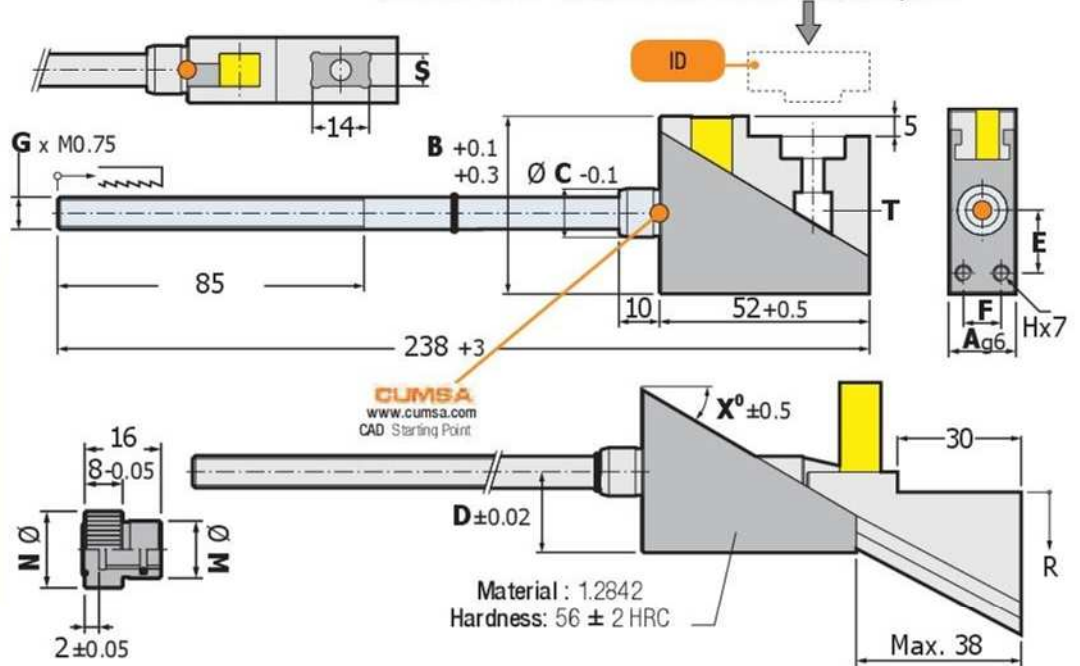
It can be ordered along with "DHO"  
 Perpendicular Core Unit and Similar  
 Coding System.  
 Hardened,  
 Grinded



## 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. 90° 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



CLUMSA  
 www.clumsa.com  
 CAD Starting Point

Material : 1.2842  
 Hardness: 56 ± 2 HRC

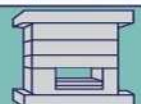
## MECHANIC READY EXTERNAL PERPENDICULAR CORE UNIT DHO

Order	A	B	C	D	E
<b>DHO. 12 85 52</b>	12.2	28	10	11	7.5
<b>DHO. 12 38 52</b>		38		18	12
<b>DHO. 16 28 52</b>	16.2	28	10	11	7.5
<b>DHO. 16 38 52</b>		38		12	18
<b>DHO. 20 28 52</b>	20.2	28	12	10.5	7
<b>DHO. 20 44 52</b>		44		14	20
<b>DHO. 24 28 52</b>	24.2	28	12	10.5	7
<b>DHO. 24 44 52</b>		44		14	20

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
-		M5			14	18
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

Section  
 Injection  
 Mould





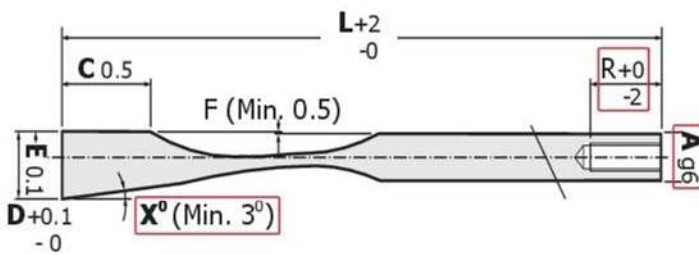
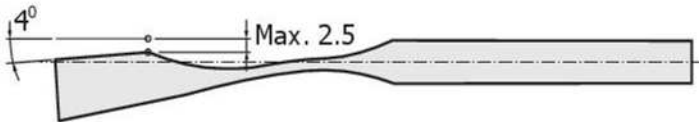
## SPECIAL FLEXIBLE INNER COREA (SPECIAL ORDERS)

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

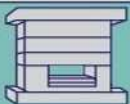
- 1- The delivery is 6-8 weeks after order date.
- 2- The shaft of cores are rectangular.
- 3- After your inquiry, CUMSA will be sent an proposal including Design, Unit and Delivery Information.



**★ A , R and X°** Sizes will be determined by CUMSA depending on dimensions given by customers.

## SPECIAL FLEXIBLE INNER COREA (SPECIAL ORDERS)

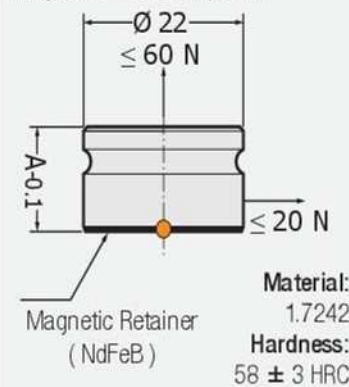
Order	B	C	D	E	F	L	Piece



## In-Mould Mounting Elements

### SAFETY DISC **TM** Magnetic Ejector

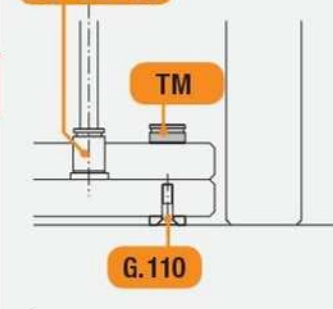
Its Ejector Plate is prevented to apply pressure to upper part of holder , when necessary to change ejector plate, it can be removed easily. The magnet is in NeFeBo power.



### 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

### BA - BE - BT



### G.120



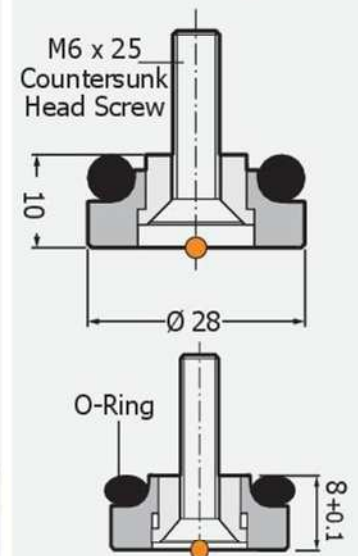
### THRUST TABLET

Pls. refer to page 30 for detailed information / technical drawing.

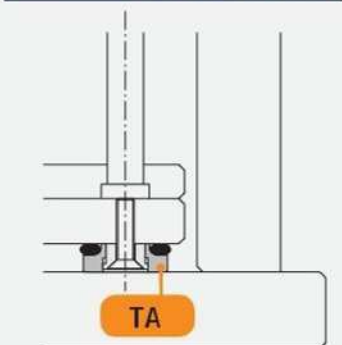


### EJECTOR PLATE **TA** Shock Absorber(With O-Ring)

It prevents vibrations and impacts during return of ejector plates, the most important advantage is to prolong bench life of all parts.

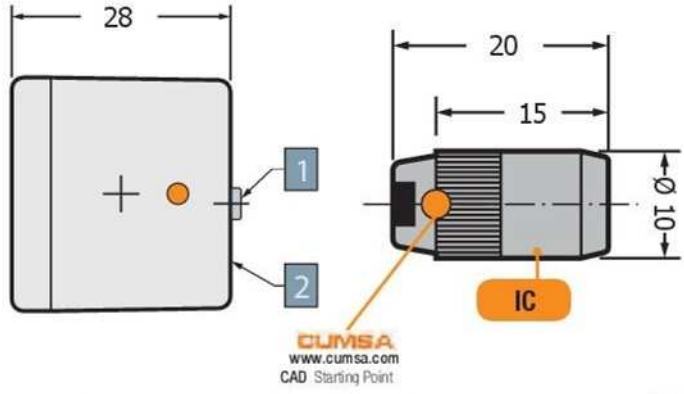
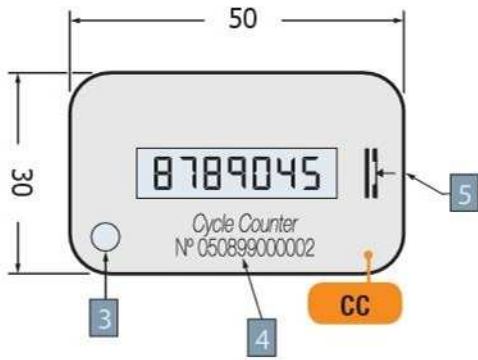


Order:  
**TA. 28 08 06**



### G.110 ASSEMBLY FLANGE

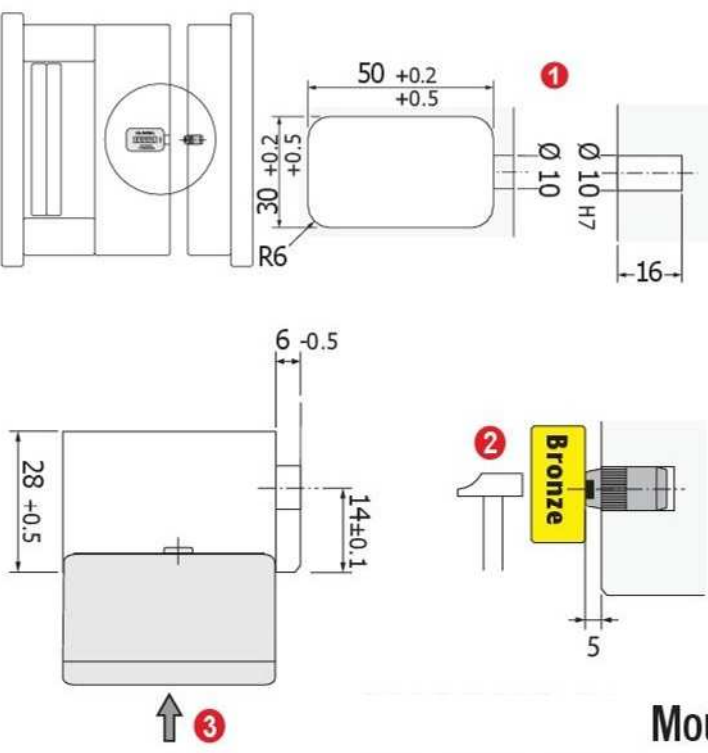
Pls. refer to page 16 for detailed information / technical drawing.



## INJECTION MOULD COUNTER

- 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
<b>CC. 50 30 28</b> <b>Orange Colour</b>	Non	100
<b>CC. RE 53 28</b> <b>Bulue Colour</b>	Available	100
<b>CC. HS 53 28</b> <b>Yellow Colour</b>	Available	500

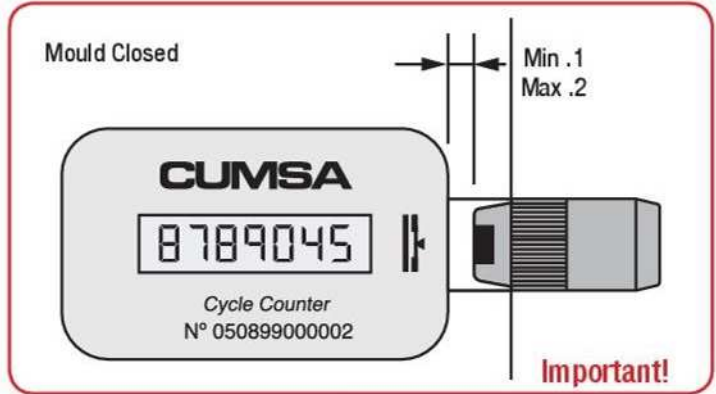


## INJECTION MOULD, MOULD COUNTER **CC**

**Production Counter, under maximum working temperature 60°C**  
 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.



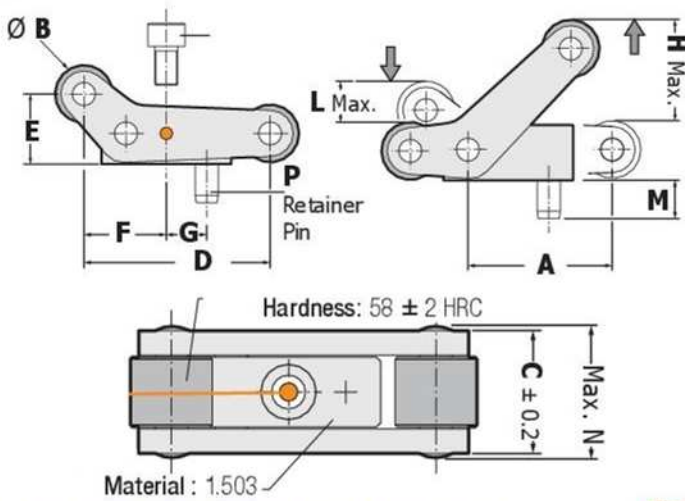


## EJECTOR PLATE ACCERELATOR

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.

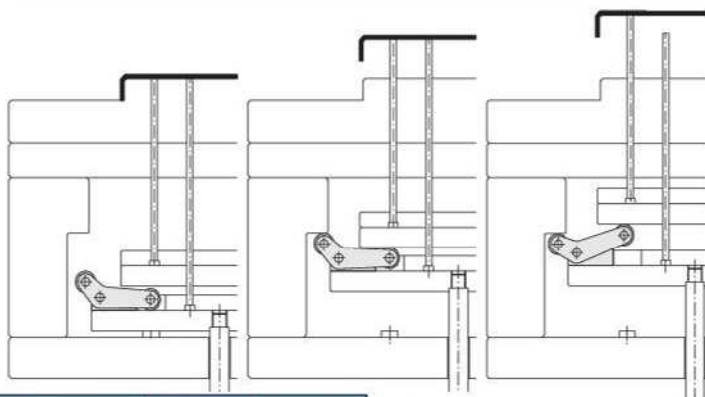


## EJECTOR PLATE ACCERELATOR UNIT

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.

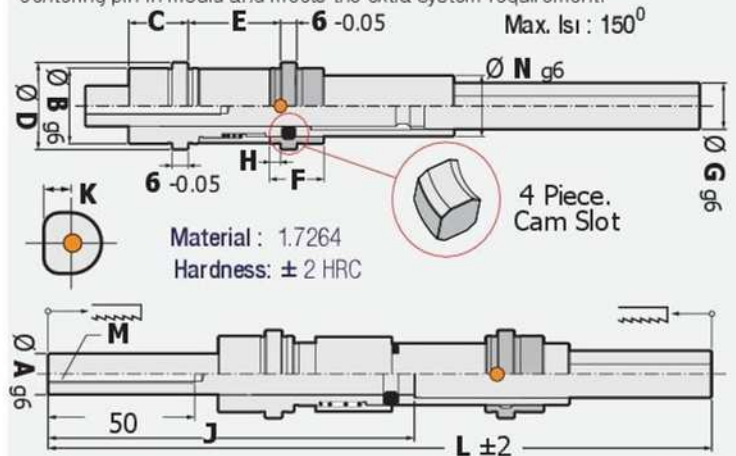


## DUAL EJECTOR PLATE OPENING SYSTEM

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.

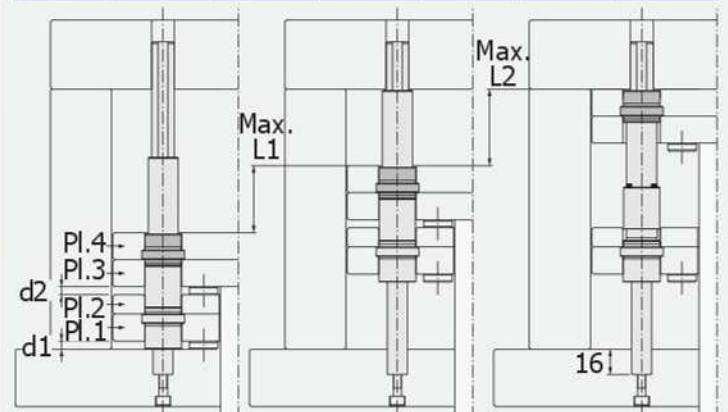


## DUAL PLATE EJECTOR SYSTEM

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				DX . 163027 Coded Product								
	1	2	3	4	1	2	3	4	5	6	7	8	9
d1	5	5	5	5	5	5	5	5	0	0	0	0	0
Pl.1	17	17	17	17	22	22	22	22	27	27	27	27	27
Pl.2	9	12	12	12	12	12	17	17	17	17	17	22	22
d2	13	10	5	5	5	5	5	5	5	5	10	0	0
Pl.3	12	12	17	17	27	27	22	22	22	22	17	22	22
Pl.4	9	9	19	12	17	22	12	17	12	17	12	12	17

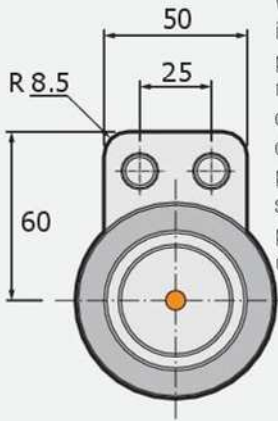


## COMPACT DUAL EJECTOR PLATE TENSILE SY

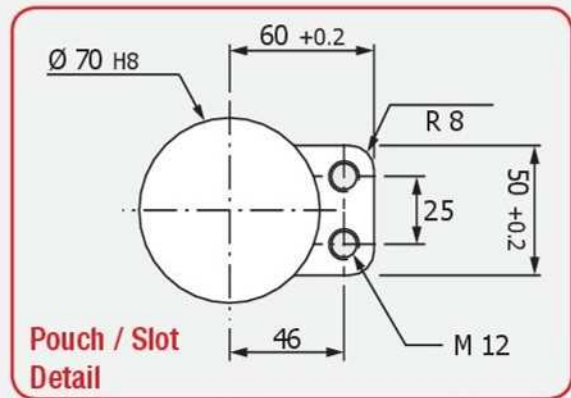
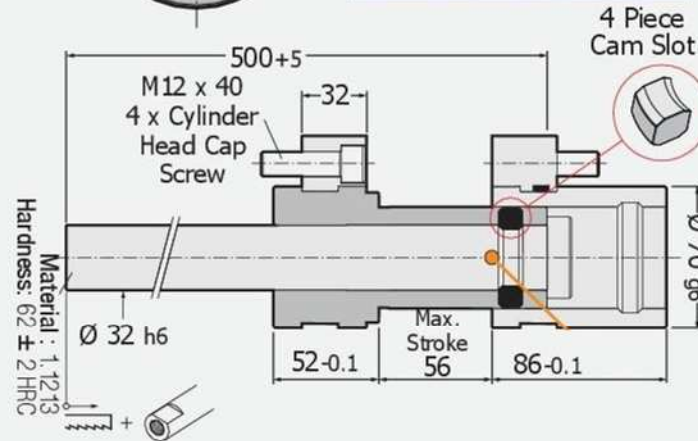
It is designed for Mould with Compact System Larger Ejector.

### Stepped Ejector Plate Tensile System:

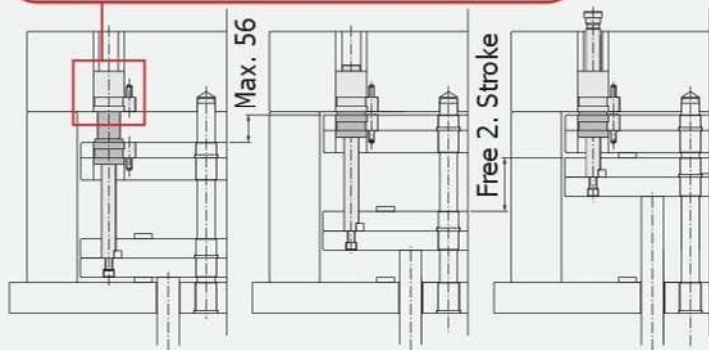
When bearing is reached to plate, Ultimate Tensile is stopped 1. Group step and until reached to upper plate, rear ejector plate group continues. The mounting of compact unit is not put in the middle of mould position, in a way that is formed at the corner edge of ejector plate group, substantially place 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:  
1.7243  
Hardness:  
56 ± 2 HRC  
Patented  
System

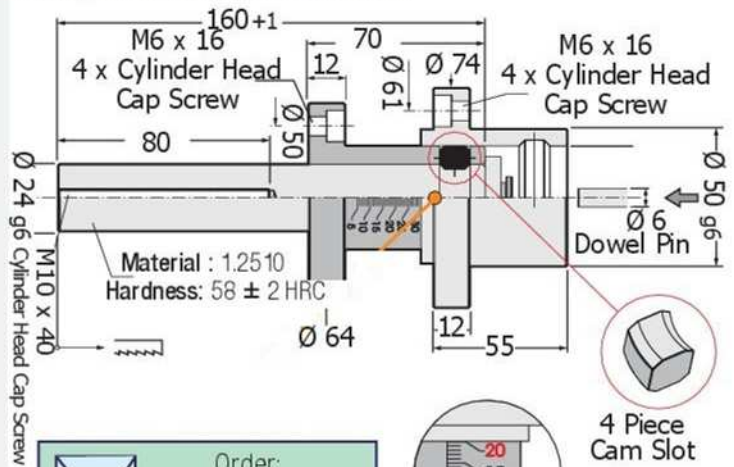


## DUAL EJECTOR PLATE PUSH SYSTEM DE

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.**

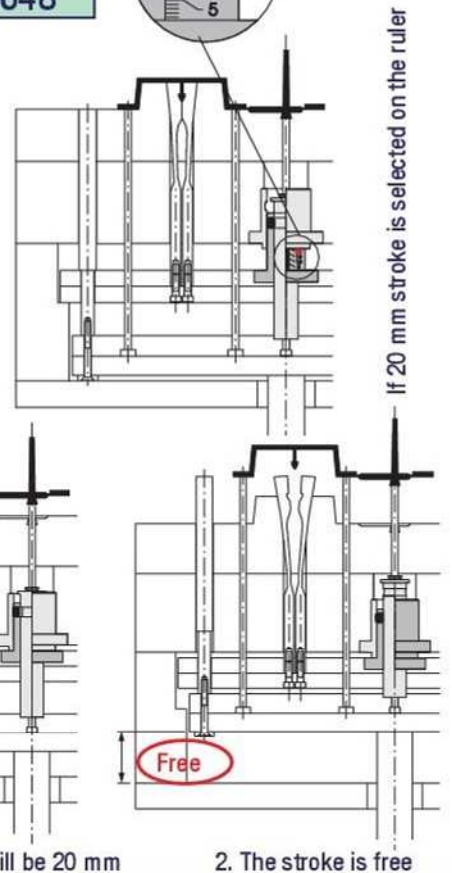
**IMPORTANT!:** To determine mounting dimensions, in selecting the first stroke, pls. use the ruler on 0-30 mm unit.



Order:  
**DE. 243648**

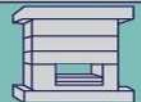
Material: 1.7243  
Hardness: 58 ± 2 HRC

**IMPORTANT!:** To determine mounting dimensions, in selecting the first stroke, pls. use the ruler on 0-30 mm unit.



1. Stroke will be 20 mm

2. The stroke is free





## MODULAR RETAINER

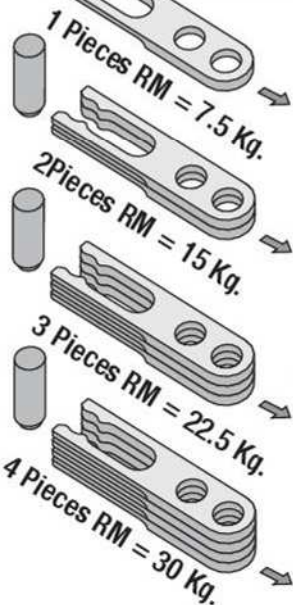
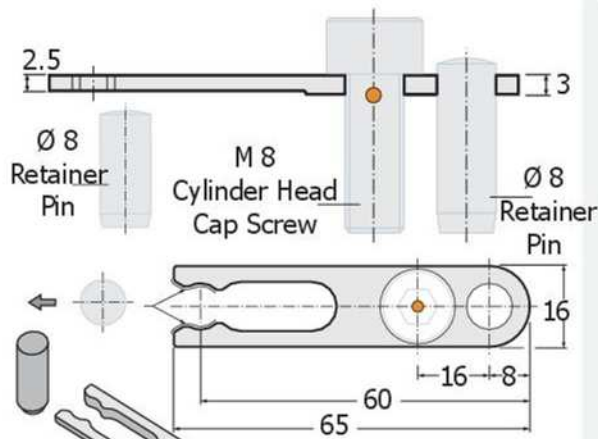
**RM**

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°C

**Material :** 1.8159 **Hardness:** 45±3 HRC

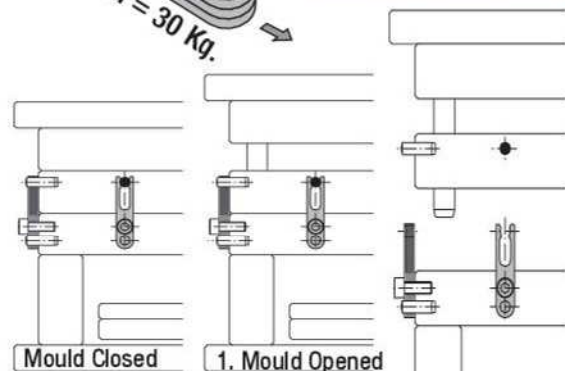


**IMPORTANT! :**  
Load values shown in representative picture are approximate values and usage with group 1 -2 -3 -4 should be created groups in different areas for more loadings.

**Fasteners:**

Cylinder Head Cap Screw and retaining pins should be procured separately.

Order:  
1Piece RM  
RM. 651608

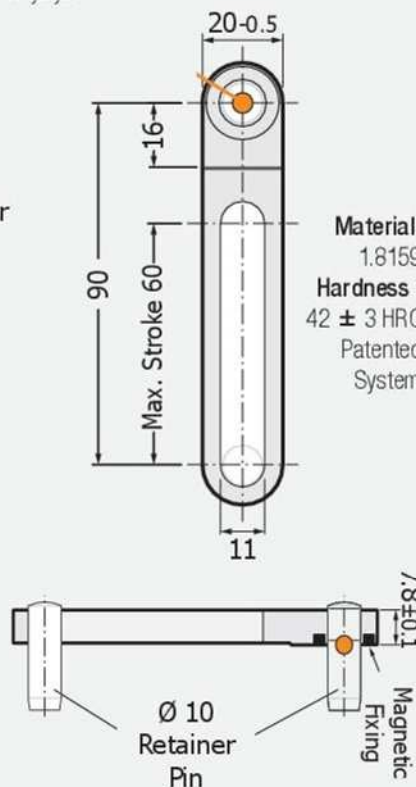


## STROKE STOPS

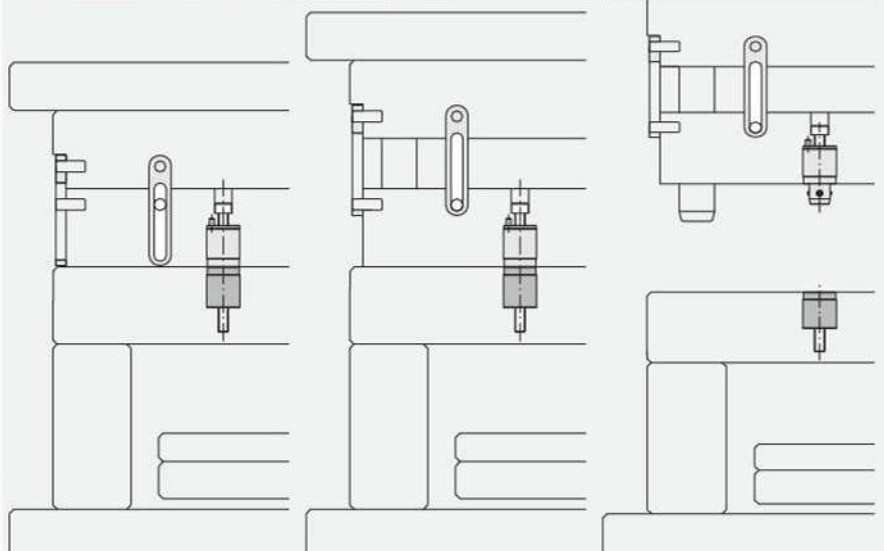
**SL**

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.



Order:  
SL. 602008

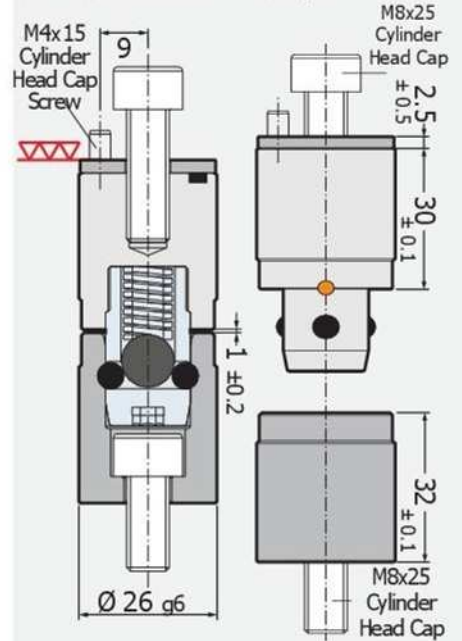


## PLATE RETAINER

**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





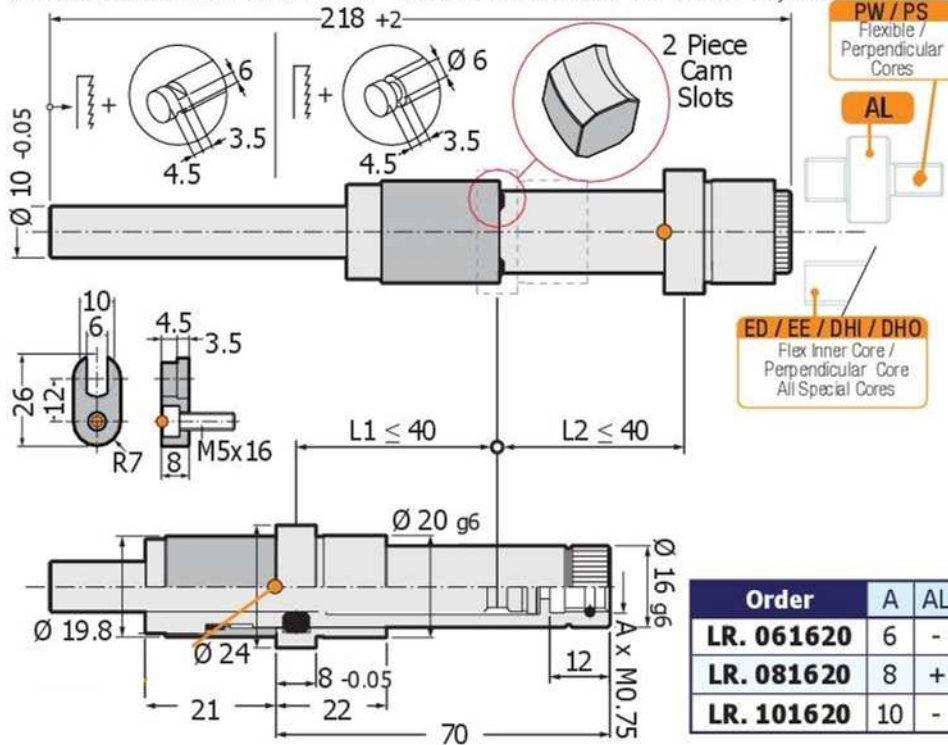


## LIMITER UNIT FOR FLEXIBLE AND PER. CORE SYSTEMS

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:  $58 \pm 2$  Max. Heat Resistance:  $150^{\circ}$  Patented System



## LR INTERCONNECT REDUCER AL

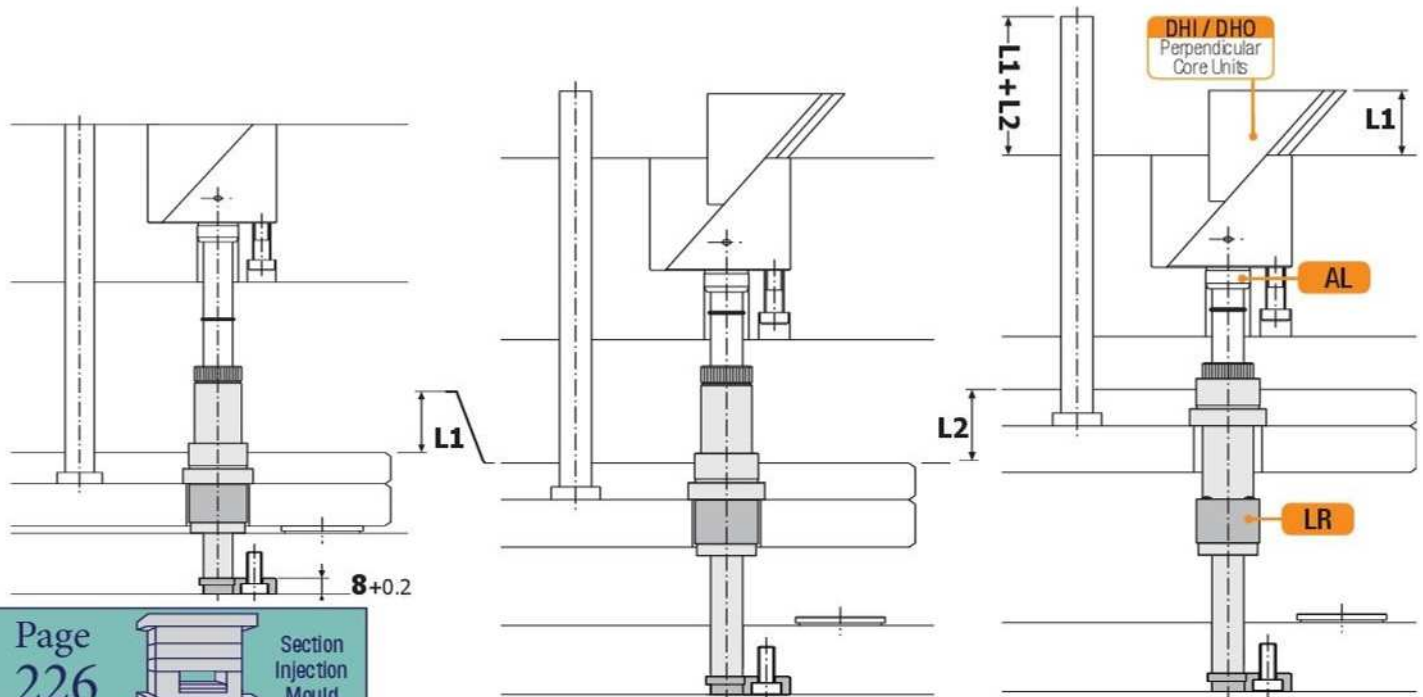
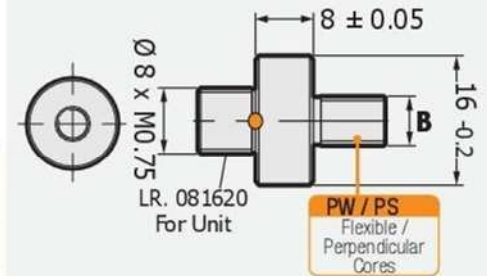
Threaded Unit, Flexible Inner Core and Perpendicular Core Limiter Unit

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



# EJECTOR ACCELERATOR CYLINDRICAL / THREADED UNIT

**AE**

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° **Patented System**

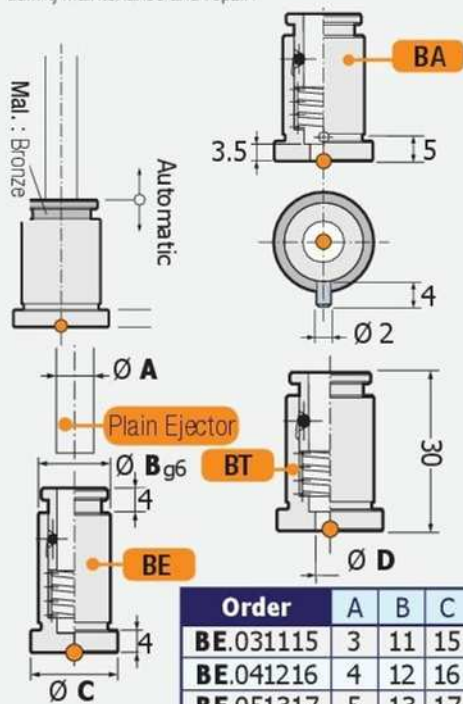


**BE /BT /BA**

## EJECTOR RETAINER

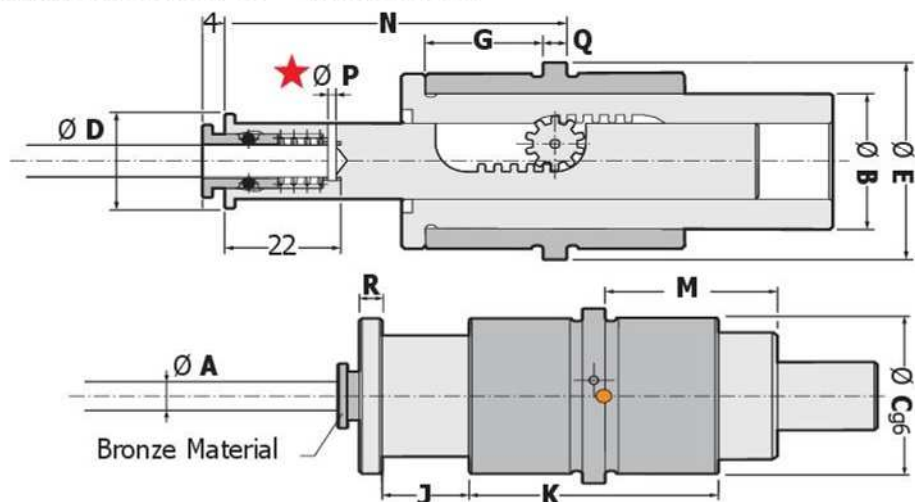
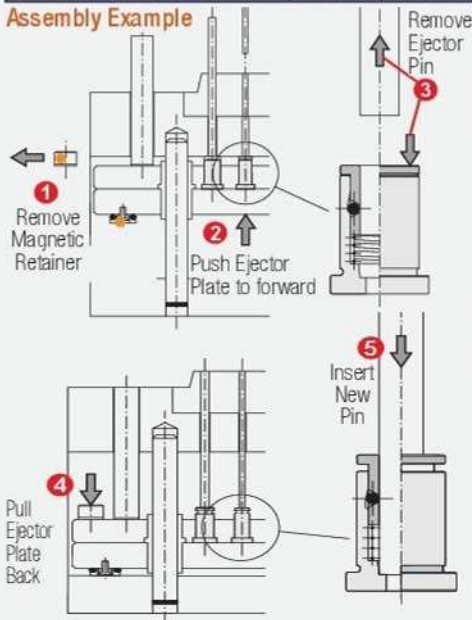
**Automatic System Holding Headless Ejector Pins**

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	D
<b>BA.061418</b>	6	14	18	3.5
<b>BA.081620</b>	8	16	20	5.5
<b>BA.101822</b>	10	18	22	7
<b>BA.122024</b>	12	20	24	9

**Assembly Example**

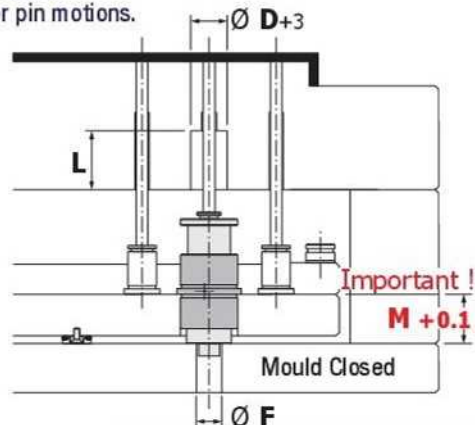
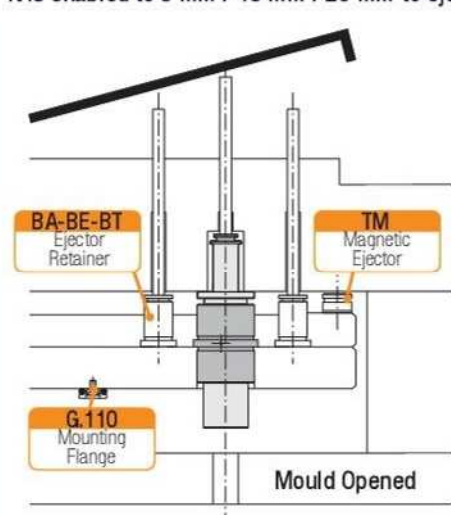


Order	A	B	C	D	E	F	G
<b>AE. 031620</b>	3	16	20	12.5	22	13	14
<b>AE. 041620</b>	4	16	20	12.5	22	13	14
<b>AE. 052430</b>	5	24	30	16	34	16	20
<b>AE. 062430</b>	6	24	30	16	34	16	20
<b>AE. 082430</b>	8	24	30	17	34	17	20
<b>AE. 103036</b>	10	30	36	21.5	40	21	28
<b>AE. 123036</b>	12	30	36	21.5	40	21	28

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.

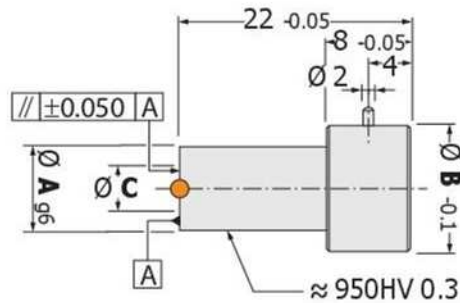




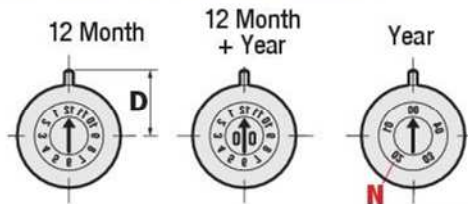
### HIGH TEMPERATURE DATE STAMP FT

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°  
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

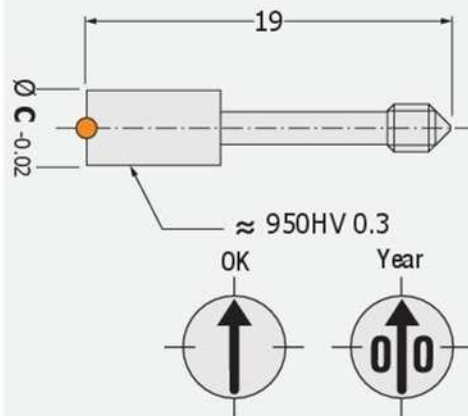


### DATE STAMP INNER (Hub) IT

Replacement from Front of Mould and Adjustable

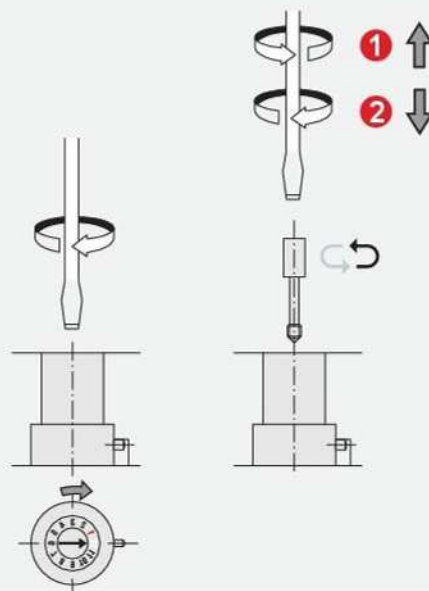
**Inner Date Stamp** : Due to replacing and settings can be done on front part of mould, there is no need to remove and dismantle mould from machine.

Material : 1.2344 Nitrite  
Max. Heat Resistance: 450°  
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.

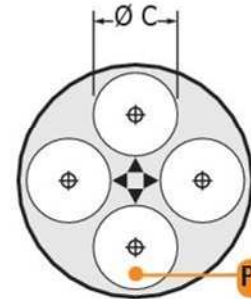
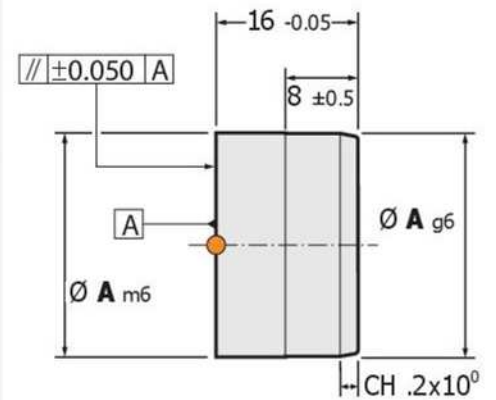


### MULTIPLE STAMPING BLOCK BM

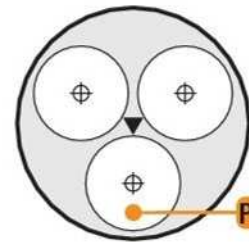
Stamping Unit, Date/ Stamping

**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



PM : Quartet



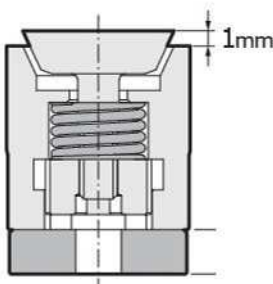
PM : Triple

### 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



Max. Conical Ejector Motion



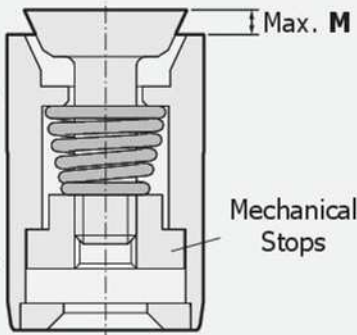
## AIR VALVE / EJECTOR PLATE VA

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 150°C is recommended. In higher temperature, steel starts to expand and melt plastic raw white slips into valve and prevents operation.

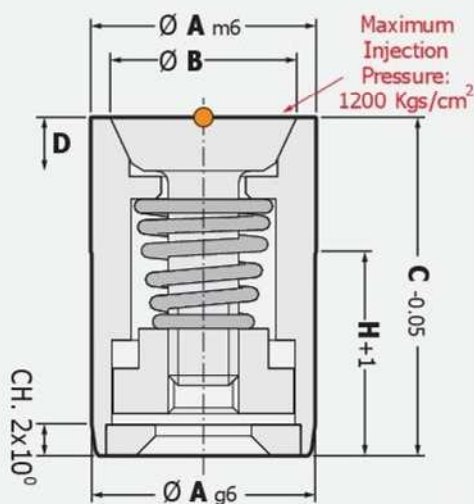
Working Pressure:  
1.5 - 6 Bar

Material:  
INOX  
1.4034

Hardness:  
51 ± 2  
HRC



1 BAR ≈ 1 Kg. / cm<sup>2</sup>



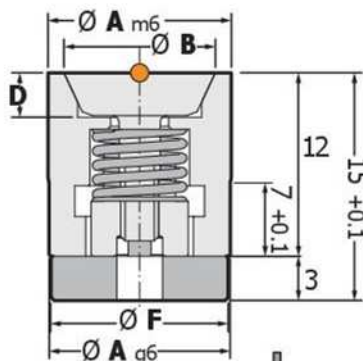
## RAPID AIR VALVE / EJECTOR ( It is for fast production)

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. / cm<sup>2</sup> It can be used on inclined and angle surfaces.

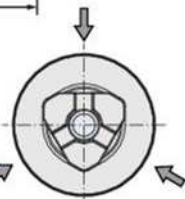
Material : INOX 1.4021 Hardness: 46 - 48 HRC



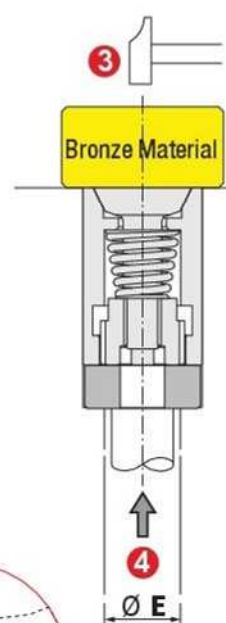
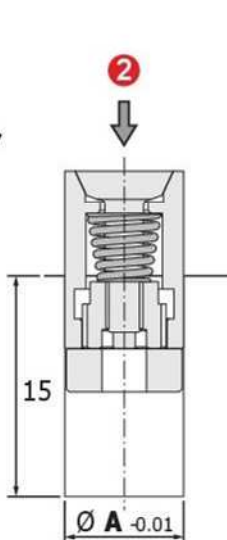
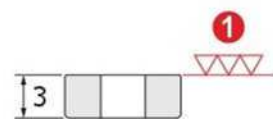
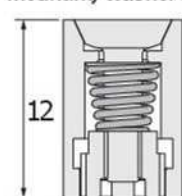
## Rapid Air Valve / Ejector

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

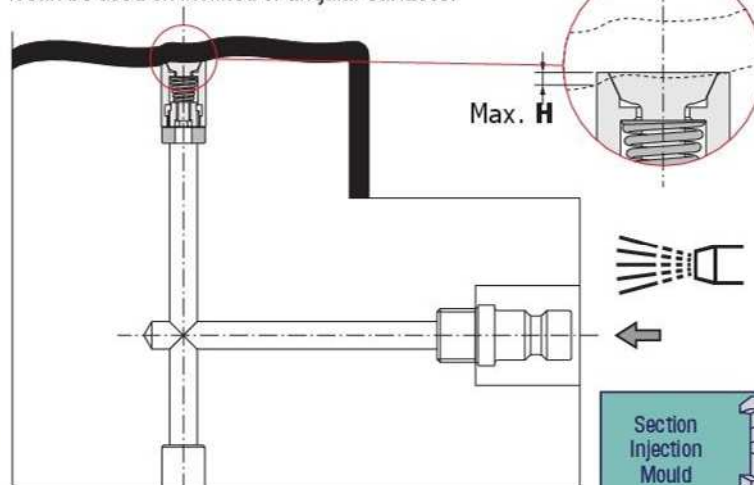
Triple Air Inlet to Provide Balanced Opening / Ejector



Mounting Washer is included.



It can be used on inclined or angular surfaces.



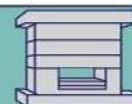
Forming Permitted Maximum Processing

## 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

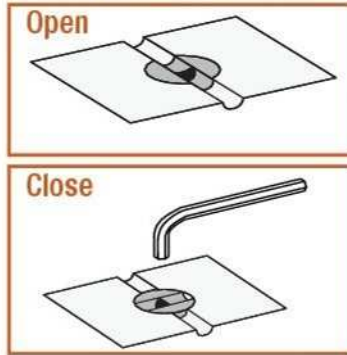
Section Injection Mould



Page 229



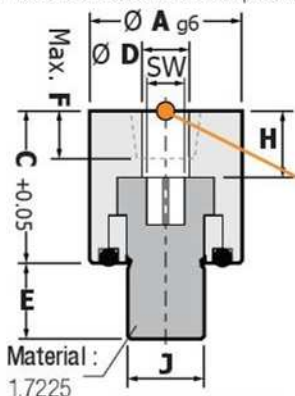
### RUNNER ADJUSTOR



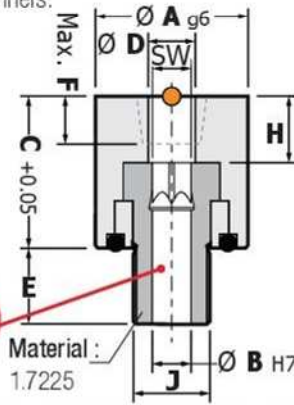
### DIVERTER VALVE FOR INJECTION COLD RUNNERS

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

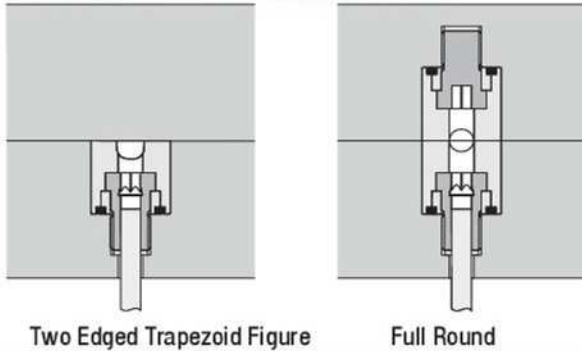


Hole Injector

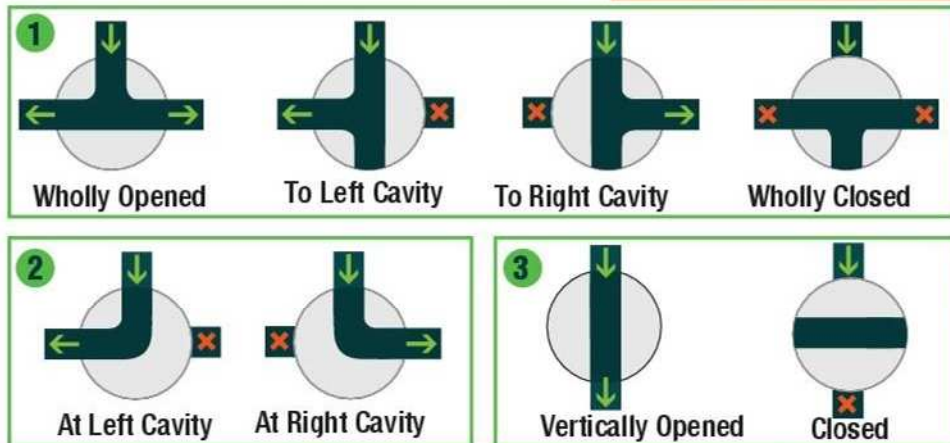
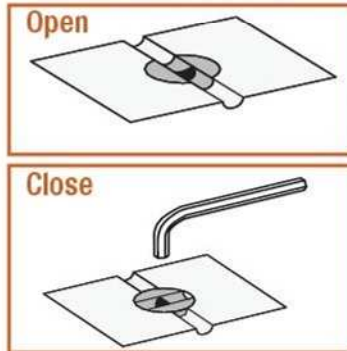
Order	A	C	D	E	F	H	J	SW
SA. 120014	12	14	4	6	3	5	M6	3
SA. 160016	16	16	5	8	5	7	M8	4
SA. 200018	20	18	6	10	6	9	M10	5

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

### RUNNER POSITION CONFIGURATIONS



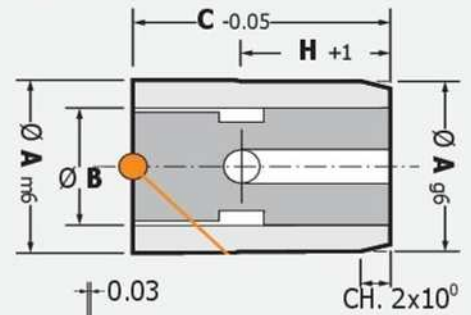
### RUNNER ADJUSTOR



### 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 temperment 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 into cavity. It deflates internal air to reverse direction to throw compressed gas containing in mould.

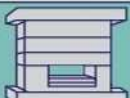
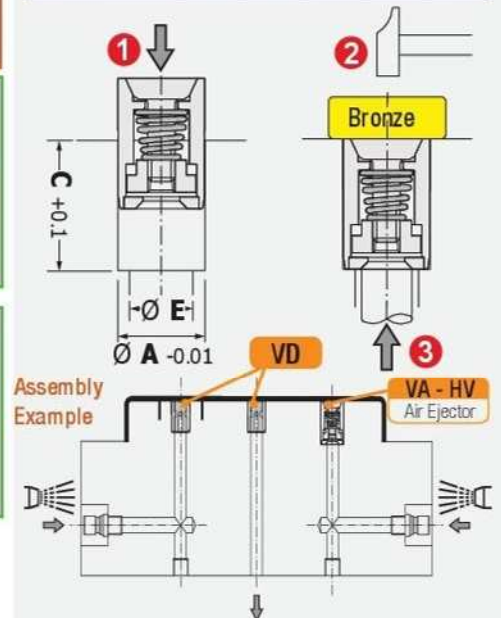


Material : INOX 1.1034  
Hardness: 51 ± 3 HRC  
Max. Temperature: 150°C

### TWO WAY AIR VALVE

VD

Order	A	B	C	E	H
VD. 080512	8	5	12	4	7
VD. 100612	10	6	12	5	7
VD. 120812	12	8	12	7	7
VD. 161020	16	10	20	9	12

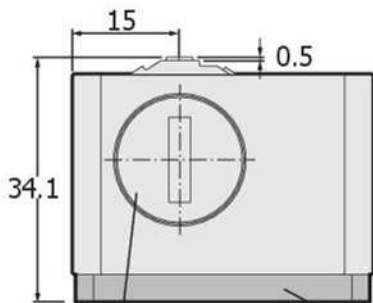
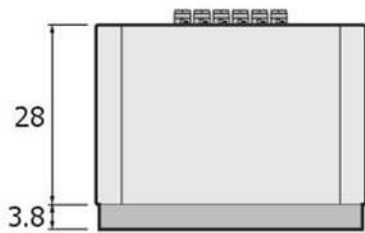




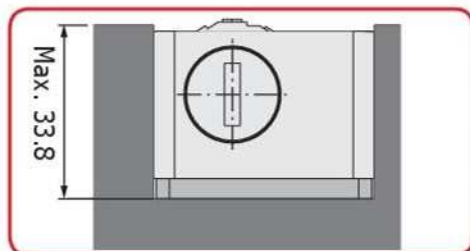
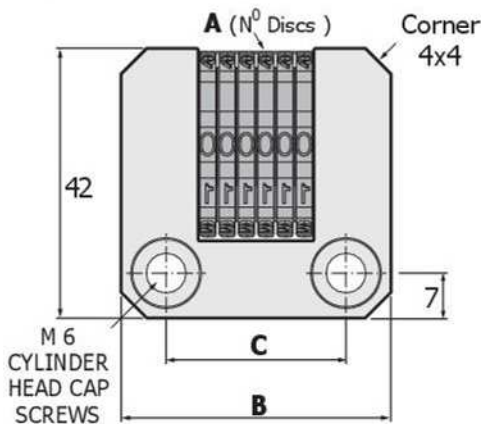
## QUARTET STAMP UNIT **UM**

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
<b>UM. 043642</b>	4	36	22
<b>UM. 064242</b>	6	42	28

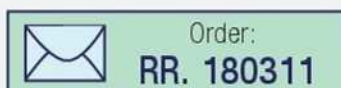
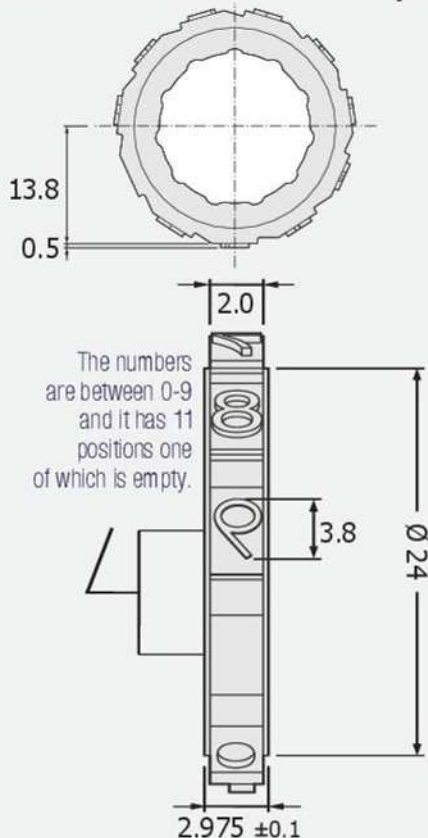


## STAMP WHEEL 0 - 9 **RR**

It is a changeable stamp wheel of UM Unit.

Material: 1.2379 Hardness: 56 - 59 HRC System

Patented



## 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



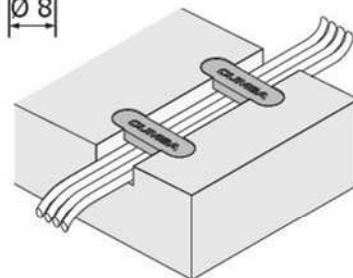
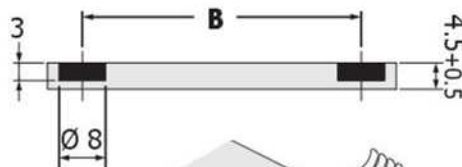
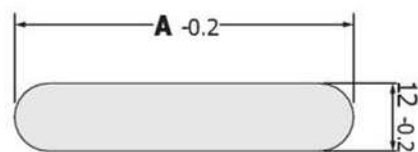
Order	Product/ Letter- Figure
<b>15706</b>	Reverse Figure 9 Set )
<b>15747</b>	Reverse Letter ( 27 Set )



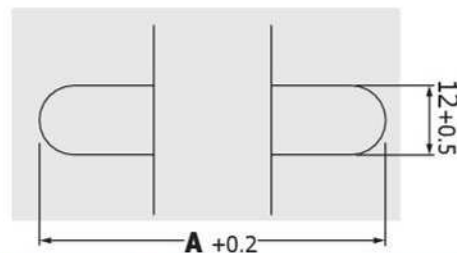
## CABLE RETAINER CAP **SC**

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 80° C. Because, plastic even magnets can be effected and broke down from high temperature.



Mould Pouch / Slot Detail



Order	A	B	Material	SW
<b>SC. 401245</b>	40	28	ABS + NfFeB	80°C
<b>SC. 401245H</b>	40	28	PA + 30% Glass Fiber	150°C
<b>SC. 601245</b>	60	48	ABS + NfFeB	80°C
<b>SC. 601245H</b>	60	48	PA + 30% Glass Fiber	150°C



Page  
**231**



## RECYCLING, MOULD TABLETS

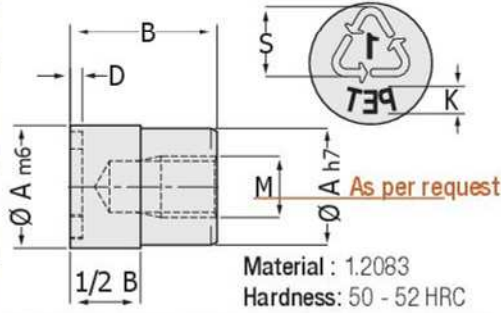
**GDM**

### 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

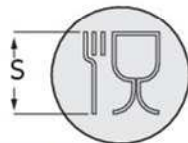
	Logo /OK	GDM.01
	EMPTY	GDM.02
	PET	GDM.03
	HDPE	GDM.04
	PE-HD	GDM.05
	PVC	GDM.06
	LDPE	GDM.07
	PE-LD	GDM.08
	PE-BD	GDM.09
	PP	GDM.10
	PS	GDM.11
	OTHERS (OTHER)	GDM.12
	OTHERS (0)	GDM.13
	FOOD (Food)	GDM.14



## RECYCLING TABLETS

**GDM**

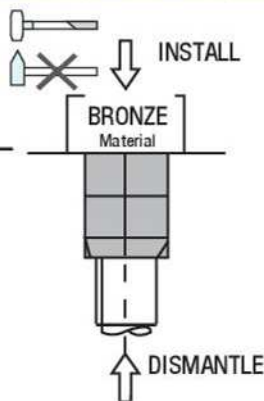
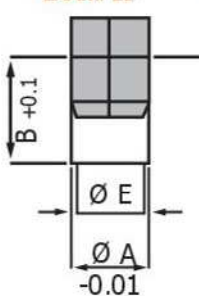
Order	A	B	D	E	K	S	M
GDM... 06	6	10	0.3	6	-	4.0	M4
GDM... 08	8	10		6	-	4.0	M4
GDM... 10	10	12		8	1.6	5.6	M5
GDM... 12	12	12		10	2.0	6.8	M6
GDM... 16	16	14		12	2.6	9.0	M6
GDM... 20	20	16		16	3.2	11.5	M6



### 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



## SCREWED DATE STAMP / MOULD CALENDAR VKT

### Long Type Mould Date Stamp With threaded Rear Side

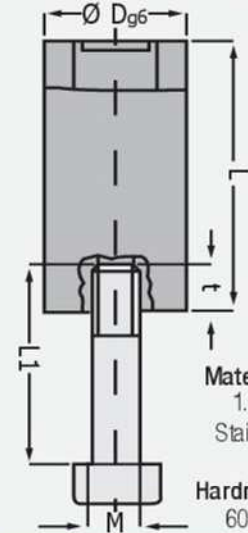
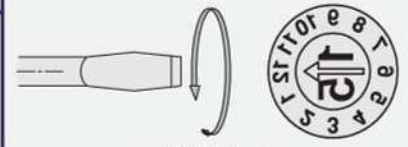
We offer wide options with our economic prices.

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

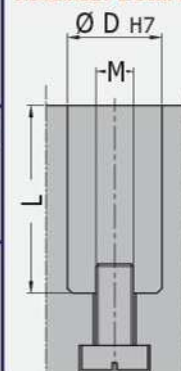


D	L	t	L1	M
4	12.5	3	4	M2
5	14	3	4	M2.5
6	16	3	4	M3
8	18	4	4	M3
10	22	4	4	M3
12	25	6	6	M4

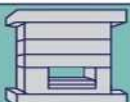


Order:  
**VKT.TIP** No D x L

#### 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

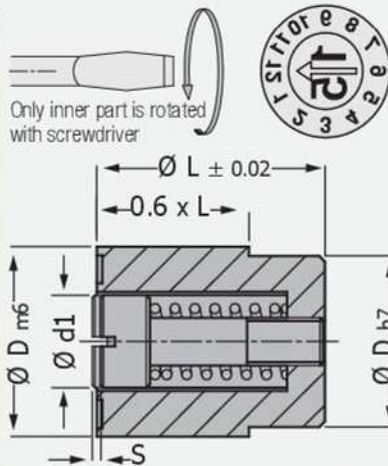
**Cylindrical, Standard Model - Production as per request**

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.

**KT**

### DIVERSIFICATION

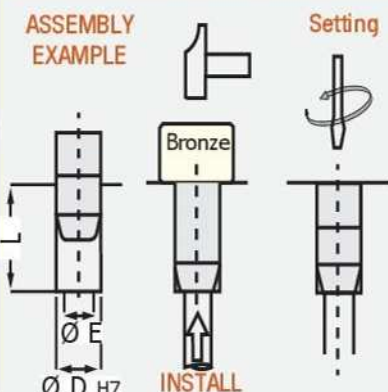
	STANDARD Month Calendar <b>KT.01</b>
	STANDARD Month and Year <b>KT.02</b>
	STANDARD Year Calendar <b>KT.03</b>
	Weekly Calendar <b>KT.04</b>
	Daily Calendar <b>KT.05</b>
	Work / Shift Calendar <b>KT.06</b>
	Figure Calendar <b>KT.07</b>
	Letter Calendar From A to M <b>KT.08</b>
	Letter Calendar From N to Z <b>KT.09</b>
	Marked/ Arrowed Calendar <b>KT.10</b>
	As per request Calendar <b>KT.11</b>



### 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.



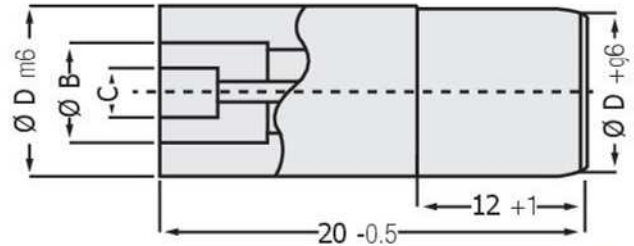
**DKT**

## COMPLICATED (DUAL) MOULD CALENDAR

**Two Different Date Stamp, Dual Date Stamp With a Unit as 12 Month + 6**

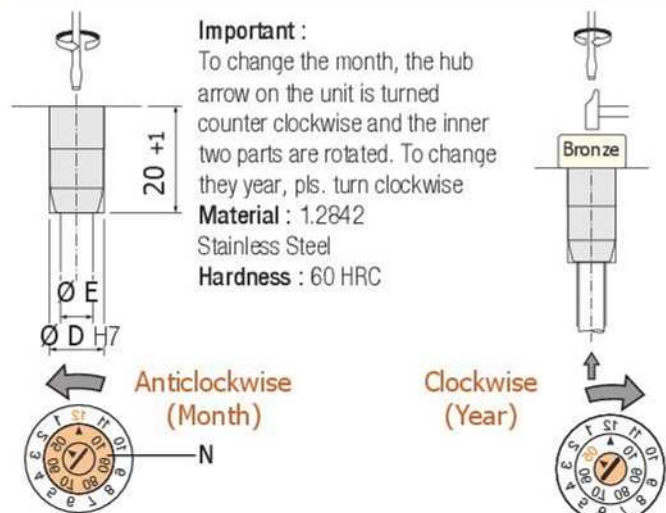
**Year:** This product reducing needs and area required for cost and two different date stamp, shows two different criterias on unit. Its Standard Model is as 12 Month+ 6 Year, i.e. is not required any change along 6 years.

The length of all date stamps (20 mm) are same.



## COMPLICATED (DUAL) MOULD CALENDAR **DKT**

Order	D	B	C	E	N
<b>DKT.08</b>	8	5.5	3	6	5
<b>DKT.10</b>	10	6	3	10	6
<b>DKT.12</b>	12	8	4	10	6
<b>DKT.16</b>	16	10.5	5.3	12	10
<b>DKT.20</b>	20	12	6	16	12



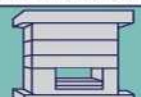
## 6 PIECES WATCHMAKER SCREWDRIVER SET



**Watchmaker Screwdriver Set:**  
6 Pieces Rotary Turret Set  
4 Pieces (1.5 - 2 - 2.5 - 3)  
Flat Ended Mini Screwdriver  
2 Pieces PH0 - 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**

Section  
Injection  
Mould



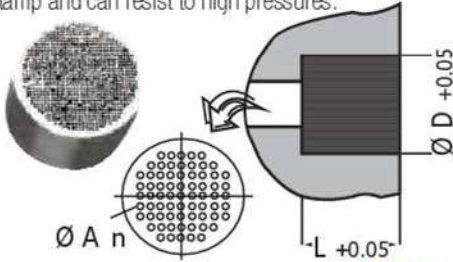
Page  
**233**



### 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**

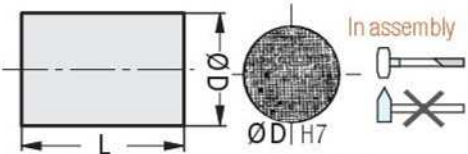
D	L	A	n		
1.6	5	0.03	250 / 400		
2.0					
2.5					
3.6					
4.1					
5.0	9	880	880		
10					
6.5	10			0.05	880
9.0					
10					
12.5					
15					
20	1200	1200			

Order: **SGA D x L**



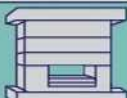
#### STEEL HOUSING SINTERED GAS RELIEF FILTER

External Surface is similar with grinded sinter structure mould inner gas relief valve **GVSY** SGA Model.



**Material:** Sintered Stainless Steel - HRC 40  
**Filter Thickness:** 10 Micron **Tension:** 300 N/mm<sup>2</sup>  
**Durability:** Weak Bases - Organic Acids Plastic Melts - Synthetic Resins

Order	D	L	Order	D	L
<b>GVSY 04</b>	4	10	<b>GVSY 12</b>	12	12
<b>GVSY 06</b>	6		<b>GVSY 16</b>	16	14
<b>GVSY 08</b>	8		<b>GVSY 20</b>	20	15
<b>GVSY 10</b>	10		<b>GVSY 28</b>	28	



Section Injection Mould

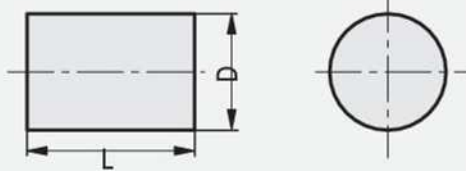
**GTH** Production As Per Request



### YELLOW WIRED GAS RELIEF FILTER

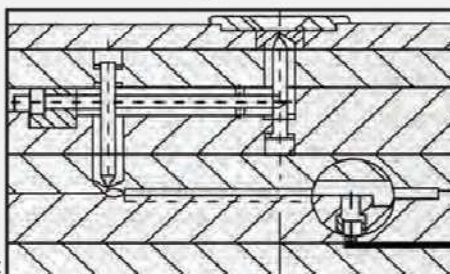
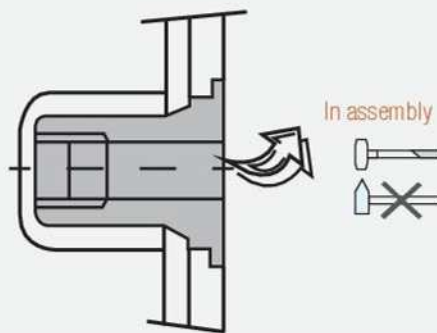
#### Wide Channel, Gas Relief Valve **GGA**

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. **It 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
<b>GGA.03</b>	3.0	8
<b>GGA.04</b>	4.0	10
<b>GGA.05</b>	5.0	10
<b>GGA.06</b>	6.0	10
<b>GGA.08</b>	8.0	10
<b>GGA.10</b>	10	10
<b>GGA.12</b>	12	10
<b>GGA.16</b>	16	10

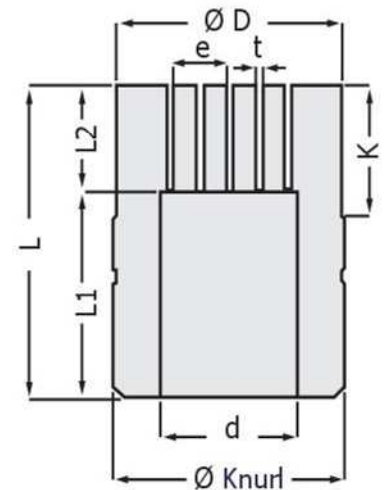
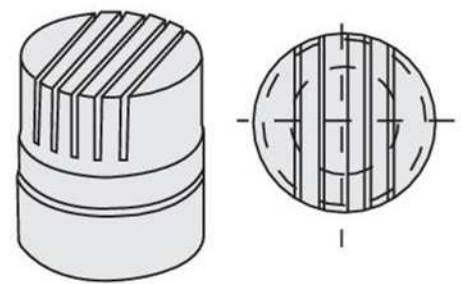


### HEADING MOULD AIR RELIEF VALVE

#### 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
<b>D</b>	6	8	10	12
<b>L</b>	10	10	10	10
<b>d</b>	3.5	5.0	6.0	8.0
<b>t</b>	1.0	1.1	1.3	1.5
<b>e</b>	0.3	0.3	0.3	0.3
<b>K</b>	4.0	4.0	5.0	5.0
<b>L1</b>	6.5	6.5	8.0	8.0
<b>L2</b>	3.5	3.5	4.0	4.0
<b>Knurl</b>	6.2	8.2	10.2	12.2

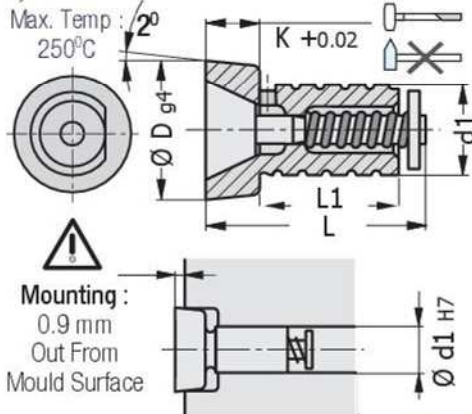


## CONEHEADED PNEUMATIC EJECTOR

**VHV**

### 2° Coneheaded / Special Reamer

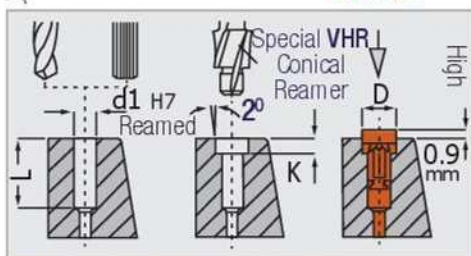
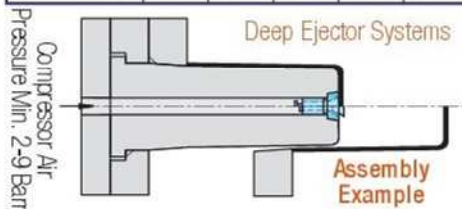
**Mounted** Coneheaded Pneumatic Ejector, Temperature Sensitive/ From Amcoloy Material **Mounting:** It should be provided with special reamer and should be 0.9 mm out from mould parting surface. It is compatible for Metal Injection Moulds.



## CONEHEADED PNEUMATIC EJECTOR

**VHV**

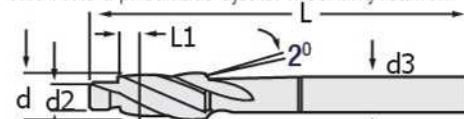
Order	D	d1	K	L	L1
<b>VHV.08</b>	8	6	5	16	8
<b>VHV.12</b>	12	8	5	21	13
<b>VHV.16</b>	16	10	6	22	14



## 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
<b>VHR.08</b>	8	6	10	5	69
<b>VHR.12</b>	12	8	12	5	100
<b>VHR.16</b>	16	10	12	6	122

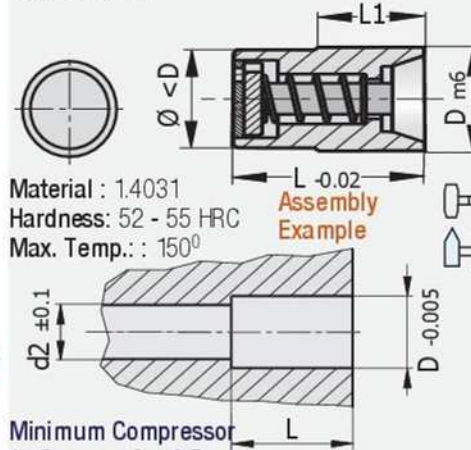


## SLEEVE PNEUMATIC EJECTOR V.

**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.



Minimum Compressor Air Pressure 3- 10 Bar

Economic Product: All diameters are available in our stocks

Order	D	L	L1	d2
<b>KHV.06</b>	6	12	7	3.5
<b>KHV.08</b>	8	15	9	5
<b>KHV.10</b>	10	20	13	6
<b>KHV.12</b>	12	25	15	8
<b>KHV.16</b>	16	30	17.5	8
<b>KHV.20</b>	20	30	19	10
<b>KHV.25</b>	25	30	19	12
<b>KHV.30</b>	30	30	27.5	15

## 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 Injection 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.

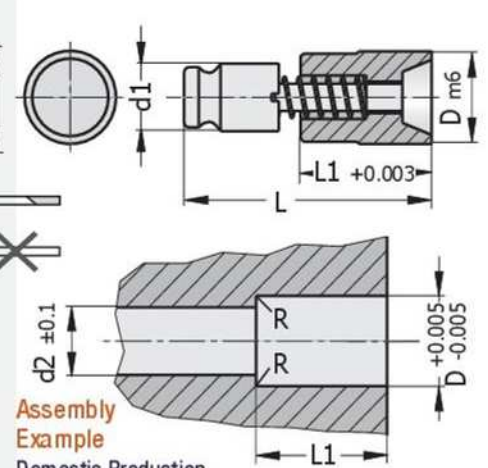


## PIN /LONG TYPE EJECTOR VALVE

### 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.

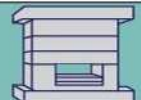
**Material:** 1.4031 **Hardness:** 52 - 55 HRC  
**Minimum Compressor Air Pressure** **Max. Temp.:** 150°  
**2- 9 Bar**



Economic Product: All diameters are available in our stocks

Order	D	L	L1	d1	d2	R
<b>PHV.08</b>	8	28	11	6	7	01
<b>PHV.10</b>	10	28	11	7	8	01
<b>PHV.12</b>	12	30	11	8	9	02
<b>PHV.16</b>	16	43	20	10	14	02
<b>PHV.18</b>	18	43	20	10	14	03
<b>PHV.20</b>	20	43	20	10	16	03
<b>PHV.25</b>	25	60	20/28	16	16	04

Section Injection Mould

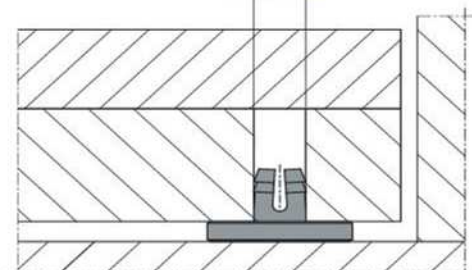
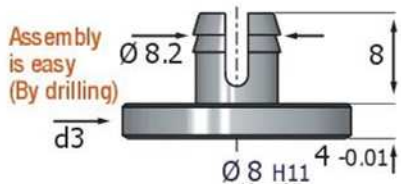


Page 235



## 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.

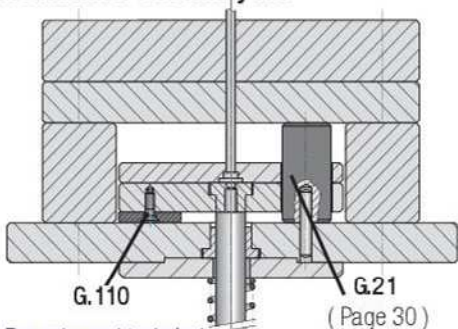


## THRUST PLATE **G. 144**

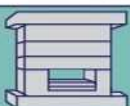
Order	d3
<b>G.144.20</b>	20
<b>G.144.30</b>	30



## THRUST PLATE **G.110** Mould Inner Assembly Kit



For order and technical information, pls. refer Page 16.



Section Injection Mould

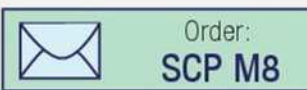
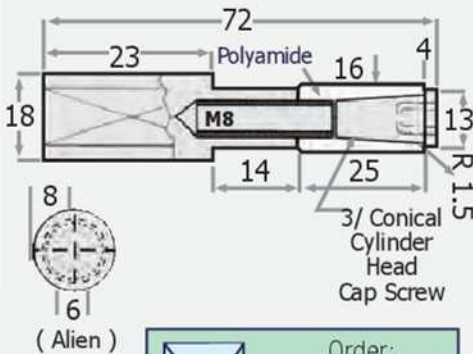


Reliable Label

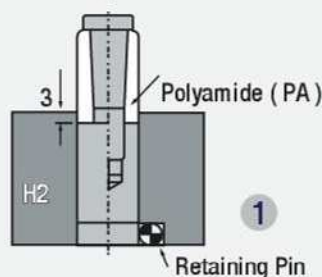
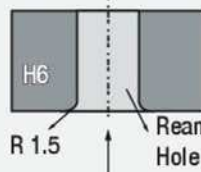
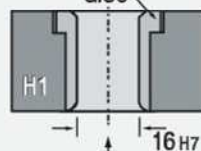


## PLATE PULLER **SCP M8** Frictional Plate Puller (Braking)

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.



Guide Bush G.30



Frictional Plate Puller (Figure 1) is send 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.



## FRICIONAL 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:**

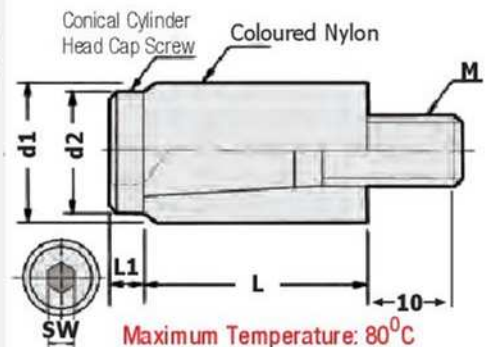
Up to 100 Kg. 4 Pieces 12 mm diameter

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.

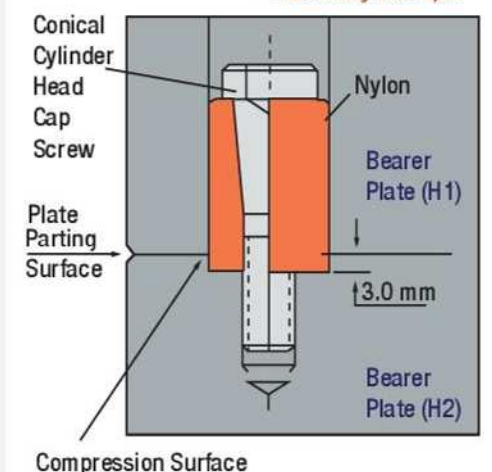
Polyamide extrusion holes in moulds should be H7 Reamed and also should be left as Radiuses, don't use any oil on extrusion surfaces.

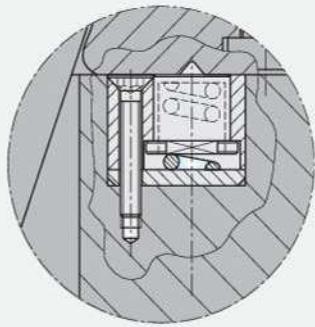


## Mould Parting, Adjusting Bolt **GPLA**

Order	d1	d2	M	SW	L1	L
<b>GPLA.10</b>	10	8.5	M5	4	3	18
<b>GPLA.12</b>	12	11	M6	5	3.5	20
<b>GPLA.13</b>	13	11	M6	5	3.5	20
<b>GPLA.16</b>	16	14	M8	6	4	25
<b>GPLA.20</b>	20	16	M10	8	5	30

Assembly Example



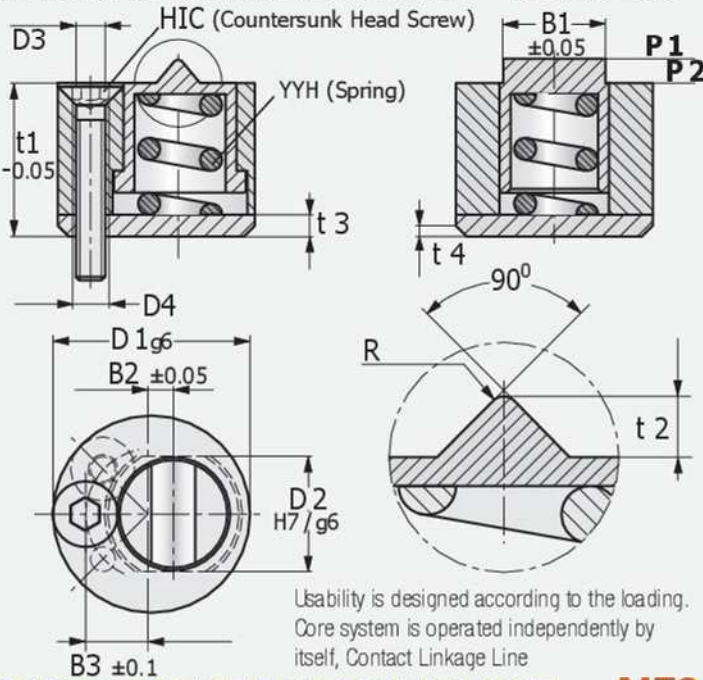


Maximum Temperature: 100<sup>0</sup>

### 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

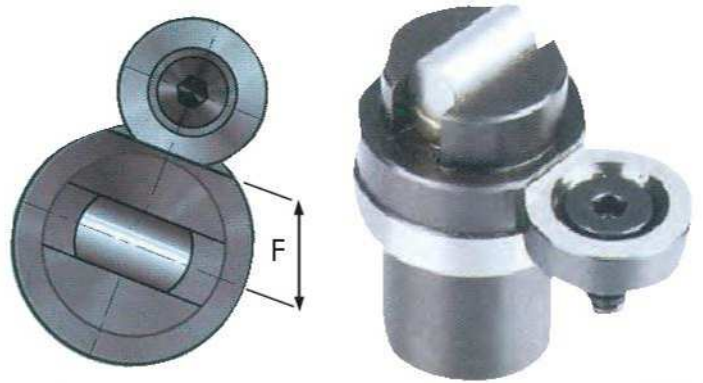
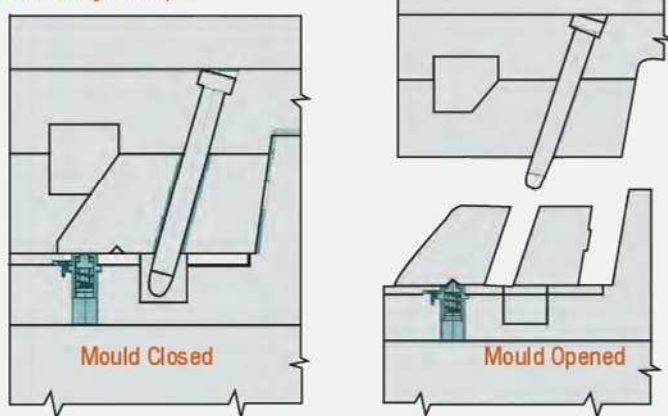


### CORE SLIDE RETAINER SPRING UNIT **MTC**

Order	D1	B1	B2	B3	t1	t2	t3
<b>MTC.13</b>	13	6.6	1.4	4.3	10	1.0	1.6
<b>MTC.18</b>	18	9.6	2.0	6.0	14	1.8	2.0
<b>MTC.27</b>	27	14.4	3.0	9.0	21	2.8	3.0

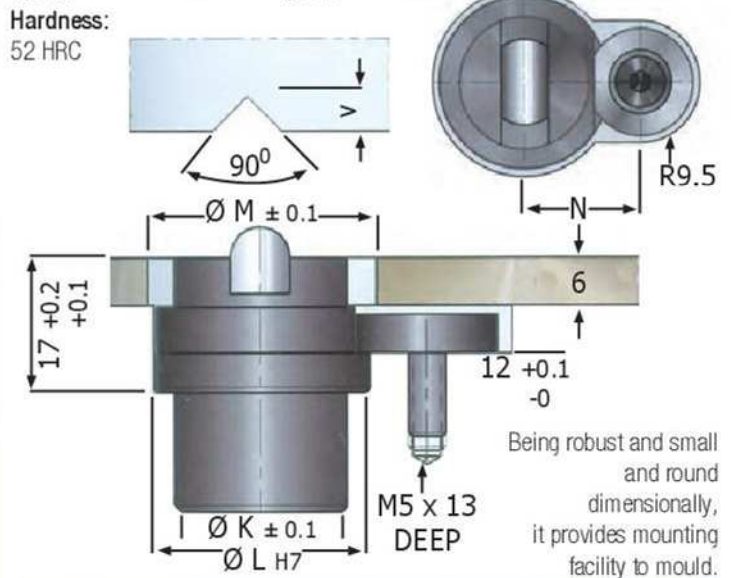
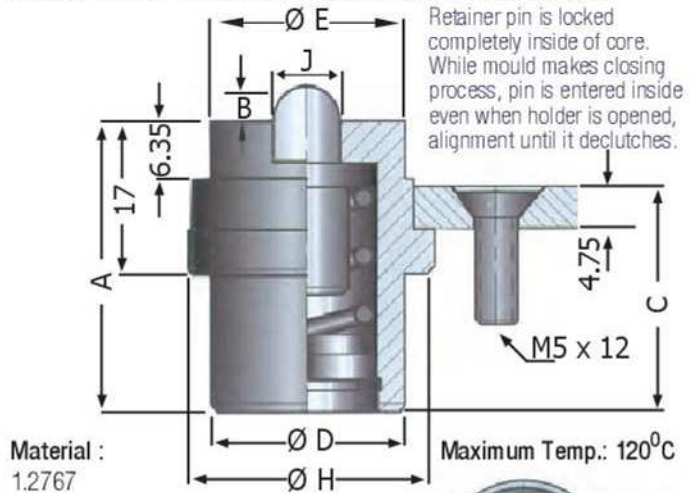
t4	D2	D3	D4	R	P1	P2	HIC
0.35	7	2.2	M3	0.35	28 Nw	34 Nw	M2 -16
0.50	10	3.2	M4	0.50	38 Nw	42 Nw	M3 -50
0.50	15	4.3	M5	0.75	38 Nw	92 Nw	M4 -25

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.



Order	A	B	C	D	E	F
<b>MTY.100</b>	27.43	1.83	20.2	15.75	16	9.52
<b>MTY.200</b>	33.53	3.07	26.29	18.8	19	10.67
<b>MTY.400</b>	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

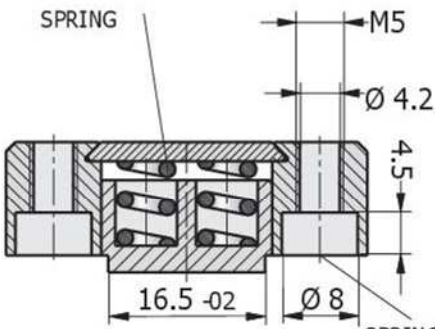
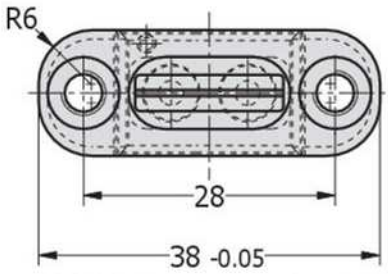
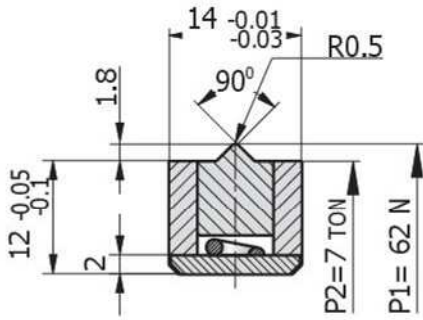
**GTH** Producing Selling  
Reliable Label With Proper Price

Section Injection Mould

Page 237



**CORE RETAINER TYPE: 1 MTK.1**  
Contact Linkage Line in Core Systems

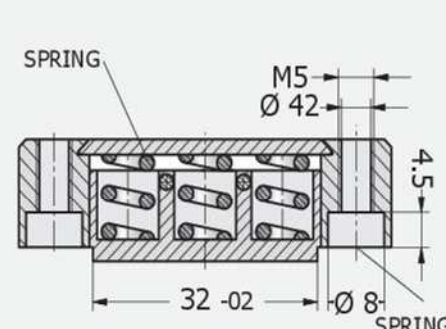
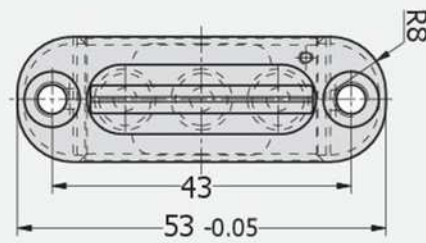
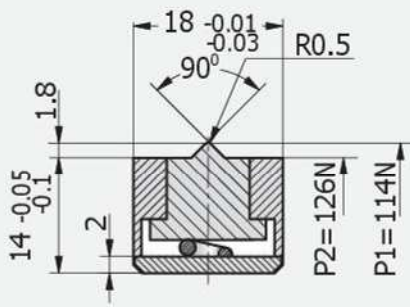


Maximum Temperature : 100°C  
Material : 1.2343 Hardness : 54 ± 2 HRC

Order: **MTK.1**



**CORE RETAINER TYPE: 2 MTK.2**  
It lifts the core without the holder in core system

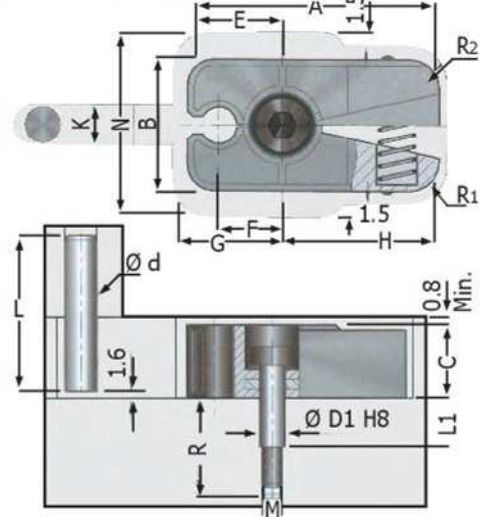


Maximum Temperature : 100°C  
Material : 1.2343 Hardness : 54 ± 2 HRC

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.



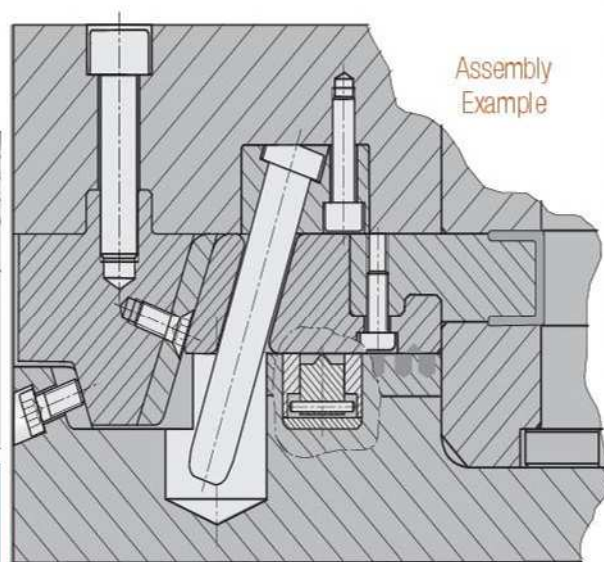
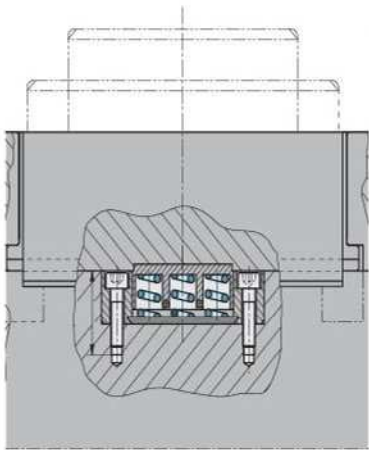
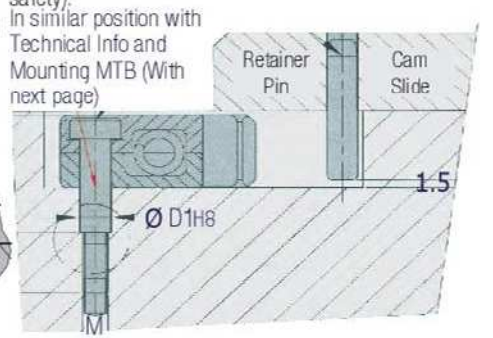
Order	A	B	C	E	F	G
<b>MTS 10M</b>	38	19	16	16	<b>9.1</b>	19
<b>MTS 20M</b>	54	32	20	21	<b>12.7</b>	24
<b>MTS 40M</b>	86	45	30	53	<b>20.3</b>	36

H	N	K	D1	L1	R	R1	R2	M
26	25	<b>8</b>	6	6	15.5	8	5	M5
36	36	<b>10</b>	8	8.5	20.5	10	6	M6
56	56	<b>12</b>	10	10	25	13	10	M8

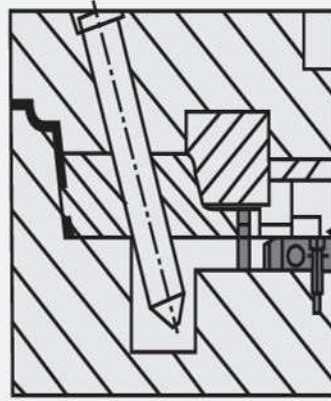
**Core Block**  
10 (Kgf.)  
20 (Kgf.)  
40 (Kgf.)

**K value:** It is 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



## PIN, CLOSED SPRING TYPE CORE RETAINER **MTB**

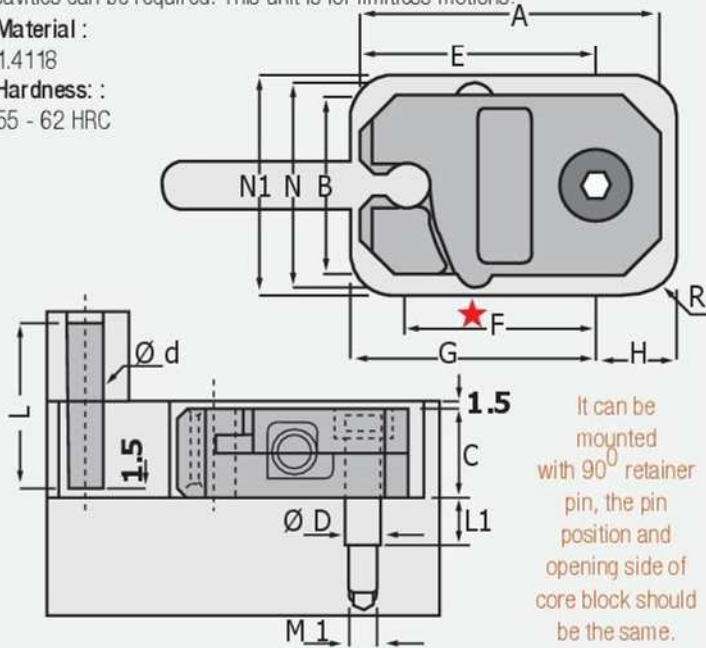
**Precise - Lock and Alignment Pinned, Spring Type Core Retainer** During fixed mounting with body core bolts, some spare hole and cavities can be required. This unit is for limitless motions.

**Material :**

1.4118

**Hardness :**

55 - 62 HRC



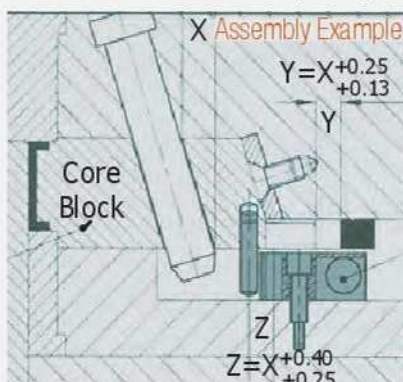
It can be mounted with 90° retainer pin, the pin position and opening side of core block should be the same.

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
<b>MTB. 38</b>	38	19	16	31.5	24.89	24	34.5	10
<b>MTB. 54</b>	54	32	20	43	34.93	36.5	46	14.5
<b>MTB. 86</b>	86	45	30	67	53.98	49.5	70	22.5

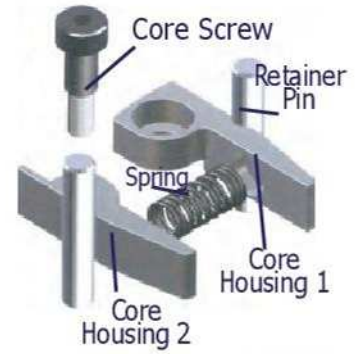
N1	R	D	L1	M1	d/L	Core
25.5	8	6	8.5	M5X11	6x30	10 Kg.
38	10	8	10.5	M6X14	8x40	20 Kg.
51	12	10	17	M8X18	10x60	40 Kg.

**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.

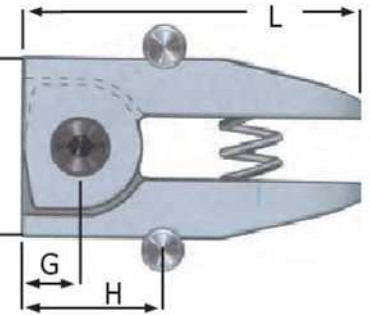


## CORE RETAINER LATCH **MTM**

**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 :**

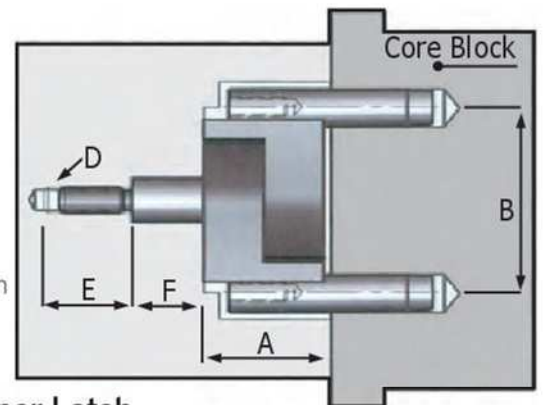
1.2767

**Hardness :**

55 - 62 HRC

**Maximum Temp. : 100°**

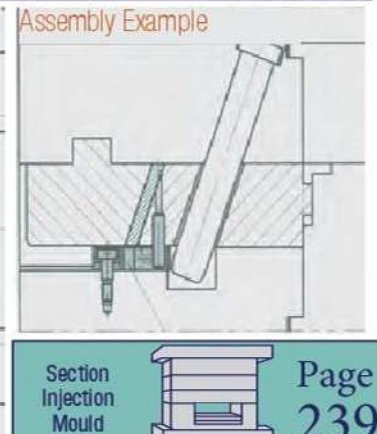
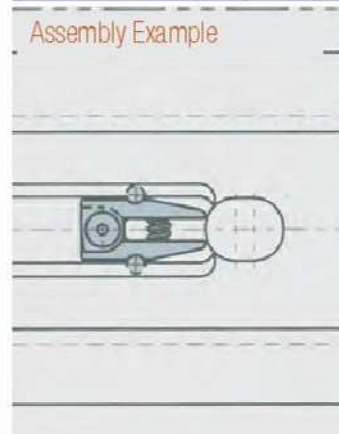
Especially, it can be preferred in alloy material moulds.



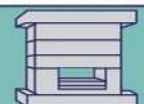
## Core Retainer Latch

Order	A	B	C	E	F
<b>MTM 1040</b>	10	21.5	18	9.5	5.1
<b>MTM 1243</b>	12	25.5	22	11	6.1
<b>MTM 1650</b>	16	31.5	28	11	8.1

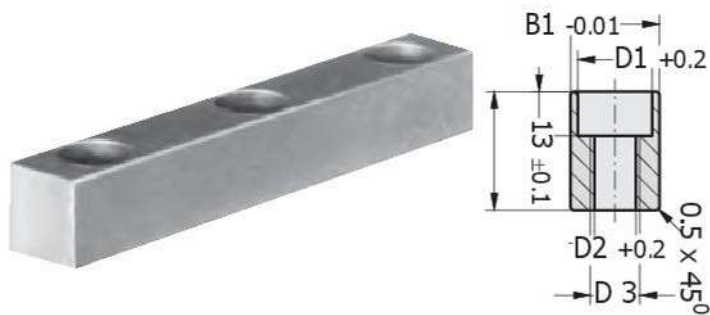
Order	G	H	L	D	Max.Retaining	Ret. Pin
<b>MTM 1040</b>	7	17.5	40	M5	∅ 6 - 30	10
<b>MTM 1243</b>	7.5	18	43	M6		15
<b>MTM 1650</b>	9.5	20.5	50	M6		25



Section Injection Mould

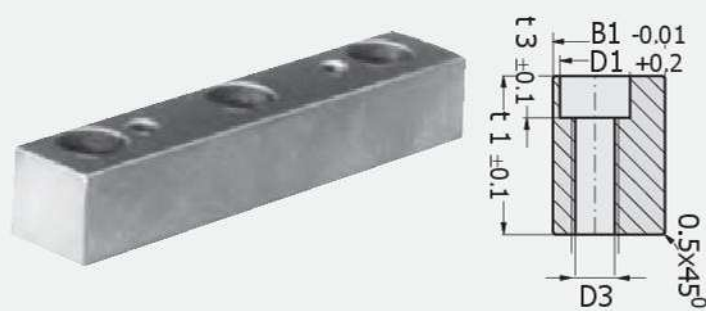
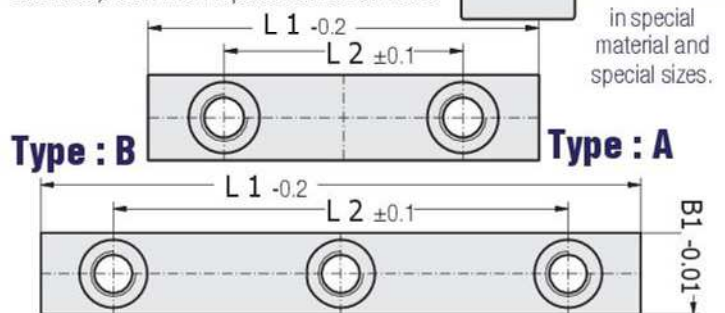


Page 239



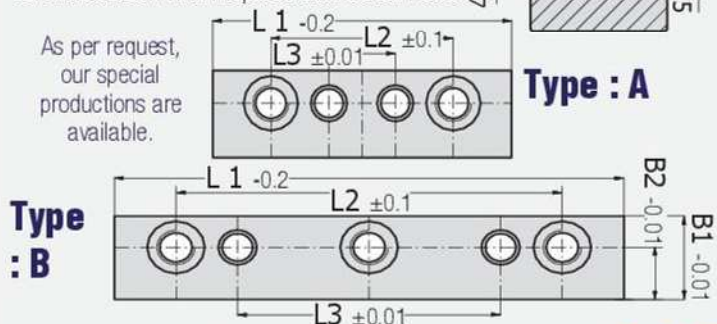
### CORE SLIDE, BOTTOM SUPPORT & INCLINED UNIT **G.147**

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



### 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

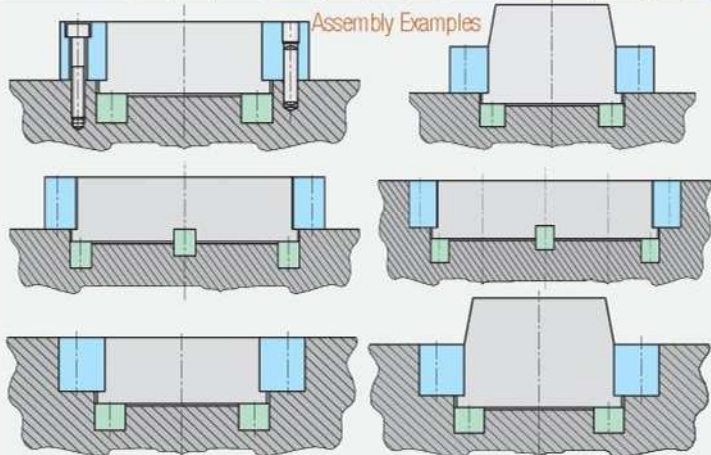
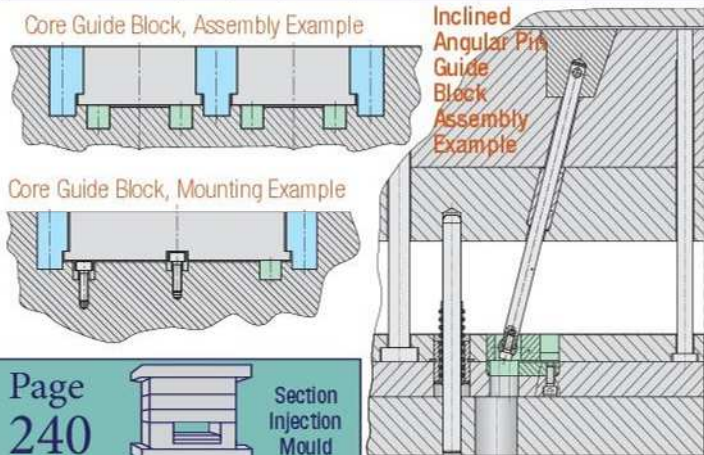


### CORE SLIDE, BOTTOM SUPPORT & INCLINED UNIT **G.147**

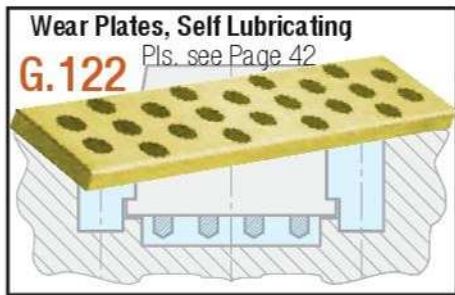
Order	B1	t1	L1	Type	t3	L2	D1	D2	D3
G.147.1250			50	A		30			
G.147.1260			60	A		40			
G.147.1270		11	70	B		50			
G.147.1275			75	B		60			
G.147.1280			80	B		60			
G.147.1290	12		90	B	5.7	70	10	5.3	M6
G.147.12100			100	B		80			
G.147.12120			120	B		100			
G.147.12140		16	140	B		120			
G.147.12160			160	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 SLIDE; LATERAL GUIDE PLATES **G.148**

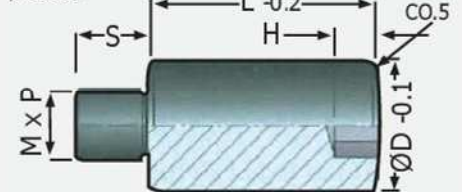
Order	B1	t1	L1	Type	B2	t2	t3	L2	L3	D1	D3	D4	D5
G.148.1550			50	A	-	-	-	30	10				
G.148.1560			60	A	-	-	-	40	20				
G.148.1570		15	70	B	9	-	5.7	50	30	10	M6	4	-
G.148.1575			75	B	-	-	-	60	40				
G.148.1580			80	B	-	-	-	60	40				
G.148.1590			90	B	-	-	-	70	50				
G.148.1880			80	A	-	-	-	56	32				
G.148.18100			100	B	-	-	-	76	52				
G.148.18120	18	22	120	B	11	12	6.8	96	72	11	M8	6	7
G.148.18140			140	B	-	-	-	106	92				
G.148.18160			160	B	-	-	-	136	112				
G.148.24100			100	A	-	-	-	68	36				
G.148.24120			120	A	-	-	-	88	56				
G.148.24140	24	36	140	B	15	12	9.0	108	76	15	M10	8	9
G.148.24160			160	B	-	-	-	128	96				
G.148.24180			180	B	-	-	-	148	116				
G.148.30120			120	A	-	-	-	80	40				
G.148.30140			140	A	-	-	-	100	60				
G.148.30160	30	50	160	B	18	15	11	120	80	18	M12	10	11
G.148.30180			180	B	-	-	-	140	100				
G.148.30200			200	B	-	-	-	160	120				







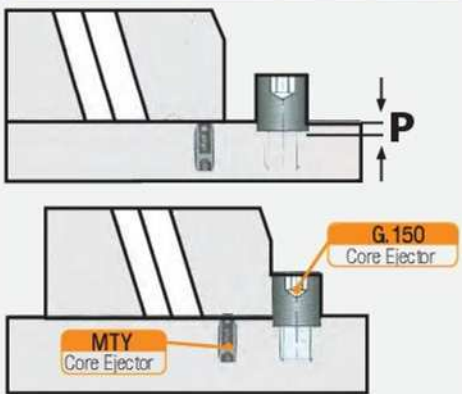
**CORE SLIDE: STOPPING**  
**Core Slide, Ejector Pin**  
It can be used as joint in inner mould designs. Ejector Pin is a practical and easy to mount product.



**CORE SLIDE: STOPPING G.150**

Order	M x P	SW
<b>G150. M6</b>	M6 x 1.0	5 Alien
<b>G150. M10</b>	M10 x 1.5	8 Alien
<b>G150. M12</b>	M12 x 1.75	10 Alien
<b>G150. M16</b>	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**

**BSM**

**Ball Locking Screw**  
For order and Technical Info, refer to Page 132

**YBS**

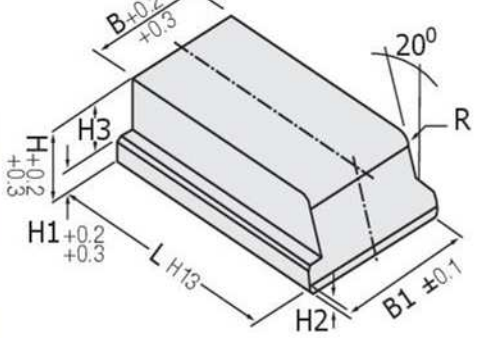
**Toothed Screwed Spring Locking**  
For order and Technical Info, refer to Page 132

**KBS**

**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 20° 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

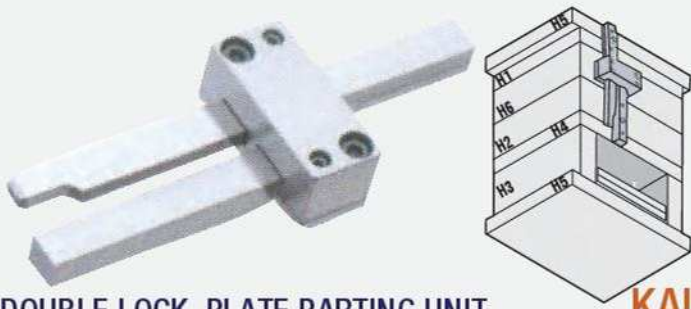
**READY, CORE SLIDE G.149**

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			40	46				
G149.2563	25	71	63	69	5	2	20	2
G149.2580			80	86				
G149.3263	32	100	63	71	6	3	26	3
G149.3280			80	88				
G149.32100			100	108				
G149.4063			63	71				
G149.4080	40	100	80	88	6	3	34	3
G149.40100			100	108				
G149.5080	50	112	80	90	8	4	42	4
G149.50100			100	110				
G149.50135			125	135				
G149.6380			80	90				
G149.63100	63	112	100	110	8	4	56	4
G149.63125			125	135				

**GTH** Reliable Label

Section Injection Mould

Page 241

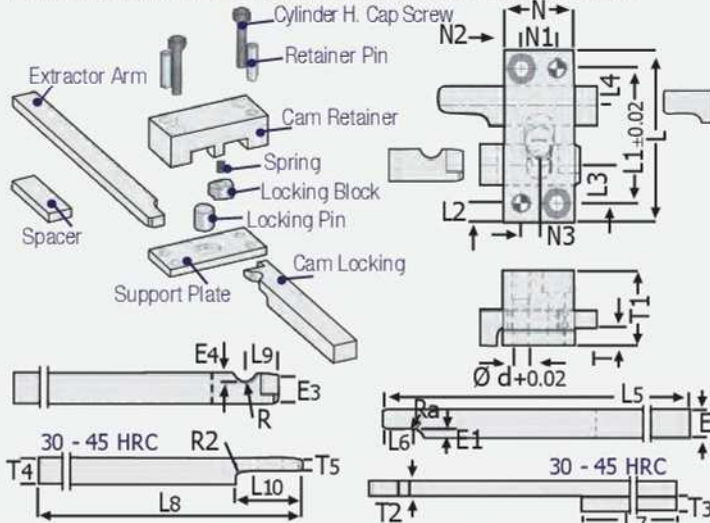


KAU

### DOUBLE LOCK, PLATE PARTING UNIT

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.



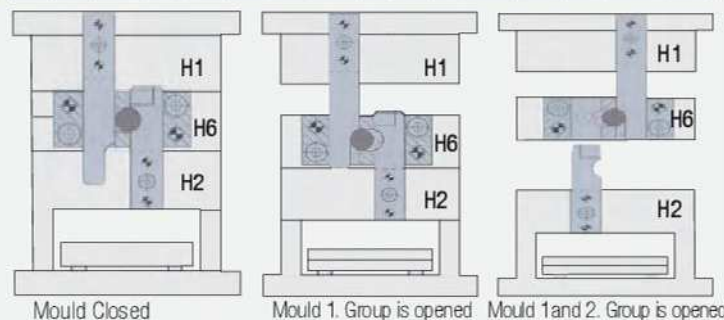
**Parallel Mounting of Locking Unit:** Pls. adjust or cut cam lock arm in required distance, open hole positions of bolts, tight cam locks on their positions, complete adjusting position with compatible parts. By forming dowel, secure cam locks. Pls. cut extractor arm in required distance and insert 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.

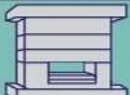
**Important:** After mounting unit, the operation test should be applied to your mould exactly, before production, the controls of opening and closing test controls of movable system should be separately. Movable parts can be greased.

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

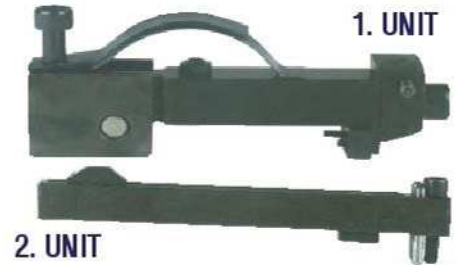
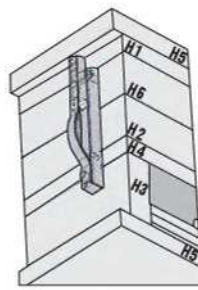
N1	N2	N3	d	E	E1	E3	E4	R	Ra	T	T1	T2	T3	T4	T5
12	6	6	5	13	4	13	4	5	5	5	24	6	5.5	11.5	6
16	8	8	6	16	5	18	5	6	6	6	32.5	10	6.5	16.5	10



Page  
242

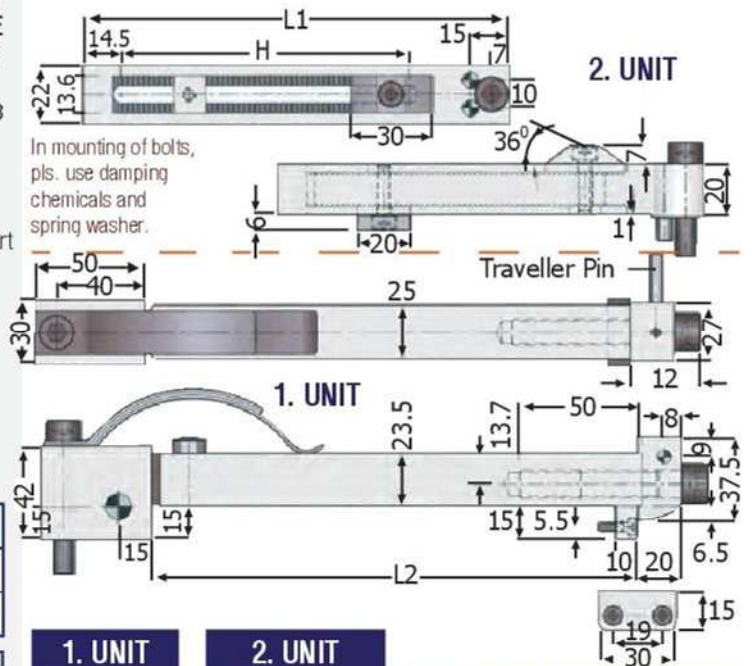


Section  
Injection  
Mould



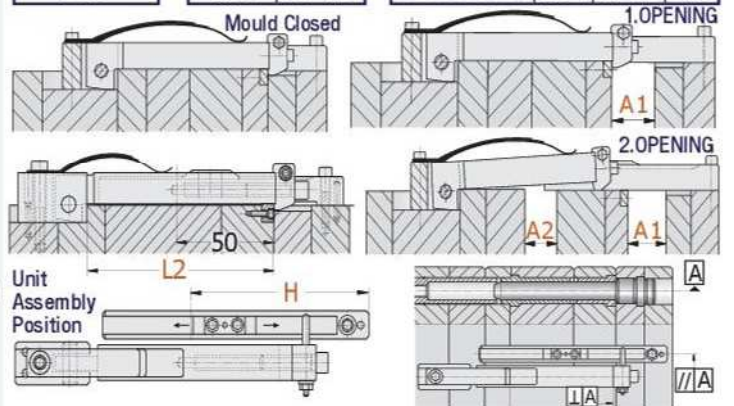
### DOUBLE UNIT - MOULD PLATE PARTING COMBINATION BOX

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 scraper 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 taper 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.



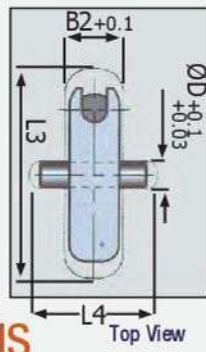
1. UNIT	2. UNIT	
L2	L1	H
90	140	83.5
170	204	152
220	254	194.5

Order	L1	H	L2
BOX460.140	140	83.5	90
BOX460.204	204	152	170
BOX460.254	254	194.5	220



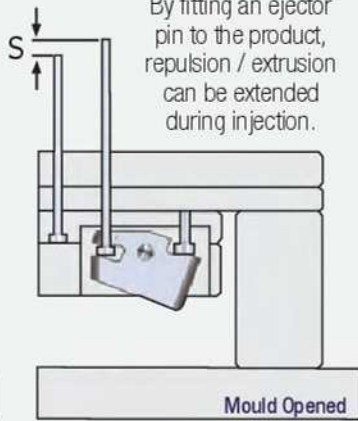
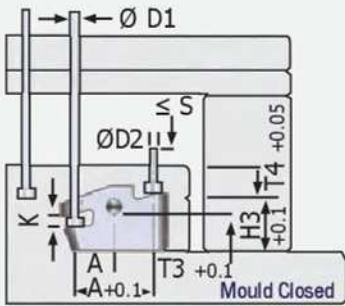


## EJECTOR ACCERELATOR SWING



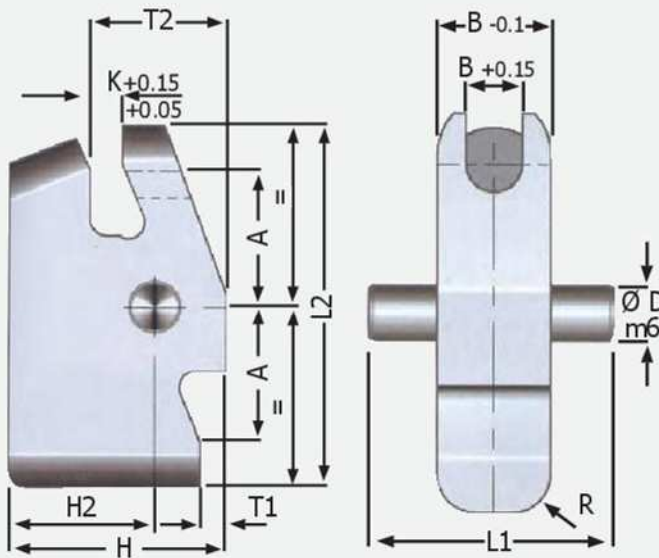
IHS

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



Accelerated Core Protector

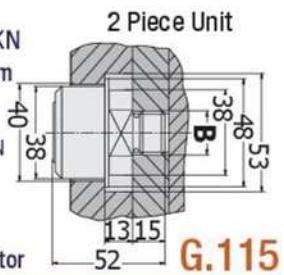
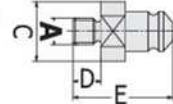


## AUTOMATIC PERCUSSION EJECTOR PLATE SYSTEM

**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

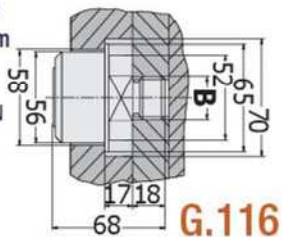
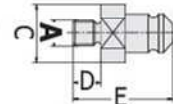


G.115

Medium Force F = 2.400 Kg. Automatic Ejector

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				

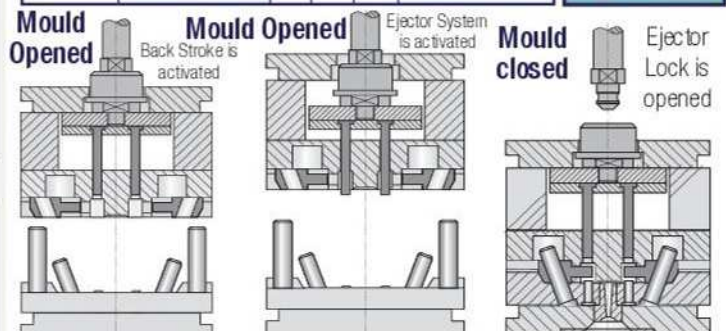
High Force F = 31.4 KN  
Automatic Ejector System



G.116

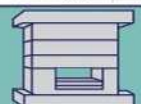
High Force F = 3.200 Kg. Automatic Ejector

Order	A	C	D	E	B	Stroke Back
G.116 A/B	M16 x 2.0	35	25	68	M16 x 1.5	Column Please see page 32.
	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					



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

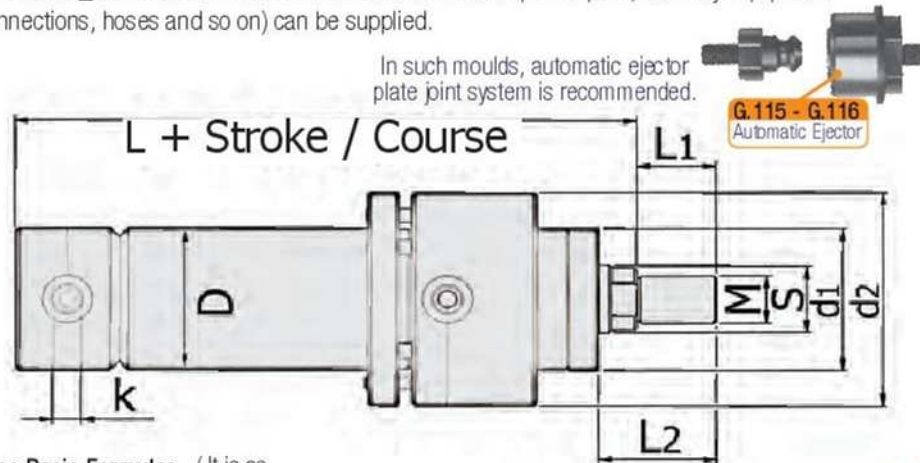
### Head Flange Various Cylinder Connection Types

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

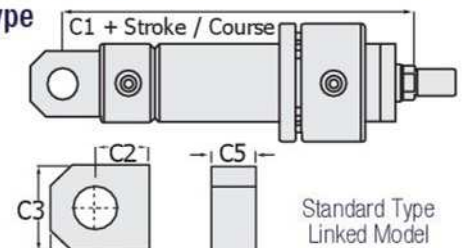
### Hydraulic Cylinders for moulds such as Waste Water Pipes, PVC Pipes. Standard Type

**Hydraulic Cylinders:** 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 / + 80°. **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.

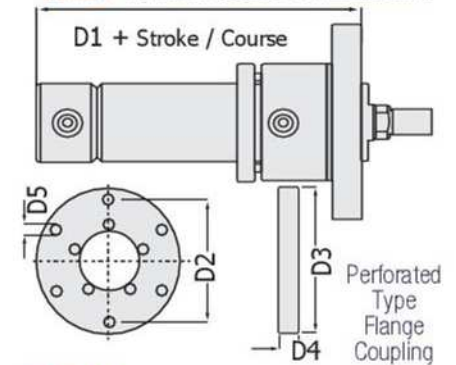


## THS

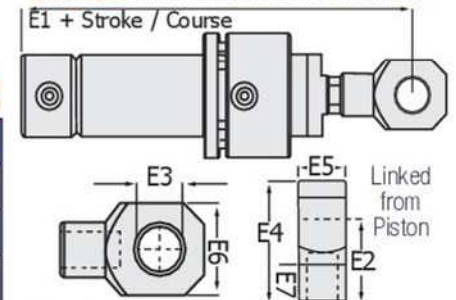
## THSE HYDRAULIC CYLINDER



## THSF HYDRAULIC CYLINDER



## THSM HYDRAULIC CYLINDER



Other dimensions are in the order table  
In Order: Product code and diameter be specified should

Some Basic Formulas (It is as advisory)  
In Application

Dimension	Formula	Unit
Force (Newton)	F	N
Length	s	m
Speed (Stroke)	v	m / s
Pressure	p	bar
Area (Piston)	A	m <sup>2</sup>
Volume	V	m <sup>3</sup>
Mass Flow Rate	Q	m <sup>3</sup> / s
Efficiency	η	-
Performance	P	kW

## INJECTION MOULD HYDRAULIC CYLINDERS THS

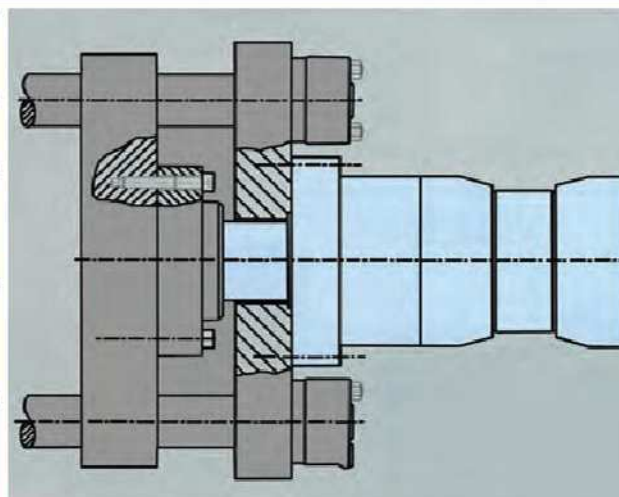
Order	D	k	M	S	d1	d2	L	L1	L2
THS. 40	50	1/4	M16 x 1.5	22	50	80	122	22	35
THS. 50	60	1/4	M20 x 1.5	28	60	95	148	31	46
THS. 63	75	3/8	M27 x 2.0	36	70	125	161	39	55
THS. 80	95	3/8	M33 x 2.0	45	85	130	180	47	65
THS. 100	115	1/2	M42 x 2.0	56	109	160	187	60	80
THS. 125	145	1/2	M48 x 2.0	70	130	195	212	67	90

**Cylinder Force:**  
 $F (N) = p (\text{bar}) \times A (\text{cm}^2) \times 10$   
 A = Effective Piston Area

**Required Mass Flow Rate:**  
 $Q (\text{lt} / \text{dk}) = A (\text{cm}^2) \times v (\frac{\text{m}}{\text{s}}) \times 6$

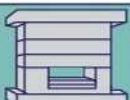
**Repulsion and Return Speed:**  
 $v (\frac{\text{m}}{\text{s}}) = \frac{Q (\text{lt} / \text{dk}) \times 1}{A (\text{cm}^2) \times 6}$   
 Q = Mass Flow Rate

**Required Pump Capacity:**  
 $P (\text{kW}) = \frac{Q (\text{lt} / \text{dk}) \times p (\text{bar}) \times 1}{\eta \times 600}$   
 η = Pump Efficiency



## 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
E3	20	25	32	40	50	60
E4	70	80	104	119	165	180
E5	40	50	60	80	100	120
E6	20	25	29	29	50	50



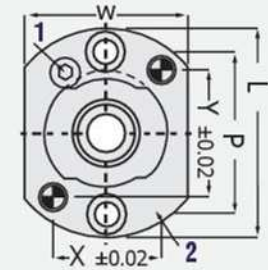
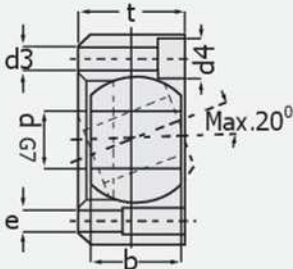


**G.136**

**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 0° and 20°. Working temperature is 170°. 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

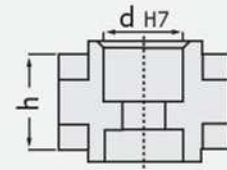
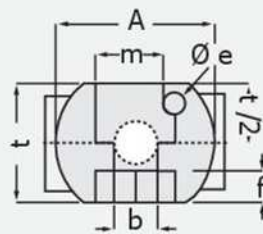
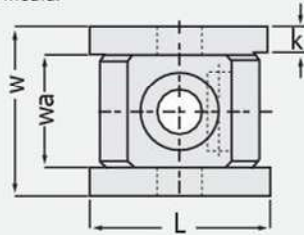


**G.135**

**INCLINED INNER UNIT**

**Mountable to the Mould (Ejector Plate)**

Slide part (Self Lubricating) is mounted by processing to ejector plate of mould.



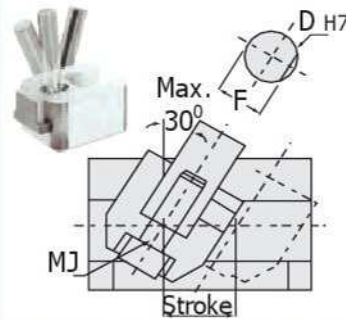
Self Lubrication System in inclined ejector pin unit, is greased up to 30° in unit

**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

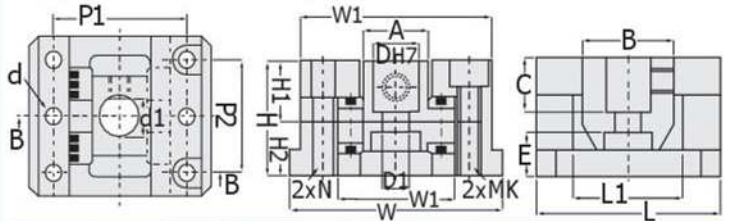
h	A	t	f	m	b	e
13	20	16	5	7.5	5	3
17	20	16	4	8.5	6	3
20	25	20	5	10	7	4
24	30	24	6	13	9	6
24	40	30	8	17	11	6
26	45	35	9.5	22	14	6
30	50	38	9	27	14	6
34	55	40	10	31	14	8
38	60	43	11.5	36	18	8



**FIXED, INCLINED EJECTOR PIN UNIT G.133**

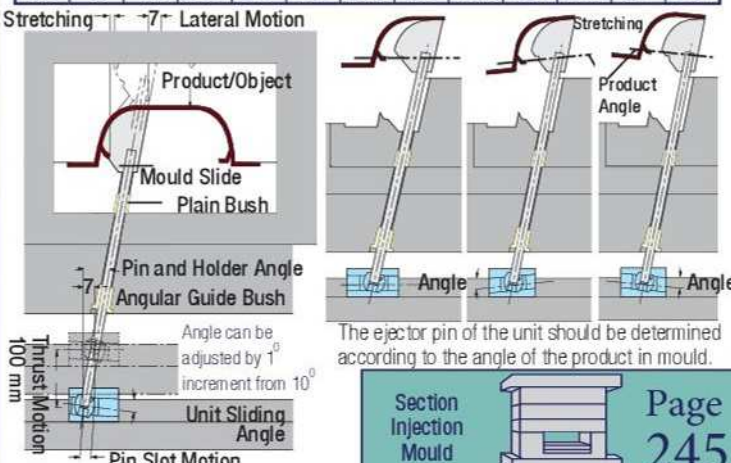
**It moves the inclined/angle pin systems in the desired angle**

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 300° (With Graphite bearing system), the unit can be lubricated itself, the working angle of ejector pin can be inclined up to 10°-20°-30°, 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.

# 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).



Gaining of Cutting Machine to Mould Industry is provided by GÜVENAL GROUP.

## 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.



**Easy  
Rapid  
Practical**



Cutting Stone Diameter



Cutting Wheel Assembly Kits

Work Piece Placement Seating Area Clamp

Work Piece Support Thrust



Grinding, Stone Correction Diamond Adjustment Scale

Cover Safety Switch



Precision Whetting of Dish Stone Movable Scale

Length Adjustment With Precision Micrometer

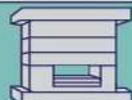


Grinding After Cutting Dish Stone

System Lubricant Grease Nipple

**Easy/ Rapid Length Adjustment & Cutting in Precision Cutting**

**It Provides Recycling of Refused Material**



d1	L	d2	k
9.0	100	11	1.0
	125		
	160		
	200		
250			

d1	L	d2	k
9.5	100	12	1.0
	125		
	160		
	200		

d1	L	d2	k
10	100	12	1.0
	125		
	160		
	200		
	250		
315			

d1	L	d2	k
10.5	100	13	1.0
	125		
	160		
	200		

d1	L	d2	k
11	100	13	1.0
	125		
	160		
	200		
	250		

d1	L	d2	k
12	100	14	1.0
	125		
	160		
	200		
	250		
315			

d1	L	d2	k
13	100	15	1.0
	125		
	160		
	200		
250			

d1	L	d2	k
14	100	16	1.5
	125		
	160		
	200		
	250		
315			

d1	L	d2	k
16	100	18	1.5
	125		
	160		
	200		
	250		
315			

d1	L	d2	k
5.4	100	6.5	0.5
	125		
	160		

d1	L	d2	k
5.5	100	7.0	0.5
	125		
	160		
	200		
	250		
315			

d1	L	d2	k
5.6	100	7.0	0.5
	125		
	160		

d1	L	d2	k
5.7	100	7.0	0.5
	125		
	160		

d1	L	d2	k
5.8	100	7.0	0.5
	125		
	160		

d1	L	d2	k
5.9	100	7.0	0.5
	125		
	160		

d1	L	d2	k
6.0	100	8.0	0.5
	125		
	160		
	200		
	250		
315			

d1	L	d2	k
6.5	100	9.0	1.0
	125		
	160		
	200		
	250		

d1	L	d2	k
7.0	100	9.0	1.0
	125		
	160		
	200		
	250		
315			

d1	L	d2	k
7.5	100	10	1.0
	125		
	160		
200			

d1	L	d2	k
8.0	100	10	1.0
	125		
	160		
	200		
	250		
	315		

d1	L	d2	k
8.5	100	11	1.0
	125		
	160		
	200		
	250		

d1	L	d2	k
3.9	100	5.0	0.5
	125		
	160		

d1	L	d2	k
4.0	100	5.5	0.5
	125		
	160		
	200		
	250		
315			

d1	L	d2	k
4.1	100	5.5	0.5
	125		
	160		

d1	L	d2	k
4.2	100	5.5	0.5
	125		
	160		

d1	L	d2	k
4.3	100	5.5	0.5
	125		
	160		

d1	L	d2	k
4.4	100	5.5	0.5
	125		
	160		

d1	L	d2	k
4.5	100	6.0	0.5
	125		
	160		
	200		
	250		
	315		

d1	L	d2	k
4.6	100	6.0	0.5
	125		
	160		

d1	L	d2	k
4.7	100	6.0	0.5
	125		
	160		

d1	L	d2	k
4.8	100	6.0	0.5
	125		
	160		

d1	L	d2	k
4.9	100	6.0	0.5
	125		
	160		

d1	L	d2	k
5.0	100	6.5	0.5
	125		
	160		
	200		
	250		
	315		

d1	L	d2	k
5.1	100	6.5	0.5
	125		
	160		

d1	L	d2	k
5.2	100	6.5	0.5
	125		
	160		

d1	L	d2	k
5.3	100	6.5	0.5
	125		
	160		



## COUNTERSUNK EJECTOR PIN DIN 1530 - D

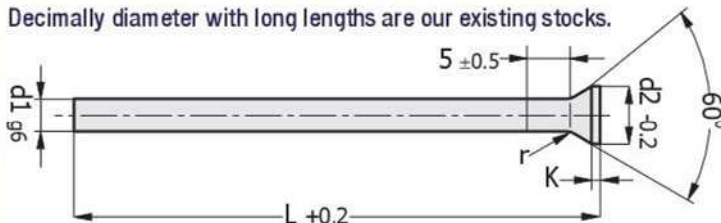
HBI

### Plastic Injection Mould Ejector Pins

Material: 1.2516 WS Head Hardness : 45 ± 2 HRC Casing Hardness : 60 ± 2 HRC

Max Heat Resistance : 220° Tension Resistance: 1300 N / mm<sup>2</sup>

Decimally diameter with long lengths are our existing stocks.



d1	L	d2	k
2.9	100	4.0	0.5
	125		
	160		

d1	L	d2	k
3.0	100	4.5	0.5
	125		
	160		
	200		
	250		
	315		

d1	L	d2	k
3.1	100	4.5	0.5
	125		
	160		

d1	L	d2	k
3.2	100	4.5	0.5
	125		
	160		

d1	L	d2	k
3.3	100	4.5	0.5
	125		
	160		

d1	L	d2	k
3.4	100	4.5	0.5
	125		
	160		

d1	L	d2	k
3.5	100	5.0	0.5
	125		
	160		
	200		
	250		
	315		

d1	L	d2	k
3.6	100	5.0	0.5
	125		
	160		

d1	L	d2	k
3.7	100	5.0	0.5
	125		
	160		

d1	L	d2	k
3.8	100	5.0	0.5
	125		
	160		

d1	L	d2	k
2.0	100	3.0	0.5
	125		
	160		
	200		
	250		
315			

d1	L	d2	k
2.1	100	3.2	0.5
	125		
	160		

d1	L	d2	k
2.2	100	3.2	0.5
	125		
	160		

d1	L	d2	k
2.3	100	3.5	0.5
	125		
	160		

d1	L	d2	k
2.4	100	3.5	0.5
	125		
	160		

d1	L	d2	k
2.5	100	3.5	0.5
	125		
	160		
	200		
	250		
315			

d1	L	d2	k
2.6	100	4.0	0.5
	125		
	160		

d1	L	d2	k
2.7	100	4.0	0.5
	125		
	160		

d1	L	d2	k
2.8	100	4.0	0.5
	125		
	160		

d1	L	d2	k
1.0	100	1.8	0.5
	125		
	160		
200			

d1	L	d2	k
1.1	100	1.8	0.5
	125		
	160		

d1	L	d2	k
1.0	100	1.8	0.5
	125		
	160		
	200		

d1	L	d2	k
1.1	100	1.8	0.5
	125		
	160		

d1	L	d2	k
1.2	100	2.0	0.5
	125		
	160		

d1	L	d2	k
1.3	100	2.0	0.5
	125		
	160		

d1	L	d2	k
1.4	100	2.2	0.5
	125		
	160		

d1	L	d2	k
1.5	100	2.2	0.5
	125		
	160		
	200		

d1	L	d2	k
1.6	100	2.5	0.5
	125		
	160		

d1	L	d2	k
1.7	100	2.5	0.5
	125		
	160		

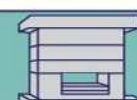
d1	L	d2	k
1.8	100	2.8	0.5
	125		
	160		

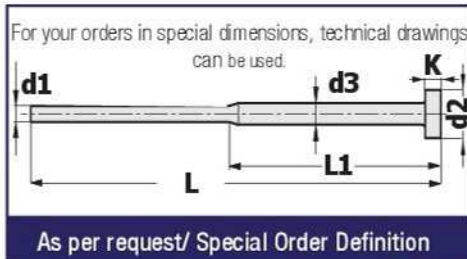
d1	L	d2	k
1.9	100	2.8	0.5
	125		
	160		

Order : **HBI** d1 x L



Section Injection Mould

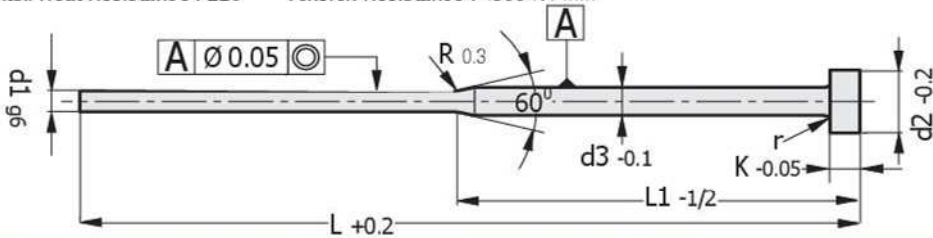




**CYLINDRICAL HEAD, EJECTOR PIN, STEPPED** DIN ISO 8694 **SBK**

Material: 1.2516 WS Head Hardness:  $45 \pm 2$  HRC Casing Hardness:  $60 \pm 2$  HRC  
 Max. Heat Resistance :  $220^{\circ}$  Tension Resistance :  $1300 \text{ N/mm}^2$

Type : AH



d1	L	L1	d3	d2	k
0.8	63	25			
	80	35			
	100		2	4	2
	125	50			
	150				
	160	75			

d1	L	L1	d3	d2	k
1.4	63	25			
	80	35			
	100		2	4	2
	125	50			
	150				
	160	75			

d1	L	L1	d3	d2	k
2.0	80	35			
	100				
	125	50	3	6	3
	150				
	160				
	200	75			

d1	L	L1	d3	d2	k
1.0	63	25			
	80	35			
	100		2	4	2
	125	50			
	150				
	160	75			

d1	L	L1	d3	d2	k
1.5	63	25			
	80	35			
	100		3	6	3
	125	50			
	150				
	160	75			

d1	L	L1	d3	d2	k
2.2	80	35			
	100				
	125	50	3	6	3
	150				
	160				
	200	75			

d1	L	L1	d3	d2	k
1.1	63	25			
	80	35			
	100		2	4	2
	125	50			
	150				
	160	75			

d1	L	L1	d3	d2	k
1.6	80	35			
	100		3	6	3
	125	50			
	150				
	160				
	200	75			

d1	L	L1	d3	d2	k
2.5	100				
	125	50	3	6	3
	150				
	160				
	200	75			

d1	L	L1	d3	d2	k
1.2	63	25			
	80	35			
	100		2	4	2
	125	50			
	150				
	160	75			

d1	L	L1	d3	d2	k
1.7	80	35			
	100		3	6	3
	125	50			
	150				
	160				
	200	75			

d1	L	L1	d3	d2	k
2.6	100				
	125	50	3	6	3
	150				
	160				
	200	75			

d1	L	L1	d3	d2	k
1.3	63	25			
	80	35			
	100		2	4	2
	125	50			
	150				
	160	75			

d1	L	L1	d3	d2	k
1.8	80	35			
	100		3	6	3
	125	50			
	150				
	160				
	200	75			

d1	L	L1	d3	d2	k
2.7	100				
	125	50	3	6	3
	150				
	160				
	200	75			

Order : **SBK.AH**  
**d1xd3xL1xL**

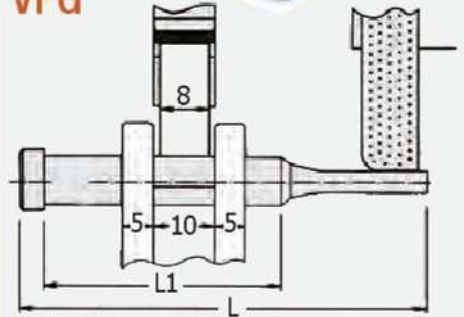
For your special order, pls. fill in the technical drawing details.



**Universal Type PIN FORM PROCESSING DEVICE**

Weight : 6.6 Kg.

Order VPG



Working System:  
 Grinding, Bench Manual System Device

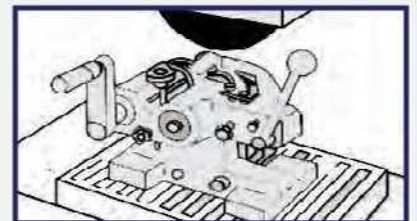
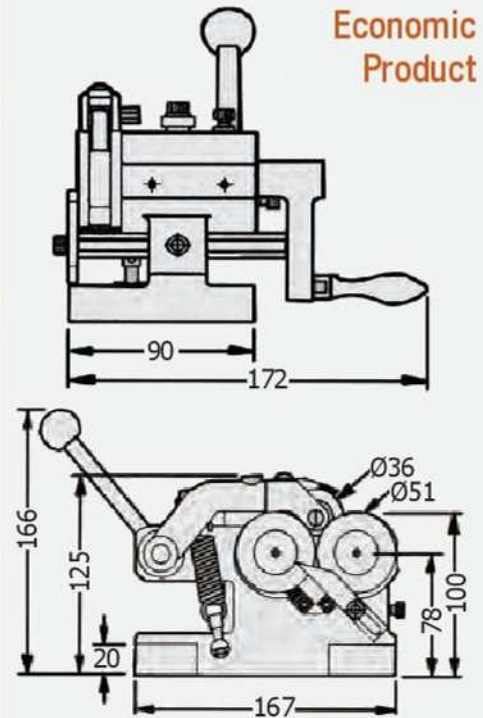
\* It is used in cylindrical or stepped form grinding operations of ejector pin - perforator or EDM Work Piece on surface honing workbench.

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.





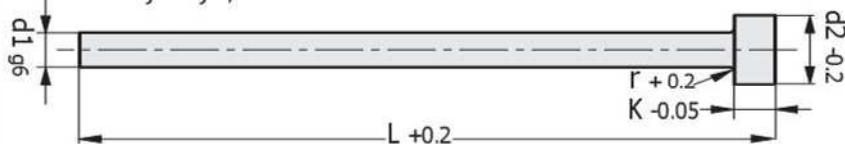
## CYLINDRICAL HEAD EJECTOR PIN DIN ISO 6751 TYPE: AH SBI

Plastic Injection Mould Economic - Heat Ejector Pins

Material: 1.2516 Head Hardness:  $45 \pm 2$  HRC Casing Hardness:  $60 \pm 2$  HRC

Max. Heat Resistance :  $220^{\circ}$  Tension Resistance :  $1300 \text{ N/mm}^2$

For extra long length, our shelf stocks are available.



d1	L	d2	k
12	100	18	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
1000			

d1	L	d2	k
13	160	20	7.0
	200		
	250		
	315		

d1	L	d2	k
14	100	22	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630			
800			
1000			

d1	L	d2	k
16	100	22	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630			
800			
1000			

d1	L	d2	k
18	100	24	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630			
800			
1000			

d1	L	d2	k
20	100	26	8.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630			
800			
1000			

d1	L	d2	k
25	100	32	10
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630			
800			
1000			

d1	L	d2	k
7.5	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
500			

d1	L	d2	k
8.0	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630			
800			
1000			

d1	L	d2	k
8.5	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
500			
630			

d1	L	d2	k
9.0	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630			
800			

d1	L	d2	k
10	100	16	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
1000			

d1	L	d2	k
10.5	100	16	5.0
	125		
	160		
	200		

d1	L	d2	k
11	100	16	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630			

d1	L	d2	k
5.5	100	10	3.0
	125		
	160		
	200		
	250		
	315		
	400		
500			

d1	L	d2	k
6.0	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
1000			

d1	L	d2	k
6.5	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630			

d1	L	d2	k
7.0	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630			
800			
1000			

d1	L	d2	k
3.5	250	7.0	3.0
	315		
	400		
	500		
	630		

d1	L	d2	k
4.0	100	8.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
1000			

d1	L	d2	k
4.5	100	8.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
500			

d1	L	d2	k
5.0	100	10	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630			
800			
1000			

d1	L	d2	k
1.0	100	2.5	1.2
	125		
	160		

d1	L	d2	k
1.5	100	3.0	1.5
	125		
	160		
200			

d1	L	d2	k
2.0	100	4.0	2.0
	125		
	160		
	200		
	250		
	315		
	400		
500			

d1	L	d2	k
2.5	100	5.0	2.0
	125		
	160		
	200		
	250		
	315		
	400		
500			

d1	L	d2	k
3.0	100	6.0	3.0
	125		
	160		
	200		
	250		
	315		
400			
500			
630			

d1	L	d2	k
3.5	100	7.0	3.0
	125		
	160		
	200		



Order : **SBI-AH** d1 x L

Section  
Injection  
Mould



Page  
249



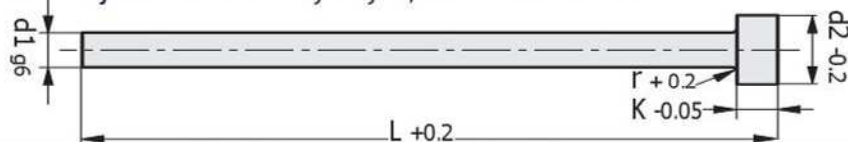
## CYLINDRICAL HEAD EJECTOR PIN DIN ISO 6751 TYPE : A **SBI**

Plastic / Metal Injection Economic - Heat Resistant Ejector Pins

Material: 1.2344 (Hot Work Steel) Head Hardness:  $45 \pm 5$  HRC Casing Hardness: 44 HRC

Max. Heat Resistance : 500 - 550<sup>0</sup> Tension Resistance : 1450 N / mm<sup>2</sup>

Decimally diameter with long lengths, Our available stocks.



d1	L	d2	k
1.0	100	2.5	1.2
	125		
	160		

d1	L	d2	k
1.5	100	3.0	1.5
	125		
	160		
	200		

d1	L	d2	k
1.8	100	3.0	1.5
	160		

d1	L	d2	k
2.0	100	4.0	2.0
	125		
	160		
	200		
	250		
	315		

d1	L	d2	k
2.2	100	4.0	2.0
	160		

d1	L	d2	k
2.5	100	5.0	2.0
	125		
	160		
	200		
	250		
	315		

d1	L	d2	k
3.0	100	6.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		

d1	L	d2	k
3.2	100	6.0	3.0
	160		

d1	L	d2	k
3.5	100	7.0	3.0
	125		

d1	L	d2	k
3.5	160	7.0	3.0
	200		
	250		
	315		
	400		

d1	L	d2	k
4.0	100	8.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
1000			

d1	L	d2	k
4.2	100	8.0	3.0
	160		

d1	L	d2	k
4.5	100	8.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		

d1	L	d2	k
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		

d1	L	d2	k
6.0	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	1000		

d1	L	d2	k
6.5	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		

d1	L	d2	k
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		

d1	L	d2	k
8.0	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
1000			

d1	L	d2	k
8.5	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		

d1	L	d2	k
9.0	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		

d1	L	d2	k
10	100	16	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	1000		

d1	L	d2	k
10.5	100	16	5.0
	125		
	160		
	200		

d1	L	d2	k
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		
	1000		

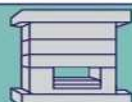
d1	L	d2	k
14	100	22	7.0
	125		
	160		
	200		
	250		
	315		
	400		

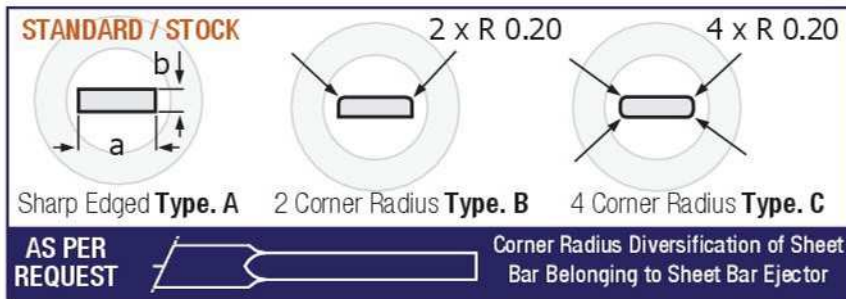
d1	L	d2	k
16	100	22	7.0
	125		
	160		
	200		
	250		
	315		
	400		

d1	L	d2	k
18	100	24	7.0
	125		
	200		
	250		

d1	L	d2	k
20	100	26	8.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		

d1	L	d2	k
25	100	32	10
	125		
	160		
	200		
	250		
	315		
	400		





As per request; CYLINDRICAL HEAD SHEET BAR EJECTOR PIN

ISO 8693 (DIN 1530 F) TYPE : A-B-C

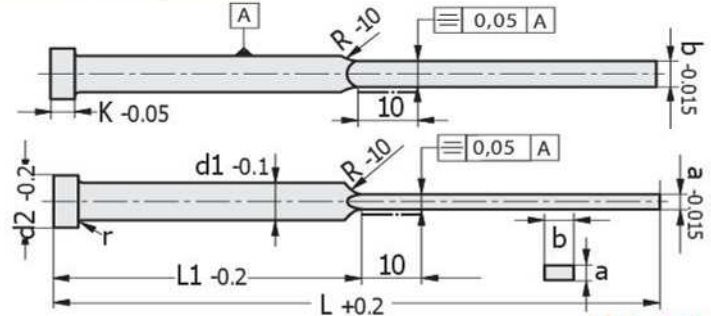
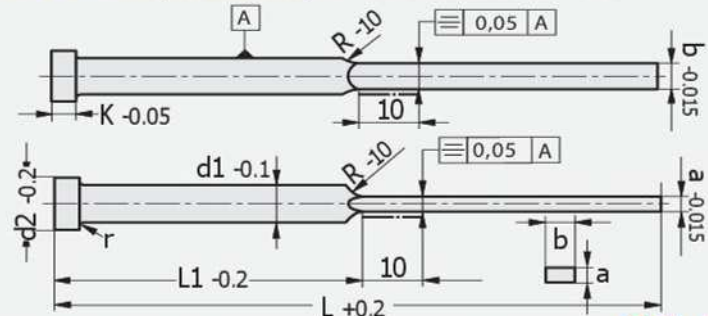
SPL  
SPL.AH

Plastic / Metal Inj. Mould HEAT RESISTANT S. BAR EJECTOR

Plastic Inj. Mould HARDENED SHEET BAR EJECTOR

Material: 1.2344 (Hot Work Steel) Max. Heat Resistance: 500 - 550°

Material: 1.2516 (Hardened) Max. Heat Resistance: 220°



Plastic / Metal Inj. Mould HIGH TEMPERATURE S. BAR EJECTOR

Plastic Inj. Mould HARDENED S. BAR EJECTOR

Our standard shelf stocks are created from Type A (Sharp Edged).

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.

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.

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
			160	80
1.5	9.5	10	200	100
			250	125
			100	50
2.0	5.5	6.0	125	60
			160	80
			200	100
			160	80
2.0	7.5	8.0	200	100
			250	125
			200	100
			200	100
			250	125
2.0	9.5	10	200	100
			250	125
			315	160
			200	100
			250	125
2.5	11.5	12	200	100
			250	125
			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

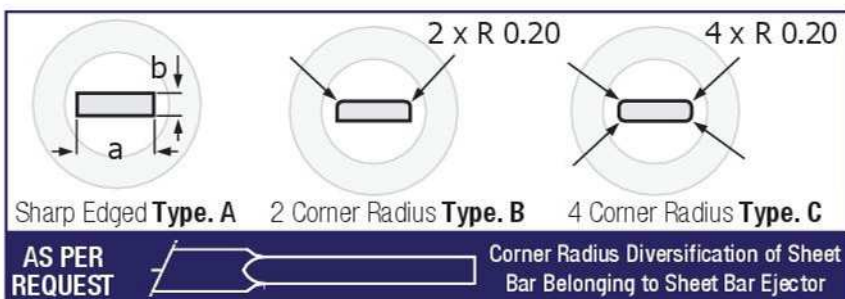
a	b	d1	L	L1
1.5	4.5	5.0	100	50
			125	60
			160	80
			200	100
1.5	5.5	6.0	100	50
			125	60
			160	80
			200	100
1.5	7.5	8.0	125	60
			160	80
			200	100
			250	125
			160	80
1.5	9.5	10	200	100
			250	125
			100	50
			125	60
			160	80
2.0	5.5	6.0	100	50
			125	60
			160	80
			200	100
			160	80
2.0	7.5	8.0	200	100
			250	125
			200	100
			200	100
			250	125
2.0	9.5	10	200	100
			250	125
			315	160
			200	100
			250	125
2.0	11.5	12	200	100
			250	125
			315	160
			200	100
2.5	11.5	12	250	125
			250	125
			315	160
			200	100

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
			200	100
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

Order : **SPL.A** Standard Type A a x b x d1 x L (Special Type B / Type C)

Order : **SPL.AH** Standard Type A a x b x d1 x L

Section Injection Mould Page 251

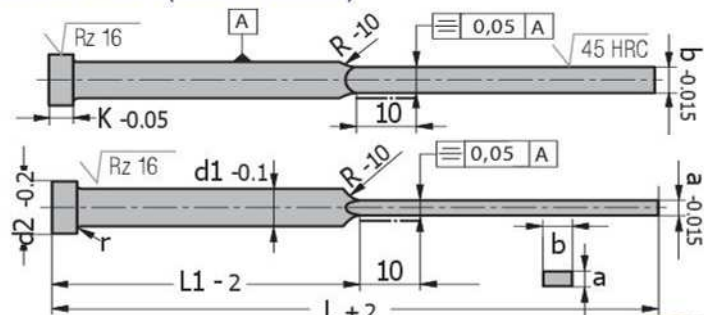


Per request; **CYLINDRICAL HEAD (Oxidation) SHEET BAR EJECTOR PIN**

**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
1.0	5.5	6.0	80	40
			100	50
			125	60
1.2	3.5	4.0	80	40
			100	50
			125	60
1.2	4.5	5.0	80	40
			100	50
			125	60
1.2	5.5	6.0	80	40
			100	50
			125	60
1.2	7.5	8.0	80	40
			100	50
			125	60
1.5	4.5	5.0	100	50
			125	60
			160	80

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
			400	200
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.



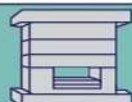
Order	
AWF 10	10 Kg. ( In can ) packing
AWF 05	5 Kg. ( In can ) packing
AWF 01	1 Kg. ( In metal can ) packing



Order	
AWF 04	520 gr. / ml. In Spray Grease Packing



Order	
AWF 03	40gr. / ml. Mini Tube With End Sponge



d1	L	d2	k	r
12	500	18	7.0	0.8
	630			
	800			
	1000			

12.5	100	18	7.0	0.8
	125			
	315			
	630			

13	100	18	7.0	0.8
	125			
	160			
	200			
	250			
	315			
400				

14	100	22	7.0	0.8
	125			
	160			
	200			
	250			
	315			
	400			
	500			
	630			
800				
1000				

16	100	22	7.0	0.8
	125			
	160			
	200			
	250			
	315			
	400			
	500			
630				
800				
1000				

18	100	24	7.0	0.8
	125			
	160			
	200			
	250			
	315			
	400			
500				

20	125	26	8.0	1.0
	160			
	200			
	250			
	315			
	400			
	500			
630				
800				
1000				

25	160	32	10	1.0
	250			
	315			
	400			
	630			
	800			

d1	L	d2	k	r
8	250	14	5.0	0.5
	315			
	400			
	500			
	630			
800				
1000				

8.5	100	14	5.0	0.5
	125			
	160			
	200			
	250			
	315			
	400			
	500			
630				

9	100	14	5.0	0.5
	125			
	160			
	200			
	250			
	315			
	400			

9.5	100	14	5.0	0.5
	125			
	160			
	200			
	250			
	315			

10	100	16	5.0	0.5
	125			
	160			
	200			
	250			
	315			
	400			
	500			
630				
800				
1000				

10.5	100	16	5.0	0.5
	125			
	160			
	200			
	250			
	315			
	400			

11	100	16	5.0	0.5
	125			
	160			
	200			
	250			
	315			
400				

12	100	18	7.0	0.8
	125			
	160			
	200			
	250			
	315			
400				



Its Ejector pin, Lubricating Grease are provided working at high temperature up to 1400°C

Plasma Nitrite Covered oxidation

## CYLINDRICAL HEAD EJECTOR PIN (Oxidation) TYPE : AV03 SBM

Especially: In Metal Injection Moulds, High Heat Resistance, Black

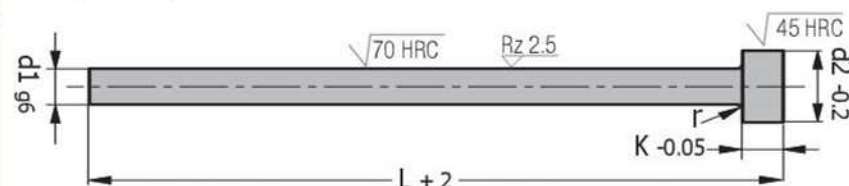
Material: 1.2343 (Hot work steel) Head Hardness : 45 ± 5 HRC Casing Hardness : 44 HRC

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° Heat Resistance. Max. Heat Resistance : 650° (Without lubricating grease, dry) 1400°

Tension Resistance : 1450 N / mm<sup>2</sup>

Especially : It is Plasma /Nitrite - Oxidation Coated (it is highly qualified compared with similar products.)



d1	L	d2	k	r
6	100	12	5.0	0.5
	125			
	160			
	200			
	250			
	315			
	400			
	500			
630				
800				

6.5	100	12	5.0	0.5
	125			
	160			
	200			
	250			
	315			
	400			

7.0	100	12	5.0	0.5
	125			
	160			
	200			
	250			
	315			
	400			
	500			
630				

7.5	100	12	5.0	0.5
	125			
	160			
	200			
	315			
	400			
500				

8.0	100	14	5.0	0.5
	125			
	160			
	200			

d1	L	d2	k	r
4	100	8	3.0	0.3
	125			
	160			
	200			
	250			
	315			
	400			
500				
630				

4.5	100	8	3.0	0.3
	125			
	160			
	200			
	250			
	315			
	400			
500				
630				

5.0	100	10	3.0	0.3
	125			
	160			
	200			
	250			
	315			
	400			
	500			
630				
800				

5.5	100	10	3.0	0.3
	125			
	160			
	200			
	250			
	315			
400				
500				

d1	L	d2	k	r
1.5	100	3	2.0	0.2
	125			
	160			
	200			

2.0	100	4	2.0	0.2
	125			
	160			
	200			
	315			
400				

2.5	100	5	2.0	0.3
	125			
	160			
	200			
	250			
	315			
400				

3.0	100	6	3.0	0.3
	125			
	160			
	200			
	250			
	315			
	400			
500				
630				

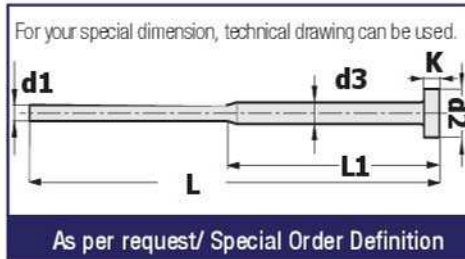
3.5	100	7	3.0	0.3
	125			
	160			
	200			
	250			
	315			
400				
630				

Order :  
**SBM.AV03**  
d1 x L

Page  
**253**

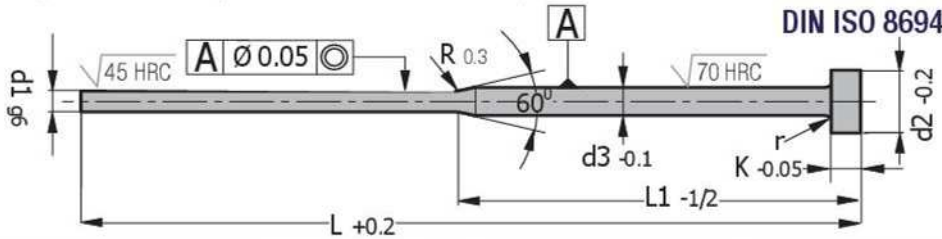


Section  
Injection  
Mould



**CYLINDRICAL HEAD - STEPPED (Oxidation) EJECTOR PIN Type : AW SBW**

Material : 1.2343 (Hot Work Steel) Head Hardness :  $45 \pm 5$  HRC Casing Hardness : 44 HRC  
 AV03 Ejector Pins ; When they are used with AWF 1400 Lubricating Grease, it is reached to  $1400^{\circ}$  Heat Resistance.



d1	L	L1	d3	d2	k	r
0.8	100	50				
	125	50	2	4	2	0.2
	160	75				

d1	L	L1	d3	d2	k	r
1.4	100	50				
	125	50	2	4	2	0.2
	160	75				

d1	L	L1	d3	d2	k	r
0.9	100	50				
	125	50	2	4	2	0.2
	160	75				

d1	L	L1	d3	d2	k	r
1.5	100	50				
	125	50				
	160	75	3	6	3	0.3
	200	75				

d1	L	L1	d3	d2	k	r
1.0	100	50				
	125	50				
	160	75	2	4	2	0.2
	200	75				

d1	L	L1	d3	d2	k	r
2.0	100	50				
	125	50				
	160	75	3	6	3	0.3
	200	75				

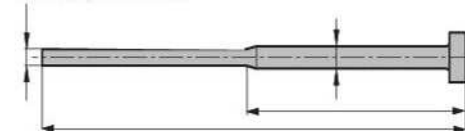
d1	L	L1	d3	d2	k	r
1.1	100	50				
	125	50	2	4	2	0.2
	160	75				

d1	L	L1	d3	d2	k	r
2.5	100	50				
	125	50				
	160	75	3	6	3	0.3
	200	75				

d1	L	L1	d3	d2	k	r
1.2	100	50				
	125	50	2	4	2	0.2
	160	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...

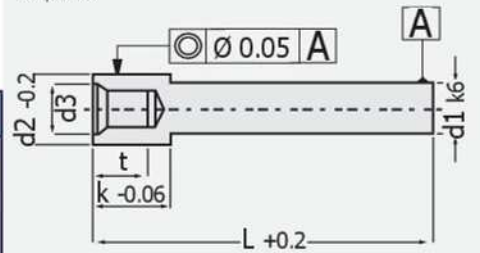


**Cylindrical Head THREADED PIN<sup>SBD</sup>**  
 Mould Inner (Ejector Plate - Cores) Usage

DIN 1530 - A / ISO 6751

It has pin mounting feature without dismantling parts. Material : 1.2344  
 it is Grinded and Hardened.

Tension Resistance :  $1400 \text{ N mm}^2$   
 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				

d1	L	d3	t	k	d2
4	63	M5	7	12	8
	125				

d1	L	d3	t	k	d2
5	80	M6	9	14	9
	160				

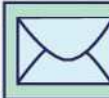
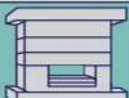
d1	L	d3	t	k	d2
6	80	M6	9	14	10
	160				

d1	L	d3	t	k	d2
8	80	M6	10	16	13
	160				

d1	L	d3	t	k	d2
10	100	M10	12	18	15
	200				

d1	L	d3	t	k	d2
12	100	M12	14	22	18
	200				

d1	L	d3	t	k	d2
14	100	M12	14	22	20
	200				

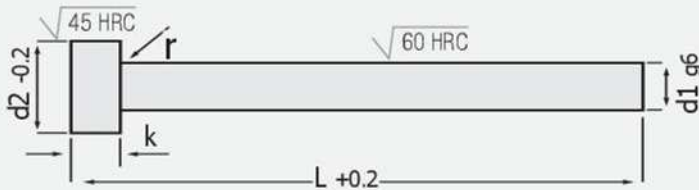




### Cylindrical Head COPPER ALLOY EJECTOR PIN **SPP**

**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 deformed, 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° ( 1 Hour ) - 300° ( 5 Hour ) **Ra <0.8 Micron**



### Cylindrical Head COPPER ALLOY EJECTOR PIN **SPP**

d1	L	d2	k	r
2.0	100	4	2	0.2
	160			
2.5	100	5	2	0.3
	160			
3.0	100	6	3	0.3
	160			
	250			
3.5	100	7	3	0.3
	160			
4.0	100	8	3	0.3
	160			
	250			
4.5	100	8	3	0.3
	160			
5.0	100	10	3	0.3
	160			
	250			
6.0	100	12	5	0.5
	160			
	250			
	315			

d1	L	d2	k	r
7.0	100	12	5	0.5
	160			
	250			
8.0	100	14	5	0.5
	160			
	250			
	315			
10	100	16	5	0.5
	160			
	250			
	315			
12	100	18	7	0.8
	160			
	250			
	315			
14	100	22	7	0.8
	160			
	250			
	400			
16	160	22	7	0.8
	250			
	400			
	500			

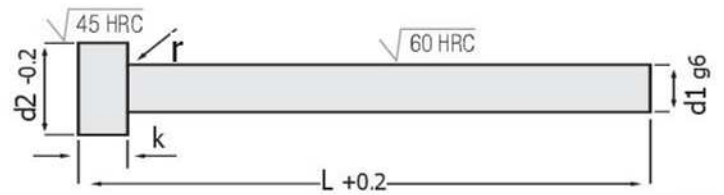
Order : **SPP.AV07**  
d1 x L



### 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° **Limited Stocks**



### Cylindrical Head STAINLESS EJECTOR PIN **SPI**

d1	L	d2	k	r
4.5	100	8	2	0.3
	160			
	200			
	250			

d1	L	d2	k	r
2.0	100	4	2	0.2
	160			
	200			
	250			

d1	L	d2	k	r
5.0	100	10	2	0.3
	160			
	200			
	250			

d1	L	d2	k	r
2.5	100	5	2	0.3
	160			
	200			
	250			

d1	L	d2	k	r
5.5	100	10	2	0.3
	160			
	200			
	250			

d1	L	d2	k	r
3.0	100	6	2	0.3
	160			
	200			
	250			

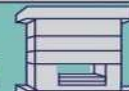
d1	L	d2	k	r
6.0	100	12	5	0.5
	160			
	200			
	250			

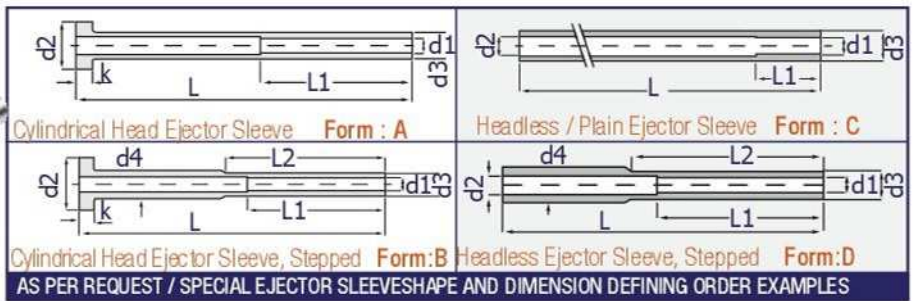
d1	L	d2	k	r
3.5	100	7	2	0.3
	160			
	200			
	250			

d1	L	d2	k	r
8.0	100	14	5	0.5
	160			
	200			
	250			

d1	L	d2	k	r
4.0	100	8	2	0.3
	160			
	200			
	250			

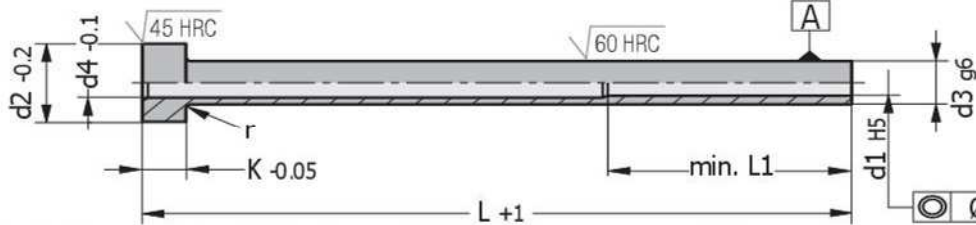
Order : **SPI.INOX**  
d1 x L

Page **255**  Section Injection Mould



**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<sup>0</sup>  
 Tension Resistance: 1450 N / mm<sup>2</sup>

Ø 0.012/10 A      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						

d3	L	d1	L1	d4	d2	k	r
5	75	2.5	35	3.0	10	3	0.3
	100						
	125						
	150						

d3	L	d1	L1	d4	d2	k	r
5	75	3.0	45	3.3	10	3	0.3
	100						
	125						
	150						
	160						
	250						

d3	L	d1	L1	d4	d2	k	r
6	75	3.5	45	4.0	12	5	0.5
	100						
	125						
	150						
	160						
	250						

d3	L	d1	L1	d4	d2	k	r
6	75	4.0	45	4.3	12	5	0.5
	100						
	125						
	150						
	160						
	250						

d3	L	d1	L1	d4	d2	k	r
8	75	4.2	45	5.3	14	5	0.5
	100						
	125						
	150						
	160						
	250						

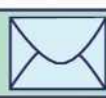
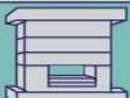
d3	L	d1	L1	d4	d2	k	r
8	75	5.0	45	5.3	14	5	0.5
	100						
	125						
	150						
	160						
	250						

d3	L	d1	L1	d4	d2	k	r
10	75	6	45	6.3	16	5	0.5
	100						
	125						
	150						
	160						
	250						

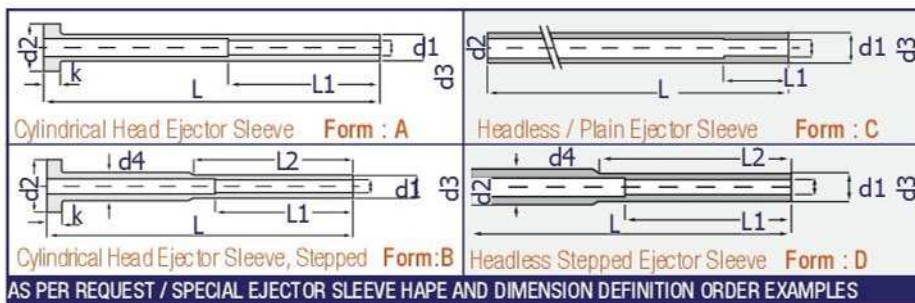
d3	L	d1	L1	d4	d2	k	r
12	75	8	45	8.3	20	7	0.8
	100						
	125						
	150						
	160						
	250						

d3	L	d1	L1	d4	d2	k	r
14	75	10	50	10.3	22	7	0.8
	100						
	125						
	150						
	160						
	250						

d3	L	d1	L1	d4	d2	k	r
16	75	12	50	12.3	22	7	0.8
	100						
	125						
	150						
	160						
	250						







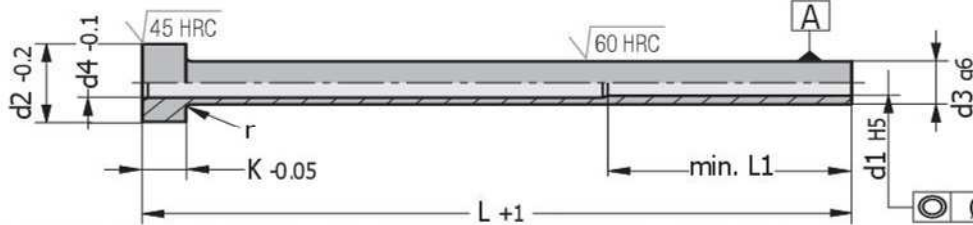
## CYLINDRICAL HEAD HARDENED EJECTOR SLEEVE

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<sup>0</sup>  
 Tension Resistance: 1300 N / mm<sup>2</sup>

Ø 0.012/10 A 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
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							

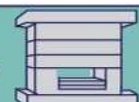
d3	L	d1	L1	d4	d2	k	r
5	75	2.5	35	3.0	10	3	0.3
	100						
	125						
	150						
	160						
	175						

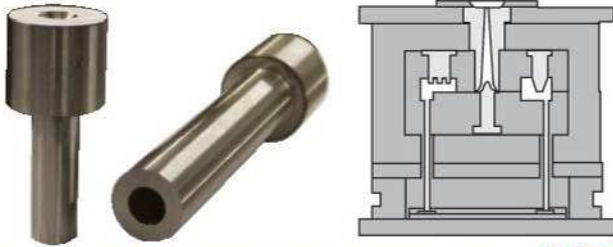
d3	L	d1	L1	d4	d2	k	r
16	75	12	50	12.3	22	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
400							
450							
500							

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
5	75	3.0	45	3.3	10	3	0.3
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						

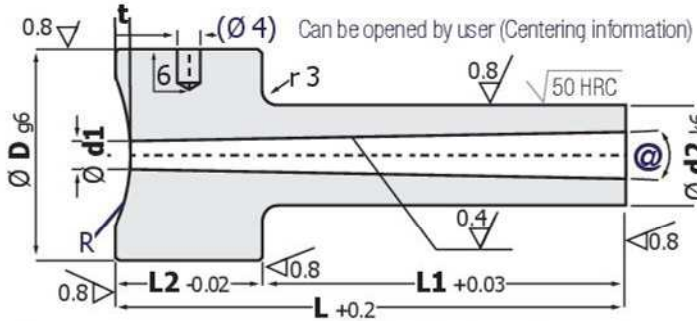
Order : **SPB.AH**  
d1 x d3 x L





## METAL INJECTION MOULDS, RUNNERS MEY

High Heat Resistant, Standard Hot Work Steel Runners / Standard Type



Material: 1.2344 Hardness: 60 HRC Heat Resistance: 500<sup>0</sup> Angle: 5.8 mm @ 3<sup>0</sup>

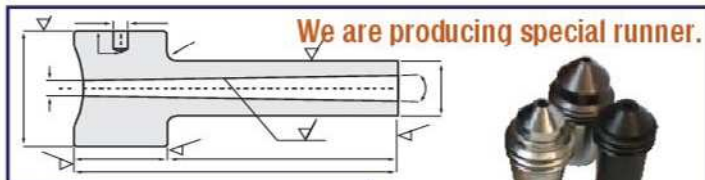
Order	L	d2	d1	D	R	t	L2	L1
MEY.12.20.55	55							35
MEY.12.20.65	65	12	5.8	20	15.5	3	20	45
MEY.12.20.75	75		3 <sup>0</sup>					55

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 <sup>0</sup>					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 <sup>0</sup>					80
MEY.14.25.115	115							90

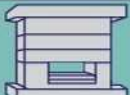
MEY.16.25.55	55							30
MEY.16.25.65	65							40
MEY.16.25.75	75							50
MEY.16.25.85	85	16	5.8	28	15.5	3	25	60
MEY.16.25.95	95							70
MEY.16.25.105	105		3 <sup>0</sup>					80
MEY.16.25.115	115							90

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 <sup>0</sup>					80
MEY.18.25.115	115							90



We are producing special runner.

Page  
258

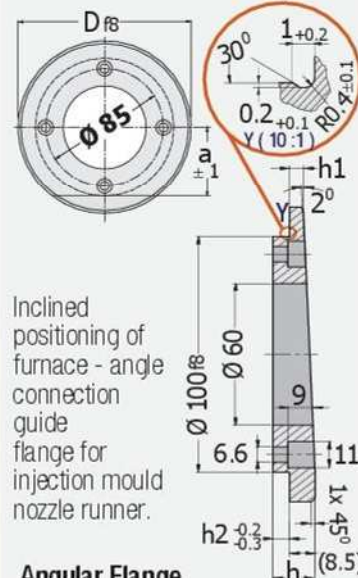


Section  
Injection  
Mould

As per request / Standard  
Type Special Order Definition

## INCLINED SURFACE HOLE POSITIONING FLANGE

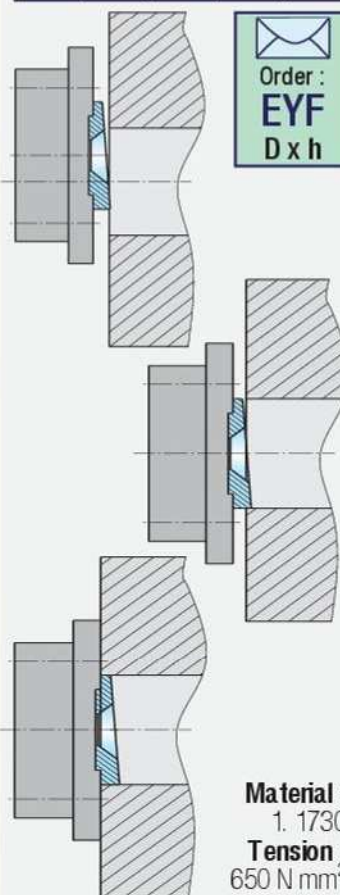
Inclined Plate Guide Flange



Inclined positioning of furnace - angle connection guide flange for injection mould nozzle runner.

Angular Flange

D	h	h1	h2	a
125	14		5.5	
	20	4.6	11.5	50
	22		13	



Order :  
**EYF**  
D x h

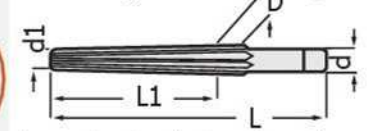
Material :  
1. 1730  
Tension :  
650 N mm<sup>2</sup>

EYF



## 1:10 Conical, Special Runner Reamer HSS

10 mm length 1 mm



In reaming of conical growing cutting edge hand reamer, conical or stepped pre processed continuous holes.

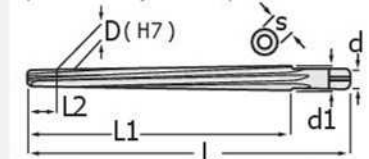
d1	D	d	L	L1	S
4	10	10	100	70	8
9	16	12.5	120	80	10
14	24	20	160	110	16
20	32	25	200	140	20

Order : **KYR** (1:10 Conical)  
d1 x D x L

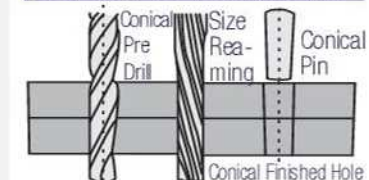


## 1:50 Conical Pin Hole Reamer DIN 9 HSS

Hand Reamer (With Conical Drill Bit)  
For Conical Pins compatible with conical growing cutting edge (50 mm length 1 mm) Helix Standard



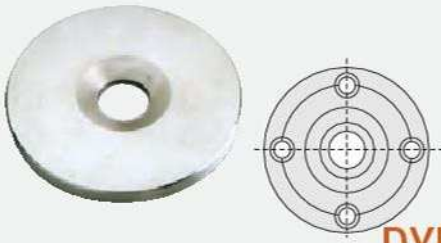
D	d1	d	L	L1	S
3	4.06	4	80	58	3.15
4	5.26	5	93	68	4
5	6.36	6.3	100	73	5
6	8.0	8	135	105	6.3
8	10.8	10	180	145	8
10	13.4	12.5	215	175	10
12	16	14	255	210	11.2
14	18	14	255	210	11.2
16	20.4	18	280	230	14



Order : **KPR** D x L

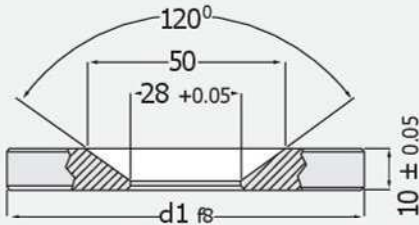
KYR

KPR



### RUNNER POSITION, FLANGE

Material: CK 45 Work Tool Steel (Grinded)



**DYF**

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 ).

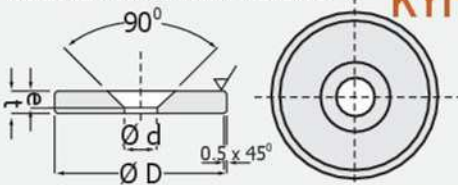


Connection Holes Special, As per Request

### RUNNER POSITIONING FLANGE

Material : CK 45 Work Tool Steel

**KYF**

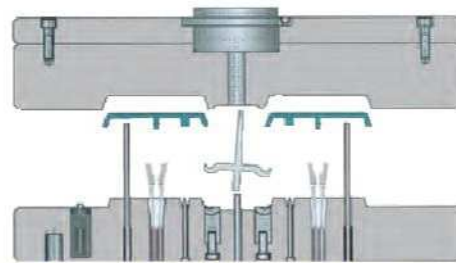


Order	Ø D	Ø d	t	e
KYF.60	60	28	15	7
KYF.80	80	28	15	7
KYF.125	125	28	20	10
KYF.150	150	28	20	10

Note: Flange Connecting Holes are opened as per request ( Subject to Price ).

We are producing special runners.

As per request, Special Order Definition

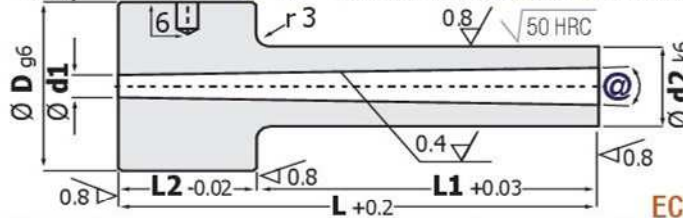


### PLASTIC MOULDS, INJECTION RUNNERS

DIN 16752 **EYM**

Injection Runner Nozzle: The length selection is presented in very wide range in our stocks.

Can be opened by user (Retainer Pin / Locating information)



Material : 1.2826

Two Different Options

d1 3.3 : @ 1.5°  
(Standard Angle)

d1 4.3 : @ 2°  
(Wide Angle)

**ECONOMICAL PRICES**

L	d2	d1	D	L2	L1
50					30
65					45
75					55
85					65
95					75
105	12	4.3	28	20	85
115					95
125		2°			105
135					115
150					130

L	d2	d1	D	L2	L1
50					30
65					45
75					55
85					65
95					75
105	12	3.3	28	20	85
115					95
125		1.5°			105
135					115
150					130

L	d2	d1	D	L2	L1
50					30
65					45
75					55
85					65
95					75
105	14	4.3	28	20	85
115					95
125					105
135		2°			115
150					130
200					180

L	d2	d1	D	L2	L1
50					30
65					45
75					55
85					65
95					75
105	14	3.3	28	20	85
115					95
125					105
135		1.5°			115
150					130
200					180

L	d2	d1	D	L2	L1
50					30
65					45
75					55
85	16	4.3	28	20	65
95		2°			75
105					85
115					95
125					105
135					115
150					130
200					180

For injection cold runner diverter valve, pls. refer to page 230.

L	d2	d1	D	L2	L1
50					30
65					45
75					55
85					65
95					75
105	16	3.3	28	20	85
115					95
125					105
135		1.5°			115
150					130
200					180

L	d2	d1	D	L2	L1
50					30
65					45
75					55
85					65
95					75
105	18	4.3	28	20	85
115					95
125		2°			105
135					115
150					130
200					180

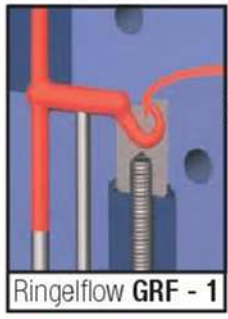
Order : d2 x L x d1

L	d2	d1	D	L2	L1
50					30
65					45
75					55
85					65
95					75
105	18	3.3	28	20	85
115					95
125		1.5°			105
135					115
150					130
200					180



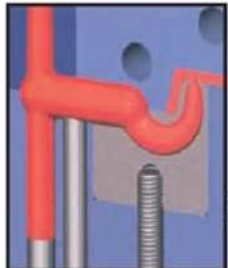
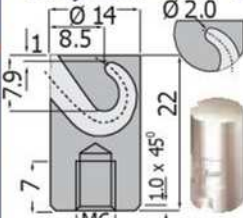
## TUNNEL / CURVED DIVERTER RUNNER SYSTEMS

- \* 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



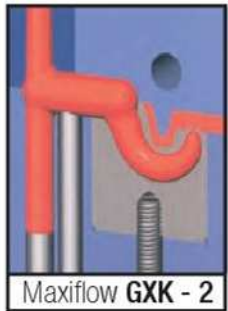
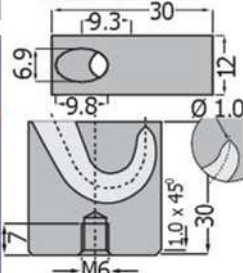
Ringelflow GRF - 1

### Ringelflow GRF - 1



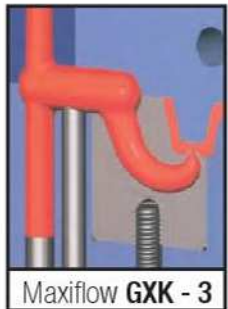
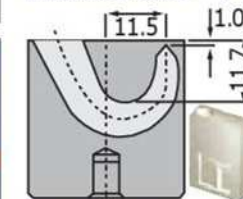
Maxiflow GXK - 1

### Maxiflow GXK



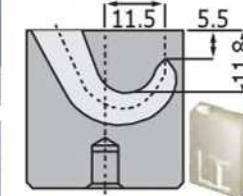
Maxiflow GXK - 2

### Maxiflow GXK - 1

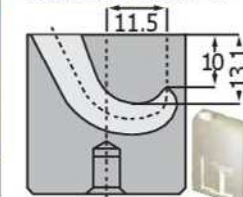


Maxiflow GXK - 3

### Maxiflow GXK - 2



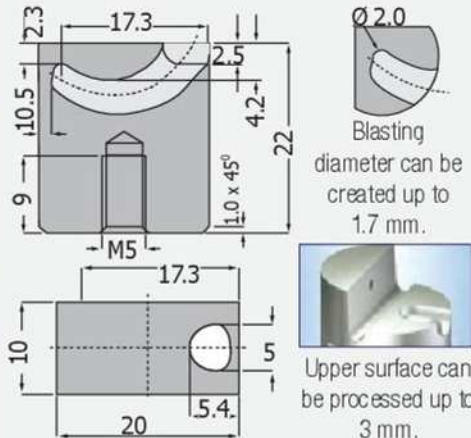
### Maxiflow GXK - 3



## 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

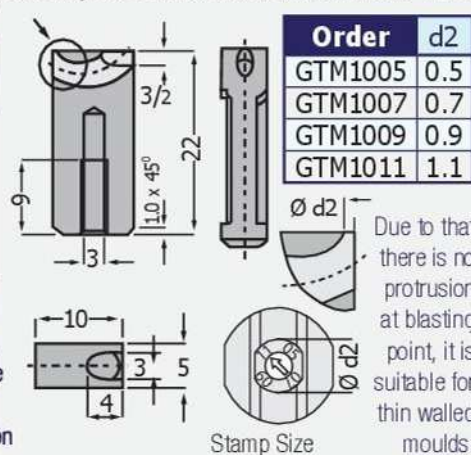


## MINIFLOW RUNNER **GTM**

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

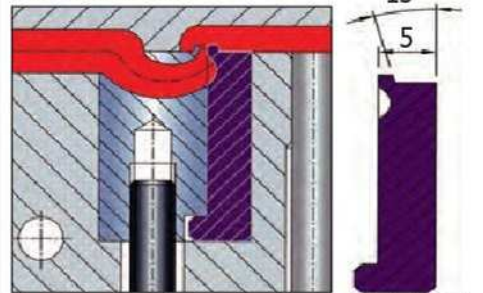


Due to that there is no protrusion at blasting point, it is suitable for thin walled moulds.



## VISCOSITY CONTINUATION BLOCK

Flat Plain Progress

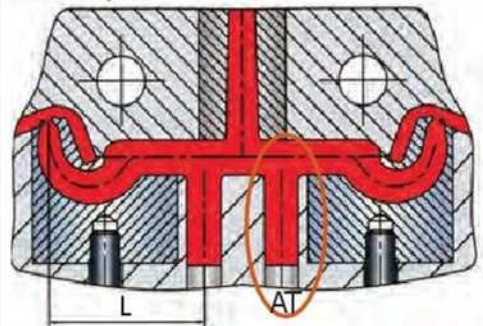


To reduce loss of raw white flow that is injected or to minimise sliding, an auxiliary block is added in front of tunnel runner. For various Processing methods of core on block at EDM (Erosion Machines), pls. refer the 'CAD' files at [www.exaflow.com](http://www.exaflow.com)

The block dimensions are depended on selected tunnel runner length.



Material:  
1.2379  
60 HRC



## "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	GTR / GTE	GTR / GTE	Konturflow GTK
Ø 10 mm	Ø 12 mm	Ø 14 mm	
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



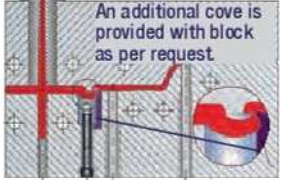
Special Size Used  
Diversification

### Tunnel Runner Systems Standard Installation



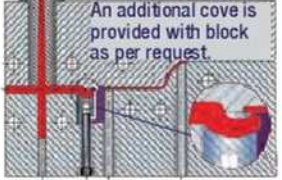
System providing viscosity control to front mould cavity next to cold runner.

### In production formation of Flat / Plain Objects



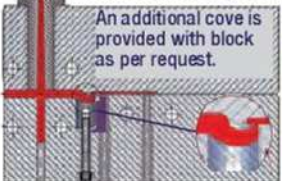
To reduce pressure loss, viscosity is provided by minimise sliding.

### Thin walled, in formation of flow objects.



Front reinforcement of tunnel runner end has been closed with cover / 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

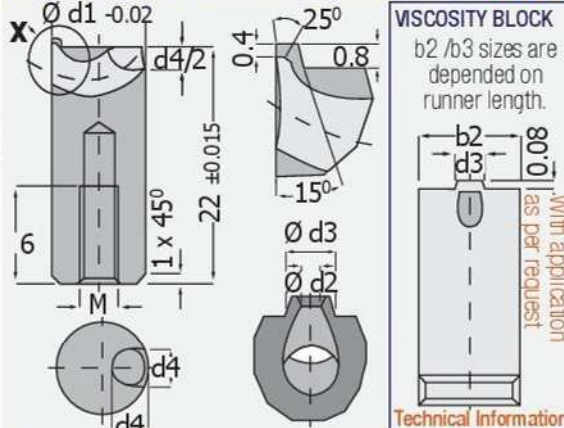


Cold runner Span Length should be reduced inwards, Elastomer Plastics.

**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

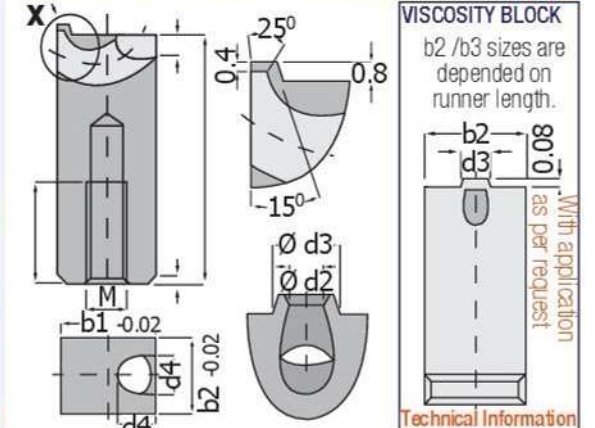
### Round Type ( Standard Flow ) GTR 14

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

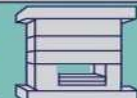
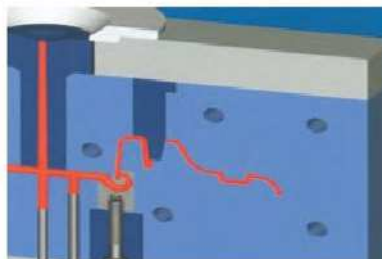
b1	b2	d2	d3	d4	M	Viscosity - Gram		
						Easy	Smooth	Hard
12	10	0.8	2.1	5	5	8	7	5
		1.0	2.3			14	12	9
		1.2	2.5			20	16	10
		1.4	2.7			30	23	15
		1.6	2.9			40	30	20
		1.8	3.1			54	40	27
2.0	3.3	68	52	34				

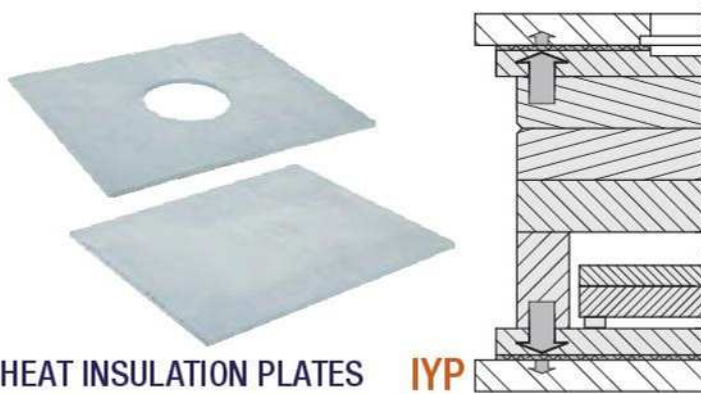
Order Form : GTR 12. d2

### 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

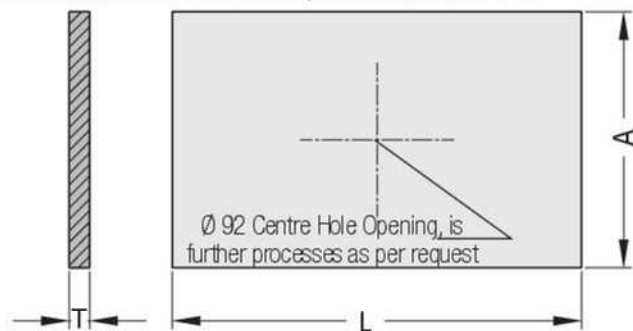
### Impact and Heat Insulation Processes of Press and Injection Moulds

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°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 Stress :** At... 100°C.....188 N / mm<sup>2</sup>  
 At... 200°C.....126 N / mm<sup>2</sup>  
 At... 260°C.....118 N / mm<sup>2</sup>  
**Thermal Conductivity :** 218°C..... 3.0 x 10<sup>-3</sup> W /mK  
**Humidity Rate :** .....0.06 %  
**Combustion Resistance according to UL 94 :** .....94 V -0

It is for hot runner moulds.

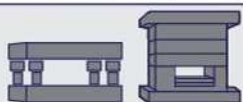


## HEAT INSULATION and PULSE PLATES IYP

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 TP

As a set with 2 pieces Probe in Protection Bag

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:** -50° C and 1300° C / 2000° F / 223 K - 2000 K

**Resolution:** 1° C or 1° F, 0.1° C or 0.1° F, 1K

**Accuracy:** It has been determined as one year, Operating Temperature over 18° C - 28° C (64° F - 82° F) and does not contained thermocouple and probe errors.

**Heat Rate:** For 01 Run Accuracy Specification °C, From °C' to 18°C and 28° C - 50° C (32° F - 64° F and 82° F - 122° 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:** 0° C - 50° C

**Storage Temperature:** -20° C / 60° C Relative Humidity %0 - 80 ( 0°-35° )

**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 °C / °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°C or 0.1°F - Low Resolution 1°C or 0.1°F

**Battery Replacement :** When the screen shows the i sign, 9 V Battery should be changed.

1 - Remove device cover and Air Temperature Contact Probe.

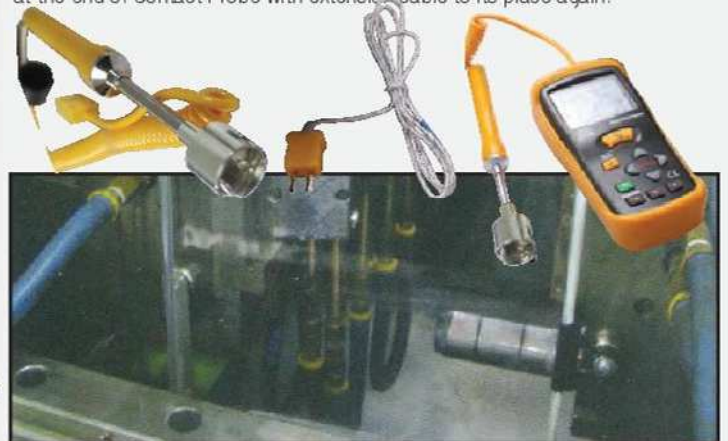
2 - Remove screws of battery box behind the device, insert battery, then close the cover and mount it again.

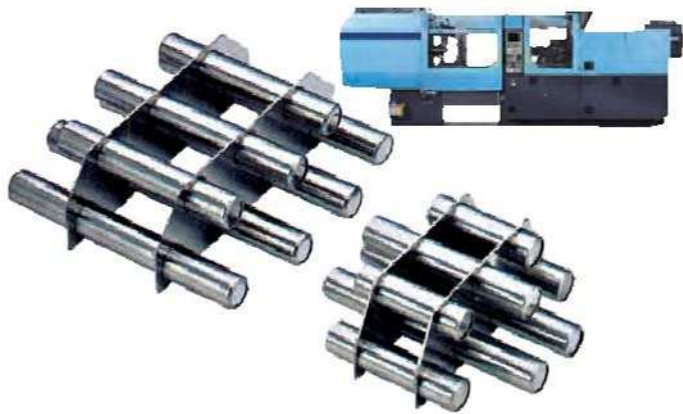
### Safety Information :

**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.





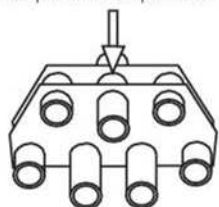
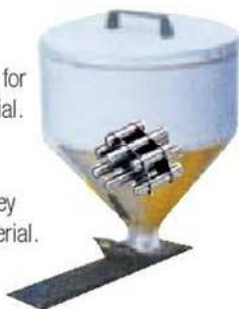
## SCREENER MAGNETIC SEPARATOR

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
<b>EGM 20C</b>	<b>Width: 170 Length: 180 Height :75</b>	2.70 Kg.
<b>EGM 25C</b>	<b>Width: 220 Length: 230 Height :75</b>	4.00 Kg.

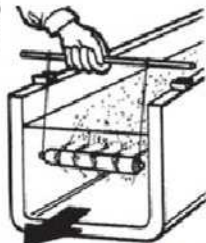
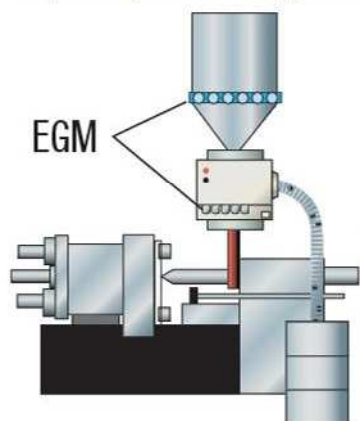
**Heat Resistance : 60°C**

It is for feeding tunnel of plastic injection machines.

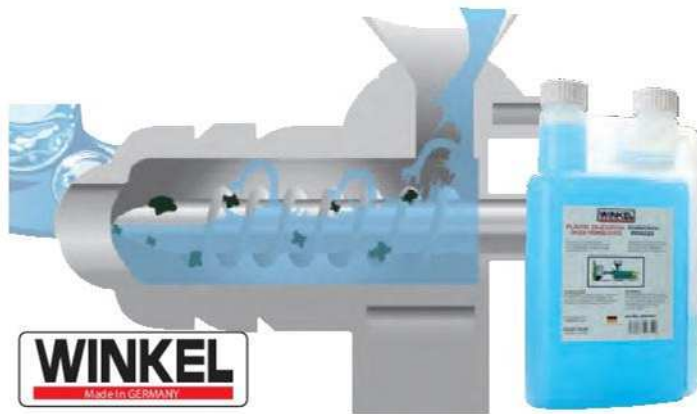
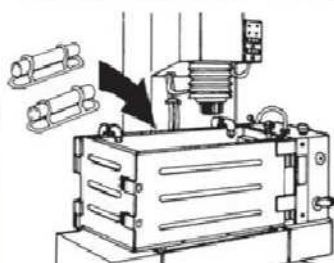
**Magnetic Separator ;** Especially, it is a processing industry application area of granule or crushing materials.

**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 120°C and 320°C 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	<b>Main Cleaning A : 3 Kg. Raw White + 1/2 Scale ( Cover ) WINKEL</b>
		<b>Final Cleaning B : 2 Kg. Raw White Spraying</b>
Traditional Oven Cleaning		40 Kg. Sprayed Material Consumption
WINKEL Liquid Mixed	Experience - 1: Normal Runner a b	<b>Main Cleaning A : 4 Kg. Raw White + 2 /3 Scale ( Cover ) WINKEL</b>
		<b>Final Cleaning B : 3 Kg. Raw White Spraying</b>
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

Page **263**  
Section Injection Mould



### 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
<b>RUK1300</b>	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
<b>RUK1345</b>	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

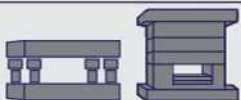
Order	Length	Housing	Handle
<b>RUK0360</b>	300 mm	Vanadium Steel	PVC - Insulated



### 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
<b>RUK0360</b>	300 mm	Vanadium Steel	PVC - Insulated



### 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.



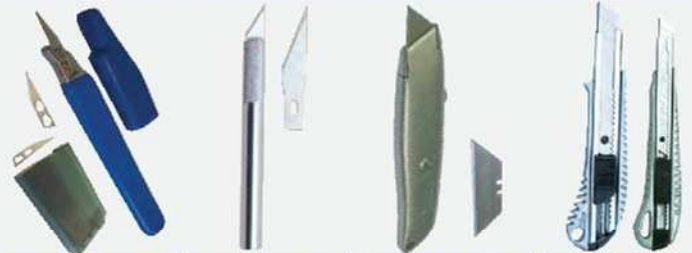
**W 2169**

**MB 5203**

**T 21600**

**T 21609**

Order	Product Definition
<b>W 2169</b>	Wert: Plastic Handle, Breakable Blade -100x 18
<b>MB 5203</b>	Wert: Small Type, Breakable Blade, Economic
<b>T 21600</b>	Wert: Metal Casing, Nonskid Handle, Robust
<b>T 21609.B</b>	Spare (Breakable Blade) Ends 10 Pieces 100x18
<b>T 21610.K</b>	Spare (Breakable Blade) Ends, 10 Pieces 80 x 9



**PCAM 1555**

**W 2163**

**MB 52207**

**W 2161-8**

Order	Product Definition
<b>PCAM 1555</b>	Deburring Scalpel (Plastic Handle) 155 mm
<b>PCAM 36</b>	Deburring Spare Blade End Length: 36mm
<b>W2163</b>	Deburring Scalpel ( Metal Type ) 160 mm
<b>MB 52207</b>	Utility Knife Angular cutting - With Spare Blade
<b>W 2161</b>	Utility Knife Metal Structure 100 x 18 / 88 gr.
<b>W 2168</b>	Utility Knife Metal Structure 80 x 90/ 60 gr.



**FAST OPENING**

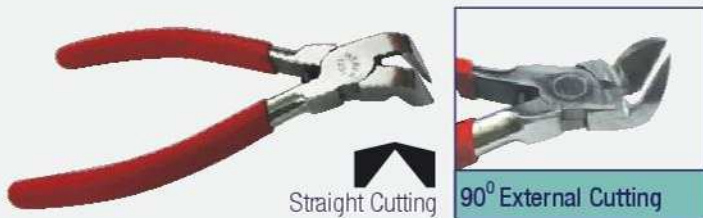
**COTTER TYPE**

**STILSON TYPE**

**HEAVY TYPE**

Order	Product Definition
<b>0510210</b>	Hook: Fast Opening Pipe Wrench 10" - 14"
<b>2201 10</b>	İzeltaş: Cotter Pipe Wrench 325-430-585
<b>2100 10</b>	İzeltaş: Stilson Pipe Wrench 300-450-600
<b>2110 10</b>	İzeltaş: Heavy Type Pipe Wrench 300-450-600





Straight Cutting

90° External Cutting

### PLASTIC RUNNER CUTTING 90° 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	90°



Plain Surface, 25°C Blade Angle Cutting - 18mm Blade Length 4 mm Cutting Capacity - 190mm Heat Controlled Runner Cutting Shear



19 Watt  
Heat Control Device HTR 30 N



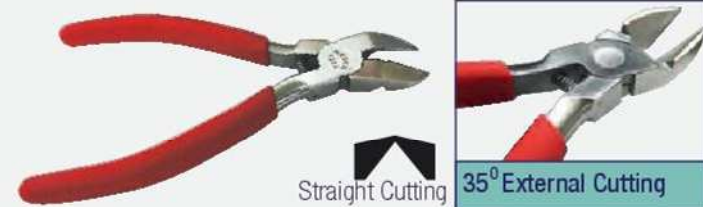
19 Watt Spare Resistance  
Burning Inhibitor Aluminium Base Plate

### HEAT CONTROLLED 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 (Head-lamp 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	25° / Straight Length : 23 mm	4.0 mm



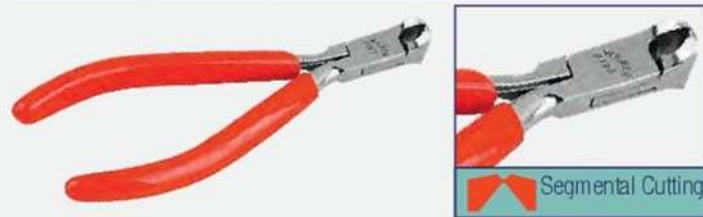
Straight Cutting

35° External Cutting

### PLASTIC RUNNER CUTTING 35° 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	35°



Segmental Cutting

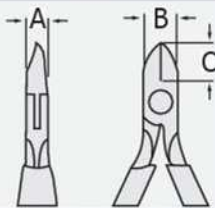
### ELECTRICIAN CHISEL 2323

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



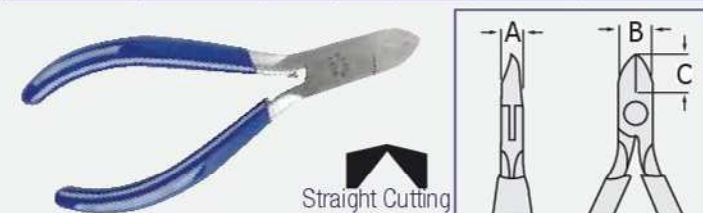
Straight Cutting



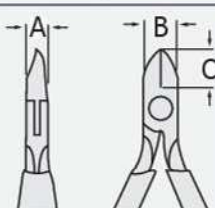
### ELECTRICIAN SPRING DIAGONAL CHISEL 1377

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



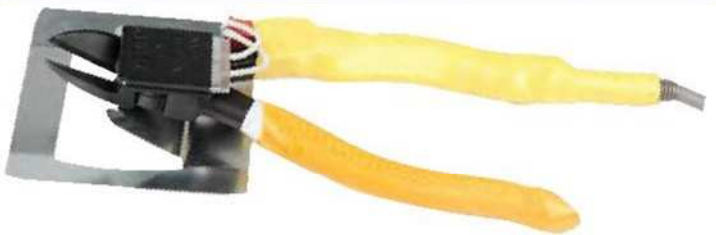
Straight Cutting



### 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



Cambered Surface, 16°C Blade Angle Cutting - 23 mm Blade Length 7mm Cutting Capacity - 190mm Heat Controlled Runner Cutting Shear



29 Watt  
Heat Control Device HTR 30 N



29 Watt Spare Resistance  
Burning Inhibitor Aluminium Base Plate

### 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.

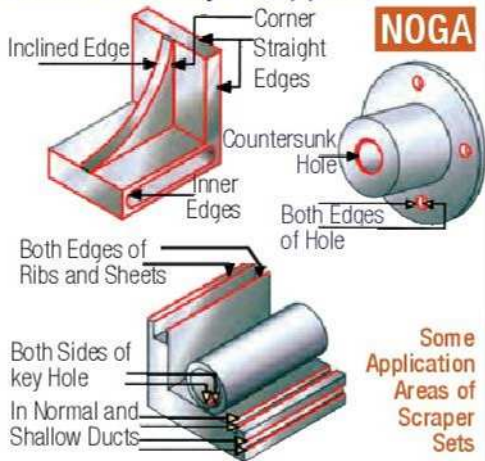
Order	Length	Housing	Cutting	Capacity
HT200	190 mm	With Heating Unit	16° / Camber Length:23 mm	7.0 mm

**GTH** Mould Equipments  
Present Special Solution...

Page 265

Section Injection Mould

## 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.



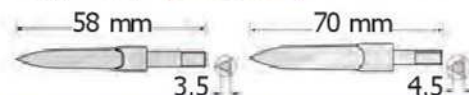
### NOGA GRIP HOLDER ( 3 Different Model)

- 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  
**INTERNAL 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**

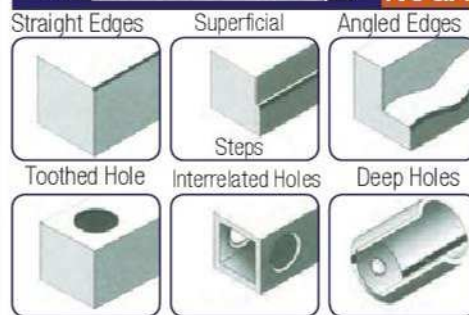
Content : E0 Holder+ S10  
Green Stripper End  
( Aluminium) E0 Hold +  
S100 Blue Stripper End  
(Steel) E0 Holder + S150  
Yellow Stripper End ( Plastic)

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



Order : LB 1000



#### " Special Sets "

**SOFT GRIP SG 1000**

Ergonomic Holder, Two Holes are suitable for S and N Scraper.

Content: S100 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°	N1	For steel, plastic aluminium
BN 2010 80° L/R	N2	Brass, Casting With Right-Left Hand
BN 2012 80° L/R	N2 TIN	Stainless Steel With Right-Left Hand
BN 1310 45°	N10 Cobaltous	Deburring of internal and external burrs
BN 3010 50°	N3	In many materials Straight Edges
BN 6010 40°	N6	In all plastic and hard materials

## STRIPPER SETS



NOGA

### NOGA BURR NG 1003

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.

"Multi Purpose"



Order : NG 1000  
NG 1003  
NG 1005

### PLASTIC EDGE OFF EO 2000

Economical Set Holds all S Scrapers (3.2 mm) Replaceable Stripper Model, Content: Plastic retainer and S 10 Stripper End



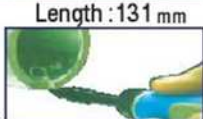
Order : EO 2000

### Long Telescopic Stripper Set



### SUPER BURR NG 3003

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



### 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 clears 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



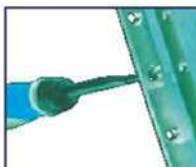
Order : NG 3300

### 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



Page  
267

# COUNTERSINKING SETS



## 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

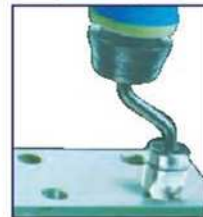
### Rotary Inner Countersunk Driver, Single Edged



### ROTO DRIVE

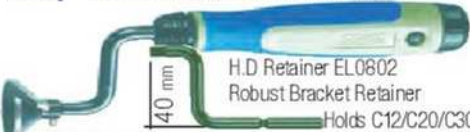
#### TOOLS NG 1200

The fastest way for bevelling by hand. Single Ended Countersunk provides smooth cutting. Content: NG1 Holder RD10.4 Countersunk Stripper



Order : NG 1200

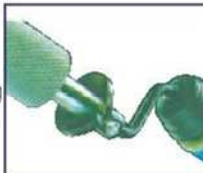
### Rotary - Toothed Shaft, Countersunk Driver



### HOTODRIVE OUTER

#### COUNTERSUNK NG 1700

It takes bevels on rods and outer diameters of tubes. The fastest tool for bevelling outer diameters 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°	O - Ring	Between 1 - 3 mm Countersinking
BC 8301 90° RD8.3		Between 1 - 8.3 mm Countersinking
BC 1041 90° RD10.4		Between 1 - 10.4 mm Countersinking
BC 1651 90° RD16.5		Between 1 - 16.5 mm Countersinking
EX 2001 90° EX18		Between 4 - 18 mm Countersinking
EX 3011 90° 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



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



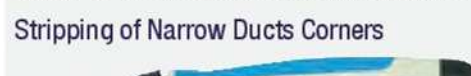
#### Medium REVERSIBLE Order No : RC 2000

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



### NOGA-SLOT

#### CLEANER NG 3210

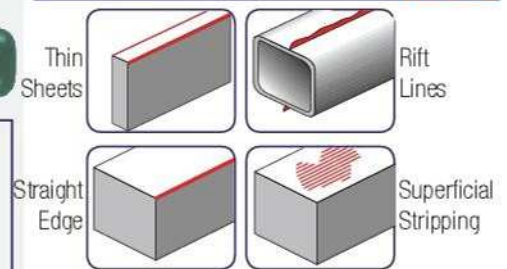
It is used for scraping of narrow ducts corners from 3.5 mm. Content: NG3 Retainer, L Retainer and L5 Stripper, L7 Stripper is available to cut in 2 ways.



Order : NG 3210

Order	End Type	Range
BC 1211 90° C12		Between 1 - 12 mm Countersinking
BC 2011 90° C20		Between 3 - 20 mm Countersinking
BC 3011 90° C30		Between 3 - 30 mm Countersinking
BR 1001 90° R1		Between 3 - 5.5 mm Countersinking
BR 2001 90° R2		Between 5 - 10 mm Countersinking
BR 3001 90° R3		Between 10 - 22 mm Countersinking

# CERAMIC STRIPPER



## A- Metal (Plastic Etc.) Ceramic Stripper



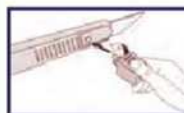
### CONVEX

#### 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 90°, then pull the stripper end.



### R.15 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 Order : CR 2200  
Concave End Order : CR 2500  
'V' Shaped Order : CR 5100





**NOGA  
SILVER KIT  
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

Order No : **NG 9200**

Content :

- \* 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  
Order No : **NG 9400**

Content:

- \* 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 driplless 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/mm<sup>2</sup> 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 -30°C / 1200° temperature and 230 N /mm<sup>2</sup> pressures and also against rust and corrosion, it is copper 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 dirt. 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 dirt, 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 dirt.

**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 dried 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 300°C 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 5°C. After completion of the work: Close the cartridge with its cover again.

### Technical Detail Information!

Colour ..... Blue  
 Density (25°C) ..... 1,12 g / cm<sup>3</sup>  
 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 ..... 350°C  
 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 (350°C) 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.

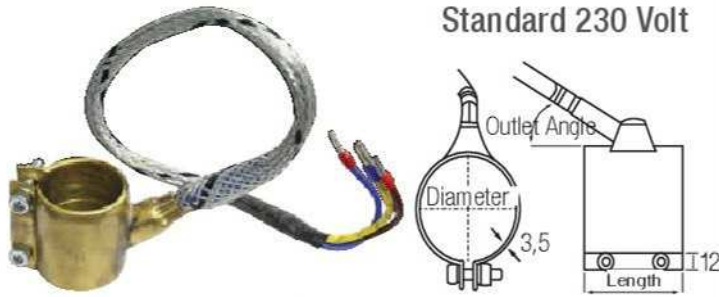
The cleaning of the product is very easy, don't remove melt plastic from copper end, the cleaning process should be done after the plastic is cooled, otherwise there is a breaking risk for the nozzle.

Order : **SYT**

**GTH**  
Mould  
Equipments



Page  
271



Standard 230 Volt

**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/cm<sup>2</sup> - 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



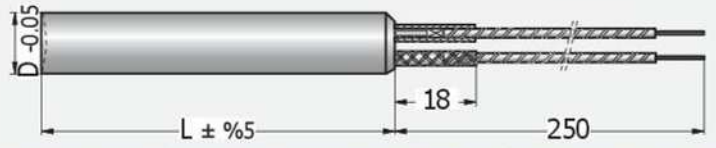
**HOT RUNNER, CLAMP END RESISTANCE KR**

Dia.	Length	Watt	Dia.	Length	Watt	Dia.	Length	Watt	
25	30	120	45	40	280	70	25	270	
	35	165		45	320		30	330	
	40	185		50	350		35	385	
	30	25	120	50	25		195	40	440
30		140	30		235	50	550		
35		165	35		275	60	660		
40		185	75		30	355	80	25	310
35	25	135		40	470	30		375	
	30	165		50	390	35		440	
	35	190		55	25	215		40	500
	40	220	30		260	50	630		
45	235	35	300		60	705			
40	25	155	60		25	235	80	25	310
	30	190		30	280	30		375	
	35	220		35	330	35		440	
	40	250		40	375	40		500	
42	35	230	65	40	470	100	25	390	
	40	265		50	565		30	470	
	45	25		175	60		750	35	550
		30		210	70		25	255	40
35		250	35	355		50	785		
40		280	50	510		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)



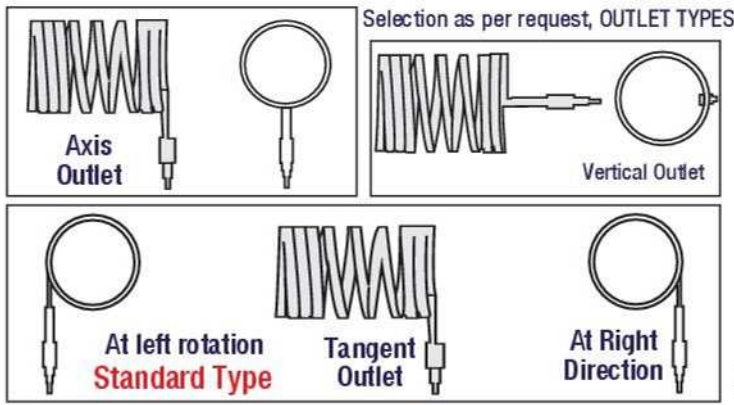
**Type 1:** Thermocouple junction point is not grounded to resistance body and is located at the bottom washer of resistance tube.  
**Type 2:** Thermocouple junction point is not grounded to resistance body and is located at the center of resistance tube.

L	40	50	60	80	100	130	160	200	250	300	400
6.5	WATT ( 230 V )										
	80	125	125	160	200	250	250	-	-	-	-
	100	160	160	200	250	315	315	-	-	-	-
	125	200	200	250	315	400	400	-	-	-	-
-0.02	160	250	250	315	400	500	500	-	-	-	
-0.04	200	315	315	400	500	500	500	-	-	-	
8.0	125	125	160	200	250	250	250	-	-	-	-
	160	160	200	250	315	315	315	-	-	-	-
	200	200	250	315	400	400	400	-	-	-	-
	250	250	315	400	500	500	500	-	-	-	-
-0.03	200	250	315	400	500	500	500	-	-	-	
-0.05	250	315	315	400	500	500	500	-	-	-	
10	125	160	160	200	250	315	400	-	-	-	-
	160	200	200	250	315	400	500	-	-	-	-
	200	250	250	315	400	500	630	-	-	-	-
	250	315	315	400	500	630	800	-	-	-	-
-0.03	315	400	400	500	630	800	1000	-	-	-	
-0.06	400	500	500	630	800	1000	1000	-	-	-	
12.5	160	160	200	250	315	315	400	500	630	630	630
	200	200	250	315	400	400	500	630	800	800	800
	250	250	315	400	500	500	630	800	1000	1000	1000
	315	400	400	500	630	630	800	1000	1250	1250	1250
-0.04	400	500	500	630	800	800	1000	1250	1600	1600	
-0.07	500	630	630	800	1000	1000	1250	1600	2000	2000	
16	200	200	250	315	400	500	630	630	800	800	800
	250	250	315	400	500	630	800	1000	1000	1000	1000
	315	315	400	500	630	800	1000	1250	1250	1250	1250
	400	400	500	630	800	1000	1250	1600	1600	1600	1600
-0.05	500	630	630	800	1000	1250	1600	2000	2000	2000	
-0.08	630	800	800	1000	1250	1600	2000	2500	2500	2500	
20	400	400	500	630	800	1000	1250	1600	1600	1250	1250
	500	500	630	800	1000	1250	1600	2000	2000	1600	1600
	630	630	800	1000	1250	1600	2000	2500	2500	2000	2000
	800	800	1000	1250	1600	2000	2500	2500	2500	2500	2500
-0.06	1000	1250	1600	2000	2500	2500	2500	2500	2500	2500	
-0.10	1250	1600	2000	2500	2500	2500	2500	2500	2500	2500	

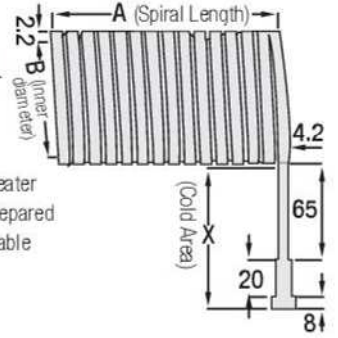
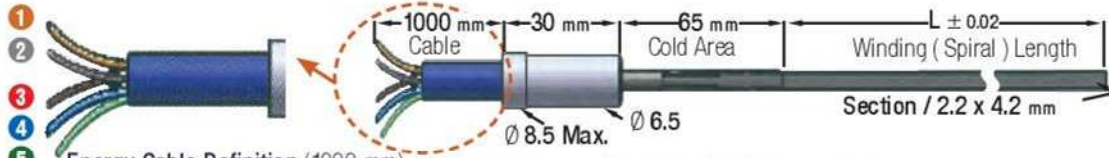
\* As per request, the desired type thermocouple can be produced in dimensions in red.  
 \* The slot that cartridge resistance will be inserted should be even and smooth.  
 \* The suitable temperature control should be done to prolong resistance life.  
 \* The resistance should be sit on slot kindly.  
 \* 90° Rotational Types is produced with an order.

Order : FR D x L x Watt





## 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 400°C, 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 Length ( L ) (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 Cold Area Including 65 mm DETECTION

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 X A X Outlet-Raw Material (Inner Dia) (Length) (Left) (Granule) ?

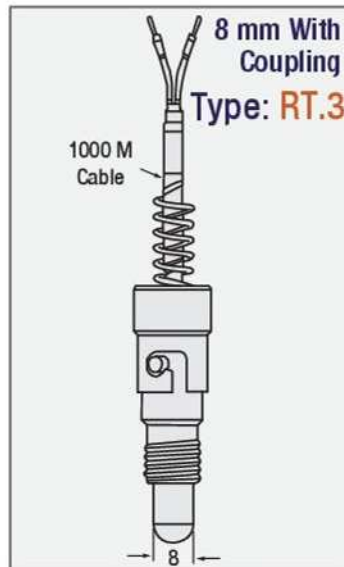
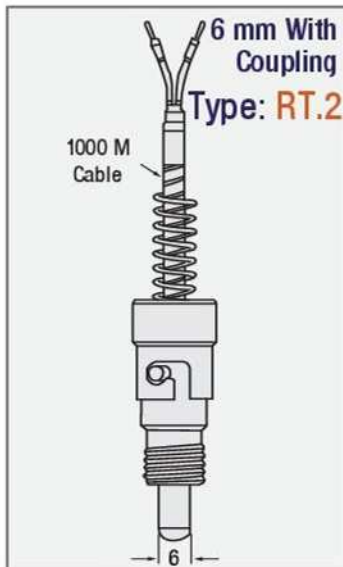
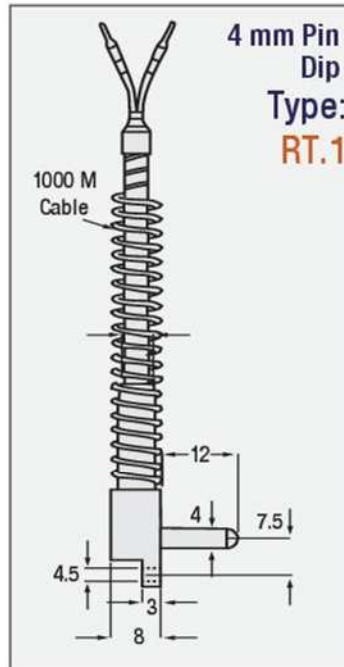
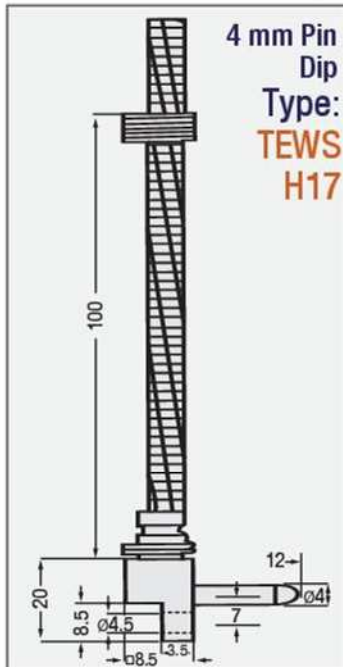
For Correct Resistance Selection; Pls. complete system with used plastic granule raw material information and by requesting information from our technical staff ( 0212 671 09 10 )..!



## MANIFOLD SYSTEM, THERMOCOUPLES RT

The Thermocouples ("J" Type) FE-constant combination makes measurement as millivolt 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 -200°C to +800°C. 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 thermocouple according to the different special type sample.

### MANIFOLD SYSTEM, THERMOCOUPLE TYPES



## 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:  $\varnothing$  5 - 6.25 - 6.4 - 7 - 8 - 8.5 - 10 - 10.2 - 11 - 12

### FLEXIBLE ELASTIC ROD STANDARD RESISTANCE CR

Section	$\square$ 4.5 x 4.5 mm $\varnothing$ 5.0 mm $\pm$ 0.10	$\square$ 6 x 6 mm $\pm$ 0.05 $\varnothing$ 5.0 mm $\pm$ 0.10	$\square$ 8 x 8 mm $\pm$ 0.05 $\varnothing$ 8.5 mm $\pm$ 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 $\pm$ 5	30 mm $\pm$ 5	40 mm $\pm$ 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	 Bendable Type According to Manifold Shape	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	 Manifold Slot Detail	3500 W	
1700 mm		3700 W	
1800 mm		3900 W	
1900 mm		4100 W	
2000 mm		4300 W	

## INDUSTRIAL TYPES PLUGS AND SOCKETS

### 16 CONTACT 16 Ampere 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



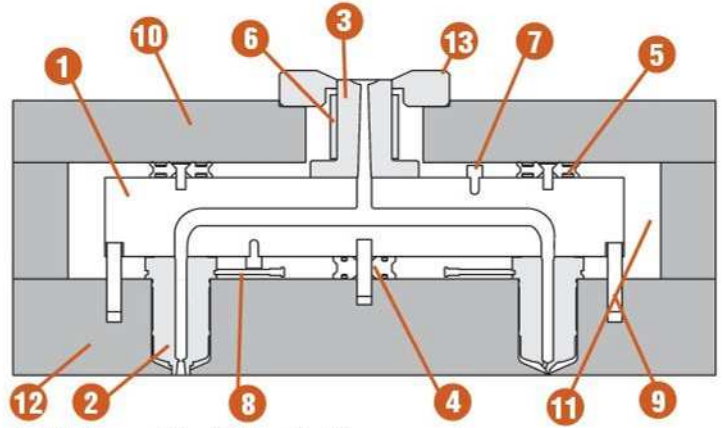
**Extension Plug:**  
24 Contact  
**Order No :**  
EBM24FU



**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.

### 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.

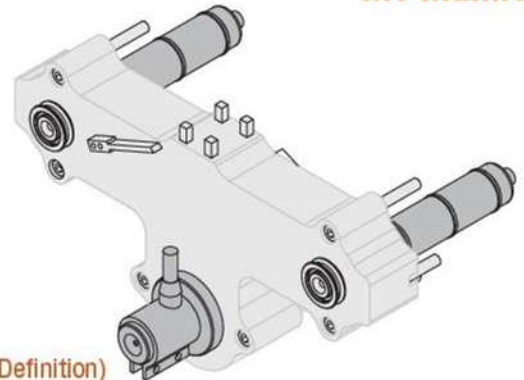
In our large mould production industry, our national capital continues to service status and we present Spare Parts - Service - Demo - Maintenance Guarantee. In selection and installation of all these systems, we will help together with our technical team. In addition, we will continue its follow up. 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 SYSTEM FOR MULTI-EYED MOULDS

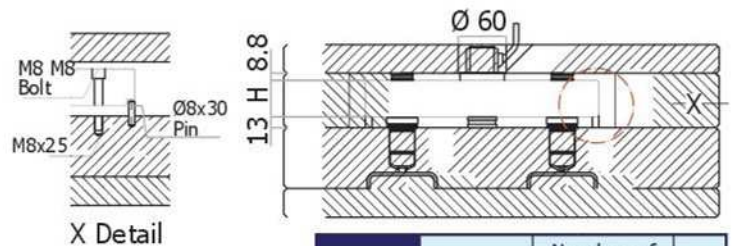
### MT Manifold



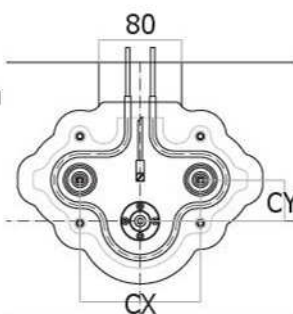
Order Form (Definition)

MT XX KA CX CY

- Axis Range in X
- Axis Range in Y
- Number of Used Nozzle
- Dia. of Used Nozzle
- Manifold Model

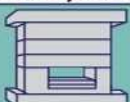


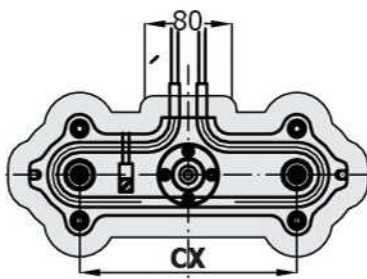
X Detail



Manifold Model	Requested Nozzle Diameter	Number of Manifold Eye Number of Nozzle To be used			Inter Axis
		2	4	8	
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.





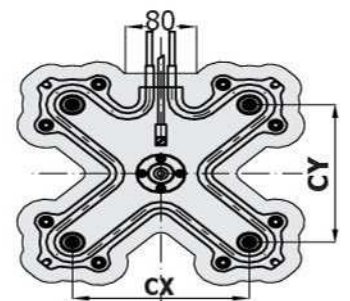
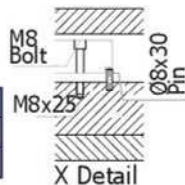
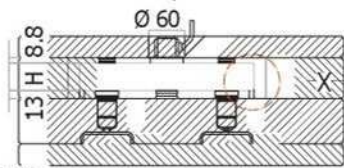
Order Form (Definition)

**MI XX KA C/CX**

- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model

Order	<b>MI - XX.. - KA.. - C/CX</b>
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.



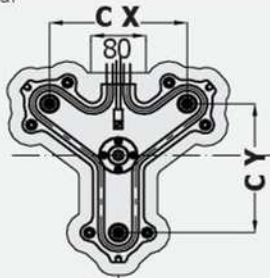
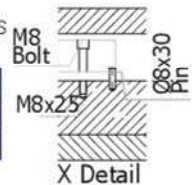
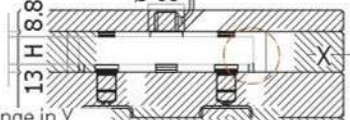
Order Form (Definition)

**MX XX KA CX CY**

- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model

Order	<b>MX- XX- KA- CX- CY</b>
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.



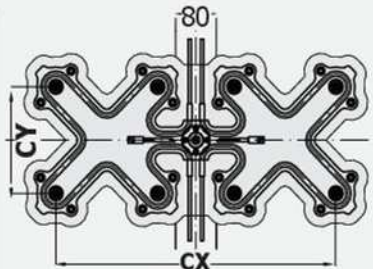
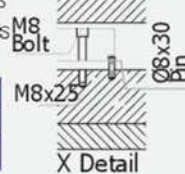
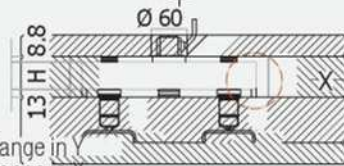
Order Form (Definition)

**MY XX KA CX CY**

- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model

Order	<b>MY- XX- KA- CX- CY</b>
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.



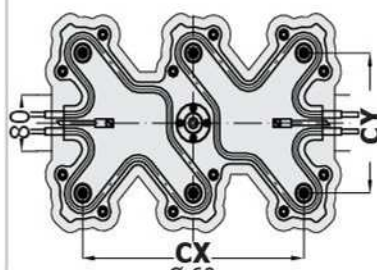
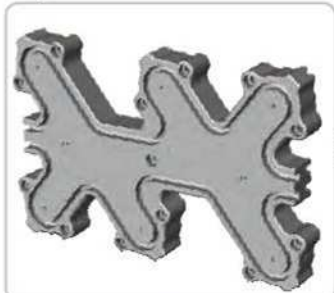
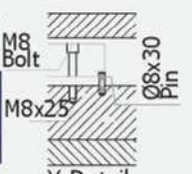
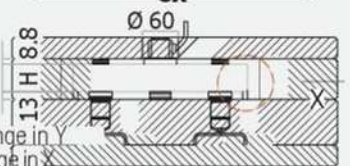
Order Form (Definition)

**MXX XX KA CX CY**

- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model

Order	<b>MXX- XX- KA- CX- CY</b>
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.



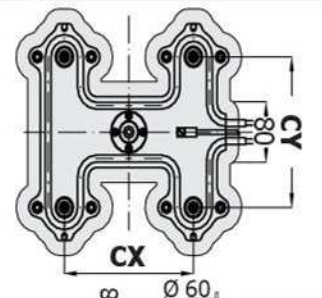
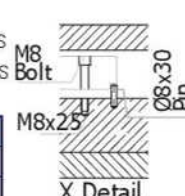
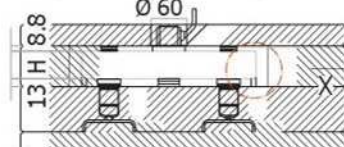
Order Form (Definition)

**MYY XX KA CX CY**

- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model

Order	<b>MYY- XX- KA- CX- CY</b>
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.



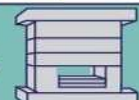
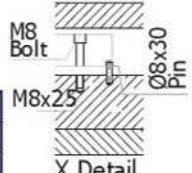
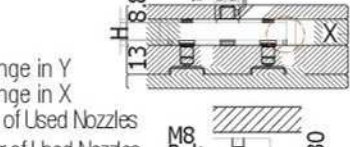
Order Form (Definition)

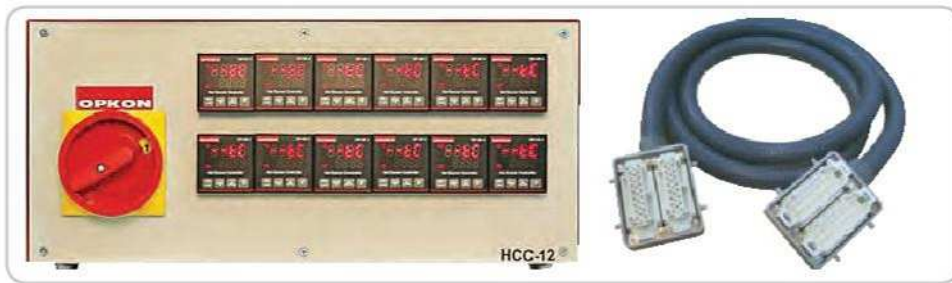
**MH XX KA CX CY**

- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model

Order	<b>MH- XX- KA- CX- CY</b>
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.

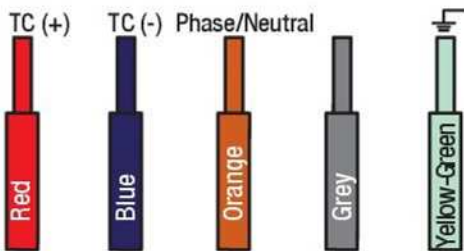
### Specifications of Heat Control Devices:

- \* 1.0 Degree \* PID Control System
- \* Working System Increases Resistance Mode up to 8 times with Soft Start Mode
- \* Standby Mode: (Starby) 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).

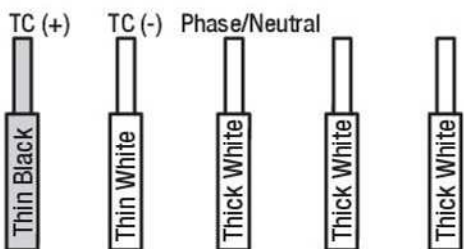
### CABLE SELECTION AND IT S IMPORTANCE

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.

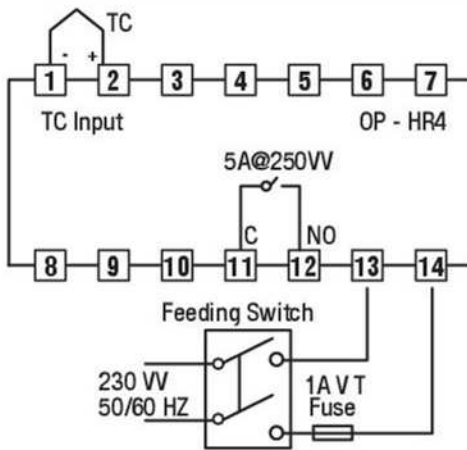
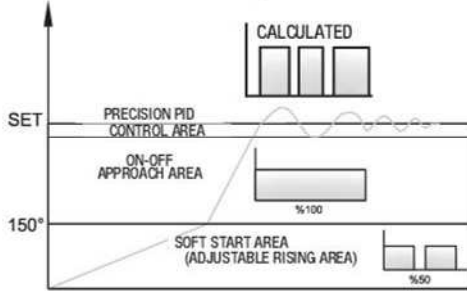
#### Cable Resistance Connection of Nozzles



#### Manifold Cable Resistance Connection

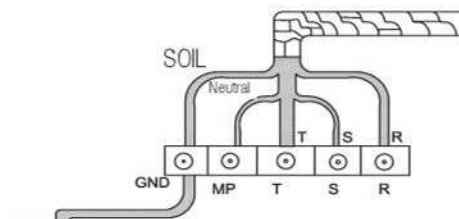


### Heat Control Technique



### 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 occurring leakages can be misread of temperature value or damage the device by transferring via thermocouple cable.



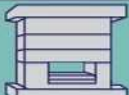
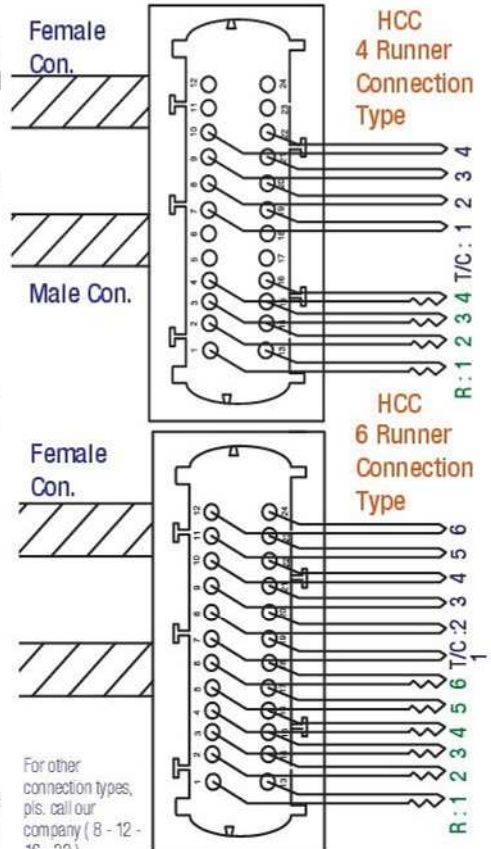
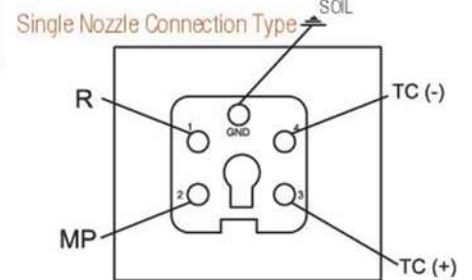
### Attention!!

Neutral (N) and Ground (GND) is different than each other. Due to current switching from neutral line, pls. don't 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



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
		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
		Surface appearance Damaged	M1 K1 K7	E11 K4 K5	E6 K6
P.10	Colour/ Material are not nonhomogeneous	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.

Raw Material Type (Fixed Coefficients)	Symbol	Coefficient for Closing Power ton / cm <sup>2</sup>	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 (Acrylic)	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 Tereftalate (Amorphous)	PET	0.31-0.388	1.7 - 2.0	1.129 - 1.172	1.29 - 1.41
Polyethylene Tereftalate (Crystalline)	PET	0.62-0.93	1.7 - 2.0	1.129 - 1.172	1.29 - 1.41
Polybutadiene Tereftalate	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:**

$$(Pi=3.1416) \times r^2 \text{ (Square of radius)} = 50\text{cm}^2$$

Therefore, when projection area (50cm<sup>2</sup>) 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 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
Crystalline Thermoplastics	PVC	130 - 160	0.4 - 0.8
	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.

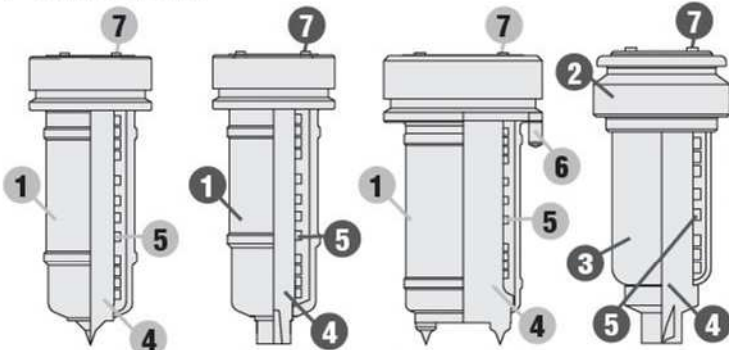


### Hot Runner Nozzle Equipment:

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;

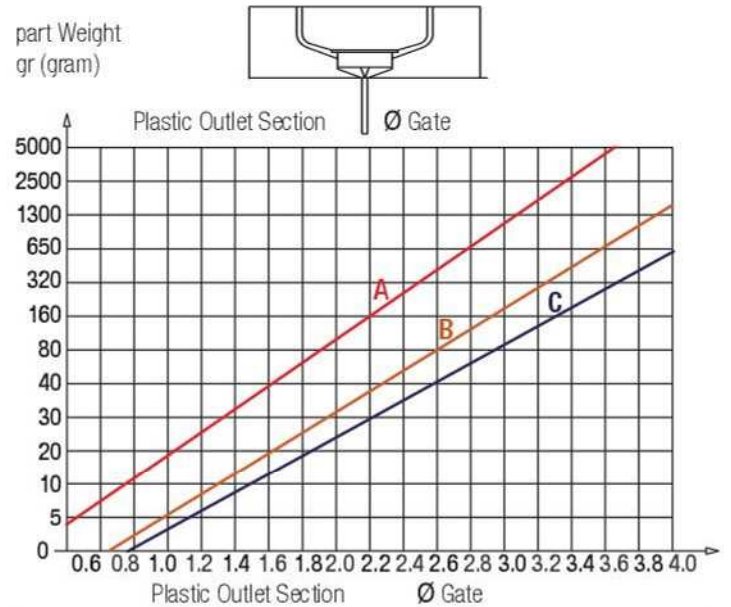
- \* Technical Drawing of the part or its data/weight
- \* Raw Material to be used / Colour Change
- \* Distances between cavities (In X and Y Axes)
- \* Is injection point on cavity?  
Or on runner? (Related information)
- \* N. of Mould Eye \* Location of Cooling System
- \* Melting Temperature of Material/ Raw Material

Order Placing  
Information

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



<b>A</b>	Low Density Plastics	PE	PP	PS	TPU	i20	HDPE
<b>B</b>	Medium Density Plastics	SAN	ABS	POM	PA	TPE	
<b>C</b>	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

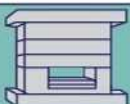
**C Group Raw Materials:** PC - PPS - PES - TPE - PUR - PC - ABS

### 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.

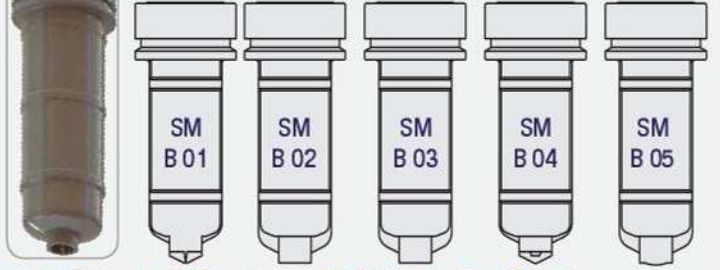
### Advantages of Hot Runner Systems:

- \* 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.

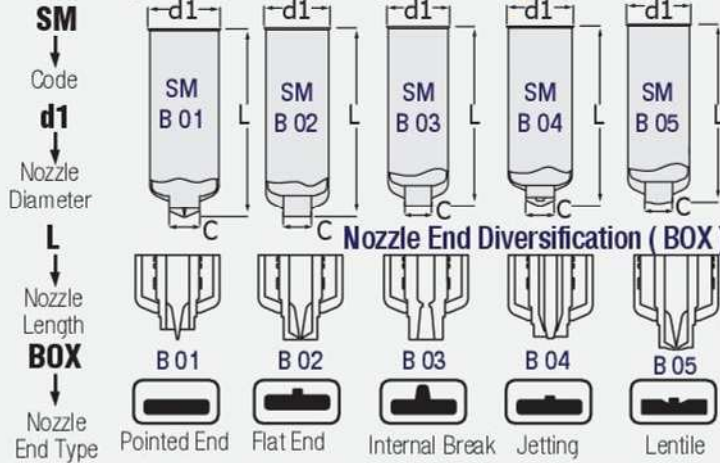




## Standard Nozzle B SERIE Types



Order Example: SM x d1 x L x BOX (Nozzle End Type)

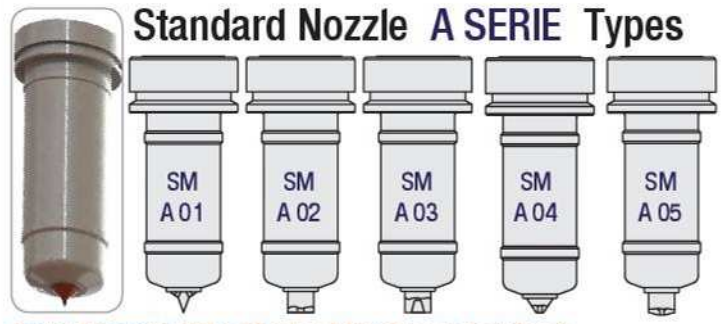


In the order; slot detail will be presented with technical drawing.

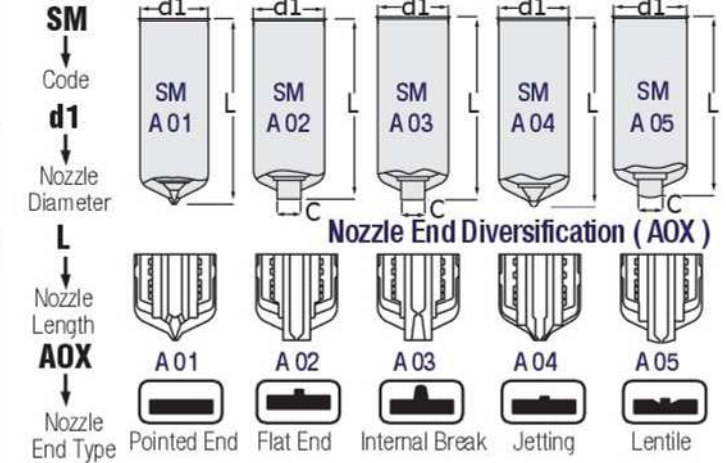
Code	d1	L	C	BOX	Resistance Watt	
SM...	22	46	8	Plug In End Type	200 - 225 Watt	
SM...		56			225 - 250 Watt	
SM...		66			Nozzle End Types:	200 - 225 Watt
SM...		76			225 - 250 Watt	
SM...	25	46	10	B01	250 - 290 - 350 W.	
SM...		56			290 - 350 - 400 W.	
SM...		66			B02	225 - 250 Watt
SM...		76			B03	250 - 290 - 350 W.
SM...		86			B04	290 - 350 - 400 W.
SM...		96			B05	350 - 400 - 470 W.
SM...	32	46	12	According to the Selection In Order	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	B	400 - 470 - 620 W.	
SM...		56			400- 470- 620- 690	
SM...		66			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



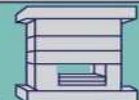
Order Example: SM x d1 x L x AOX (Nozzle End Type)



In the order; slot detail will be presented with technical drawing.

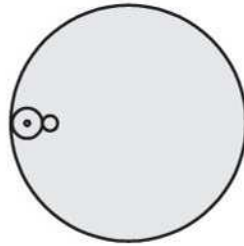
Code	d1	L	C	AOX	Resistance Watt	
SM...	18	46	6	Plug In End Type	200 - 225 Watt	
SM...		56			225 - 250 Watt	
SM...	22	46	7	Nozzle End Types:	200 - 225 Watt	
SM...		56			225 - 250 Watt	
SM...		66			250 - 290 - 350 W.	
SM...		76			290 - 350 - 400 W.	
SM...	25	46	8	A01	225 - 250 Watt	
SM...		56			A02	250 - 290 - 350 W.
SM...		66			A03	290 - 350 - 400 W.
SM...		76			A04	350 - 400 - 470 W.
SM...		86			A05	400 - 470 Watt
SM...		96			400 - 470 - 620 W.	
SM...	32	46	10	According to the Selection In Order	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	A	290 - 350 Watt	
SM...		56			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.

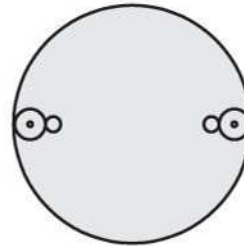




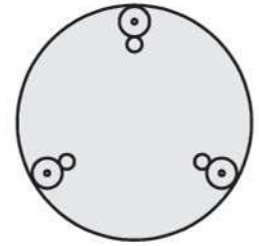
## Standard MULTI NOZZLE D01 SERIE



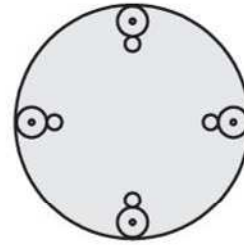
K1 - Single Pin



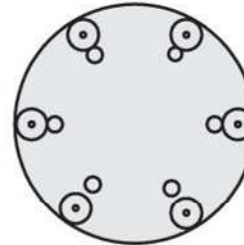
K2 - Two Pin



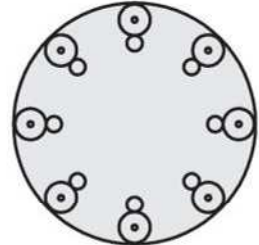
K3 - Three Pin



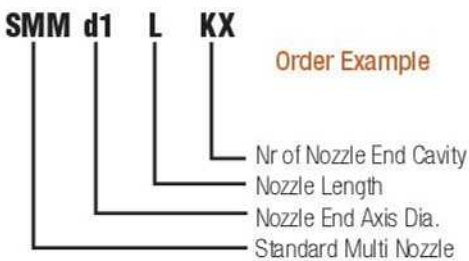
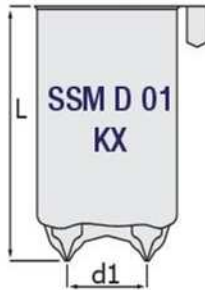
K4 - Four Pin



K6 - Six Pin



K8 - Eight Pin

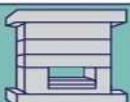


### Multi Nozzle Series :

- \* It is not suitable for each material and weight
- \* While making selection, pls. request technical support...
- \* Resistance watts are changed according to material density.

## 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

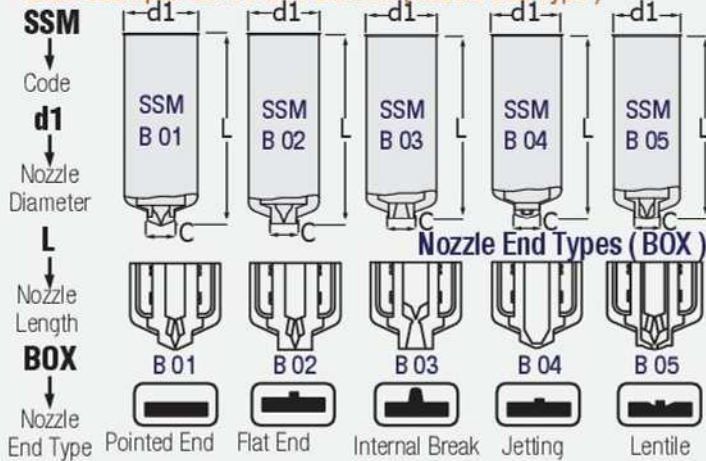




## Standard Spinning Nozzle B SERIE



Order Example: SSM x d1 x L x BOX ( Nozzle End Type )



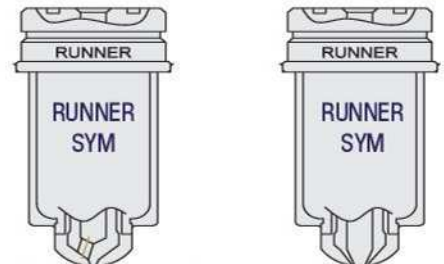
In order, will be presented with slot detail technical drawing.

Code	d1	L	C	BOX	Resistance Watt	
SSM...	22	46	8	Plug-in Type	225 Watt	
SSM...		56		Sleeve Spinning	290 Watt	
SSM...		66		Economic Model	290 Watt	
SSM...		76			350 Watt	
SSM...		86			Nozzle End Types:	350 Watt
SSM...		96		400 Watt		
SSM...	25	46	10	B01	250 Watt	
SSM...		56			290 Watt	
SSM...		66			B02	350 Watt
SSM...		76			B03	400 Watt
SSM...		86			B04	400 Watt
SSM...		86		B05	470 Watt	
SSM...	32	46	12	According to Selection In Order	470 Watt	
SSM...		56			250 Watt	
SSM...		66			M Spinning	350 Watt
SSM...		76				400 Watt
SSM...		86				470 Watt
SSM...		96				470 Watt

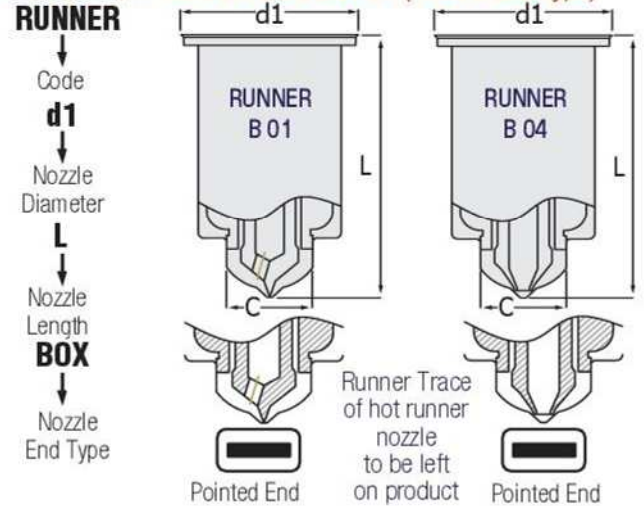
Attention !!! Technical information is absolutely essential in order.  
**Resistance Watts:** It is changed according to material density.  
**Gate Diameters:** It will be determined in accordance with the order.



## RUNNER Spinning Nozzle A SERIE



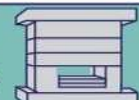
Order Example: RUNNER x C x L x AOX ( Nozzle End Type )



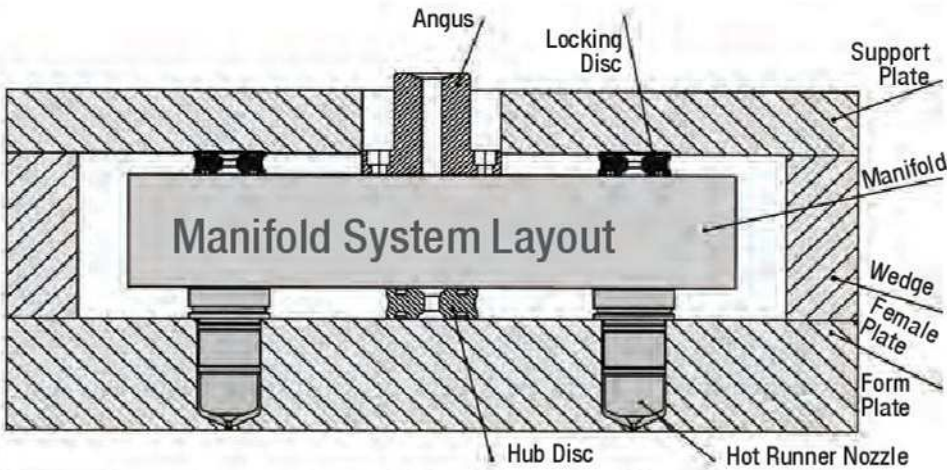
In order, will be presented with slot detail technical drawing.

Code	d1	L	C	BOX	Resistance Watt	
RUNNER	30	49	15	Plug-in Type	250 Watt	
RUNNER		59		Sleeve Spinning	290 Watt	
RUNNER		69		Multi Serie Systems	350 Watt	
RUNNER		79			400 Watt	
RUNNER		89			Economic Model	400 Watt
RUNNER		99		470 Watt		
RUNNER	32	49	17	Nozzle End Types:	250 Watt	
RUNNER		59			290 Watt	
RUNNER		69			350 Watt	
RUNNER		79		B01	400 Watt	
RUNNER		89			B04	470 Watt
RUNNER		99			470 Watt	
RUNNER	34	49	19	According to Selection In Order	290 Watt	
RUNNER		59			350 Watt	
RUNNER		69			M Spinning	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



## OUTER SLEEVE Serie : SB

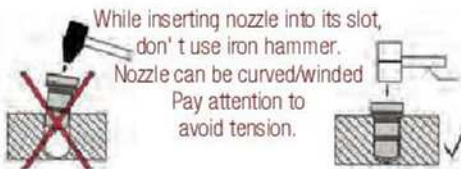
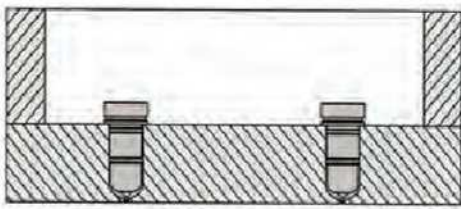
It is a useful unit used when desired to change existing injection mould which is cold runner system to hot runner system or using in situations that the creation of water channel using extra cooling of nozzle in hot runner system should be required.

Material : 1.2344 Hardness : ± 52 HRC

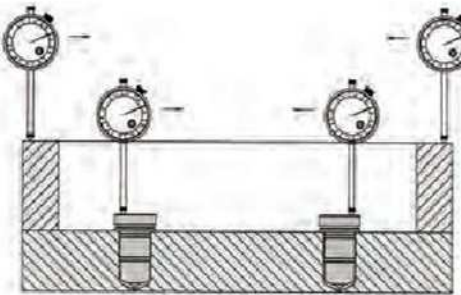
Code : Y01 / Pointed End Nozzle Type

Code : Y02 / Pointed End Nozzle Type

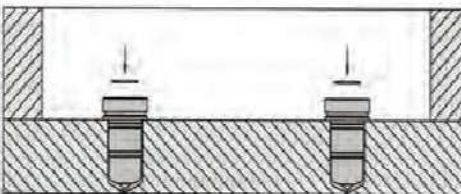
## Mounting Examples of Hot Runner Nozzles



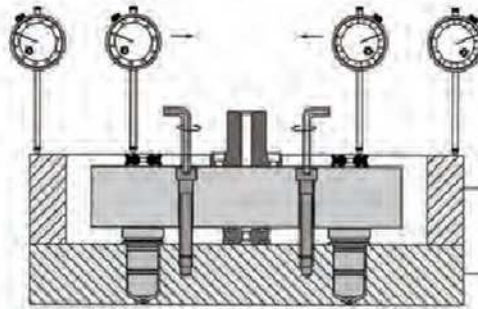
- 1 - Form Plate: Check that nozzle slot measurement are properly processed in accordance with given tolerance.
- 2 - Insert unsealed nozzle in its place with the help of gavel balancedly.



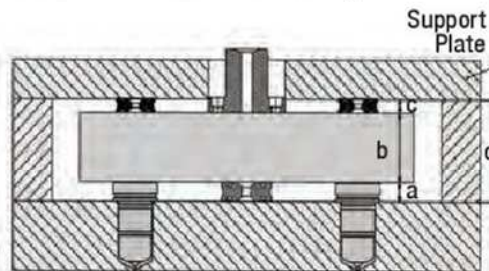
- 3 - Measure nozzle cap height with dial gauge and reset it.



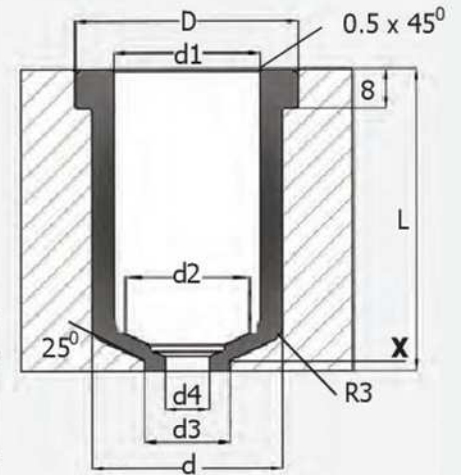
- 4 - Insert copper sealing gasket on nozzles.



- 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.



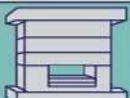
## OUTER SLEEVE Serie : SB

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

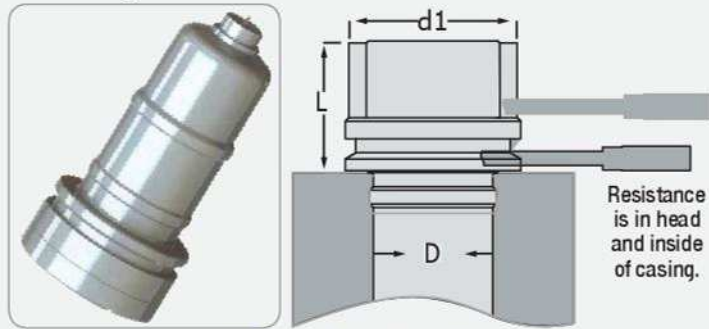
In order : Pls. place an order with order code by selecting length (L) according to the determined diameter.

Data in Table is an document related to flat end sleeve structure.

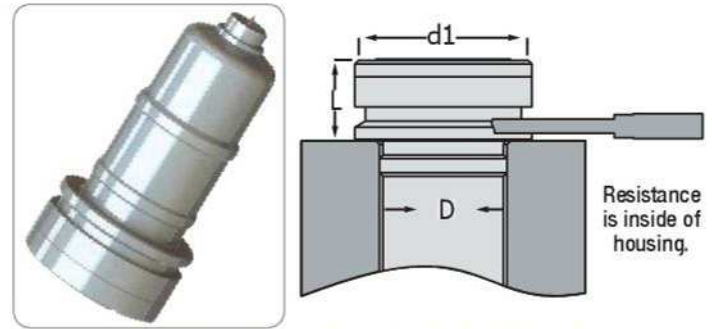
When requesting pointed end outer sleeve; also gate end diameter should be added to order. As per request: Our production is available for desired material and measurement is available.



# In Usage of Hot Runner Nozzles: Inlet MAIN RUNNER NOZZLES of Mould Serie: ASM

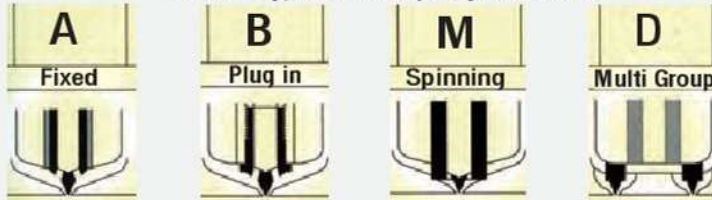


Resistance is in head and inside of casing.



Resistance is inside of housing.

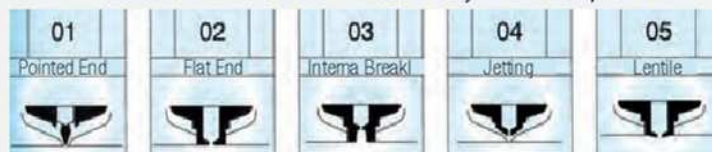
Nozzles Types According to System Series



Nozzle End Diversification According To End Shape 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, PBT) 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).

## 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.

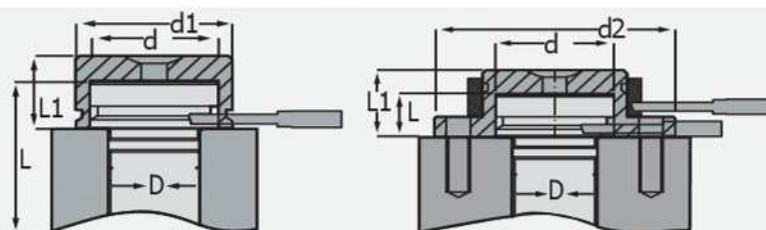
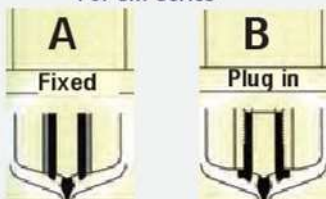
Hot Runner; Main Runner Nozzle For One Eye Mould **SM - SMM**

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

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

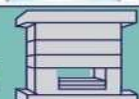
For SM Series



**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

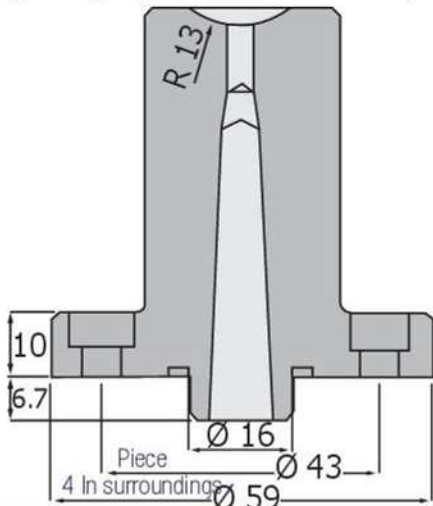


# Fittings Used in Hot Runner Systems ANGUS - HUB / LOCKING DISCS - APPARATUS - RESISTANCE

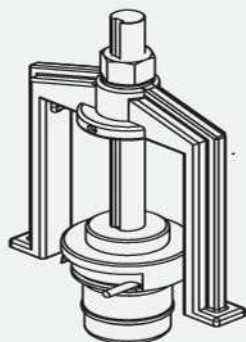


## MANIFOLD ANGUS SERIE: SA

Unit providing the first connection from injection group to hot runner manifold system.



Order: SA 01 00 V02

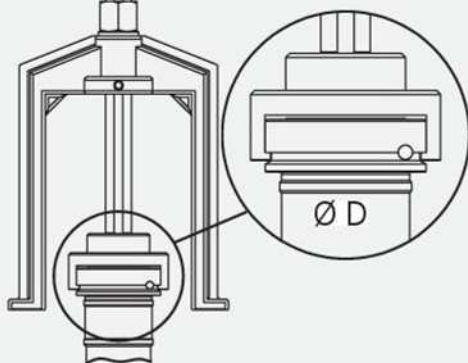


## NOZZLE EXTRACTOR APPARATUS SERIE: MCA

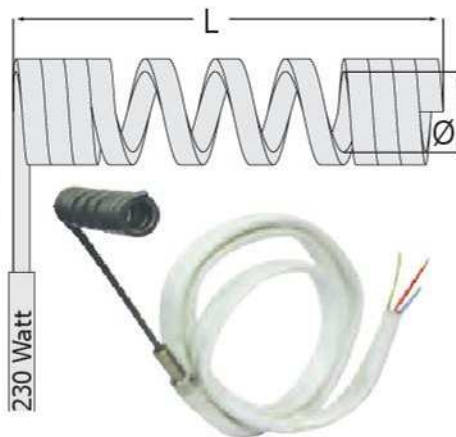
In dismantle process of hot runner nozzles from mould plate, it is used in dismantle processes not to damage runner nozzles.

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.

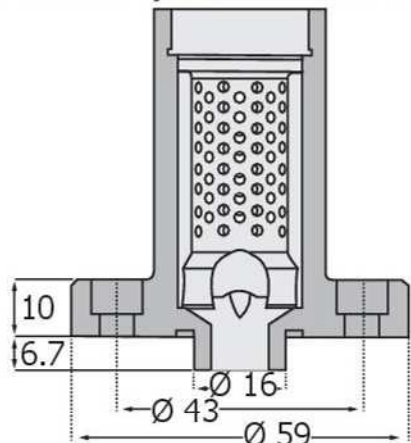
Resistance	Resistance
200 Watt	620 Watt
225 Watt	690 Watt
250 Watt	850 Watt
290 Watt	950 Watt
350 Watt	1100 Watt
400 Watt	1200 Watt
470 Watt	



## FILTERED ANGUS SERIE: SB

Unit providing the first connection from injection group to hot runner manifold system.

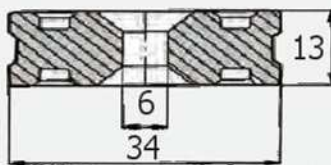
\* Unit avoiding blockages / damages due to raw material in dusty or chamfer environment.



Order: SB 01 00 V02



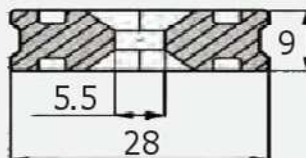
## HUB DISC SERIE: SD02



Order: SD02 00 V 01



## LOCKING DISC SERIE: SD03



Order: SD03 00 V 02

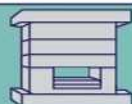


## GATE VALVE HOT RUNNER CONTROL THERMOCOUPLE SERIE: MT015

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		80
MT 015 100	Ø 1.5 mm	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**

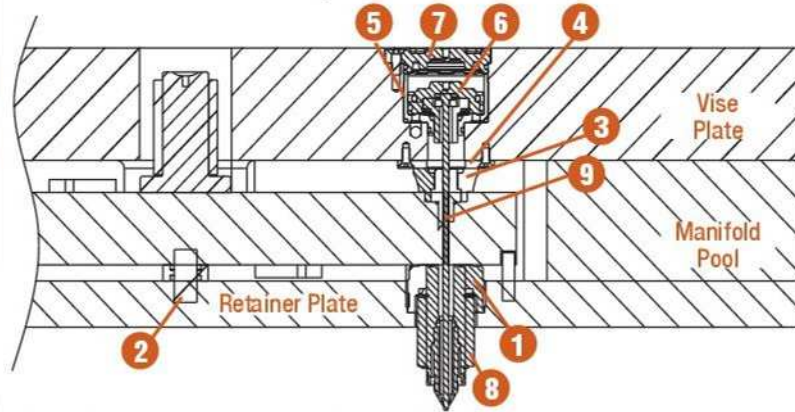


**Cosmetics (Personal Care) Products**

**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**

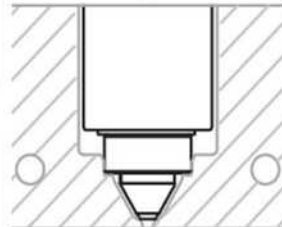


**Section View of Gate Valve Nozzle Group:**

- 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

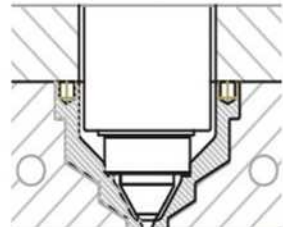
**Nozzle End Type Options in Gate Valve Hot Runner Systems:**

Gate Valve is changed with end type bushings in hot runner systems. Standard Large VG Hot Runner Nozzles are compatible with all bushings.



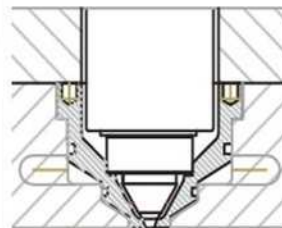
**Gate Valve E-04 Standard End Type**

Ejector Pin cuts the goods in mould slot. The trace left on product is close to excellent cosmetically.



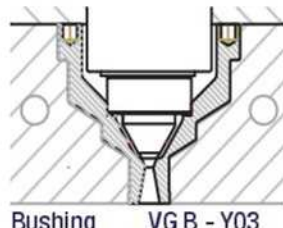
**Bushing VG CB - Y02 Gate Valve Plain Bushing**

Plain Bushing: Ejector Pin cuts the goods on bushing surface. Processing of slot detail in mould is easier.



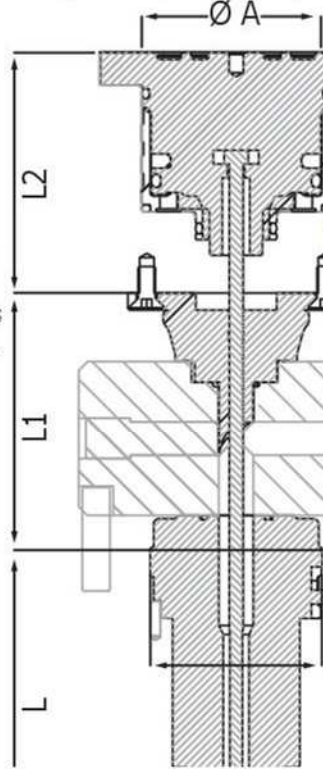
**Bushing VG B - Y02 Gate Valve Air Channel Type**

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

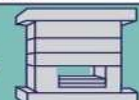
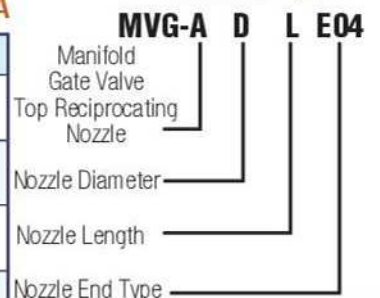
**Economical Presentation.**  
It is an absolute essential application with its

**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**

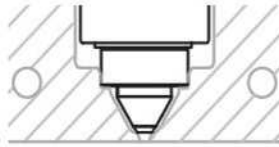
Ø C **Order Example**



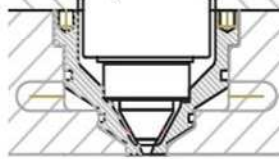
## BOTTOM PISTON



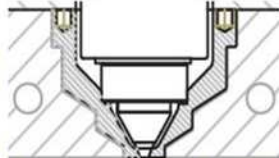
**Nozzle End Type Options:**  
In Gate Valve Hot Runner Systems, end type is changed with bushings. Standard Large VG Hot Runner Nozzles are compatible with all kinds of bushings.



**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.



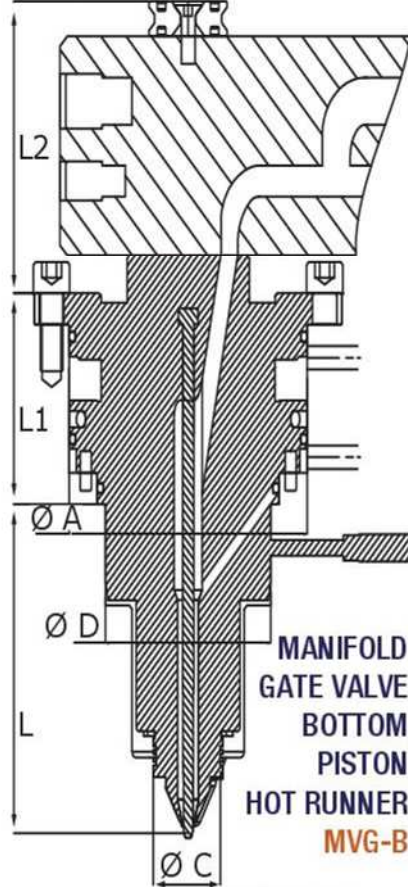
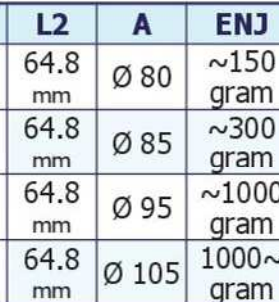
**Bushing VG B - Y02 Gate Valve Water Channel Type**  
It is used when extra cooling is requested around cooled plain bushing nozzle. Usage in transparent, optic, cosmetic parts is required.



**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 BOTTOM PISTON HOT RUNNER

**MVG-B**

Order Example

**MVG-B D L E 04**

Manifold Gate Valve

Top Piston

Nozzle

Nozzle Dia.

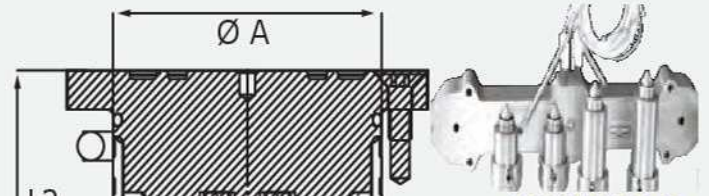
Nozzle Length

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



## MANIFOLD GATE VALVE MULTI HOT RUNNER SYSTEMS

**MVG-M1**

When axis diameter (C) is increased, number of cavity (K) can be increased.

Order Example

**MVG-M1 D L E 04**

Manifold Gate Valve

Top Piston

Nozzle

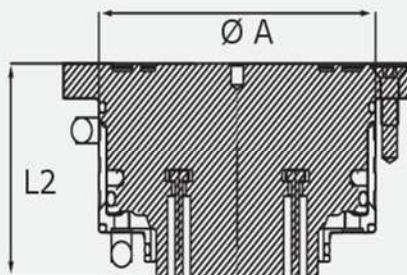
Nozzle Dia.

Nozzle Length

Nozzle End Type

\*L2 Size: It can be changed according to the manifold thickness.

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.

Order Example

**MVG-M2 D L E 04**

Manifold Gate Valve

Top Piston

Nozzle

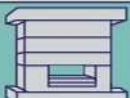
Nozzle Dia.

Nozzle Length

Nozzle End Type

\* L2 Size: It can be changed according to the manifold thickness.

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





### 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.



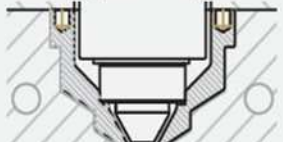
### Gate Valve E-04 Standard End Type

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.



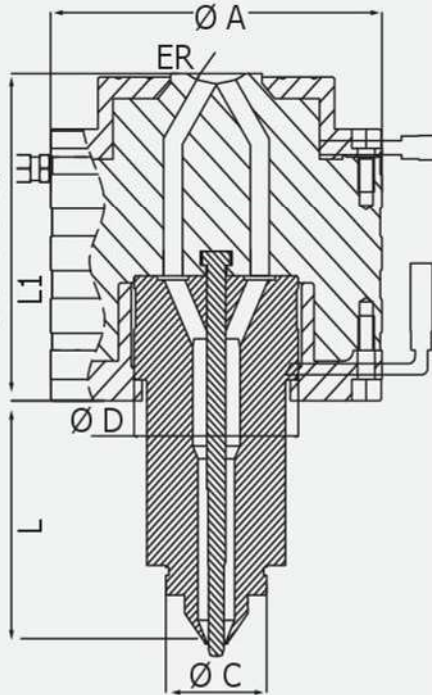
### Bushing VG CB - Y02 Gate Valve Plain Bushing

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

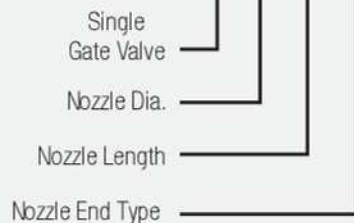
If injection in mould will be made to hot runner channel or to bring product near nozzle is difficult due to cavity, this product should be used. They are left a conical runner trace from the point that injected.



## SINGLE GATE VALVE MAIN RUNNER HOT RUNNER SYSTEMS SVG

Order Example.

SVG D L E 04



### Single Gate Valve - MAIN RUNNER Hot Runner Systems

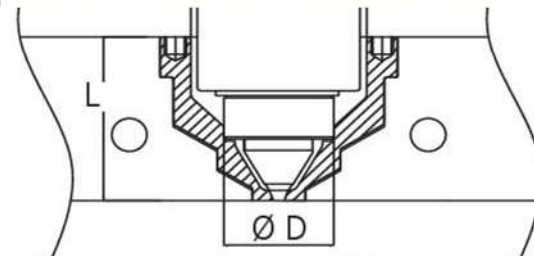
It is recommended to give your orders according to **Order Example.**

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



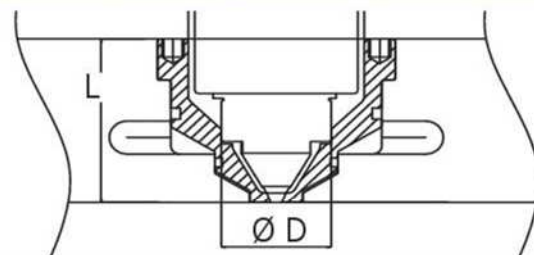
## GATE VALVE BUSHING APPLICATIONS



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	

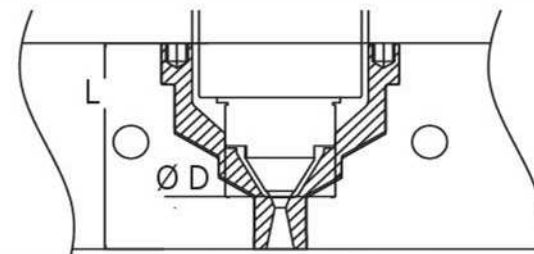
For MVG-A,SVG Nozzles		
Code	D	L
VG B Y02	Ø 18	40 mm
	Ø 22	
	Ø 32	
	Ø 42	



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	

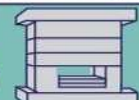


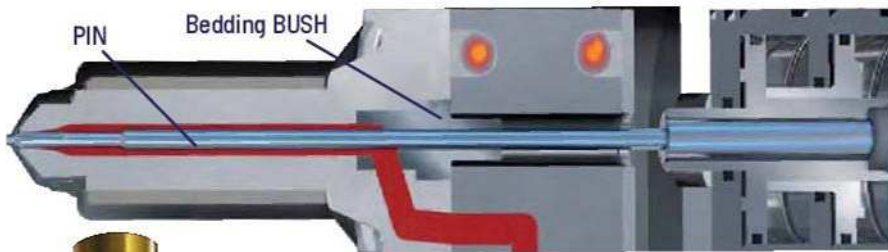
GATE VALVE INTERNAL BREAK BUSHING VG B Y03

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.

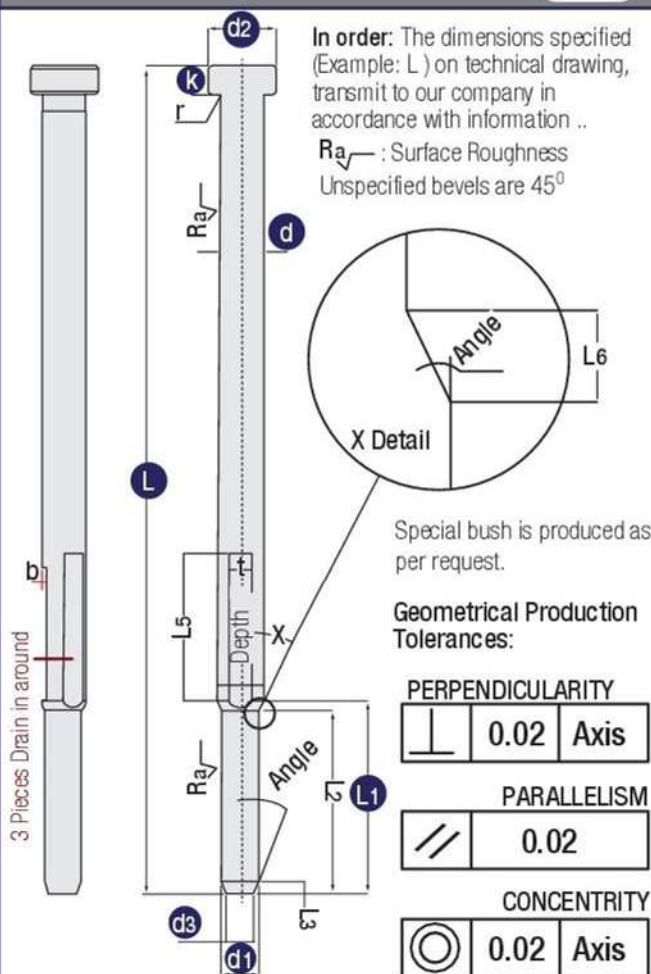




### GATE VALVE PIN / BUSH (Production As per Request)

**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 second 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



Tolerance for tin pre plating can be -0.008, after plating it can be +0.01.

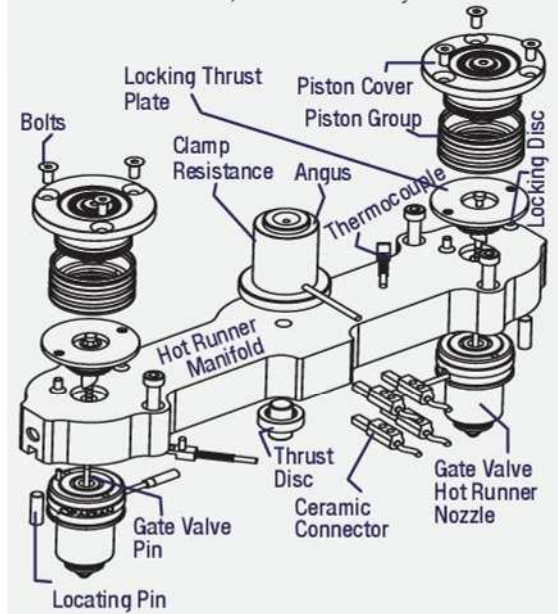
- Specify Step Bevel Dimensions .....
- Specify channel slotted processing measurement .....
- Specify tin plating area and its length .....
- Specify full size dimension and tolerance .....
- Material: Specify material and hardness as HSS or 1.2344 .....
- Specify quantity .....
- Specify general tolerance values  $\pm$  .....

**Special Notes:** For precision production of Gate Valve Pin, sending the previous existing pin or bush sample offers good production.

## Gate Valve System MOUNTING

### 1. Step Mounting of Nozzles:

We recommend to make according to details in hot runner nozzles, nozzle mounting section.



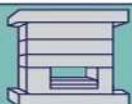
### Mounting Sequence :

#### 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.



**In your orders:** Pls. request an offer from our company in a way that given in example .... !

# RESISTIVE LINEER POTENTIOMETERS

# OPTIC MEASUREMENT SCALE

<p><b>Linear</b> (Rectilinear)</p> <p><b>Rotary</b> (Sliding Arm)</p> <p><b>Position Metering Scale</b></p> <p><b>Technical Specifications</b></p>	 <p>Digital Reader As per request</p> <p><b>LPT</b> <b>Linear 33</b> <b>Scale</b></p> <p><b>Usage Area:</b> Due to Easy Mounting Opportunity and being <b>Economic</b>, they are products with large usage area, are given output data as Potentiometric / mm. Mainly, they are used in <b>Plastic Injection Machines, Marble Machines and Hydraulic Presses</b>. At sliding models.</p>	 <p>Digital Reader As per request</p> <p><b>LPH</b> <b>Linear 33</b> <b>Scale</b></p> <p><b>Usage Area:</b> 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 <b>Plastic Injection Machines, Hydraulic Presses</b>, due to having IP 53 protection class. At sliding models.</p>	 <p>Digital Reader As per request</p> <p><b>LPM</b> <b>Linear 33</b> <b>Scale</b></p> <p><b>Usage Area:</b> 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 <b>Pipe/ Sheet Bending Machines and Packaging Machine</b>. At Sliding Model.</p>
<b>Model</b>	<b>Order No : LPT x Length.mm</b>	<b>Order No : LPH x Length.mm</b>	<b>Order No : LPM x Length.mm</b>
<b>Measuring Length</b>	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)
<b>Linearity</b>	± % 0.05	± % 0.05	± % 0.05
<b>Resistance</b>	5 - 10 KOhm	5 - 10 KOhm	5 - 10 KOhm
<b>Working Temperature</b>	- 20 / + 80 °C	- 20 / + 80 °C	- 20 / + 80 °C
<b>Max. Speed</b>	< 5 m/s	< 1.5 m/s	< 5 m/s
<b>Mechanical Life</b>	100.000.000 Cycle	100.000.000 Cycle	100.000.000 Cycle
<b>Housing Material</b>	Aluminium	Aluminium	Aluminium
<b>Shaft Material</b>	Stainless Steel	-	Stainless Steel
<b>Supply Voltage</b>	28V DC Max.	28V DC Max.	28V DC Max.
<b>Electrical Connection</b>	4 Pole Connection	4 Pole Connection	4 Pole Connection
<b>Protection Class</b>	IP 65	IP 40 & IP 53	IP 54
<b>Connection</b>	Mechanic	Mechanic	Mechanic
<b>Housing Size</b>	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 linear & 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..

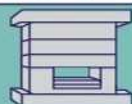


# RESISTIVE LINEER POTENTIOMETERS OPTIC MEASUREMENT SCALE

<b>Linear</b> (Rectilinear) <b>Rotary</b> (Sliding Arm) <b>Position</b> <b>Metering</b> <b>Scales</b>	 <p>Digital Reader As per request</p> <p><b>SLPT</b> Slim 18 Linear Scale</p>	 <p>Digital Reader As per request</p> <p><b>SLPC</b> Slim 18 Linear Scale</p>	 <p>Digital Reader As per request</p> <p><b>SLPS</b> Slim 18 Linear Scale</p>		
	<b>Technical Specifications</b>			<p><b>Usage Area:</b> 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 <b>Plastic Injection Machines, Textile Machines and Test Machines.</b> At sliding models.</p>	<p><b>Usage Area:</b> 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 <b>Marble Machines, Pipe/Sheet bending Machines, Textile Machines.</b> At sliding models.</p>
<b>Model</b>	<b>Order No : SLPT x Length.mm</b>	<b>Order No : SLPC x Length.mm</b>	<b>Order No : SLPS x Length.mm</b>		
<b>Measuring Length</b>	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)		
<b>Linearity</b>	± % 0.05	± % 0.05	± % 0.05		
<b>Resistance</b>	5 - 10 KOhm	5 - 10 KOhm	5 - 10 KOhm		
<b>Working Temperature</b>	- 20 / + 80 °C	- 20 / + 80 °C	- 20 / + 80 °C		
<b>Max. Speed</b>	< 5 m/s	< 5 m/s	< 5 m/s		
<b>Mechanical Life</b>	50.000.000 Cycle	50.000.000 Cycle	50.000.000 Cycle		
<b>Housing Material</b>	Aluminium	Aluminium	Aluminium		
<b>Shaft Material</b>	Stainless Steel	Stainless Steel	Stainless Steel		
<b>Supply Voltage</b>	28V DC Max.	28V DC Max.	28V DC Max.		
<b>Electrical Connection</b>	Cabled Standard 1 Metre	Cabled Standard 1 Metre	Cabled Standard 1 Metre		
<b>Protection Class</b>	IP 53	IP 53	IP 53		
<b>Connection</b>	Mechanic	Mechanic	Mechanic		
<b>Housing Size</b>	18 x 18 mm	18 x 18 mm	18 x 18 mm		

Special Prices for Higher Quantities..




Page  
292



Section  
Injection  
Mould

**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 linear & 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 POTENTIOMETERS AND ENCODERS

<b>Linear</b> (Rectilinear) <b>Rotary</b> (Pivoting) <b>Position</b> <b>Metering</b> <b>Scales</b>	 <p>Digital Reader As per Request</p> <p><b>MST</b> <b>CONTACTLESS POSITION SENSOR</b></p> <p><b>Usage Area:</b> National Type Position Sensors work with Magnetostrictive Principle. Due to measuring as contactless, they long lived. They have high protection class. <b>They can be worked in water and oil.</b> Generally, they are used by inserting inside of piston. Sliding Type.</p>	 <p>Digital Reader As per Request</p> <p><b>DWP</b> <b>CORDED POTENTIOMETER</b></p> <p><b>Usage Area:</b> 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</p>	 <p>Digital Reader As per Request</p> <p><b>DWE</b> <b>CORDED ENCODER</b></p> <p><b>Usage Area:</b> 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 linear distance.</p>		
	<b>Technical Specifications</b>				
<b>Model</b>	<b>Order No : MST x Length</b>	<b>Model</b>	<b>Order No : DWP x Length</b>	<b>Model</b>	<b>Order No : DWE x Length</b>
<b>Measuring Length</b>	From 10 mm up to 2000 mm (Selection according to the measure)	<b>Measuring Length</b>	1800 mm	<b>Resolution</b>	From 500 mm to 3500 mm
<b>Resolution</b>	16 BIT	<b>Linearity</b>	± 0.1 mm	<b>Outlet Type</b>	A, B, Z, or A, $\bar{A}$ B, $\bar{B}$ Z, $\bar{Z}$
<b>Repeatability</b>	< 0.05 mm	<b>Resistance</b>	5 -10 K	<b>Channels</b>	Pushpull - TTL - HTL
<b>Outlet</b>	0... 10V , 10...0 V	<b>Working Temp.</b>	- 20 / + 80 °C	<b>Max. Speed</b>	2 m/sec
<b>Supply Voltage</b>	24V DC ± %10	<b>Max. Speed</b>	< 1.5 m/s	<b>Supply Voltage</b>	5V DC 8V - 24V DC 5V - 24V DC
<b>Max. Speed</b>	< 10 m/s	<b>Mechanical Life</b>	5.000.000	<b>Working Temp.</b>	- 20 / + 80 °C
<b>Max. Current Consumption</b>	50 mA	<b>Housing Material</b>	ABS / Aluminium and Stainless Steel	<b>Housing Material</b>	ABS / Aluminium and Stainless Steel
<b>Max. Outlet Values</b>	10.5V	<b>Shaft Material</b>	-	<b>Protection Class</b>	IP 50
<b>Inverse Voltage Protection</b>	Yes	<b>Supply Voltage</b>	28V DC max.	<b>Cable</b>	2.5 mt. Standard
<b>Electrical Connection</b>	4 Pinned Hydraulic Type	<b>Protection Class</b>	IP 54	<b>Shaft Dia.</b>	-
<b>Protection Class</b>	IP 66	<b>Housing Size</b>	81 x 81 x 86 mm	<b>Housing Size</b>	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 linear & 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.







Page  
293



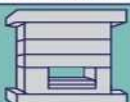
Section  
Injection  
Mould

# RESISTIVE LINEER POTENTIOMETERS

# OPTIC MEASUREMENT SCALE

<b>Linear</b> (Rectilinear) <b>Rotary</b> (Pivoting) <b>Position</b> <b>Metering</b> <b>Scales</b>	  <p><b>PRI 50</b> <b>OPTIC 50 ENCODER</b></p> <p><b>Usage Area:</b> They are <b>Economic</b> 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.</p>	  <p><b>PRI 50 SH</b> <b>OPTIC 50 ENCODER</b> (Semi Hole) Shaft</p> <p><b>Usage Area:</b> 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.</p>	  <p><b>PRI 58</b> <b>OPTIC 58 ENCODER</b></p> <p><b>Usage Area:</b> They are <b>Economic</b> 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.</p>
	<b>Technical Specifications</b>	<b>Order No : PRI 50 x Pulse</b>	<b>Order No :PRI 50 SH x Pulse</b>
<b>Resolution</b> (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
<b>Outlet Type</b>	Pushpull - TTL - HTL	Pushpull - TTL - HTL	Pushpull - TTL - HTL
<b>Channels</b> (Outlet Direction)	A, B, Z, or A, $\bar{A}$ B, $\bar{B}$ Z, $\bar{Z}$	A, B, Z, or A, $\bar{A}$ B, $\bar{B}$ Z, $\bar{Z}$	A, B, Z, or A, $\bar{A}$ B, $\bar{B}$ Z, $\bar{Z}$
<b>Max. Speed</b>	4000 RPM	4000 RPM	4000 RPM
<b>Supply Voltage</b>	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC
<b>Working Temperature</b>	- 20 / + 80 °C	- 20 / + 80 °C	- 20 / + 80 °C
<b>Cable</b>	2.5 ( Standard ) 5 Cable - 8 Cable	2.5 ( Standard ) 5 Cable - 8 Cable	2.5 ( Standard ) 5 Cable - 8 Cable
<b>Protection Class</b>	IP 54	IP 50	IP 50
<b>Shaft/Hole Dia.</b>	Ø 6 - Ø 8 mm	Ø 6 - Ø 8 mm	Ø 6 - Ø 8 - Ø 10 mm
<b>Shaft Material</b>	Stainless Steel	Stainless Steel	Stainless Steel
<b>Housing Material</b>	Aluminium	Aluminium	Aluminium
<b>Housing Dia.</b>	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 linear & 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.

# RESISTIVE LINEER POTENTIOMETERS

# OPTIC MEASUREMENT SCALE

<b>Linear</b> (Rectilinear) <b>Rotary</b> (Pivoting) <b>Position</b> <b>Metering</b> <b>Scale</b>	 <p>Digital Reader As per Request</p> <p><b>PRI 100 H</b></p>	 <p>Digital Reader As per Request</p> <p><b>MRI 50</b></p>	 <p>Digital Reader As per Request</p> <p><b>PRI 58 SH</b></p>
	<p><b>OPTIC 100 ENCODER</b> (Full Hole) Shaft <b>Usage Area :</b> They are full hole shaft products with 100 mm casing diameter 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 <b>Elevator Machines</b> and many automation application. Rotary Model.</p>	<p><b>OPTIC 50 ENCODER</b> (Magnetic) Shaft <b>Usage Area :</b> 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.</p>	<p><b>OPTIC 58 ENCODER</b> (Semi Hole) Shaft <b>Usage:</b> 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.</p>
<b>Technical Specifications</b>			
<b>Model</b>	<b>Order No : PRI 100 H x Pulse</b>	<b>Order No : MRI 50 x Pulse</b>	<b>Order No : PRI 58 SH x Pulse</b>
<b>Resolution</b> (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
<b>Outlet Type</b>	Pushpull - TTL - HTL	Pushpull - TTL - HTL	Pushpull - TTL - HTL
<b>Channels</b> (Outlet Direction)	A, B, Z, or A, $\bar{A}$ B, $\bar{B}$ Z, $\bar{Z}$	A, B, Z, or A, $\bar{A}$ B, $\bar{B}$ Z, $\bar{Z}$	A, B, Z, or A, $\bar{A}$ B, $\bar{B}$ Z, $\bar{Z}$
<b>Max. Speed</b>	4000 RPM	4000 RPM	4000 RPM
<b>Supply Voltage</b>	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC
<b>Working Temperature</b>	- 20 / + 80 °C	- 20 / + 80 °C	- 20 / + 80 °C
<b>Cable</b>	2.5 Meter ( Standard )	2.5 Meter ( Standard )	2.5 Meter ( Standard )
<b>Protection Class</b>	IP 50	IP 50	IP 50
<b>Shaft/Hole Dia.</b>	Ø 25 - 28 - 35 - 38 mm	Ø 4 - Ø 6- Ø 8- Ø 10 mm	Ø 6 - Ø 8 - Ø 10 mm
<b>Shaft Material</b>	Stainless Steel	Stainless Steel	Stainless Steel
<b>Housing Material</b>	Aluminium	Aluminium	Aluminium
<b>Housing Dia.</b>	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 linear & 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 transferring 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 20-25°C and should be came out as 50 -55°.

### Effect of Cooling Water on Mould:

#### Injection Errors

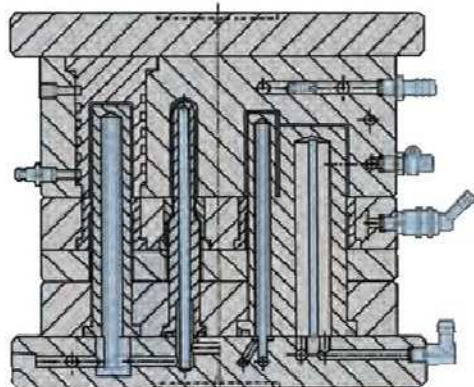
Drawing - Distortion-Sinking  
Fragility-Cracking - Shrinkage  
Visible Ejector Traces  
Tension Whitening

#### Solutions

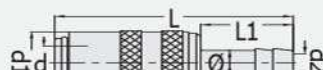
Cooling period Should be increased and  
Mould Water Runner System Should be controlled

### Automatic Sockets

Automatic sockets and bushes compatible with mould cooling systems 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 100°C . 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.

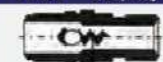


As per request  
Unclamped  
Hose Ended  
Coupling



**Valved System:** Provides controlled water flow, when coupling is removed, water flow is closed (Valved)  
**Non Valved System:** With free water flow, when bush is removed, circuit is open (Valveless).

Valved Coupling



Non Valved Coupling



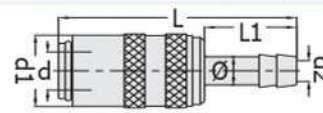
### AUTOMATIC, FAST CLUTCH, SMALL SIZE EURO TYPE

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
<b>W 560 - HGV 10</b>	W 560 - SG 10	10 mm 3/8"				<b>6</b>	



As per request  
Unclamped  
Hose Ended  
Coupling



**Valved System:** Provides controlled water flow, when coupling is removed, water flow is closed (Valved)  
**Non Valved System:** With free water flow, when bush is removed, circuit is open (Valveless).

Valved Coupling



Non Valved Coupling



### 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
<b>W 590 - HGV 13</b>	W 590 - HG 13	13 mm 1/2"				<b>10</b>	

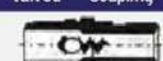


As per request  
Unclamped  
Hose Ended  
Coupling

Serie: **W 590**



Valved Coupling



Non Valved Coupling

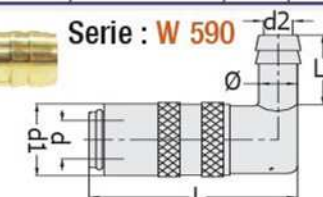


### AUTOMATIC, FAST CLUTCH COUPLING, 45° ANGLE

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
<b>W 590 - HGV 1345</b>	W 590 - HG 1345	13 mm 1/2"				<b>10</b>	



Serie: **W 590**



As per request  
Unclamped  
Hose Ended  
Coupling

Valved Coupling



Non Valved Coupling



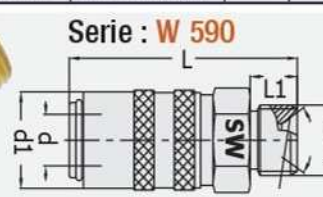
### AUTOMATIC, FAST CLUTCH COUPLING, 90° ANGLE

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
<b>W 590 - HGV 1390</b>	W 590 - HG 1390	13 mm 1/2"				<b>9</b>	

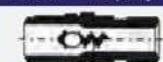


Male Gear Type  
Bush is also  
procurement  
be altered

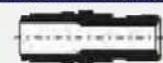
Serie: **W 590**



Valved Coupling

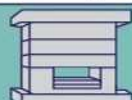


Non Valved Coupling

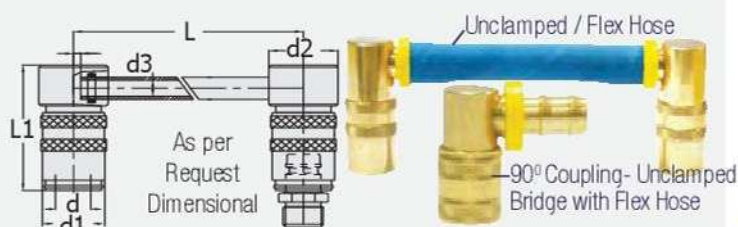


### AUTOMATIC, FAST CLUTCH COUPLING, MALE GEAR EURO TYPE

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	<b>G 1/4"</b>	13	52	23	11	21
<b>W 590 - EGV 21</b>	W 590 - EG 21	<b>G 1/2"</b>					







### Automatic Fast Clutch DOUBLE BRIDGE EURO TYPE W590KG

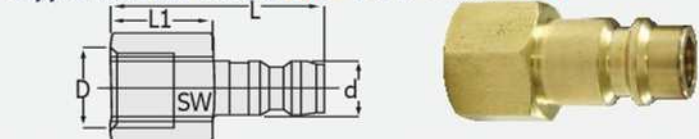
Order No (d x L)	d	L	L1	d1	d2	d3
W590 - KG 125	13	125	53	23	26	10
W590 - KG 250		250				13
W590 - KG 500		500				Flex Hose

### Automatic Fast Clutch BUSH / END Hose Input EURO TYPE W590HR

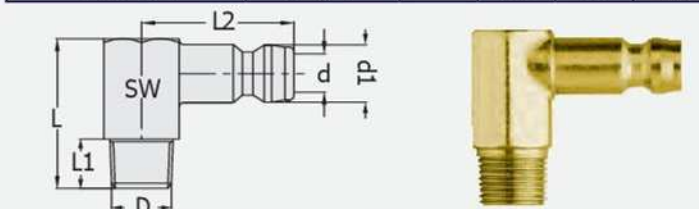


Order No : (d x L) ( Thread ) D	d	L	L1	d1
W590 FR 10	10 - 3/8"	9	41	24
W590 FR 13	13 - 1/2"	9	45	28

### Automatic Fast Clutch BUSH / END Capped Internal Thread EURO TYPE Serie: ORD

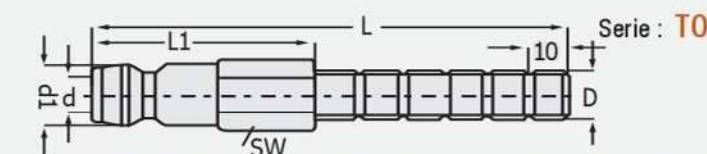


Order No : (d x L) ( Thread ) D	d	L	L1	SW
ORD M10	M10 x 1.5	13	24	10
ORD M12	M12 x 1.75		27	13
ORD 1/8	G 1/8"		24	10
ORD 1/4	G 1/4"		33	13



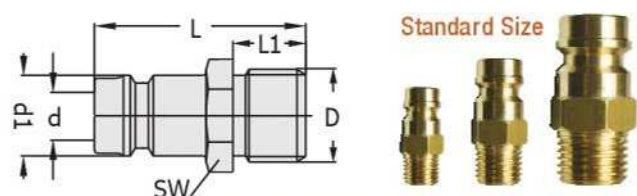
### Automatic Fast Clutch BUSH / END 90° ORTHOGONAL EURO TYPE

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
W590 ER 14-90	M14 x 1.5					15
W590 ER 17-90	G 3/8"					17



### Automatic Fast Clutch THREADED BATCH BUSH EURO TYPE

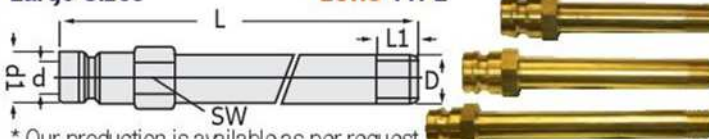
Order No (d x L) ( Thread ) D	d	L	L1	d1	SW
T 060 BLM10100	M10 x 1	9	100	40	13
T 060 BLM14100	M14 x 1.5				17
T 060 BL 10300	G 1/4"				14



### Automatic Fast Clutch BUSH / End EURO TYPE

Order No : (d x L) ( Thread ) D	d	L	L1	d1	SW
<b>Small Type</b>					
W560 ER M10	M10 x 1	6	24	7	9
W560 ER 10	G 1 x 8	6	24	7	9
W560 ER 13	G 1/4"	6	26	9	14
<b>Standard Type</b>					
W590 ER M10	M10 x 1	9	31	9	13.5
ORE M10	M10 x 1.5	9	31	9	13.5
ORE M12	M12 x 1.75	9	31	9	13.5
W590 ER M14	M14 x 1.5	9	31	9	13.5
W590 ER M16	M16 x 1.5	9	31	9	13.5
ORE 1/8	G 1/8"	9	31	7	13.5
ORE 1/4	G 1/4"	9	31	9	13.5
W590 ER 17	G 3/8"	9	31	9	13.5
<b>Large Type</b>					
W690 ER M24	M24x1.5	13	51	16	19
W690 ER 21	G 1/2"	13	47	12	19
W690 ER 26	G 3/4"	13	51	16	19

### Automatic Fast Clutch BUSH / End Large Sizes EURO TYPE

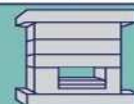


\* Our production is available as per request.

Order No : (d x L) ( Thread ) D	d	L	L1	d1	SW
<b>Standard Type</b>					
ORE M10.060	M10 x 1.5	6	11.5	13	60
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
<b>Standard Type</b>					
ORE M12.060	M12 x 1.75	7	11.5	13	60
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
<b>Standard Type</b>					
ORE 1/8.060	G 1/8"	6	11.5	13	60
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
<b>Standard Type</b>					
ORE 1/4.060	G 1/4"	8	12.5	13	60
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

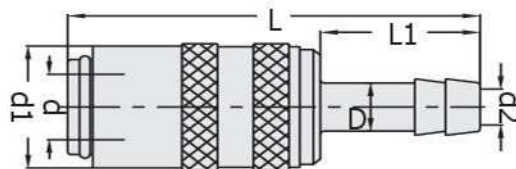
Material : Brass / Yellow Material  
Max. Temperature: 100°C

Section Injection Mould

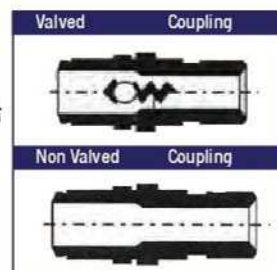


\* Bush, is supplied separately.

\* 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 (Valved).  
**Non Valved System** : With free water flow, when bush is removed, circuit is open (Valveless).



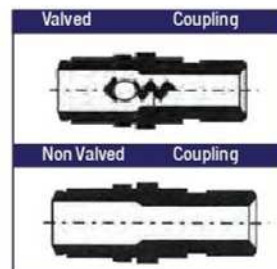
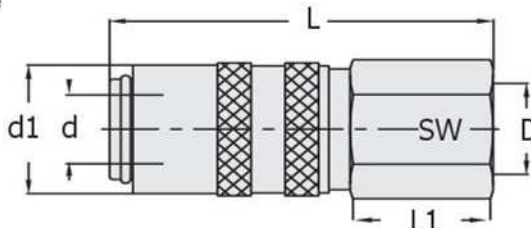
### Automatic Fast Clutch, HOSE INPUT COUPLING, Large Size EURO TYPE Serie : W 690

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 BUSHED LARGE / POWERFUL TYPE COUPLINGS



90° 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.

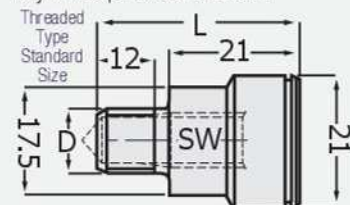


Flat Type Automatic Coupling

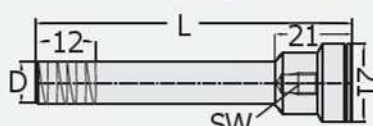
Never make corrosion

### AUTOMATIC, FAST CLUTCH COLOURED BUSH / END

In cases requiring continuous and high pressure resistance, also desired mounting and demounting facility on mould, this system bushes can be used. They can be worked up to 13 Bar pressure and approximate 150°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



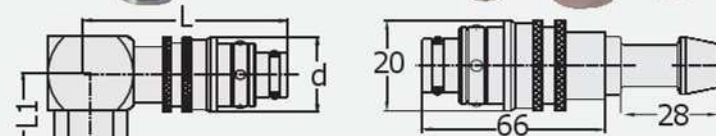
Order	D	L	SW
W600 ER10	R 1/8"	31	6
W600 ER13	R 1/4"	33	8
W600 ER17	R 3/8"	33	8
W600 M10	M10 x1.5	33	6
W600 M14	M14 x1.5	33	8

Order	D	L	SW
W600 10.100	R 1/8"	100	6
W600 10.150		150	
W600 10.200		200	
W600 10.250		250	
W600 13.100	R 1/4"	100	8
W600 13.150		150	
W600 13.200		200	
W600 13.250		250	

\* In order, pls. specify colour as per request



Section Injection Mould



In free flow (non valved) system, the valve can be added at rear side as per request. Bush connections are at side section.

#### 90° 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"

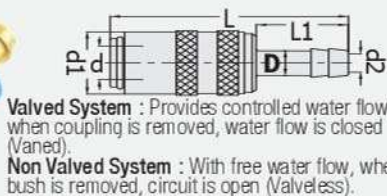


#### DUAL BRIDGE SYSTEM W600 UG

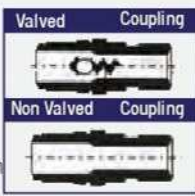
Order	L	L1
W600 UG 125	125	101
W600 UG 250	250	226
W600 UG 500	500	425



As per request, unclamped Hose Inlet Coupling



**Valved System** : Provides controlled water flow, when coupling is removed, water flow is closed (Valved).  
**Non Valved System** : With free water flow, when bush is removed, circuit is open (Valveless).

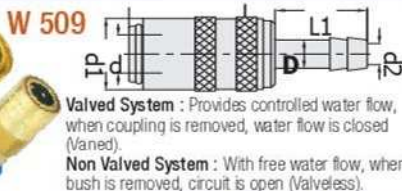


**AUTOMATIC, FAST CLUTCH COUPLING, SMALL SIZE USA TYPE Serie : W 506**

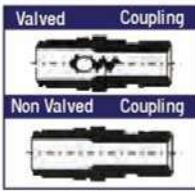
Order (Valved - Non Valved .d x L)		Connection Measure D	Small Size				
Valved	Non Valved		d	L	d1	d2	L1
W 506 - HGV 06	W 506 - SG 06	6 mm 1/4"	9	56	17	4,5	27
<b>W 506 - HGV 10</b>	W 506 - SG 10	10 mm 3/8"				<b>6</b>	



As per request, unclamped Hose Inlet Coupling



**Valved System** : Provides controlled water flow, when coupling is removed, water flow is closed (Valved).  
**Non Valved System** : With free water flow, when bush is removed, circuit is open (Valveless).



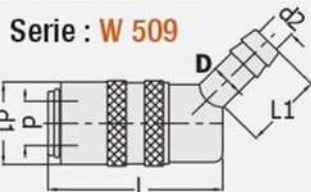
**AUTOMATIC, FAST CLUTCH COUPLING, STANDARD SIZE USA TYPE**

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
<b>W 509 - HGV 13</b>	W 509 - HG 13	13 mm 1/2"				<b>10</b>	

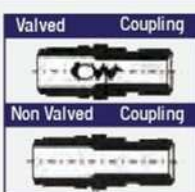


USA TYPE

As per request, unclamped Hose Inlet Coupling



Serie : W 509

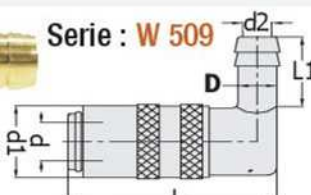


**AUTOMATIC, FAST CLUTCH COUPLING, 45° ANGULAR**

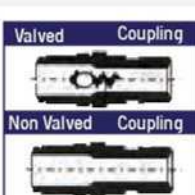
Order (Valved - Non Valved .d x L)		Connection Measure D	Standard Size				
Valved	Non Valved		d	L	d1	d2	L1
W 509 - HGV 1045	W 509 - HG 1045	10 mm 3/8"	13	38	23	8	29
<b>W 509 - HGV 1345</b>	W 509 - HG 1345	13 mm 1/2"				<b>10</b>	



As per request, unclamped Hose Inlet Coupling  
**USA TYPE**



Serie : W 509

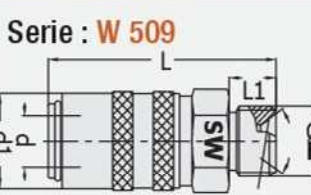


**AUTOMATIC, FAST CLUTCH COUPLING, 90° ANGULAR**

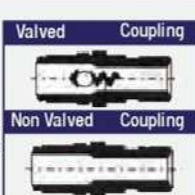
Order (Valved - Non Valved .d x L)		Connection Measure D	Standard Size				
Valved	Non Valved		d	L	d1	d2	L1
W 509 - HGV 1090	W 509 - HG 1090	10 mm 3/8"	13	39	23	8	29
<b>W 509 - HGV 1390</b>	W 509 - HG 1390	13 mm 1/2"				<b>10</b>	



Male type coupling will be supplied separately

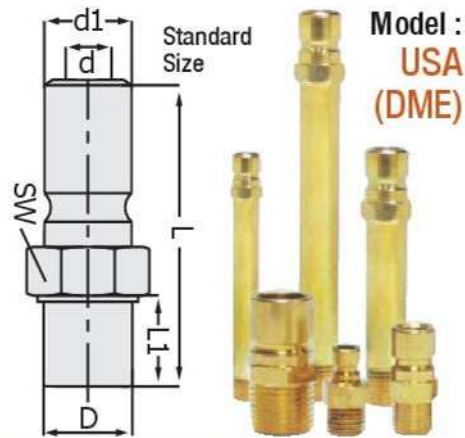


Serie : W 509



**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
<b>W 509 - EGV 21</b>	W 509 - EG 21	G 1/2"					



Model : USA (DME)

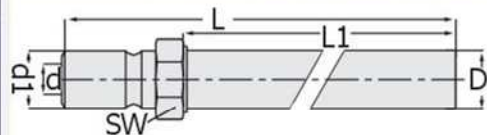
**Automatic Fast Clutch BUSH / END**

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 x 1.5	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			
509 EUR17 x (Length) L	G 3/8"	9	60	13	13	19
			80			
			100			
			150			
			200			



Section Injection Mould



## 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



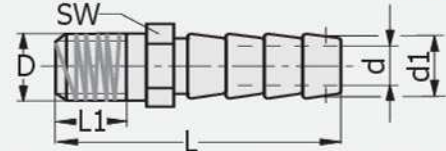
Order	D	L
HKE 01	04 mm	50
HKE 02	06 mm	50
HKE 03	08 mm	50
HKE 04	09 mm	50
HKE 05	13 mm	60
HKE 06	16 mm	60
HKE 07	19 mm	60



Economic Prices

## Hose Inlet, Mould COUPLING/END

Threaded Type, For Injection Mould

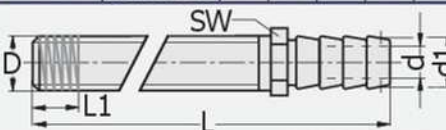


Material: Brass/Yellow

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

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



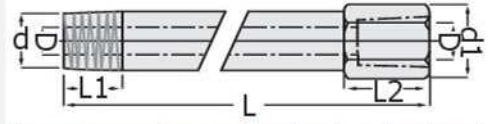
Material: Brass/Yellow

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

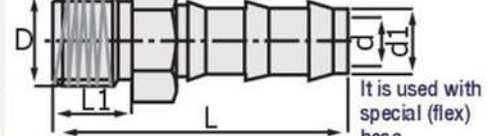


Order	D	d	L	L1	L2	d1
ARU 18060	G 1/8"	10	60	10	14	14
ARU 18080			80			
ARU 18100			100			
ARU 18150	150					
ARU 14060	G 1/4"	13	60	10	15	16
ARU 14080			80			
ARU 14100			100			
ARU 14150	150					



## Unclamped End, Threaded Coupling

Unclamped Connection with Flexible Hose



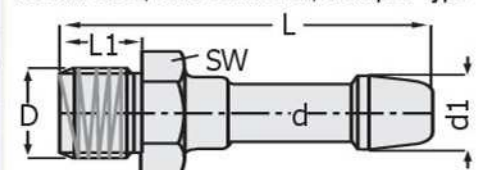
Material: Brass/ Yellow - Nickel Plated

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



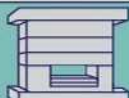
## Fast Connected End, COUPLING

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 - LIQUID WASHER



In Threaded Connections  
Teflon Band 10 mt. x 13 mm  
Order Code : GL.10321

WINKOL Teflon Reinforced  
Bush Sealing Chemical  
Order Code : 678511F50

404 Liquid Washer:  
300° 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

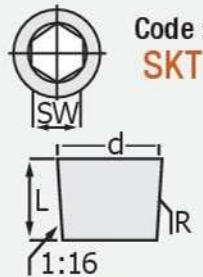
Stainless / Inox Material  
Extra Quality Clamp  
Capacity : 12 x 20  
Order No : HK1 1220

## 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

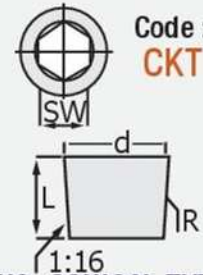
## WATER RUNNER PLUG, CONICAL TYPE

### 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
SKT 38	G 3/8"	15.9	14.1	8
SKT 12	G 1/2"	20.5	17.8	10



Code :  
CKT

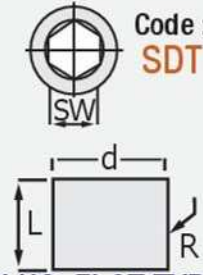
## WATER RUNNER PLUG, CONICAL TYPE

### 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



Code :  
SDT

## WATER RUNNER PLUG, FLAT TYPE

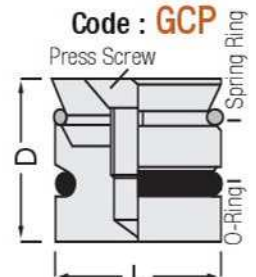
### Yellow Brass Material/ Blind Plug

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
SDT 38	G 3/8"	15.9	14.1	8
SDT 12	G 1/2"	20.5	17.8	10

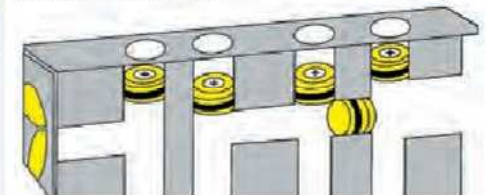


Code : GCP

## 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 0.1 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°C  
**Pressure Capacity :** Ø 6 - 8 mm = 16 Kg./cm<sup>2</sup>  
Ø 10-12 mm = 18 Kg./cm<sup>2</sup> Ø 14-16mm = 25 Kg./cm<sup>2</sup>

## 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

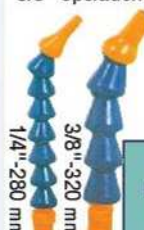


## FLEXIBLE "Cooling Liquid" HOSE

### 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



Page  
301

## AUTOMATIC FAST CLUTCH



**Metal Nut Proportional Nipple**

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

Max. Heat: 100°

## HOSE FASTENERS



**Metal Automatic Nipple Socket**

Yellow Casting /Nickel Plated

Non Corrosive  
Max. Heat: 100°

Order	Hose
M2 0404	4 mm
M2 0606	6 mm
M2 0808	8 mm
M2 1010	10 mm
M2 1212	12 mm

## FITTING GROUP

Plastic, Central Leg - Threaded "TE"



Max. Heat: 60°

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



**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



**Metal Automatic Rotary Elbow**

Max. Heat: 100°

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



**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

Max. Heat: 100°

**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



**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



**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



Non Corrosive

**Metal Nut "T" Socket**

Yellow Casting Nickel Plated

Max. Heat: 100°

Order	Hose
S3 0606	6 ~ 4
S30808	8 ~ 6
S3 1010	10 ~ 8
S3 1212	12 ~ 9



**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



Material: Polyester

**Automatic Plastic 3 Input "T"**

Max. Heat: 60°

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

**Plastic Automatic Clutch Socket**

Material: Polyester  
Max. Heat: 80°



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



**Automatic Plastic Elbow**

Material: Polyester  
Max. Heat: 60°

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



Material: Polyester

**Automatic Plastic 3 Inlet Reducer**

Max. Heat: 60°

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 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: 60°



**Automatic Plastic Reduction**

Material: Polyester

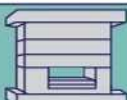
Order	Hose
P8 0604	4 ~ 6
P8 0806	8 ~ 6
P8 1008	10 ~ 8
P8 1210	12 ~ 10

Max. Heat: 60°



**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







## CIRCULATION REGULATOR

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.

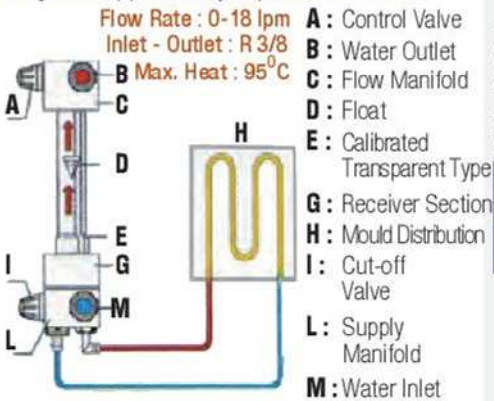
Inlet-Outlet distribution couplings of transparent tubes can be adjusted with Anodized/ Light Aluminium Casing and controlled system has been created with buttons.



Circulation Regulators ( Flow Indicators ) :

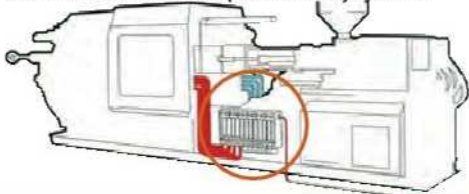
As per request

they are supplied as group of 4-6-8-10-12'.



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.



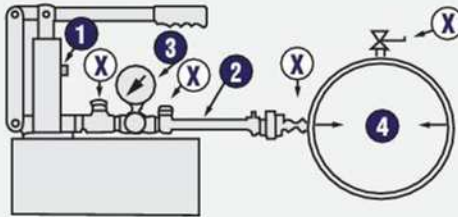
## MANUAL PRESSURE TEST PUMP

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 drained.) 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
<b>SSY.6</b>	6.3 Mpa	25 ml / s.



## CONCENTRATE 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

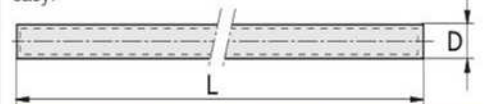
GH

Closed Circuit (Compressed Gas) Copper Pipe

Deep Male Core Cooling in Injection Mould:

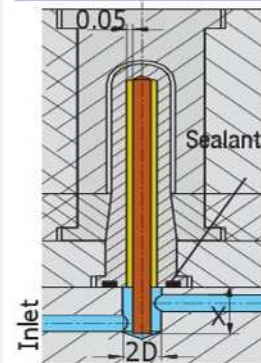
The cooling system is formed by rising heat to the upper points via compressed gas in pipe expeditiously, in Mounting at least 70% of conductor pipe remains inside the core, 30% of mould should remain in mould water runner.

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	D	L	D	L
Ø 3	40	Ø 5	60	Ø 8	80
	60		80		100
	80		100		120
	100		120		150
	120		150		200
Ø 4	150	Ø 6	200	Ø 10	250
	200		250		300
	250		300		350
	300		350		400
	350		400		450

Order : GH D x L Sealant Winkel Mix



## REPAIR PASTE

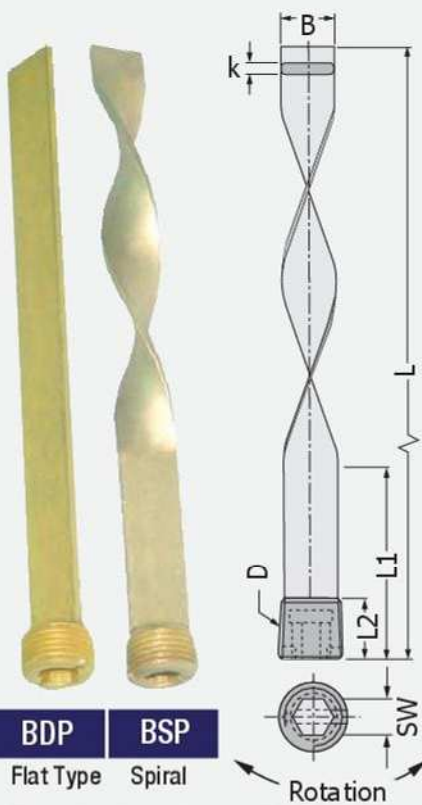
Winkel Mix Waser :

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** Flat Type  
**BSP** Spiral

### DEEP COOLING SEPARATOR

#### Deep Male / Die Cooling Spiral & Sheet Bar

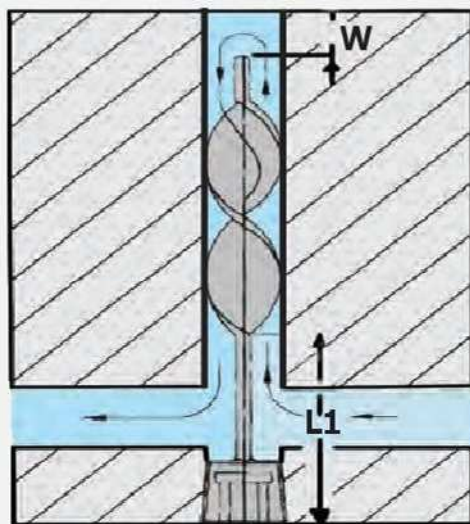
It is a deep male/die modular system for water flow system in injection moulds rapid water cooling process. It is processed from high quality yellow material in long size precision compatible with abrasion resistance and is resistant to high liquid pressure. Conical threaded rotary base strengthens water 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



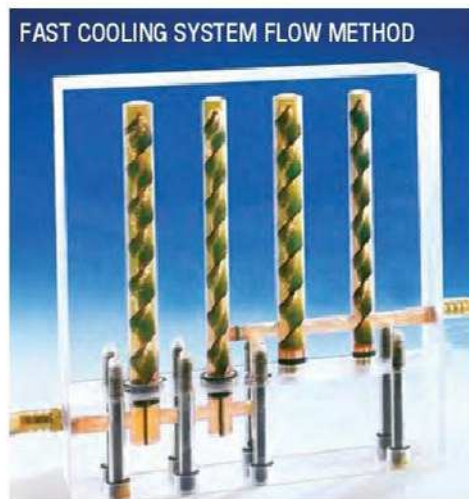
Material: Glass Fiber Reinforced Plastic

### PLASTIC, SPIRAL / MODULER DEEP COOLING SEPARATOR

It provides effective flow opportunity by creating balanced turbulence 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)

- At technical drawing in figure 1 and 3 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.
- 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 2, flat model is selected.

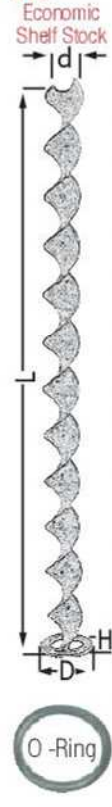


#### PLS. BASED SPIRAL

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

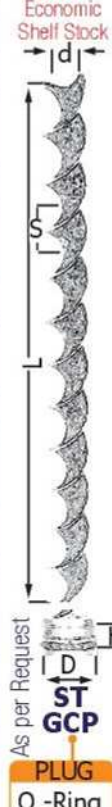


#### PLS. BASED SPIRAL

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

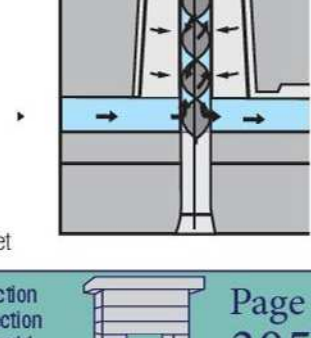
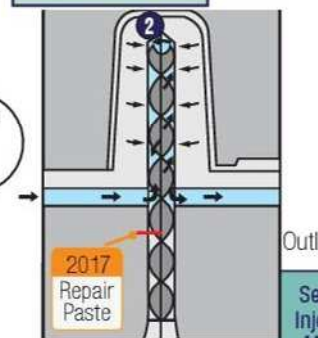
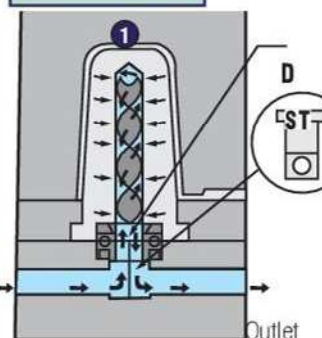


#### PLS. BASED SPIRAL

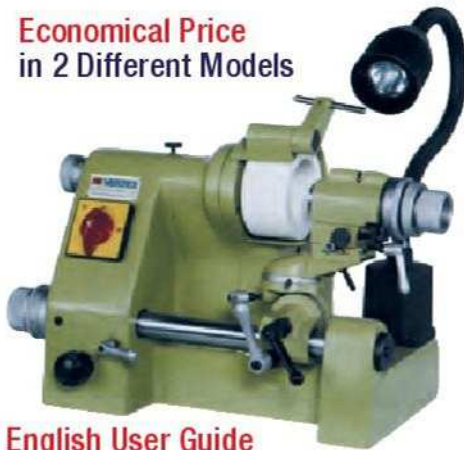
D	L	H	T
8	25	2	1.5
	30		1.5
	35		1.5
	40		1.5
10	25	2.5	1.8
	30		1.8
	35		1.8
	40		1.8
12	25	3	2.0
	30		2.0
	35		2.0
	40		2.0
16	25	4	3.0
	30		3.0
	35		3.0
	40		3.0
20	25	5	3.0
	30		3.0
	35		3.0
	40		3.0
25	30	6	4.0
	35		4.0
	40		4.0

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**

**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 - E Diamond Grind Stone**



**U2 - TDE  
Stone Whetting Diamond**



**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**

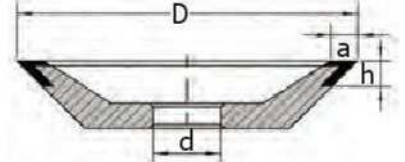
Order : **Model U2**  
(Radius Grinding) Precision

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.

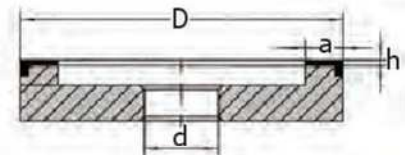


**Diamond, Conical Type / CBN 75**

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**

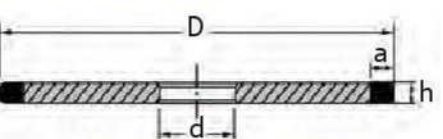


**Diamond, Perpendicular Type / CBN 75**

Order	D	d	a	h
C180.10053	Ø 100	20	5 mm	3 mm
C180.12553	Ø 125	20	5 mm	3 mm

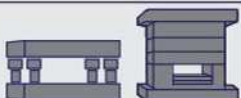


**DIAMOND DISH WHEEL DISC TYPE**



**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

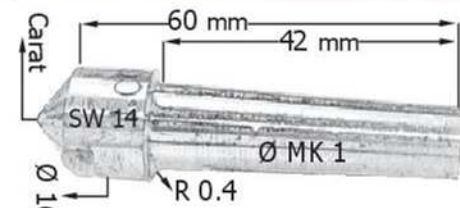
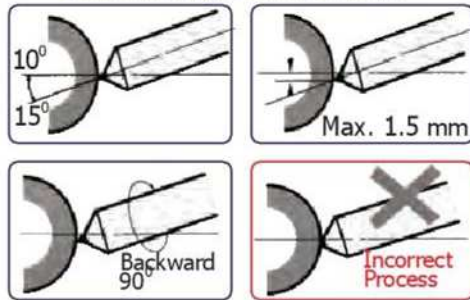




## STONE WHETTING DIAMOND TDE

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



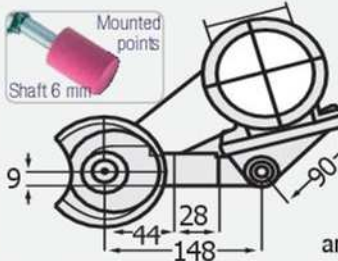
## Diamond Drill Line Pen ECK

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 :
Motor Power	ST - 175 Grinding
Speed m /min.	0.5 HP 380 V ~ 50 Hz
Shaft / Wheel Size	2800 m /min.
Suitable Machine	175x20x20 (25/32)
	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 :
Motor Power	ST - 201 Grinding
Speed m /min.	1 HP 380 V ~ 50 Hz
Shaft / Wheel Size	2800 m /min.
Suitable Machine	200x20x20 (25/32)
	2 Meter Lathe

\* Hole Grinding Equipment is with machine.

Support Grinding Machine Suitable to Dia. 202 Stone

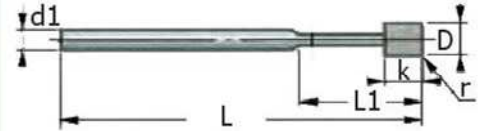
Machine Technical Data	Order No :
Motor Power	ST - 202 Grinding
Speed m /min.	2 HP 380 V ~ 50 Hz
Shaft / Wheel Size	3000 m /min.
Suitable Machine	200x20x20 (25/32)
	2 Meter and Over Lathe

\* 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	
ID203	2.0				12	
ID253	2.5				15	
ID303	3.0					
ID403	4.0	6	10	80	22	# 100
ID406	4.0					
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





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
<b>EKR10025</b>	100 x 25 x 20	# 36 Coarse
<b>EKR12520</b>	125 x 20 x 20	
<b>EKR15020</b>	150 x 20 x 20	
<b>EKR15025</b>	150 x 25 x 20	# 46 Medium
<b>EKR17520</b>	175 x 20 x 20	
<b>EKR17525</b>	175 x 25 x 20	# 60 Fine
<b>EKR20020</b>	200 x 20 x 20	
<b>EKR20025</b>	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
<b>NK15020</b>	150 x 20 x 20	# 36 Coarse
<b>NK15025</b>	150 x 25 x 20	
<b>NK17520</b>	175 x 20 x 20	
<b>NK17525</b>	175 x 25 x 20	# 46 Medium
<b>NK20020</b>	200 x 20 x 20	
<b>NK20025</b>	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
<b>SCG15020</b>	150 x 20 x 20	# 80 J5V Fine
<b>SCG15025</b>	150 x 25 x 20	
<b>SCG17520</b>	175 x 20 x 20	
<b>SCG17525</b>	175 x 25 x 20	
<b>SCG20020</b>	200 x 20 x 20	
<b>SCG20025</b>	200 x 25 x 20	



### Whetting / Grinding Motors

Workshop Type General Purpose Grinding / Whetting Works

Machine Technical Data	Order No : QSM-150 Grinder
Motor Power	450 W / 230 V - 50 Hz
Speed m /min.	2850 m /min.
Shaft/ Wheel Size	Ø 20 / 150 x 20 / 25
Machine Dimension	210 x 410 x 295 mm
Weight	12 Kg.

Order No : QSM-175 Grinder	Order No : QSM-200 Grinder
450 W/230 V-50 Hz	450 W/230 V-50 Hz
2850 m /min.	2850 m /min.
175 x 20 x 20	200 x 20 x 20
220 x 420 x 300	245 x 450 x 330
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**

### 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

For special size  
and quality demands,  
pls. call our company.



Rotating Speed: 35 m /s

### Flat Type Steel Grinding WHEELS

Order Specify Colour	Dimension Dia.xThicknessxHole	Sand
<b>EKR.1752032</b>	175 x 20 x 32	# 36 K6V Coarse
<b>EKR.1752051</b>	175 x 20 x 51	
<b>EKR.2000820</b>	200 x 8 x 20	
<b>EKR.2004016</b>	200 x 40 x 16	
<b>EKR.2002020</b>	200 x 20 x 20	
<b>EKR.2002032</b>	200 x 20 x 32	
<b>EKR.2002051</b>	200 x 20 x 51	
<b>EKR.2002520</b>	200 x 25 x 20	
<b>EKR.2002532</b>	200 x 25 x 32	
<b>EKR.2002551</b>	200 x 25 x 51	
<b>EKR.2502576</b>	250 x 25 x 76.2	# 46 K6V Medium
<b>EKR.2503076</b>	250 x 30 x 76.2	
<b>EKR.2504076</b>	250 x 40 x 76.2	
<b>EKR.3002076</b>	300 x 20 x 76.2	# 60 K6V Fine
<b>EKR.3002576</b>	300 x 25 x 76.2	
<b>EKR.3003076</b>	300 x 30 x 76.2	
<b>EKR.3004076</b>	300 x 40 x 76.2	
<b>EKR.30040127</b>	300 x 40 x 127	
<b>EKR.35040127</b>	350 x 40 x 127	
<b>EKR.35050127</b>	350 x 50 x 127	
<b>EKR.40040127</b>	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





## 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
				# 150	
				# 180	
<b>4 x 4 x100</b>	<b>6 x 3 x150</b>	<b>Ø 6 x150</b>	<b>8 x 8 x150</b>	# 220	Pre Polishing
				# 280	
				# 320	
<b>6 x 6 x150</b>	<b>13 x 3 x150</b>	<b>Ø 8 x150</b>	<b>10 x 10 x150</b>	# 400	Last/Final Polishing
				# 600	
				# 800	
<b>8 x 8 x150</b>	<b>13 x 6 x150</b>	<b>Ø 10 x150</b>	-	# 1000	
<b>10 x 10 x150</b>	-	<b>Ø 12 x150</b>	-		

Order E.G. 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		Filing Machine Holder		Filing Machine 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 Ø 3.0 mm
KS40	40 x 1.0	
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
CSY # 700	1 x 6 x100	3 x 100 mm
CSR # 1200	1 x10x100	

Order TYPE/SANDxDIMENSION

### SELECTION TABLE

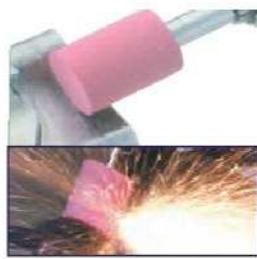
1 x 4 x 100		Order No : XH 041
1 x 6 x 100		Order No : XH 061
1 x 10 x 100		Order No : XH 101
Diameter : 3 x 100		Order No : XH 22K
Pneumatic Filing Spare Holders		Order : AR 664 AR 665 AR Ø 662



CERATON CERAMIC SUPER STONE



Page 309



## Pink, Mounted Levelling Points Shaft 3 mm

They are combine suitable to soft and hard surfaces. Imported Product  
 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 :  $n = V (m/s) \times 60.000$

$$D = (mm) \times 3.14$$

Mounted points can be selected from table.

Type Form A / R	D	L	Order	D x L
	3 mm		256A	2.5 x 6
			308A	3 x 8
			410A	4 x 10
			510A	5 x 10
			612A	6 x 12
			816A	8 x 16
			1016A	10 x 16
			813R	8 x 13

Type Form B / R	D	L	Order	D x L
			30B	Ø 3
			40B	Ø 4
			50B	Ø 5
			60B	Ø 6
			80B	Ø 8
			100B	Ø 10
			120B	Ø 12
			1224R	12x24

Type Form C / F	D	L	Order	D x L
			2508C	25 x 8
			3208C	32 x 8
			4010C	40 x 10
			1220D	12 x 20
			2035D	20 x 35
			0816F	8 x 16
			1320F	13 x 20
			2032F	20 x 32

Type Form E	D	L	Order	D x L
			308T	3 x 8
			310T	3 x 10
			412T	4 x 12
			710T	7 x 10
			412J	4 x 12
			616J	6 x 16
			816J	8 x 16
			1016J	10 x 16
			609S	6 x 9

Type Form G / H / J	D	L	Order	D x L
			2016G	20 x 16
			2520G	25 x 20
			10H	Ø 10
			15H	Ø 15
			20H	Ø 20
			1225J	12 x 25
			1632J	16 x 32
			2040J	20 x 40

**DEDECO Spiral Stone**  
 92560  
  
**MANNESMAN 12 Shank 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	D	L	Order	D x L
			1608A	16 x 8
			2008A	20 x 8
			2016A	20 x 16
			2510A	25 x 10
			2520A	25 x 20
			3220A	32 x 20
			4025A	40 x 25
			5030A	50 x 30

Type Form B	D	L	Order	D x L
			1015B	10 x 15
			1620B	16 x 20
			2020B	20 x 20
			2030B	20 x 30
			2040B	20 x 40
			2525B	25 x 25
			2532B	25 x 32
			3240B	32 x 40

Type Form C / F	D	L	Order	D x L
			2508C	25 x 8
			3208C	32 x 8
			4010C	40 x 10
			1220D	12 x 20
			2035D	20 x 35
			0816F	8 x 16
			1320F	13 x 20
			2032F	20 x 32

Type Form E	D	L	Order	D x L
			0816E	8 x 16
			1230E	12 x 30
			1640E	16 x 40
			2030E	20 x 30
			2040E	20 x 40
			2525E	25 x 25
			2540E	25 x 40
			3240E	32 x 40

Type Form G / H / J	D	L	Order	D x L
			2016G	20 x 16
			2520G	25 x 20
			10H	Ø 10
			15H	Ø 15
			20H	Ø 20
			1225J	12 x 25
			1632J	16 x 32
			2040J	20 x 40

**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

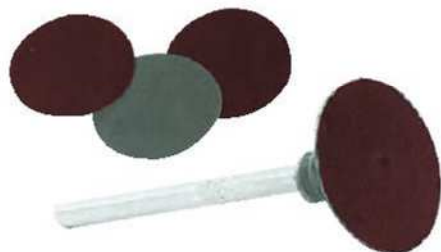




### Metal WIRE, MOUNTED BRUSH

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	<b>Order : STF158</b>
	Conical Wire, Mounted Brush Yellow/ Brass Wire Shaft: 2.35 or 3 mm	<b>Order : SMF158</b>
	Wire Disc, Mounted Brush Yellow/ Brass Wire Shaft: 2.35 or 3 mm	<b>Order : STF222</b>
	Wire Disc, Mounted Brush Yellow/ Brass Wire Shaft: 2.35 or 3 mm	<b>Order : SMF222</b>
	Pen, Wire Mounted Brush Inox / Metal Wire Shaft: 2.35 or 3 mm	<b>Order : STF148</b>
	Pen, Wire Mounted Brush Inox / Metal Wire Shaft: 2.35 or 3 mm	<b>Order : SMF148</b>



### 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
<b>DZ 10</b>	Ø 10		Ø 10	<b>3 mm</b>
<b>DZ 18</b>	Ø 18	# 080	Ø 18	
<b>DZ 30</b>	Ø 30	# 120	Ø 30	
<b>DZ 45</b>	Ø 45	# 220	Ø 45	
<b>DZ 70</b>	Ø 70	# 320	Ø 70	
<b>DZ 80</b>	Ø 80	# 400	Ø 80	
<b>DZ 100</b>	Ø 100		Ø 100	<b>6 mm</b>
<b>DZ Set</b>	5 + 5 Coarse / Fine Emery + Holder			

\* At order, pls. specify shaft measure and emery sand.



### SPIRAL BAND Holder + Emery

SMALL SIZE SET PACKAGING 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	<b>ML.04</b>	Ø 4	# 120
	<b>ML.05</b>	Ø 5	# 320
5 Pieces Emery 320 Sand	<b>ML.06</b>	Ø 6	# 400
	<b>ML.08</b>	Ø 8	# 600
1 Piece Rubber Holder	<b>ML.10</b>	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
<b>SPZ.12</b>	Ø 12 x 25	
<b>SPZ.15</b>	Ø 15 x 25	
<b>SPZ.20</b>	Ø 20 x 30	# 80
<b>SPZ.25</b>	Ø 25 x 30	# 120
<b>SPZ.30</b>	Ø 30 x 30	# 220
<b>SPZ.40</b>	Ø 40 x 30	
<b>SPZ.50</b>	Ø 50 x 30	
<b>SPZ.60</b>	Ø 60 x 35	

Order	Rubber	Shaft-Length
<b>SPL.12</b>	Ø 12	Ø 6 - 60
<b>SPL.15</b>	Ø 15	Ø 6 - 60
<b>SPL.20</b>	Ø 20	Ø 6 - 60
<b>SPL.25</b>	Ø 25	Ø 6 - 60
<b>SPL.30</b>	Ø 30	Ø 6 - 60
<b>SPL.40</b>	Ø 40	Ø 6 - 65
<b>SPL.50</b>	Ø 50	Ø 6 - 65
<b>SPL.60</b>	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	Order	D x L
3 mm			<b>RK04</b>	4 x 13
			<b>RK05</b>	5 x 15
			<b>RK06</b>	6 x 17
			<b>RK08</b>	8 x 20
			<b>RK10</b>	10 x 20

Type Form	RB	Shaft	Order	D x L
6 mm			<b>RB15</b>	15 x 25
			<b>RB20</b>	20 x 25
			<b>RB25</b>	25 x 25
			<b>RB30</b>	30 x 30
			<b>RB35</b>	35 x 35



### Mounted Polishing RUBBERS

Ceramic / Hard Type - Leveling Polishing

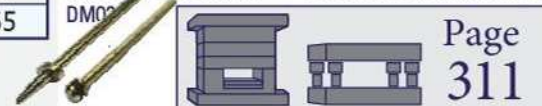
Type Form	CK	Shaft	Order	D x L
3 mm			<b>CK04</b>	4 x 13
			<b>CK05</b>	5 x 15
			<b>CK06</b>	6 x 17
			<b>CK08</b>	8 x 20
			<b>CK10</b>	10 x 20

Type Form	CB	Shaft	Order	D x L
6 mm			<b>CB15</b>	15 x 25
			<b>CB20</b>	20 x 25
			<b>CB25</b>	25 x 25
			<b>CB30</b>	30 x 30
			<b>CB35</b>	35 x 35



### 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 : Screwed Drill Chuck : VM03  
 DM03





### 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 felt is **imported product**. In application, avoid Extreme High Pressure..! In polishing: Diamond Compound is used by thinning.

Type Form AB	Diagram showing various cylindrical felt shapes with diameter (D) and length (L) labels.							
Order	0408A	0509A	0610A	0810A	1014A	1220A	1520A	2020A
D x L	4 x 8	5 x 9	6 x 10	8 x 10	10 x 14	12 x 20	15 x 20	20 x 20

Type Form AB	Diagram showing various cylindrical felt shapes with different top profiles.							
Order	0408C	0509C	0610C	0810C	1013C	1214C	1220A	1218H
D x L	4 x 8	5 x 9	6 x 10	8 x 10	10 x 14	12 x 20	15 x 20	20 x 20

Type Form AC	Diagram showing various pointed cylindrical felt shapes.								
Order	0410J	0512J	0616J	0817J	1014J	1020J	1220J	1225J	1218T
D x L	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

Type Form AC	Diagram showing various flat and cylindrical felt shapes.								
Order	08B	10B	12B	18B	1014R	1225R	2505L	2207L	2210L
Ø	8	10	12	18	10 x 14	12 x 25	25 x 5	22 x 7	22 x 10



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	Diagram showing various cylindrical felt shapes with diameter (D) and length (L) labels.						
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	Diagram showing various cylindrical felt shapes with different top profiles.						
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	Diagram showing various pointed cylindrical felt shapes.						
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	



G.133

### Manual Run, Rod Felt

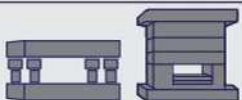
Usage with machines, Square Felt  
At machines: It is used with plastic holder equipment (G. 133).

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 Bars, Wood Felts

Order	Dimension	Type
AC 06	6 x 6 x 150	Square
AC 10	10x10 x 150	
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	

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.



G.133 Holder



## "PLEXIGLASS" Polishing Kits

It becomes a precision diamond diamond riffler at application on surfaces of 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 Plexi Glas	Square
PC 08	8 x 8 x 6 mm Plexi Glas	
PC 13	13 x 6 x 150 mm Plexi Glas	
PC 19	19 x 8 x 850 mm Plexi Glas	Rectangle



## Hair, Mounted Brushes for Diamond Compound

Hair brushes facilitating polishing process and not requiring extra kits form excellent surfaces with fine micron diamond pastes at final polishing.

			
Order : SKF 022	Order : SKF 168	Order : SKF 016	Order : SKF 068



## 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.	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.	
SDP.10	10 / 7 µ	#1.700	20 Gr.	Pre Polishing Precision Gloss
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.	

As per request, in 40 Gr. Packing.

**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 dirt 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



Page 313



**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
<b>BM22A</b>	25.000 d/d Power: <b>125Watt</b>
<b>BM23A</b>	25.000 d/d Power: <b>200Watt</b>
<b>BM26A</b>	25.000 d/d Power: <b>275Watt</b>
<b>BM24A</b>	22.000 d/d Power: <b>500Watt</b>

Motor Hanger Screwed Connection  
Adjustable Length-Rotary Arm-Modular

Order	Product
<b>M18A</b>	Motor Hanger



**MONOPHASE 220 - 230 V SPEED PEDAL**  
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
<b>BM...W</b>	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
<b>M19KK</b>	Spiral Whip Length 965 cm
<b>M19FTK</b>	Ratchet Whip without Tool Piece
<b>YP... Ø</b>	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

90° Angular Rotary Head - Tool Piece

### ROTARY HEAD - TOOL PIECE

For Ratchet Type Whips without Tool Piece:  
For 3 mm plier capacity / connection sets

Order	Product
<b>M20KPT</b>	Rotary Head - Tool Piece
<b>DK 36</b>	Rotary - 90° Angular Tool Piece



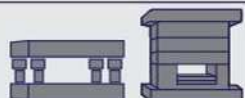
### CAMPAIGNED HOBBY SETS

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.

<b>AG-260</b>	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.

<b>AG-360</b>	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



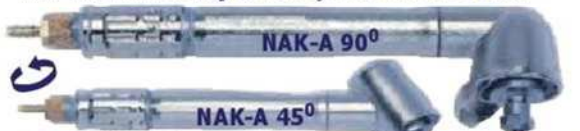
Standard Accessories



**AG - 460: POWERFUL SPIRAL**  
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

<b>AG-460</b>	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

<b>NAK-A 45°</b>	<b>NAK-A 90°</b>	Mounted Point / Felt / Brush etc	
Capacity	Speed m/m	Machine Dimensions	Weight
3 / Ø 30	35.000	<b>NAK 45°</b> 18 x 160	190 gr.
3 / Ø 30	35.000	<b>NAK 90°</b> 18 x 155	185 gr.

PNEUMATIC, PRECISION-ANGULAR, AND FLAT GRINDING MACHINE



Standard Accessories



**AG 45° - AG 90°**  
At both models, Grinding Equipments

<b>AG - 45°</b>	<b>AG - 90°</b>	Grinding Stone / Emery Disc	
Capacity	Speed m/m	Machine Dimensions	Weight
Ø 30	23.500	<b>AG 45°</b> Ø 17 x 153	180 gr.
Ø 30	23.500	<b>AG 90°</b> Ø 17 x 140	170 gr.

SPARES



AR - 664 AR - 665

1 - 3 mm Ceramic Stone Holder

Order	Set
AR - 664	AR - 030
1 mm	AR - 070
AR - 665	SAR - 070
3 mm Ceramic	AR - 300
Polishing Stone Holder	AR - 991
	Optional



AR - 662

Ø Dia. 3.0 mm Ceramic Stone Holder

Order	Set
AR - 662	AR - 030
Circular Ceramic	AR - 070
Stone Holder	SAR - 070
3 x 100	-
	Optional



AR - 666

AR - 667

6.3 x 13 mm Polishing Stone/ Felt Holder

Order	Set
AR - 666	AR - 030
6.3 x 13	AR - 070
AR - 667	AR - 300
3.2 x 13	SAR - 070
Gas Stone Holder	AR - 991
	Optional



AGC-01 AGS-01 AGP-01

Grinding Wheel / Emery Disc

Order	Set
AGC-01	NAK - A 45
AGS-01	NAK - A 90
	AG - 45
AGP-01	AG - 90
Ø 30 mm	Optional



AG - 672 / 673 / 676

Ø Dia. 2.35 - 3 and 6 mm Pneumatic Tool Holder Plier

Order	Set
AG - 672	AG - 260
Dia. 2.35	AG - 360
AG - 673	AG - 460
Dia. 3 mm	NAK 45°
AG - 676	NAK 90°
Dia. 6 mm Plier	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.

<b>AR-030</b>	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.

<b>AR-070</b>	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.

<b>AR-300</b>	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.

<b>SAR-070</b>	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.

<b>AR - 991</b>	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.

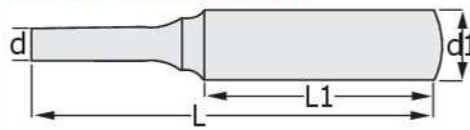


Pls. comply with working speed instructions.

**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 :** 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	450-600 m/min.
	Fine Processing	500-600 m/min.
Steels up to 38 HRC. With heat treatment	Coarse Processing	250-300 m/min.
	Fine Processing	350-450 m/min.
Stainless, (Inox)	Coarse Processing	250-350 m/min.
	Fine Processing	350-450 m/min.
Austenitic - Ferritic	Coarse Processing	250-350 m/min.
	Fine Processing	350-450 m/min.
Non-Ferrous Metals Aluminium, Brass	Coarse Processing	250-350 m/min.
	Fine Processing	350-450 m/min.
Cast Iron Heat Treated, Grey	Coarse Processing	450-600 m/min.
	Fine Processing	500-600 m/min.

### Recommended Cutting Speed /Cycle (m /min.)

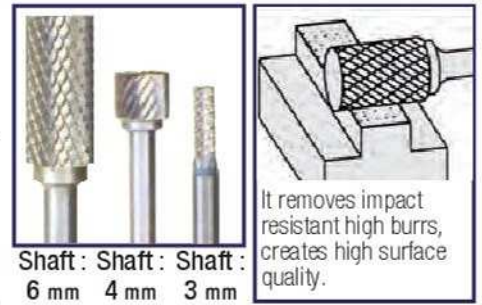
Tool Dia.	Cycle ( RPM )				
	250	300	350	400	500
2 mm	40.000	48.000	56.000	64.000	80.000
3 mm	27.000	32.000	37.000	42.000	53.000
4 mm	20.000	24.000	28.000	32.000	40.000
6 mm	13.000	16.000	19.000	21.000	27.000
8 mm	10.000	12.000	14.000	16.000	20.000
10	8.000	10.000	11.000	13.000	16.000
12	7.000	8.000	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 \* Peripheral 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 : Shaft : Shaft :  
6 mm 4 mm 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 : Shaft : Shaft :  
6 mm 6 mm 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	



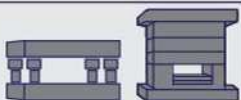
Shaft : Shaft : Shaft :  
6 mm 4 mm 3 mm

It removes burrs at side and inner surfaces, creates high surface quality.

## Tungsten, Diamond Carbide Mill

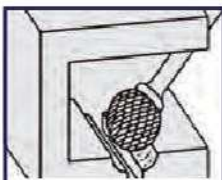
Head Cutter Cylindrical Mill Code : SC

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 : Shaft : Shaft :  
6 mm 4 mm 3 mm



It creates smooth surfaces, ball shaped combination for round ended surfaces.

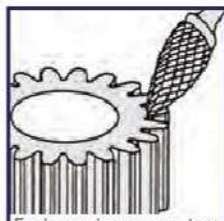
### Tungsten, Diamond Carbide Mill

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 : Shaft :  
6 mm 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 : Shaft :  
6 mm 3 mm



With hole chamfers, on surfaces of radius precision figures.

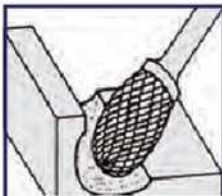
### Tungsten, Diamond Carbide Mill

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 : Shaft :  
6 mm 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 : Shaft :  
6 mm 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 : Shaft :  
6 mm 3 mm



Reverse conical type to work at hard-to-reach rear sides surfaces.

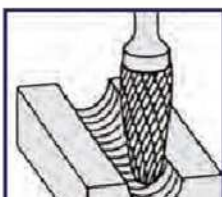
### Tungsten, Diamond Carbide Mill

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 : Shaft :  
6 mm 3 mm



Processing of corners, bottom of round figures and surfaces

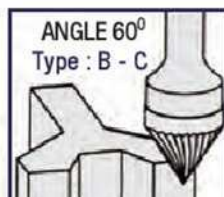
### Tungsten, Diamond Carbide Mill

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 : Shaft :  
6 mm 3 mm



It is to open countersunk and to chamfer with specific end angles.

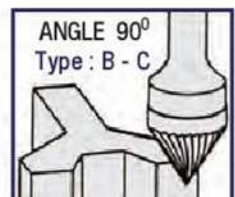
### Tungsten, Diamond Carbide Mill

ANGLE 60° 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)		6.0	4.0	50	
SJ.3 (Type)	6	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 : Shaft :  
6 mm 3 mm



It is to open countersunk and to chamfer with specific end angles.

### Tungsten, Diamond Carbide Mill

ANGLE 60° 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)		6.0	3.0	50	
SK.3 (Type)	6	9.5	4.7	52	C
SK.6 (Type)		16	8	57	





**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.

Full Length 45 mm	Shaft 3 mm									
		<b>Order</b>	<b>10A</b>	<b>15A</b>	<b>20A</b>	<b>25A</b>	<b>30A</b>	<b>35A</b>	<b>40A</b>	<b>50A</b>
<b>D x L</b>		1x8	1.5x8	2x8	2.5x8	3x10	3.5x10	4x10	5x10	3x10

<b>Order</b>	<b>20B</b>	<b>30B</b>	<b>50B</b>	<b>15C</b>	<b>20C</b>	<b>25C</b>	<b>30C</b>	<b>35C</b>	<b>40C</b>	<b>50C</b>
<b>Ø 2</b>		Ø 3	Ø 5	1.5x8	2 x 8	2.5x8	3x10	3.5x10	4x10	5x10

<b>Order</b>	<b>20F</b>	<b>30F</b>	<b>50F</b>	<b>20P</b>	<b>30P</b>	<b>15R</b>	<b>20R</b>	<b>30R</b>	<b>20T</b>	<b>30T</b>
<b>2x10</b>		3x10	5x10	2x12	3x15	1.5x10	2x12	3x14	2x10	3x10

<b>Order</b>	<b>40Q</b>	<b>30S</b>	<b>40S</b>	<b>30D</b>	<b>886L</b>	<b>86L</b>
<b>4 x 7</b>		3 x 6	4 x 8	30x0.5	8 x 8	Ø 8
				Ø 18 Disc Ø 25 Disc 3-Chuck	Shaft : 6 mm Length : 52	Shaft : 6 mm Length : 52



**BMS 30 30 Pcs. Diamond CBN Set**



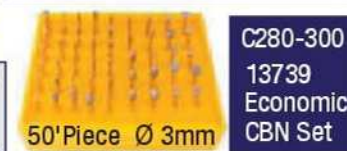
**T30 30 Pcs. Economic CBN Set**



**BMS 30 20 Pcs. Diamond CBN Set**



**T20 20 Pcs. Economic CBN Set**



**50'Piece Ø 3mm**

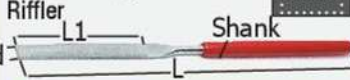
**C280-300**  
**13739**  
**Economic**  
**CBN Set**



**Diamond, Precision Riffler**  
**In Tool Making Applications**

**Economic Riffler** using with hand at mechanics requiring general sensitivity

**Sheet Bar Type Diamond**



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**

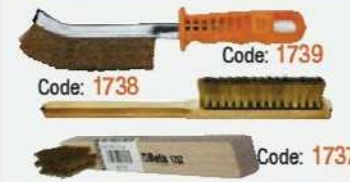
Order	Shank	d x L1 x L
EYE-140	Ø4	Ø3x 70 x140
EYE-160	Ø5	Ø4x 50 x160
EYE-200	5.5	Ø4x 70 x200

**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**



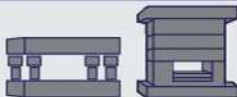
**Economic Diamond File Set**  
 10 Pcs. Different Types, Thick and Long Serie

**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



Order	a	b (Angular)	Length
CF-503	6.1	0.60-2.40	L1 60 mm
CF-502	8.2	0.60-2.40	L 180 mm
CF-501	10.2	0.70-2.60	

### THICK TYPE DIAMOND RIFFLER

Round - Wide Model, Hand Type



Order	Shank	Dimension
IF 503	5 x 5	End Dia. : 5.2 Length: 80 x 215

Half Round - Wide Model



Order	Shank	Dimension
IF 502	11 x 4	End : 9 x 4 Length: 80 x 215

Hand / Sheet Bar - Wide Model



Order	Shank	Dimension
IF 501	11 x 4	End : 11 x 4 Length: 80 x 215

Triangle - Wide Model, Hand Type



Order	Shank	Dimension
IF 505	11 x 4	End : 8 x 8 Length: 80 x 215

Square - Wide Model, Hand Type



Order	Shank	Dimension
IF 504	6 x 6	End : 6 x 6 Length: 80 x 215

### THICK & SHANK, Fitter

Type, Small Model Diamond Riffler



Order	Length	Width-Thickness
HX 4	100 4"	12.2 x 3.5 mm

Fitter Type, Large Model Riffler



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

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50

Order : CF 50



### CURVED - DIAMOND FILE SET

6 Different Model Moulder Type

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800

Order : BF 800



### MACHINE; DIAMOND FILE SET

12 Pieces Sheet Bar Different Sand/Size

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

Order : MTF - 100

### 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

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50

Order : IF 50



## PRECISION NEEDLE RIFFLERS

In Tool Making Applications

It is ideal to work at smallest surfaces, volumes, profiles and angles, thanks to forging pivana, can be used with or without shank.



Order	Shank	a x b	L	Processing
SLE 140	∅	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
SYE 140	∅	5.0 x 1.75	140	3 Side Operation
SYE 160	3	5.5 x 2.0	160	

### Round Needle Riffler



Order	Shank	a(Conical)	L	Processing
SYE 140	∅	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	∅	1.3 x 2.5	140	4 Side Operation
SKE 160	3	1.4 x 2.7	160	

### Triangle Needle Riffler

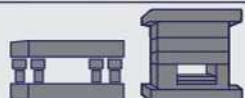


Order	Shank	a(Conical)	L	Processing
SUE 140	∅	1.0 x 3.2	140	3 Side Operation
SUE 160	3	1.3 x 3.4	160	



## 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

Order	Size	Tooth	a	b	L
MTE 100	4"	Coarse	10	2.5	<b>100</b>
MTE 150	6"		16	3.0	<b>150</b>
MTE 200	8"	Fine, as per request	20	4.0	<b>200</b>
MTE 250	10"		25	5.0	<b>250</b>
MTE 300	12"		30	6.5	<b>300</b>

## SQUARE Type - Fitter Rifflers

Square Rifflers, Pirivana, 3 Side Cutting



**Coarse Tooth:** Square file, conical, pivana, 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	6.3	4.0	<b>100</b>
KTE 150	6"		11	6.0	<b>150</b>
KTE 200	8"	Fine as per request	14	8.0	<b>200</b>
KTE 250	10"		17	10	<b>250</b>
KTE 300	12"		20	12	<b>300</b>

## 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	<b>250</b>
ALE 300	12"		30	6.5	<b>300</b>



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"
ESY 08	∅		6"
ESD 10	∅		8"
ESD 12	∅		10"
Needle Riffler	∅	All Model Needle Rifflers	12"

## 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	10	2.5	<b>100</b>
LHE 150	6"		16	4.0	<b>150</b>
LHE 200	8"	Fine as per request	20	5.0	<b>200</b>
LHE 250	10"		25	6.5	<b>250</b>
LHE 300	12"		30	7.0	<b>300</b>

## 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	10	3.3	<b>100</b>
YYE 150	6"		16	5.0	<b>150</b>
YYE 200	8"	Fine, as per request	20	6.0	<b>200</b>
YYE 250	10"		25	7.0	<b>250</b>
YYE 300	12"		30	9.0	<b>300</b>

## 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	∅ 4	4.0	<b>100</b>
YTE 150	6"		∅ 6	6.3	<b>150</b>
YTE 200	8"	Fine as per request	∅ 8	8.0	<b>200</b>
YTE 250	10"		∅ 10	10	<b>250</b>
YTE 300	12"		∅ 12	13	<b>300</b>

## 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	∅ 4	4.0	<b>100</b>
UTE 150	6"		∅ 6	6.3	<b>150</b>
UTE 200	8"	Fine, as per request	∅ 8	8.0	<b>200</b>
UTE 250	10"		∅ 10	10	<b>250</b>
UTE 300	12"		∅ 12	13	<b>300</b>



## NEEDLE RIFFLER SETS



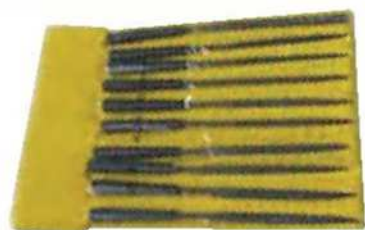
**BAHCO - 12 Pcs Needle Riffler Set**  
12 Different Types 3 x 160 Needle Rifflers

Order : **BSE 12 - 12 Pcs. Needle Rifflers**



**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 Pcs. NEEDLE RIFFLER SET**



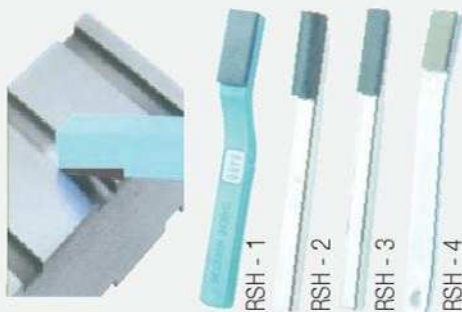
4 x 160 Different Type Needle Riffler 5 Pcs.

Order : **RESO 105**



**BETA / 6 Pcs. Needle Riffler Set**  
Professional, High Quality Riffler Set

Order : **1720 B**



**HAND TYPE-CBN DIAMOND COATED RIFFLER**

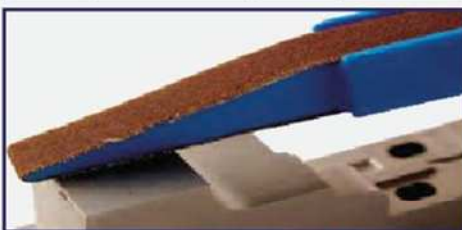
**Levelling - Polishing - Whetting**

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 x 2 x 30	#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 Spare Strip Emery with Holding Emery 10 Pcs. Packing

Order : **KZ 310**

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	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, Cloth #1000 Sand (Blue) Cloth Band CBN Diamond Strip  
Order Code: 1100 R



Page  
321



Drill Chuck  
Shaft: 3 mm



### 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),

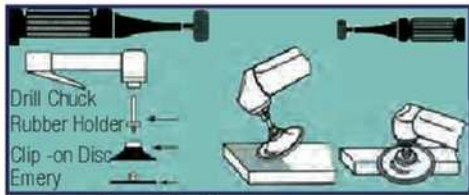
**Application :** Pls. always grind by using end instead of surface at places that are hard to reach, holes, weld cleaning, deburring. Pls. always use wound emeries in a way that adhesive side is facing the holder. During use, grinding oil protects the surface brightness and tool life. Wear protector glasses.

Safe cutting speed is max. 11 m/s.

Conical Roll Emery Thread Drill Chuck: 3 mm

Order	Roll	Sand	Order	Holder
RZ.06	6x38	# 80	TM 03	3 x 30
RZ.10	10x38		TM 06	6 x 60
RZ.13	13x38	# 120		
RZ.16	16x38	# 220		
RZ.20	20x38			

Note : At conical roll emery orders, pls. specify sand selection.



Pinned Rubber Holder  
Shaft: 3 mm

### 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 retaining. 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 Pinned Holder Shaft: 6

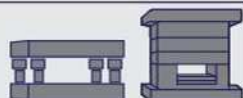
Order	Roll	Sand	Order	Rubber
KZD.38	Ø 38	# 36	KLT.63	6 x38
KZD.51	Ø 51	# 80	KLT.65	6 x51
KZD.76	Ø 76	#120	KLT.67	6 x76



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

Page  
322



Order :  
KZS 29  
Set



Shaft :  
6 mm



### 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
MZ31515	Shank: 3.0 mm Ø 15 x 15	# 40
MZ32020	Shank : 3.0 mm Ø 20 x 20	
MZ62015	Shank : 6.0 mm Ø 20 x 15	
MZ62520	Shank : 6.0 mm Ø 25 x 20	# 80
MZ63010	Shank : 6.0 mm Ø 30 x 15	
MZ63020	Shank : 6.0 mm Ø 30 x 20	#120
MZ64015	Shank : 6.0 mm Ø 40 x 15	
MZ64030	Shank : 6.0 mm Ø 40 x 30	#180
MZ65020	Shank : 6.0 mm Ø 50 x 20	
MZ65030	Shank : 6.0 mm Ø 50 x 30	#220
MZ66020	Shank : 6.0 mm Ø 60 x 20	
MZ66030	Shank : 6.0 mm Ø 60 x 40	#320
MZ68020	Shank : 6.0 mm Ø 80 x 20	
MZ68040	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		Emery Fiber Mop	
Order	Shank 6	Order	Shank 6
SEM.30	30 x30	ZEM.30	30 x30
SEM.40	40 x30	ZEM.40	40 x30
SEM.50	50 x30	ZEM.50	50 x30
SEM.60	60 x30	ZEM.60	60 x30
SEM.80	80 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 Steel Wire Pen Brush

Order	ShankxDia	Order	ShankxDia
STF -17	6 x 17	CTF -17	6 x 17
STF -25	6 x 25	CTF -25	6 x 25
STF -30	6 x 30	CTF -30	6 x 30

Brass Wire Dish Brush Steel Wire Dish Brush

Order	ShankxDia	Order	ShankxDia
SCF -50	6 x 50	CCF -50	6 x 50
SCF -75	6 x 75	CCF -75	6 x 75

Brass Wire Disc Brush Steel Wire Disc Brush

Order	ShankxDia	Order	ShankxDia
DTF -40	6 x 40	CDF -40	6 x 40
DTF -60	6 x 60	CDF -60	6 x 60
DTF-100	6 x 100	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 for 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 adhering 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 Yellow Wire Circle Brush

Order	Ø x Hole	Order	Ø x Hole
DFC.100	100 x20	DFS.100	100 x20
DFC.150	150 x25	DFS.150	150 x25
DFC.175	175 x25	DFS.175	175 x25
DFC.200	200 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



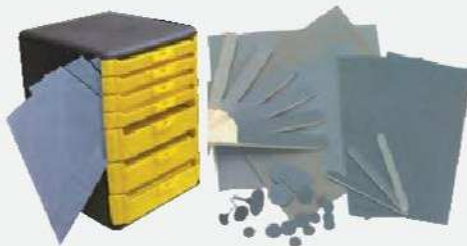
### Wedged Fiber Mop and its Machine

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	SM	SM	SM	SM	SM
Cutting	# 150	# 220	# 280	# 320	# 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	EZ	EZ	EZ	EZ	EZ
Cutting	# 60	# 100	# 150	# 220	# 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

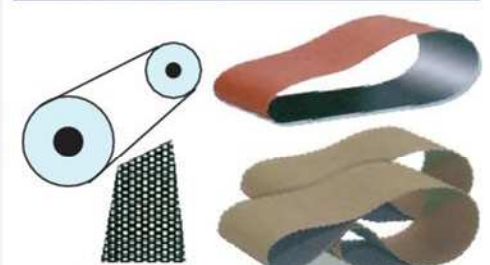
Sand	40	60	80	100	120
Order (Acc. to 1 Mt.) Sand Option					
Width	BZ	BZ	BZ	BZ	BZ
15 cm	# 40	# 60	# 80	# 100	# 120

#### Medium Sand Surface Levelling / Forming

Sand	150	180	220	280	320
Order (Acc. to 1 Mt.) Sand Option					
Width	BZ	BZ	BZ	BZ	BZ
15 cm	# 150	# 180	# 220	# 280	# 320

#### Fine Sand Final Surface Polishing Process

Sand	400	600	800
Order (Acc. to 1 Mt.) Sand Option			
Width	BZ	BZ	BZ
15 cm	# 150	# 180	# 220



### MACHINE, BAND EMERIES

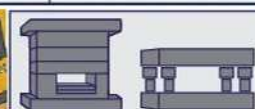
According to the existing standard machines in market

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
B300050	3000 x 50 mm	# 400
		As per Request



### Circular Vibrant Emery



Order :  
05010

Continuous 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

Continuous 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

Continuous 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

Continuous 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  
Continuous Current : 500 Watt  
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 Adhesive Flat Pad

Order	Type
N-39051	115mm/ Flat
N-39065	150/Perfor.

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
		100
A- 34578	13 x533	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
		100
794	93 x228	120
561-7		



### POLISHING SETS

Accessories for Electronic Polishing Machine  
8 and 9 Pieces Set Contents

Order	Product
PC	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
PSK	Polishing Polish Polishing Sisa Felt Polishing Cloths
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 ), refer 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



### 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 Horizontal 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**

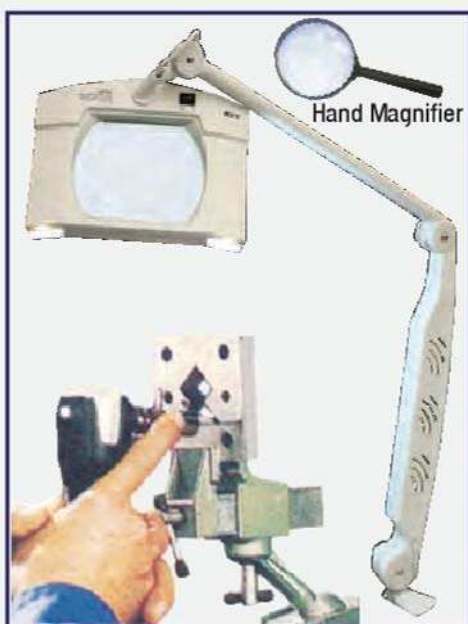
Order Model	Table Dia.	Bearing Height	Table Width	Product Weight
VU - 100 (14948)	100 mm	117 mm	228 mm	13.5 kg.
VU - 200 (14950)	200 mm	177 mm	429 mm	46 kg.

**Mini - Rotary / Angular Vacuumed Clamp**



Vacuumed Fixing system claws, plastic protected 360° 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, lighth 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

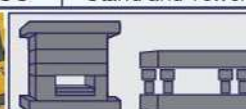


**Sanitary Paper / Cloth Stand**

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 cutting 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



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  
ALU.

### 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  
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



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



Flat Type  
NK

### General Purpose Cutting Stones

Suitable for all 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



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



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



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

### 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



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



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



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



### 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



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.



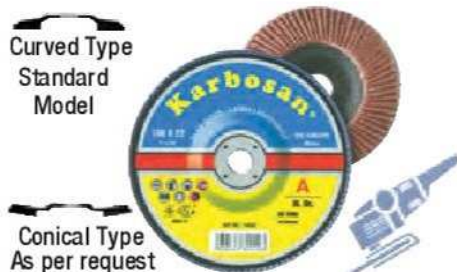
Flat  
EKR

### 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
AFD115..Sand	Ø 115 x Hole 22	#60
AFD125..Sand	Ø 125 x Hole 22	#80
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
ZR115..Sand	Ø 115 x Hole 22	#60
ZR125..Sand	Ø 125 x Hole 22	#80
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. Speed 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
SC 125..Sand	125 x 22	150-220
SC 180..Sand	180 x 22	320-400



### 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
SC 125..Sand	125 x 22	150-220
SC 180..Sand	180 x 22	320-400



### 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
SC 125..Sand	125 x 22	150-220
SC 180..Sand	180 x 22	320-400



### 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



### Electrical, MOULD GRINDING

Short Type



Order	Mould Grinder
GGG 28 CE <b>BOSCH</b>	650 Watt - 6 mm Persli Adjustable Cycle 12000-28.000 d/d
GD0602 <b>Makita</b>	400 Watt - 6 mm Plier Cycle 25.000 d / d

### Electrical, MOULD GRINDING MACHINE

Long Type



Order	Mould Grinder
GGG 28 LCE <b>BOSCH</b>	650 Watt - 6 mm Plier Adjustable Cycle 10000-28.000 d/d
GD0601 <b>Makita</b>	400 Watt - 6 mm Plier Cycle 25.000 d / d

### Electrical, MOULD GRINDING MACHINE

Standard Type



Order	Mould Grinder
GGG 8 CE <b>BOSCH</b>	750 Watt - 6 mm Plier Adjustable Cycle 2.500 - 8.000 d/d
GD0800C <b>Makita</b>	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)



### 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 : 1mm /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 12 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

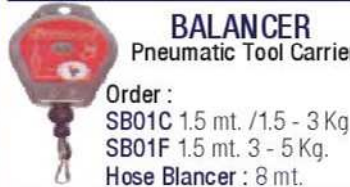
Order	Model
824K	Gison : 10 Pieces Set
OPT-4	Osaka : Moulder Set



### 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



Order :  
SB01C 1.5 mt. /1.5 - 3 Kg.  
SB01F 1.5 mt. 3 - 5 Kg.  
Hose Balancer : 8 mt.





**GISON BEMATO  
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



**WERT GISON  
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



**OSAKA  
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



**GISON OSAKA  
PNEUMATIC 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



**GISON HANDLE  
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



**WERT GISON  
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



**GISON WERT  
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



**GISON  
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



**BEMATO GISON  
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.



**GISON  
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



**GISON BEMATO  
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



**GISON WERT  
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

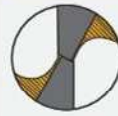
**NEWEST  
DURABLE  
GUARANTEED  
PRODUCT**



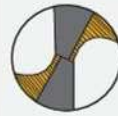
**WE GIVE WORK BENCH  
AS A GIFT**



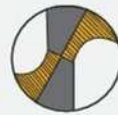
### Standard Swarf Evacuation Forms



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. Precision 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 13mm  
 Edge Grinding Angle : 90° ~ 140°  
 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 burrs 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.



## BAND GRINDING MACHINE

**EB - 150**

It is used for grinding and deburring of all kinds of metal surfaces. It has steel casing and 360° 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.



## 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



Fast  
Easy  
Balanced  
Jig System

ECB -50

ECB -75

ECB -120

ECB -210

Ideal Technology  
For NEW MODEL  
Large Work Pieces



Robust and  
Flexible Jig  
Method

## Self Magnetic BLOCKS "WORKING POWER " Work Piece Binding Claw

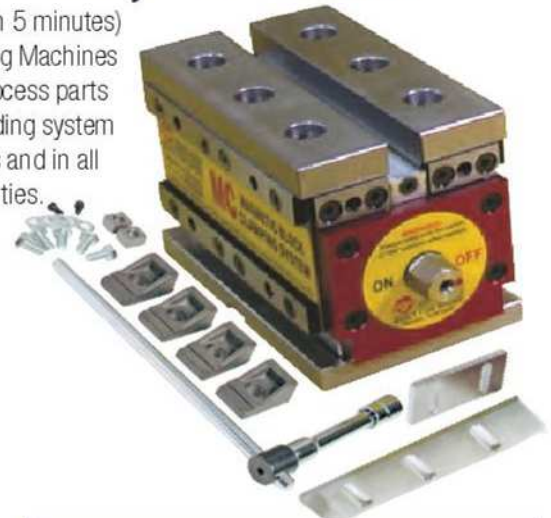
ECB

It is designed to bind work pieces practically and precisely as SAFELY and SERIALY ( 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.**



Hold Power : 500 Kgf / Pcs.  
W. Piece Thick. : Such as 15 mm  
Sens. :  $90^\circ = 0.015 / 100$  mm  
X - Y = 0.01/100 mm  
Dimension : Height : 78 mm  
Length / Width 126 x 76 mm  
Weight : 7 Kg.



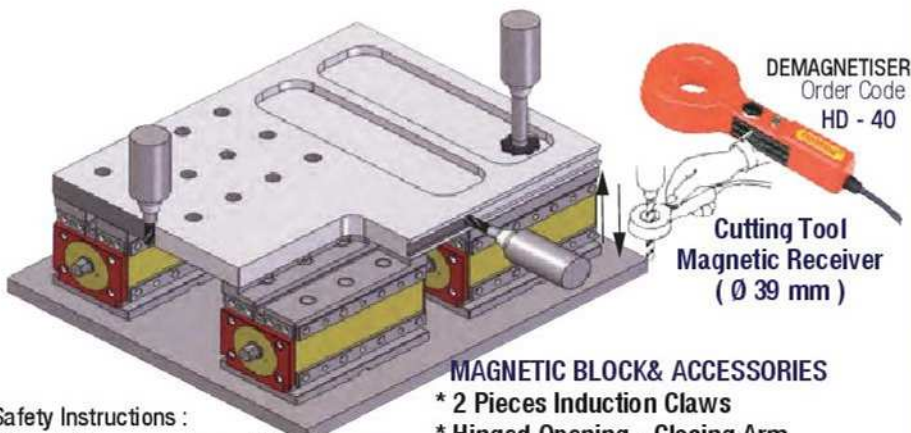
Hold Power : 750 Kgf / Pcs.  
W. Piece Thick. : Such as 15 mm  
Sens. :  $90^\circ = 0.015 / 100$  mm  
X - Y = 0.01/100 mm  
Dimension : Height : 78 mm  
Length / Width 174 x 76 mm  
Weight : 9,5 Kg.



Hold Power : 1200 Kgf / Pcs.  
W. Piece Thick. : Over 20 mm  
Sens. :  $90^\circ = 0.015 / 100$  mm  
X - Y = 0.01/100 mm  
Dimension : Height : 108 mm  
Length / Width 188 x 108 mm  
Weight : 18 Kg.



Hold Power : 2100 Kgf / Pcs.  
W. Piece Thick. : Over 30 mm  
Sens. :  $90^\circ = 0.015 / 100$  mm  
X - Y = 0.01/100 mm  
Dimension : Height : 134 mm  
Length / Width 234 x 133 mm  
Weight : 36 Kg.



DEMAGNETISER  
Order Code :  
HD - 40

Cutting Tool  
Magnetic Receiver  
(  $\varnothing$  39 mm )

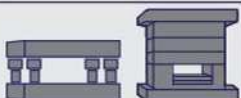
### MAGNETIC BLOCK & ACCESSORIES

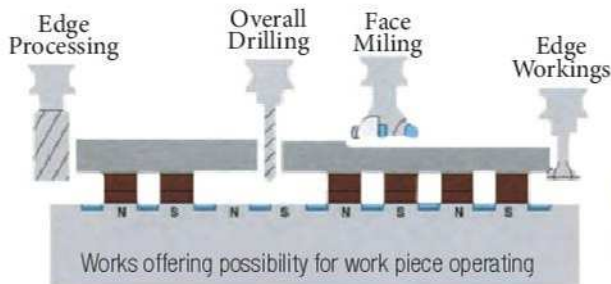
- \* 2 Pieces Induction Claws
- \* Hinged Opening - Closing Arm
- \* 4 Pieces Block Fishplate
- \* Side / Front / Rear Thrust Parallels
- \* Combined connection between two block
- \* English User Manual - Visual Video CD

### 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 ( Aluminium / 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.





**At Binding Work Piece** Serie Precision Easy New  
**Fast Safe Practical 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 cm<sup>2</sup>**



**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

<p><b>EEPM 3040 W</b> Width: 340 x Length: 430 mm AC 380 / 440 V (Three-phase) Pole / k : 24 Piece ( Lug )</p>	<p><b>Presentation / Set</b></p> <ul style="list-style-type: none"> <li>• Magnetic Table</li> <li>• Control Unit</li> <li>• Mobile Hand Unit</li> <li>• Side Thrusts</li> <li>• Connection Cables</li> <li>• CNC Table/Locker</li> <li>• 24 Pieces Lug</li> <li>• Connecting Bolts</li> <li>• English User M.</li> <li>• Demo CD</li> </ul>	<p>EEPM 3040 W</p> <p><b>1515</b> € / Euro</p> <p>Prices valid on the basis of FOB Turkey</p>	<p>2 Pcs. Magnetic Table EEPM 3040 W</p> <p><b>2605</b> € / Euro</p>
<p><b>EEPM 4060 W</b> Width: 420 x Length: 590 mm AC 380 / 440 V ( Three Phase) Pole / k : 48 Piece ( Lug )</p>	<p><b>Presentation / Set</b></p> <ul style="list-style-type: none"> <li>• Magnetic Table</li> <li>• Control Unit</li> <li>• Mobile Hand Unit</li> <li>• Side Thrusts</li> <li>• Connecting Cables</li> <li>• CNC Table / Locker</li> <li>• 48 Pieces Lug</li> <li>• Connecting Bolts</li> <li>• English User M.</li> <li>• Demo CD</li> </ul>	<p>EEPM 4060 W</p> <p><b>2495</b> € / Euro</p> <p>Prices valid on the basis of FOB Turkey</p>	<p>2 Pcs. Magnetic Table EEPM 4060 W</p> <p><b>4569</b> € / Euro</p>
<p><b>EEPM 40100 W</b> Width: 420 x Length: 990 mm AC 380 / 440 V ( Three Phase) Pole / k : 84 Piece ( Lug )</p>	<p><b>Presentation / Set</b></p> <ul style="list-style-type: none"> <li>• Magnetic Table</li> <li>• Control Unit</li> <li>• Mobile Hand Unit</li> <li>• Side Thrusts</li> <li>• Connecting Cables</li> <li>• CNC Cable / Locker</li> <li>• 84 Pieces Lugs</li> <li>• Connecting Bolts</li> <li>• English User M.</li> <li>• Demo CD</li> </ul>	<p>EEPM 40100 W</p> <p><b>3799</b> € / Euro</p> <p>Prices valid on the basis of FOB Turkey</p>	<p>2 Pcs. Magnetic Table EEPM 40100 W</p> <p><b>6859</b> € / Euro</p>



## 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

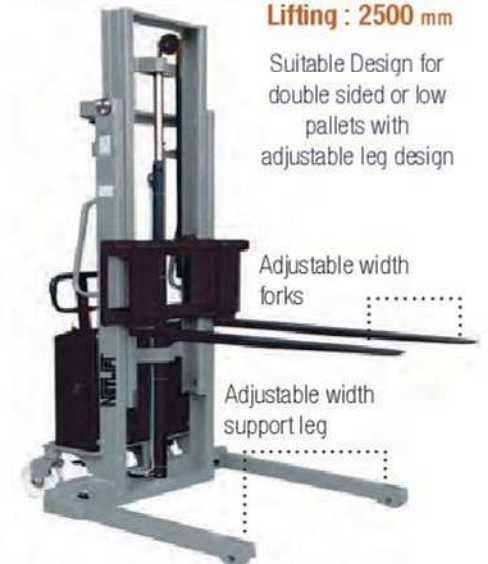
Adjustable width  
support leg

- \* 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**



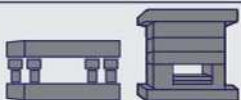
Suitable Design for  
double sided or low  
pallets with  
adjustable leg design

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 - Handling

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.	

