Güvenal
Kalıp Elemanları A.Ş.

Mould Components - Mould Manufacturing Equipments

EXPERIENCE PRODUCES - THE SECTOR GAINS

Reliable Label

GTH
www.guvenal.net

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Catalogue Content Information, Definitions & Benefits;

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

Our Customer Services;

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

TOLERANCE TABLE

(0.001mm) DIN ISO 286 PART / II

SOME (Selected) Data Micron Value

EXTERNAL DIAMETER TOLERANCE (Shaft)

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

SOME (Selected) Data Micron Value

INTERNAL DIAMETER TOLERANCE (Hole)

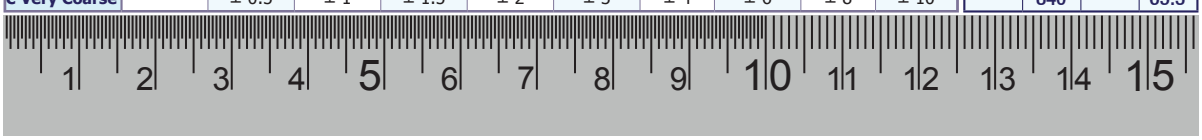
Symbol	From 3 to 6	From 6 to 10	From 10 to 18	From 18 to 30	From 30 to 50	From 50 to 80
E8	+ 28 + 14	+ 38 + 20	+ 47 + 25	+ 59 + 32	+ 73 + 40	+ 89 + 50
F7	+ 16 + 6	+ 22 + 10	+ 28 + 13	+ 34 + 16	+ 41 + 20	+ 50 + 25
G6	+ 8 + 2	+ 12 + 4	+ 14 + 5	+ 17 + 6	+ 20 + 7	+ 25 + 9
G7	+ 12 + 2	+ 16 + 4	+ 20 + 5	+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

General Tolerances for Length Measures

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

Hardness Conversion Table

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

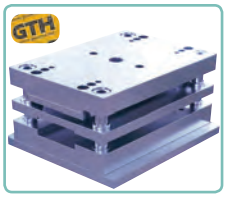


GTH Coding / Identification Table of Products in Our Mould Components Production

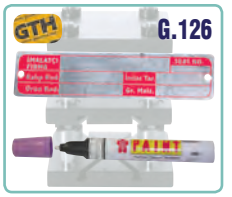
Product Code	Page No	GTH Mould Components Product Definition
G.01	21	Guide Pillar With Collar- Ford
G.02	21	Guide Pillar - Ford
G.03	23	Guide Pillar - Cnomo
G.04	22	Guide Pillar - PSA
G.05	22	Guide Perforated Pillar-PSA
G.06	20	Guide Pillar-FIAT
G.07	20	Guide Perforated Pillar-FIAT
G.08	25	Scraper Ball - Guide Pillar
G.09	19	Guide Pillar - Slotted
G.10	17	Guide Pillar-With Centre Collar
G.11	29	Lubricated Guide Pillar
G.12	36-37	G.12/D Guide Pillar
G.13	33-35	With Collar - G.13/D Guide Pillar
G.14	31	Threaded Core Guide Pillar
G.15	16	Thickbacked Guide Pillar AKK
G.16	32	Injection Back Striker
G.17	28	Plain Guide Pillar
G.18	30	Guide Pillar - Ball
G.19	18	Guide Pillar - Ball
G.20	24	Cast Block Guide Pillar
G.21	30	Ejector Plate, Support Guide Pillar
G.22	27	Guide Pillar Protection Flange
G.23	27	Sheet Lifting Guide Pillar
G.24	18	Plain, Threaded Guide Pillar
G.25	41	Self-lubricating, SB Bush
G.26	40	Self-lubricating, OFB Bush
G.27	41	Self-lubricating, KSB Bush
G.28	38	Steel, Retaining Pin
G.29	43	OFB Ejector Ball Bush
G.30	39	Steel, Guide Bush
G.31	38	Steel, With Collar Bush
G.32	39	Steel, OFB Bush
G.33/ K	48/49	Long Steel Thin Bushes
G.34/ K	48/49	Short Steel Thick Bushes
G.35	47	Steel, Bronze Long Bush
G.36	47	Steel, Bronze Short Bush
G.37	44	Steel, Ball Long Bush
G.38	44	Steel, Ball Short Bush
G.39	136	6 Guide Screws/Locking
G.40	53	Self-lubricating F. Bush NAAMS
G.41	52	Self-lubricating C. Bush CNOMO
G.42	53	Self-lubricating C. Bush NAAMS
G.43	52	Self-lubricating Slit Bush VDI
G.44	51	Self-lubricating Guide Bush with Collar DIN
G.45	51	Self-lubricating Guide Bush DIN
G.46	73	Conical Locking Guide Screw
G.47	83	Threaded Set Eyebolt VDI
G.48	40	Self-lubricating Plain Bush
G.49	50	Short, Steel Self-lubricating Bush
G.50	50	Long,Steel Self-lubricating Bush
G.51	84	FORD Mould Bearing Shaft

Product Code	Page No	GTH Mould Components Product Definition
G.52	84	VDI Mould Bearing Shaft
G.53	85	Transport Brackets FIAT
G.54	83	Threaded Core DIN / ISO
G.55	84	FIAT Bearing Shaft
G.56	86	FIAT Safety Pins
G.57	86	VDI Safety Pins
G.58	86	FORD Safety Pins
G.59	71	Support Washer C. Locking
G.60	71	Conical Locking Element
G.61	31	Core Pin Bearing
G.62	70	Centering Pin
G.63	73	Conical Centering /NAAMS
G.64	72	Conical Centering / Plate
G.65	70	Centering Pin
G.66	70	Centering Pin
G.67	69	Mechanical Sheet Thrust
G.68	69	Control Parted Thrust
G.69	27	Tij Shaft - Ventilation
G.70	145	Ball, Bronze Cage / Spring
G.71	134	Inter Safety Bolt
G.72	26	Guide Pillar Carrier Block Slot
G.73	26	Bush Carrier Block Slot
G.74	43	Bearing Guide Bush
G.75	43	OSB Bearing Bush
G.76	63	Bronze Cam Return G / B
G.77	62	Bronze Cam Support Y / D
G.78	62	Steel Cam Support Y / D
G.79	25	Cast Block Sets / 5
G.80	24	Cast Block Bushes /10
G.81	20	Centering Block - Fiat
G.82	20	Trimming Ball - Fiat
G.83	54	Self-lubricating Bronze Plate 5 mm
G.84	55	Self-lubricating Bronze Plate 10 mm
G.85	54	Self-lubricating Bronze Plate 10 mm
G.86	55	Self-lubricating Bronze Plate 12 mm
G.87	55	Steel Guide Plate 12 mm
G.88	56	Self-lubricating Bronze Plate 20 mm
G.89	56	Self-lubricating Bronze Plate 20 mm
G.90	57	**Self-lubricating Plate 20 - Stock**
G.91	57	Self-lubricating Bronze Plate 20 mm
G.92	57	Steel Guide Plate 20 mm
G.93	58	Self-lubricating Bronze Block Plate
G.94	58	Self-lubricating E Type Bronze Plate
G.95	58	Steel E Type Guide Plate
G.96	58	Self-lubricating Two Way Block
G.97	68	Mould Guide Screw / A - Spring
G.98	68	Cylindrical Mould Guide Screw
G.99	68	Power Routing Block
G.100	46	Guide Pillar/Bush Fishplate
G.101	46	Bush Fishplate
G.102	46	Bush Fishplate

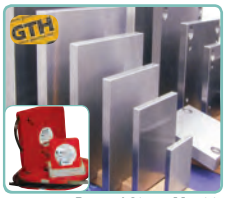
Product Code	Page No	GTH Mould Components Product Definition
G.103	82	Mould Safety Latch
G.104	59	Self-lubricating L Guide
G.105	59	Plate Graphite L Guide Plate
G.106	60	Self-lubricating Bronze GuidePlate
G.107	60	Steel Guide Plates
G.108	60	**Cam Guide Plate C - B**
G.109	61	**Cam Blocks A - B - C - D**
G.110	16	Mould Mounting Flange
G.111	61	G.111 V - U Cam Block
G.112	22	Guide Pillar Snap Ring
G.113	128	Die Gas Spring Shock Inhibitor
G.114	32	Thick Mounting Washer
G.115	239	M. Automatic Ejector System
G.116	239	H. Automatic Ejector System
G.117	32	Back StrikerMounting Kit
G.118	52	Bush Sleeve Dual
G.119	22	Guide Pillar Retaining Flange
G.120	30	Plate Thrust Tablet
G.121	42	Inj. Self-lubricating "T" Shape
G.122	42	Inj. Self-lubricating Plain Plate
G.123	42	Inj. Self-lubricating, Two Way
G.124	77	Product Counter / Mounting
G.125	12	Inj. Mould ID Card
G.126	12	Press Mould ID Card
G.127	75	Square Group Locking Block
G.128	75	Square Locking Blocks
G.129	75	Conical Centering Block
G.130	74	Sliding Centering
G.131	74	Centering Blocks
G.132	76	Parallel Centering Block
G.133	241	Inclined Ejector Pin Unit
G.134	85	**KTB Transport Bracket**
G.135	241	Inclined Inner Unit
G.136	241	Angular Spherical Bush
G.137	63	Self-lubricating Bronze Cam Setting
G.138	62	Steel Small Cam Support
G.139	62	Steel Cam Support Plate
G.140	89	Two Way Rotary Eye bolt
G.141	89	Fixed Load Eyebolt
G.142	78	Round - Tube Counter
G.143	46	Walled Bush Sleeve
G.144	232	Plate Thrust (Dust Cover)
G.145	135	Spring Clamping Screw
G.146	135	Spring Fastening / Guide Screw
G.147	236	Core Bottom Guide Block
G.148	236	Spring Fastening / Guide Screw
G.149	237	Core Bottom Guide Block
G.150	237	Core Side Guide Block



Page 14 Press /Sheet Mould Ready Standard Mould Sets



Page 12 Press / Sheet Mould Identity Card Writing Pen



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

Page 16 Press / Sheet Mould Thick backed Guide Pillar

Page 16 Press /Sheet Mould Screwed Flange Mould Inner Support

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

Page 18 Press / Sheet Mould Internal Threaded Plain Guide Pillar

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

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

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

Page 20 Cylindrical - Perforated Trimming Ball Reference : FIAT

Page 21 Slotted Guide Pillar Reference : Ford

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

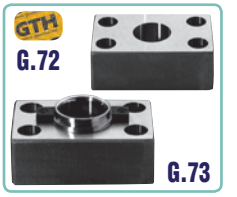
Page 23 Slotted Plain Guide Pillar Reference : CNOMO

Page 24 Cast Block Plain Slotted Guide Pillar

Page 24 Cast Block Connection, with Collar Bush Series

Page 25 Cast Block Guide Pillar / Bush Kit Series

Page 25 Scraper Connected Ball - Bush Guide Pillar



Page 26 Rectangular Type Steel - Bronze Bushes

Page 27 Guide Pillar Protection Washer-Flange Connecting Hole

Page 27 Sheet Band Lifting Retaining Guide Pillar Spring Lifting Pin

Page 27 Press / Sheet Mould Tij Shaft Ventilation Pin

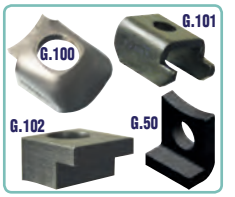
Page 28 Press Mould Inner Unlubricated Guide Pillar

Page 29 Press Mould Inner Lubricated Guide Pillar

Page 43 Bearing Bush Ball / Steel Guide Bush

Page 44 Ball Bush System Short / Long Steel Bushes

Page 45 Press / Sheet Mould Ball Cage Bronze Bush



Page 46 Demountable Guide Pillar / Bush Fishplates

Page 47 Bronze Bearing Short / Long Steel Bushes

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

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

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

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

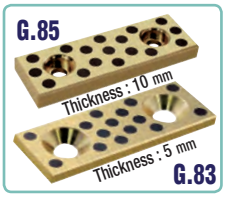
Page 51 Self-lubricating / Bronze Guide Bush with Center Collar Reference: DIN 9834

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

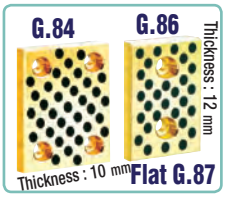
Page 52 Self-lubricating / Bronze Slit Guide Bush with Collar Reference : VDI

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

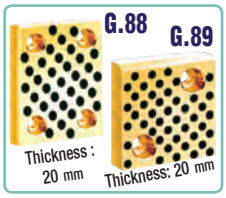
Page 53 Self-lubricating / Bronze Guide Bush with Collar Reference: NAAMS



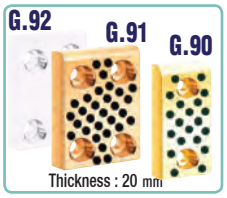
Page 54 Self-lubricating / Bronze Sliding Guide Thin Plates



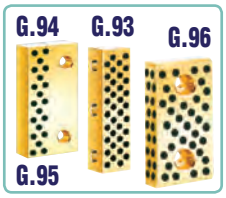
Page 55 Self-lubricating / Bronze Sliding Guide Thin Plates



Page 56 Self-lubricating / Bronze Perforated Steel Guide Plates

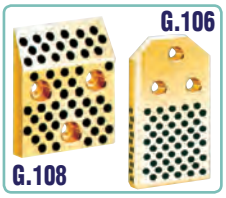


Page 57 Self-lubricating / Bronze Guide Plates Standard Type

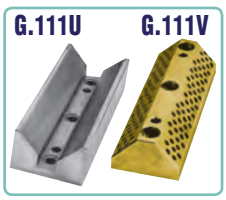


Page 58 Self-lubricating / Bronze E Type/ Block Guide Plates

Page 59 Bronze / Self-lubricating L Type Guide Plates

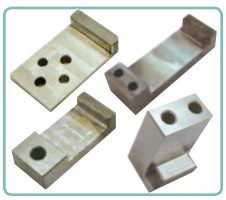


Page 60 Bronze/Self-lubricating Cam Unit Guide Plates

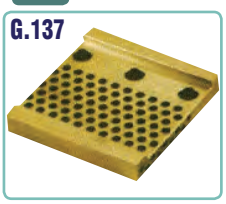


Page 61 Self-lubricating / Bronze Guide Plates For U/V Cam

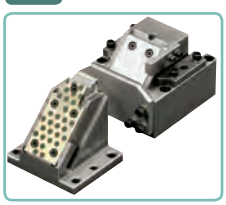
Page 61 Self-lubricating / Bronze Cam, Sliding Bearing Guide Plates


Page 62 Cam Connection Return / Support Steel Plates


Page 63 Bronze / Self-lubricating Cam Unit Support Plates



Page 63 Bronze / Self-lubricating Cam Unit Adjusting Plate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Page 69 Mechanical Sheet Thrust and Sensors

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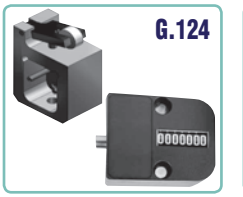
Page 73 Conical Centering Unit and Adjusting Plate

Page 73 Conical Centering Guide Screw



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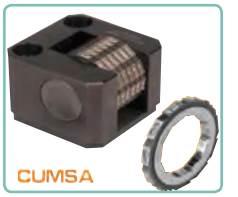

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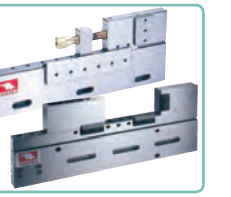
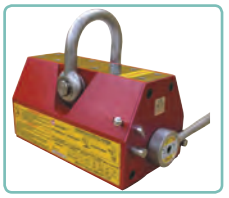


Page 80 Wire Erosion Chucks Vise



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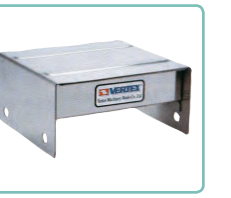

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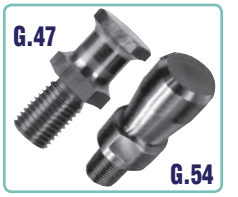

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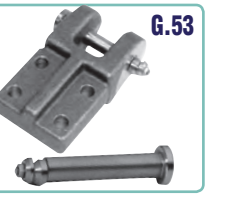
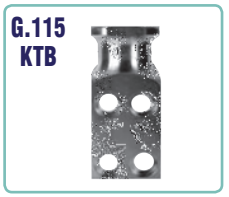


Page 85 Mould Handling Bracket Fiat



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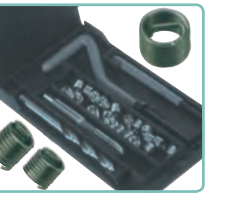

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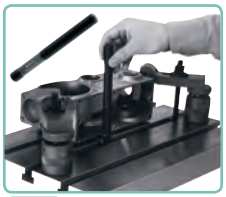
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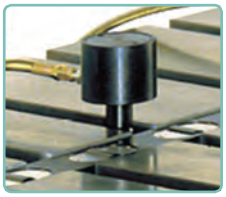
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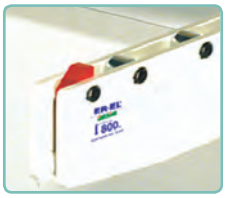
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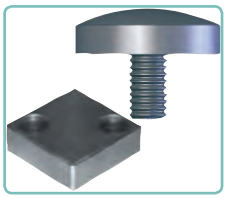
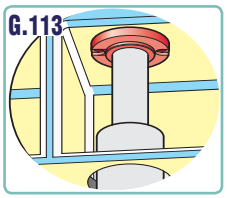
Page 124 Die Gas Spring Serial Connection Equipment


Page 127 Die Gas Spring Stamping Pad Burnishing Plate



Page 128 Die Gas Spring Stamping Plate Shock Absorber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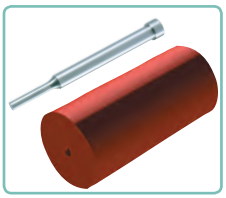
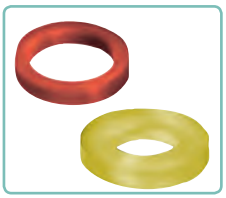

Page 130 Polyurethane Punch Stripper Bush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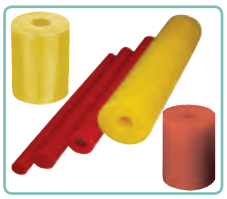
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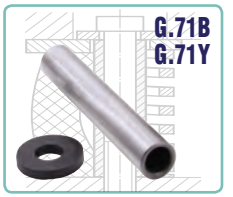
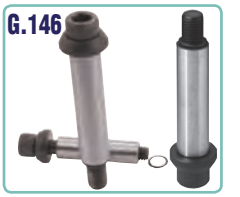


Page 134 Safety Pipe Spring Distance Pipe

Page 135 Spring Compressor Precise Control Threaded Plug



Page 135 Spring Fixing Guide Screw Bolt

Page 136 Guide Screws Locking

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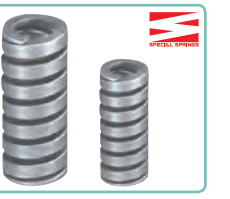
Page 141 Rectangular Medium Load Blue Spring

Page 142 Rectangular Heavy Load Red Spring

Page 143 Rectangular Extra Heavy Load Yellow Spring



Page 144 Rectangular Ultra Heavy Load Yellow Spring

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Page 146 Precise Control Pin Kit Control Gauge

Page 146 Dowel Pin 7979 Pin Puller Complete Set

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Page 148 Dowel Pin 6325

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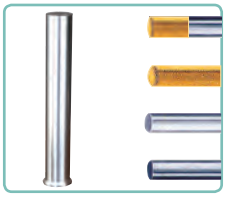
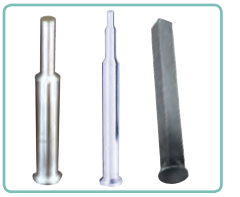
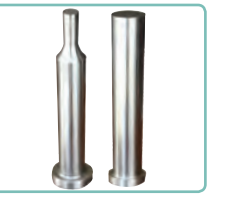


Page 151 HSS Punch Countersink



Page 152 HSS Punch Stepped Formed / Slot



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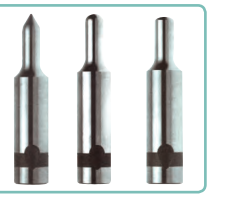
Page 154 HSS Punch Cylinder Head Ejector Pinned

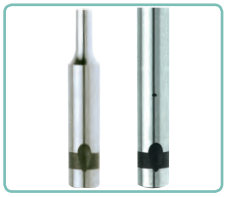
Page 155 HSS Punch Cassette Holders

Page 156 Cylinder Head Guide Pilot Pin

Page 157 Conical Head HSS Punch Head Burr



Page 158 Light Duty Guide Pilot Pins



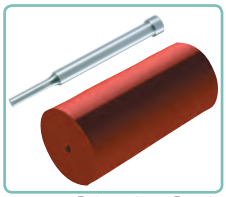
Page 159 Light Duty Ball Locking HSS Punch

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

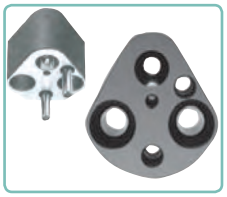

Page 163 Heavy Duty Pilot Pins

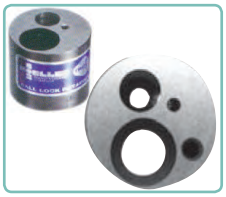

Page 164 Heavy Duty Ball Locking Ejector Punches


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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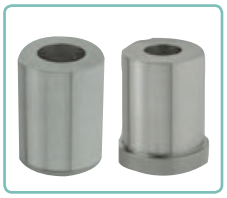
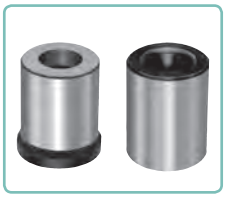
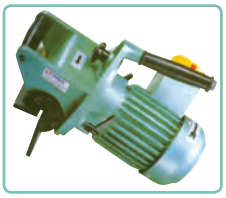
Page 168 Heavy Duty/ Small Ball Locking Triangle Holder


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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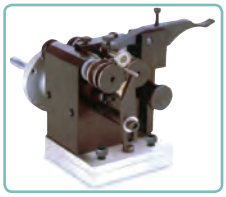
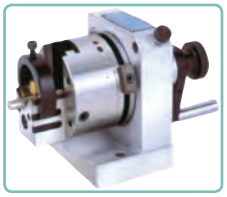
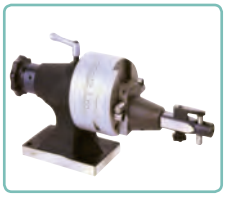
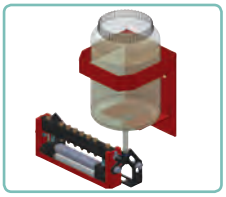
Page 173 Pin Cutting Length Adjustment Machine

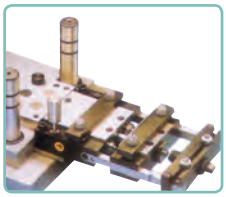

Page 174 Small / Punch Forming Equipment

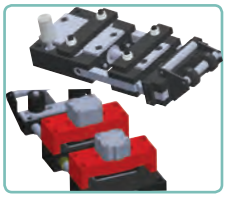

Page 175 Pin / Punch Forming Equipment


Page 175 Grinding Wheel Forming Equipment


Page 176 Cylinder Part Balance Control Precision Stand

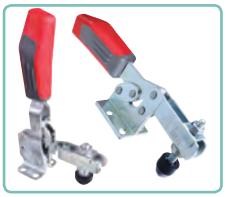

Page 176 Sheet Band Lubricant Roller Unit

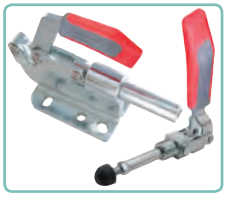

Page 177 Pneumatic Import / Precision Drivers

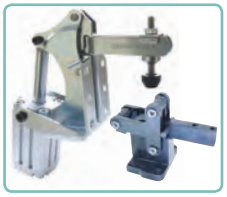

Page 178 Pneumatic Domestic Standard / Heavy Duty Drivers

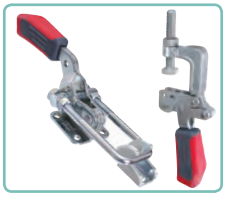

Page 179 Servo Motor Drivers


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

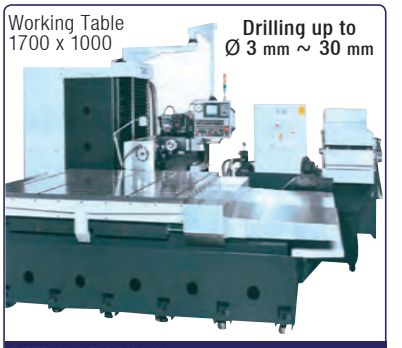

Page 192 Mould and Production Chemicals

EKS

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

EDS **ESI**

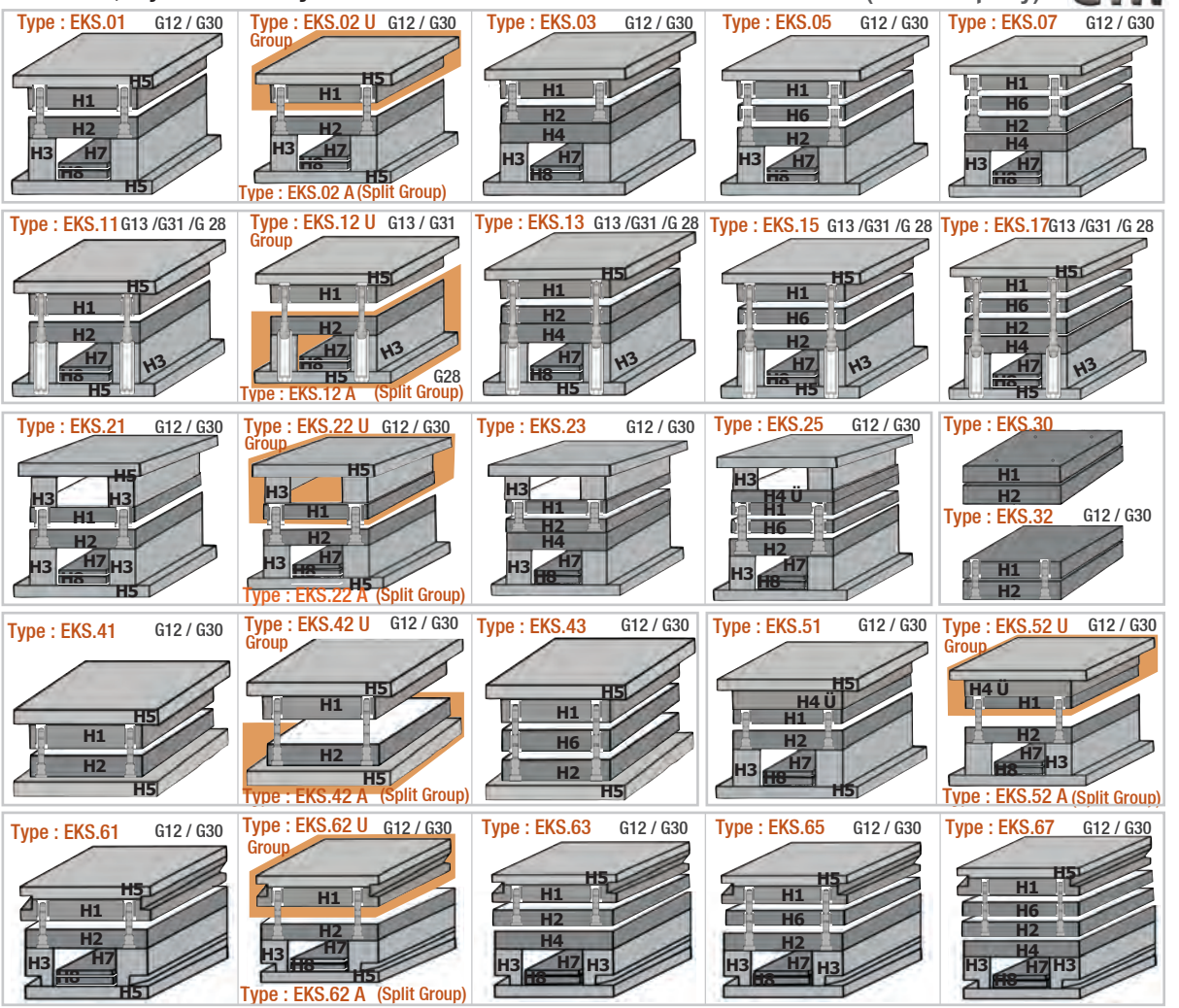
GRINDED PLATE SPECIAL
PROCESSING Injection Ready Sets (From 01up to 67)



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

Standard, Injection Ready Mould Sets and Diversification

Production (Our Company) : GTH



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

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

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

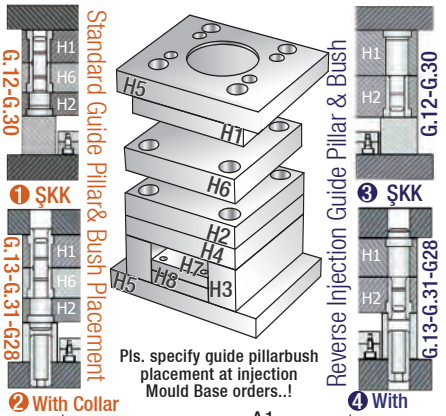
- **EKS.01 ~ EKS.07** Plastic Injection Standard Ready Sets (Guide Pillar Bush Equipped with Bolt Connection) Mould Base
- **EKS.11 ~ EKS.17** Plastic Injection (With Collar Overall Guide Pillar System Bolt Connecting) Mould Base
- **EKS.21 ~ EKS.25** Plastic Injection (Hot Runner / Manifold Created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

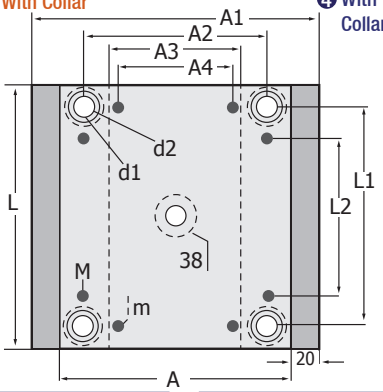
Diversification: Your Mould Base can be produced as per desired (EKS - EDS - ESI) position, for other mould types, cycles can be done by you according to the table. Example: ESI.01 for mould numbered 01 from ESI.serial.

Section Injection Mould

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

546	546	**596**	596	**646**	646	**696**	696	**746**	746
	596		646		696		746		796
	646		696		746		796		846
	696		746		796		846		896





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

Material: CK 45 Steel
Production As Per Request

Injection (Plastic / Metal) Ready Mould Sets:

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

Standard & Special Production Ready Mould Sets

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

BOTH Produces Sells
Affordable Prices

Mercury Steel Material

DIN 17006

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

Mercury Steel, is a tool steel hardening with water.

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

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

CC . Dia.
Piece: (Length)

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

Material : 115 CR V 3
According to DIN 17006

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

Injection Moulds

Press Mould

Mould ID Card

Red Colour Mould ID card is for plastic injection moulds

Black Colour Mould ID card is for metal injection moulds.

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

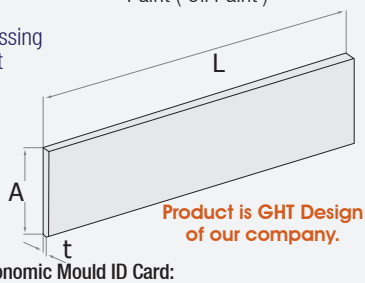
Dispatch: ID Card, 4/2 Pieces Mounting Rivet, Mounting Instruction

ID Card Marking and Writing Pens

Acetate / Felt Marker (Edding 142 M)

Paint (Oil Paint)

Mould Set Pressing Unit



Product is GHT Design of our company.

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

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

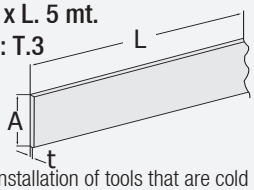
Standard ID Card; They are presented from quite economic stocks.
Special ID Card; Pls. request price unit price" **for ID card with company logo as per request** or data sheet involving different definition.
Other Special ID Card; Pls. request price unit price" for your designs with different dimension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

Adjusting Shim, Gauge - Band

Thickness Adjustment Detection - Precision Liner

Precision Liner Band

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



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

Precision Liner Band

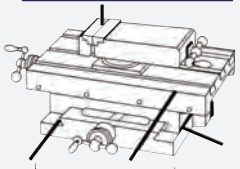
HLB Order Form

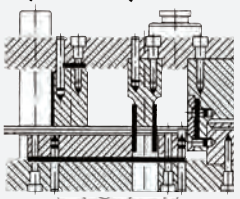
Length can be adapted by cutting.

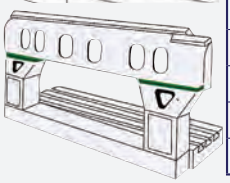
HLB .t
Band Thickness

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

Material : Stainless Hardened Shiny Surface





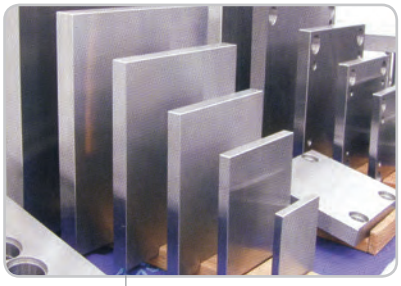


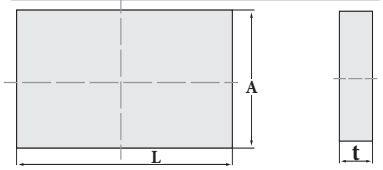
Thickness t (mm)	Tolrnc. D ±
0.01	0.002
0.02	
0.03	0.003
0.04	
0.05	
0.06	
0.07	0.004
0.08	
0.09	
0.10	
0.12	
0.15	0.005
0.20	0.006
0.25	0.007
0.30	
0.35	0.008
0.40	0.009
0.45	
0.50	0.010
0.60	
0.70	0.012
0.80	0.013
0.90	
1.00	0.017

Grinded, Steel Plate Selection Table

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

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





Precision Grinded, Ready Steel Plates

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

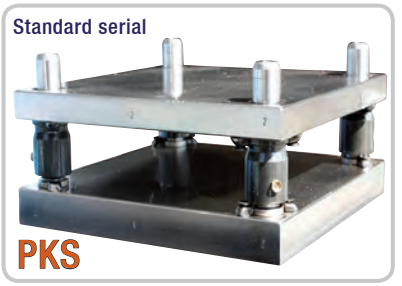
Ground Plate
Type : A x L x t

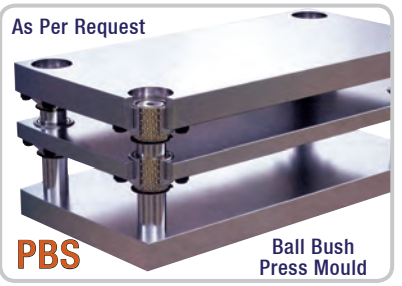
Special: 3D technical drawing
Standard: Technical drawing

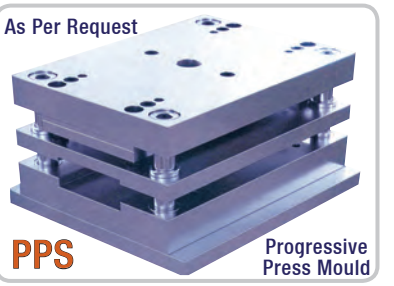
Material : CK 45 Steel
Production As Per Request

Precision Grinded, Ready Steel Plates Order Form:

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







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

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

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

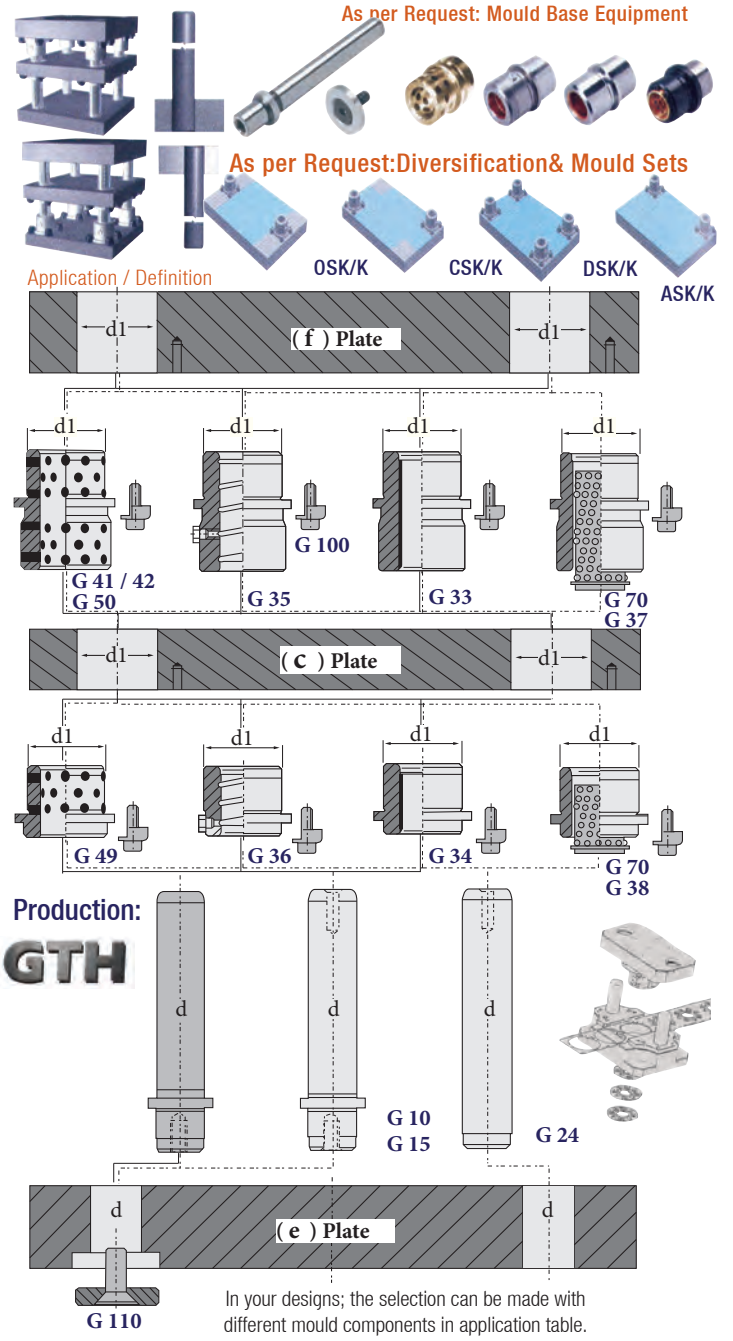
In addition, our mould polishing leadership (it has accelerated works) with our hot runner interest has provided technological attacks to the sector. By opening 3. company store in 2010, we have approximated sales services through it to our customers. Today, our 145 employees are honored to contribute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

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

Standard&Special Ready Press Mould Sets;

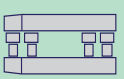
In Our Production; precision surface grinding of Mould Base plate as well as circumferential perpendicularity precision are made by using machining power and our CNC machinery as well as new requirements of design engineering. The connections are completed with 12.9 Cylinder Head Cap Screw by providing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

Standard & Special Press Mould Sets

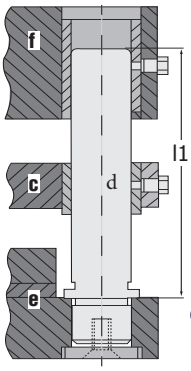


In your designs; the selection can be made with different mould components in application table.

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



Press Mould Base - Guide Pillar Bush Selection:

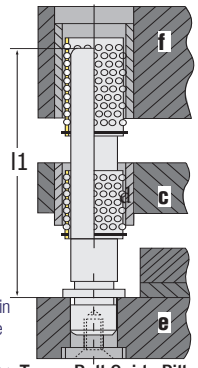


Type : Plain Guide Pillar
(Standard)
Sliding Bearing

Plain Guide Pillar Application

Reverse Guide Pillar Application

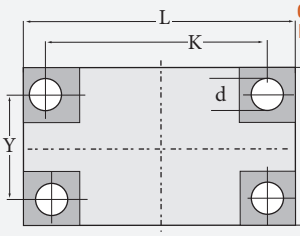
Suggestion: Pls. note that shrink fits are not suitable for four columned moulds ! Generally, two or three diversification can be chosen in cases that Guide Pillar space geometry is irregular. To know required space for mould Guide Pillar or preloading is important



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

DIVERSIFICATION of Press Mould Base - Selection as per request

Type : DSK/K DSK/K Four Columnar

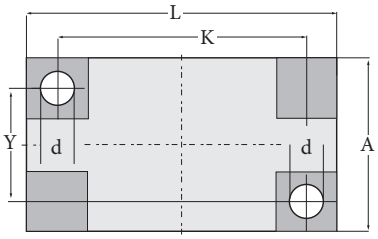


Guide Pillar Bush Refer Page 5.

Type : DSK

Type : DSK K

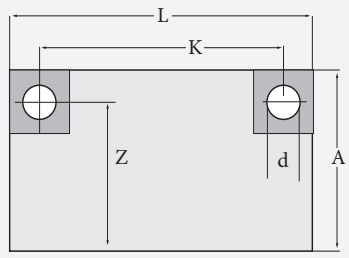
Type : CSK/K CSK/K Cross Columnar



Type : CSK

Type : CSK K

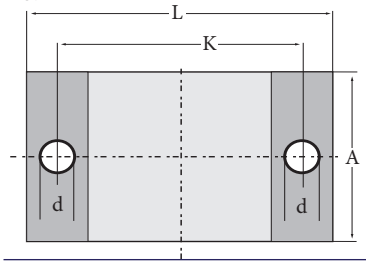
Type : ASK/K ASK/K Rear Columnar



Type : ASK

Type : ASK K

Type : OSK/K OSK/K Center Columnar



Type : OSK

Type : OSK K

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

Special: 3D technical drawing
Standard: Technical drawing

Material: CK 45 Steel
Production As Per Request

Press Mould Base - Measurement Table

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

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

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

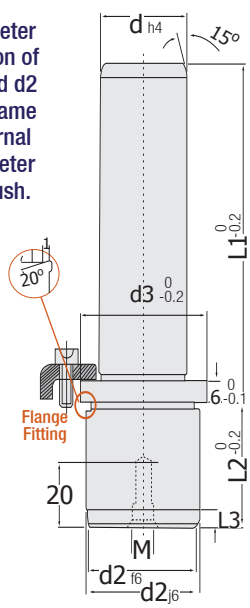
Production: GTH Mould Base Production

THICKBACKED

G. 15

Guide Pillar with Centre COLLAR

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



For suitable bushes, Refer Page 5

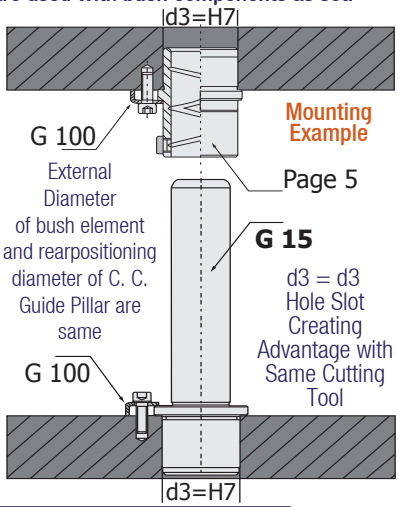
THICKBACKED G. 15

Guide Pillar with Centre Collar

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

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

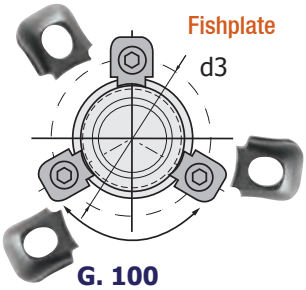
Thick backed Guide Pillar G15: It is used as centering element at cutting and form press mould sets. In processing of **Guide Pillar / Bush** Slots on mould, processing of Guide Pillar and bush holes also are provided with the same dimensional tools (Drill/Reamer). Thus; the necessity of using different 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)

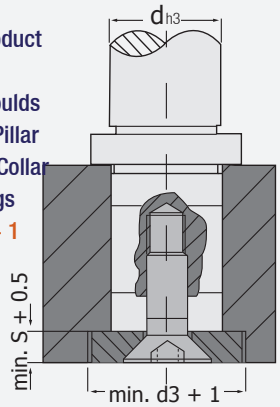
Operating Elements : G.100 - G.33 /G.34 G.35 /G.36 -G.40 /G.42 - G.49 /G.50



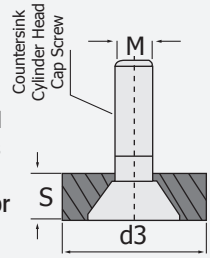
Guide Pillar with Centre Collar MOUNTING FLANGE G. 110

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

Min. d3 + 1



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



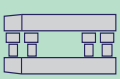
Guide Pillar with Centre Collar MOUNTING FLANGE G. 110

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

Order : **G.110** x d3

Material : CK 45 Steel
Grinded Mould Component

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



Section Press Mould

BOTH Produces Sells Affordable Prices

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

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

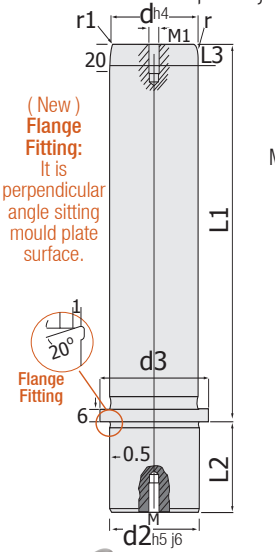
Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Lug d5	M M.1	r r1
15 **16**	100	20	4	22	22	M8 M8	r. 2 r.1 15
	112						
	125						
	140						
	160						
	180						
	200						
	220						
	250						
	300						
19 **20**	100	23	4	25	25	M8 M8	r. 2,5 r.1 20
	112						
	125						
	140						
	160						
	180						
	200						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

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

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

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

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



G.110 Guide Pillar Mounting Flange

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

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

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

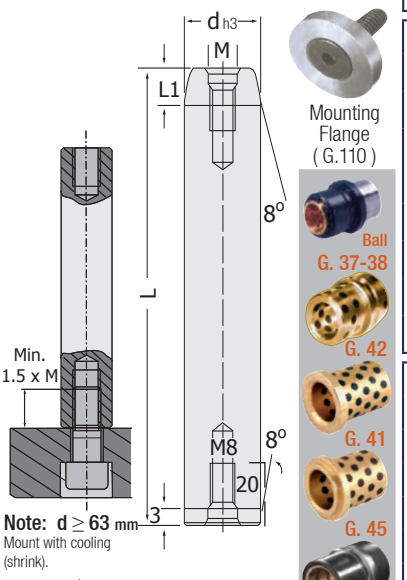
Order : G.10. d x L1 x L2

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

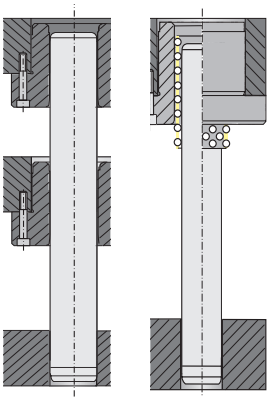
Operating Elements : All sliding systems also can be used with ball bush tools.

GUIDE PILLAR G.24

Mould Guide Pillar, Internal Screwed



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



In Friction System Applications

In Ball Bush System Applications

Plain Guide Pillar G.24

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

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

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

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

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

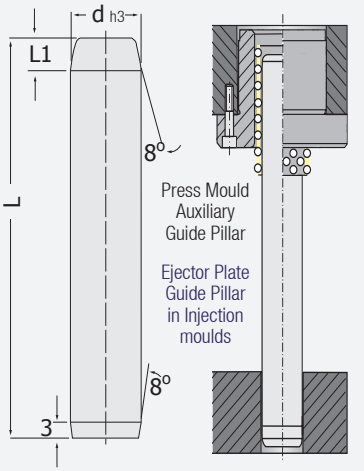
Order : G.24. d x L

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

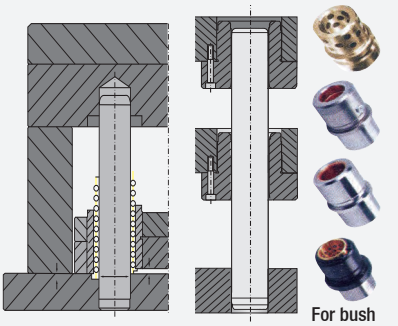
Operating Elements : It can be used with all sliding systems as well as ball bush tools.

GUIDE PILLAR G.19

Inner Press Type, Mould Guide Pillar



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



For bush selection Refer Page 5

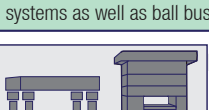
Plain Guide Pillar G.19

Order : G.19 d x L

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

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

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



Production GTH

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

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

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

Order : G.09 d x L

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

Operating Elements :
Self Lubricating Bushes are recommended

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

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

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

Special production can be done as per request.

Production GTH

GUIDE PILLAR G.09

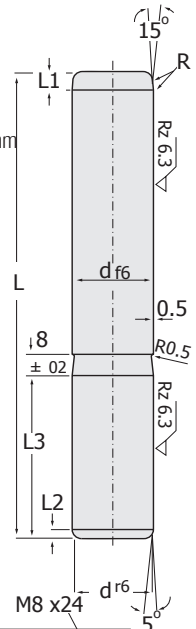
Mould Guide Pillar, Slotted Type

Heavy Type Press Moulds

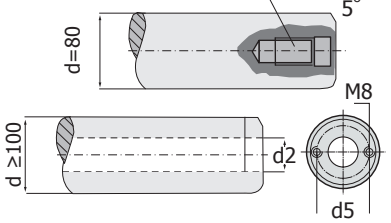
Application:
Grinded surface is Holeless up to Ø d = 80 and Ø 80 = M.12 x 24 mm has one lifting hole.
From Ø d = 100, it has hollow (d2) and 2 pieces M.8 x 24 mm lifting holes.

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

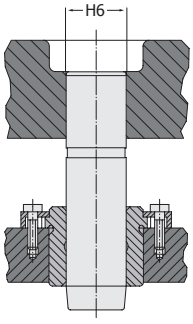
Compatible Bushes:
Self-lubricating Bronze Bushes DIN 9833 Guide Columns



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



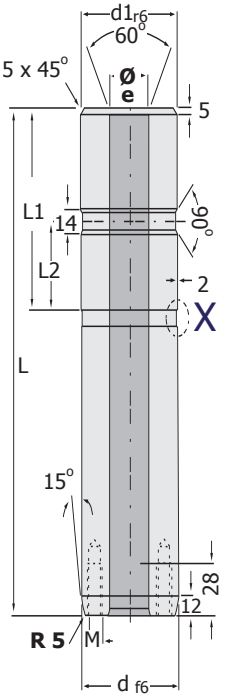
Mounting Example



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

GUIDE PILLAR G. 07

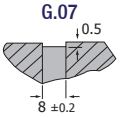
Large Size Slotted /Perforated



Reference:
FIAT STQ
10002
DIN 9833
FIAT

For Suitable Bushes, Refer Page 5.

X - Detail G.07

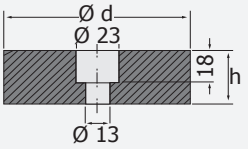


It has Ø d = Follow M.8, two pieces lifting holes.

GUIDE PILLARSLOTTED - PERFORATED G.07

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

Balancing / Centering Cylindrical Blocks G.81-82



d	h
80	25
	30
100	25
	30
120	25
	30

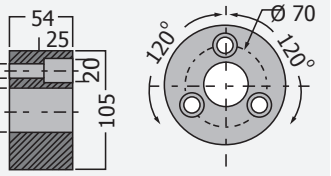
FIAT Balancing Block G.82

FIAT Q 1001 (TDC)

Material : 1.6511
Hardness : HRC 46-48

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

FIAT Centering Blocks G.81



FIAT 230 GSG.74.01

Material : 1.6511
(36 CrNiMo 4)

For your extra orders, G.81 Ø 105

GUIDE PILLAR G.06 G.07

Reference : FIAT STQ 10002
DIN 9833 FIAT

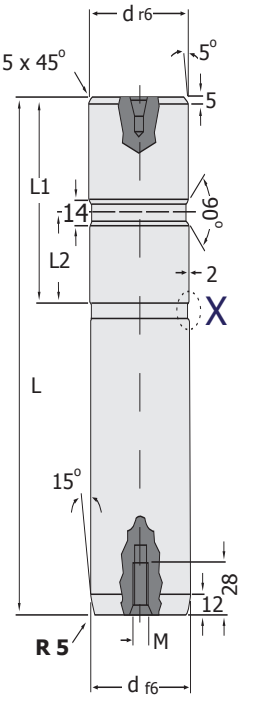
Order : G.06 / G.07 d x L
FIAT STQ 10002 DIN 9833

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

Operating Elements :
Self lubricating bushes are recommended.

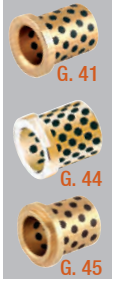
GUIDE PILLAR G. 06

Large Size - Slotted

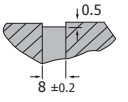


Reference:
FIAT STQ
10002
DIN 9833
FIAT

For Suitable Bushes, Refer Page 5.



X - Detail G.06



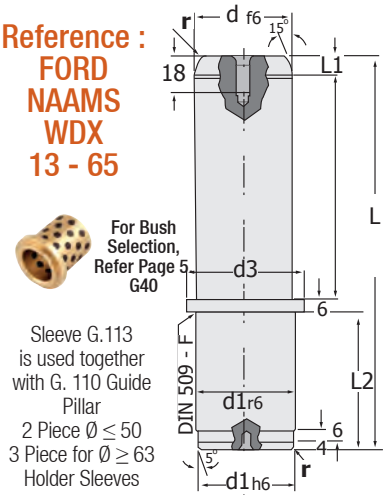
Hole tolerance should be H7.
It is recommended to use mould pillars with self lubricating bedding.

FIAT GUIDE PILLAR SLOTTED G.06

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

G. 01 GUIDE PILLAR

Reference :
FORD
NAAMS
WDX
13 - 65



For Bush Selection, Refer Page 5. G40

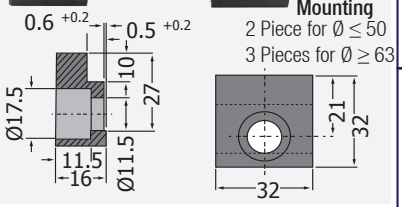
Sleeve G.113 is used together with G. 110 Guide Pillar
2 Piece Ø ≤ 50
3 Piece for Ø ≥ 63
Holder Sleeves

GUIDE PILLAR G. 02
Large Size - Slotted

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

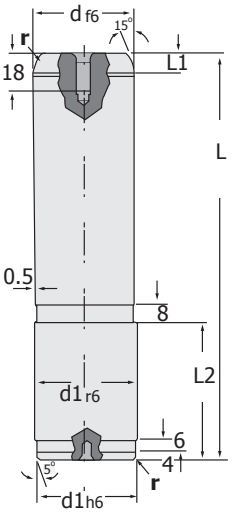
GUIDE PILLAR
Reference : FORD WDX 13 - 60 -1001
Bush and Guide Pillar Holder Sleeve

G.102



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

G. 02 GUIDE PILLAR
FORD
NAAMS
WDX 13 - 65



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

For Suitable Bushes, Refer Page 5.

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

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

Operating Elements :
With all lubricated bush components.

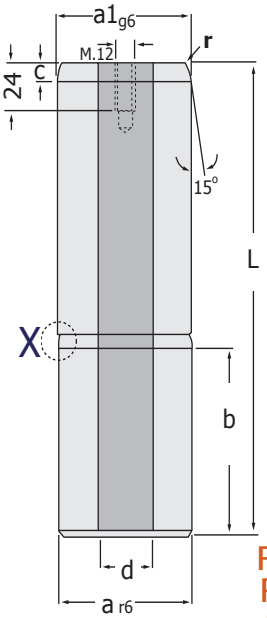
GUIDE PILLAR G. 01
Large Size - With Collar

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

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

GUIDE PILLAR G. 05

Mould Pillars, Slotted /Perforated



For Suitable Bushes, Refer Page 5

Reference PSA E 24. 52.105.G

GUIDE PILLAR G. 05

MouldPillars, Slotted /Perforated

Plain Type Guide Pillar, Slotted

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

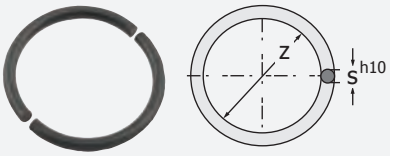
Perforated Type Guide Pillar, Slotted

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

CIRCLIP G.112

Reference : PSA E24.52.105 G

Order : A102 - 01 x Guide Pillar Diameter

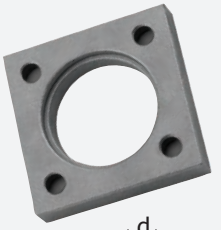


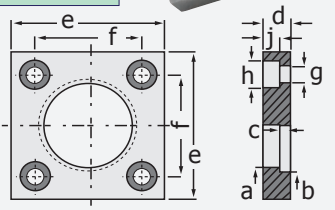
RETAINING FLANGE G.119

Reference : PSA E24.52.105 G

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

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

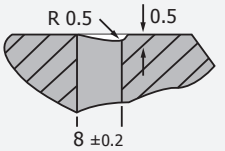




RETAINING FLANGE G.119

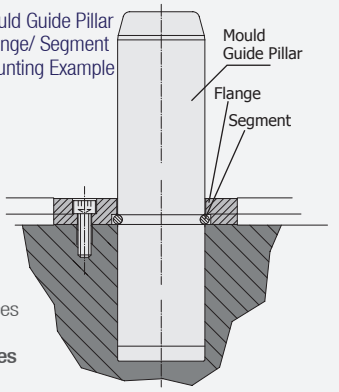
a	b	c	d	e	f	g	h	j
25	45	2.7	10	45	31	6.6	12	7
32	37	4.2	10	56	36			
40	45		12	70	50			
50	55		14	80	55	9	16	9
63	70	6.2	18	100	70	11	18	11
80	87		20	110	80	14	22	13

X - Detail (G.05)



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

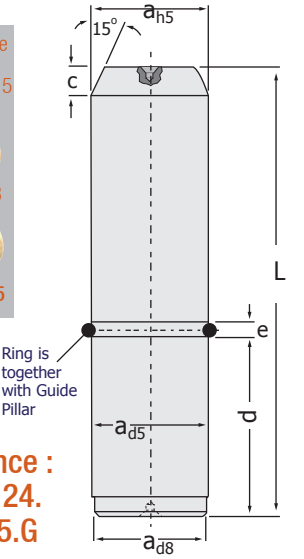
Mould Guide Pillar Flange/ Segment Mounting Example



GUIDE PILLAR G. 04

Large Size - Slotted

For Suitable Bushes, Refer Page 5



Reference : PSA E 24. 52.105.G

GUIDE PILLAR G. 04

Large Size - Slotted

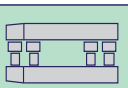
Ø a	L mm	c mm	d mm	e mm	Segment z	Segment s
40	180	12	63	4.2	36	4
	200					
	220					
50	220	16	80	4.2	46	4
	250					
	280					
63	250	16	100	6.2	57	6
	315					
80	315	16	125	6.2	74	6
	355					

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

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

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

Operating Elements :
With all lubricated bush components.

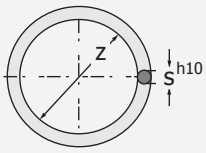


Section Press Mould

CIRCLIP G.112

Reference: CNOMO EM 24.52.100

Material : 1.0301 (C10)



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

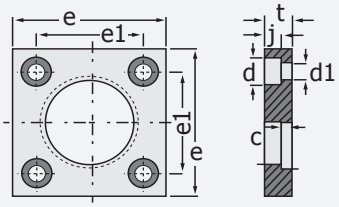
The products; are given together guide pillar and flange ring.

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

RETAINING FLANGE G.119

Reference: CNOMO EM 24.52.100

Material : 1.0301 (C10)



RETAINING FLANGE G.119

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

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

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

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

CNOMO - GUIDE PILLAR
Large Size -Slotted G.03

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

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

GUIDE PILLAR - CNOMO
Large Size -Slotted G.03

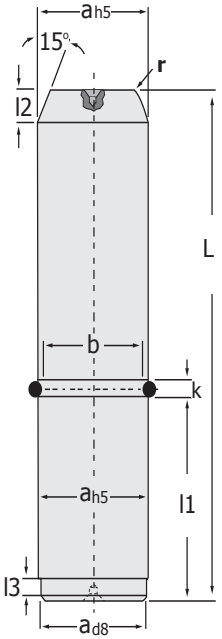
Reference: CNOMO EM 24.52.100

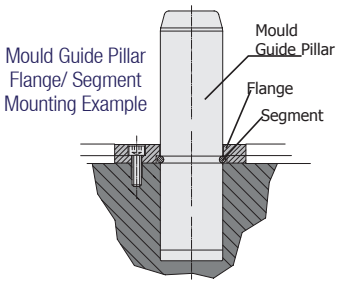
For Suitable Bushes, Refer Page 5

G. 43

G. 45

As per request





CNOMO EM 24.52.100
Order : a x L

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

Operating Elements :
With all lubricated components.

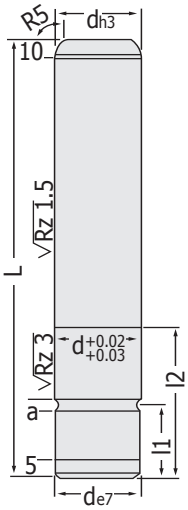
For your extra orders, G.03 No can be used.

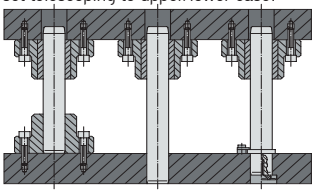
Suitable for extra usage
G.24 (Page 18)
Guide Pillar

RECTANGULAR, CAST BLOCK GUIDE PILLAR

Large Size Slotted G. 20

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

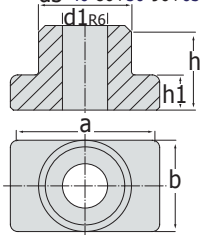




Ø d	L	l1	l2	a
40	180	37	77	8
	220			
	260			
	300			
	355			
	400			
50	200	47	95	8
	240			
	280			
	315			
	355			
	400			
	450			
63	240	60	120	8
	280			
	315			
	355			
	400			
	450			
80	240	60	120	8
	280			
	315			
	355			
	400			
	450			
	500			

RECTANGULAR, CAST BLOCK GUIDE PILLAR

G. 80 - 10

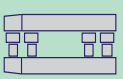


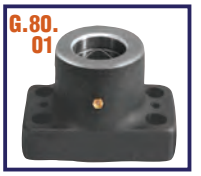
Order : G.20. d x L
(Cast Block, Guide Pillar)

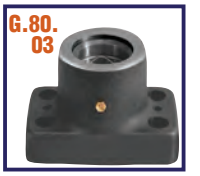
Material : 1.1213 (Cf 53)
Hardness : 62 ±2 HRC With induction

Operating Elements :
Rectangular, Cast Block - Bushes

Absolutely, control the perpendicularity of pillars after mounting.

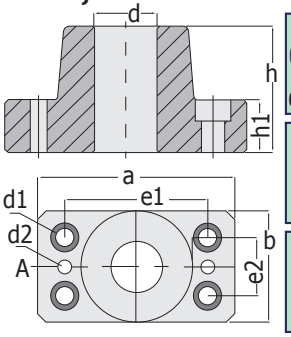






Rectangular, Cast Block BUSHES G.80

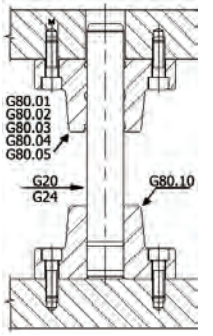
Rectangular Connection Flange Cast Bearing



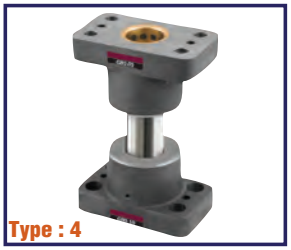
Order : G.80 Type
01~10 x d

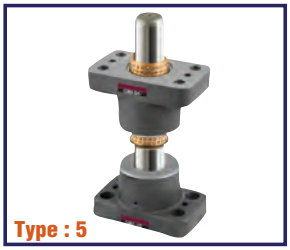
Material :
GG 25

Operating Element :
G.20
G.24



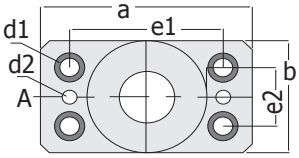
Cast Block Bush	Ø d	d1	d2	h	h1	a	b	e1	e2	M
G.80. 01	40	13	10	77	30	130	80	95	45	12
	50	15	10	95	35	160	96	118	55	14
	63	17	12	120	35	180	110	132	62	16
STEEL Bearing	80	21	14	120	40	215	130	160	75	20
G.80. 02	40	13	10	77	30	130	80	95	45	12
	50	15	10	95	35	160	96	118	55	14
	63	17	12	120	35	180	110	132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

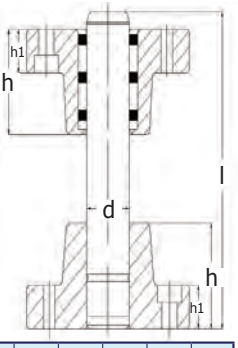




Rectangular - Cast Block SETS G.79

Connection Guide Pillar / Bush Cast Sets





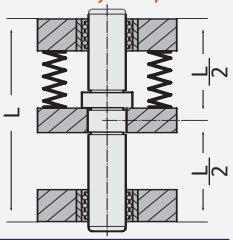
Order :G.79. d x L.Type
Block Casting,Pillar / Sign Set

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

Operating Elements : SET Rectangular Cast Block Guide Pillar / Bush

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

Mounting Example:



Order : G.08. d x L x L1

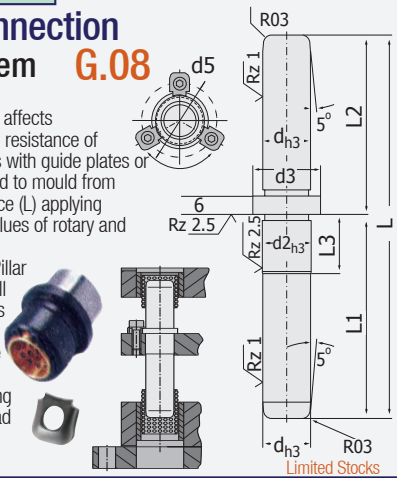
Material : 1.7131 (16 MnCr5)
Hardness : 62 ±2 HRC Depth : 1

Operating Elements :
Ball Cage / Steel Bush / Sleeve

Scraper - Connection

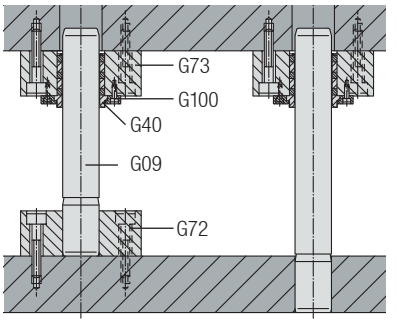
Ball Bush System G.08

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



Limited Stocks

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



G. 72

GUIDE PILLAR BEARING- BLOCK

Steel, Rectangular Type Slot Mould Bushes, with Connection Hole

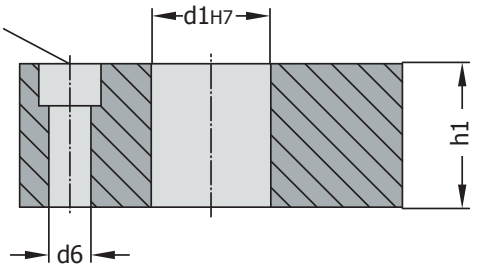
For Mould Pillars / Bush Components, also to give order, refer to Page 5.

Control its perpendicularity of guide pillars after mounting.

G. 73

BUSH BEARING - BLOCK

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



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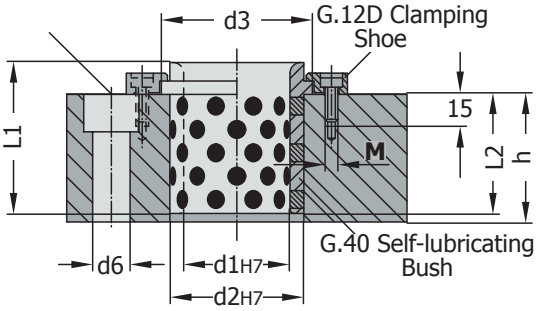
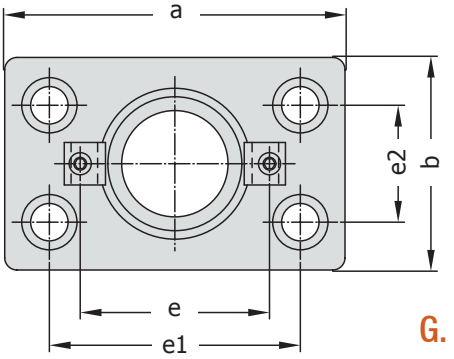
GTH





G. 73

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

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

Order : **G.72 d1**

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

Operating Elements : Guide Pillars (Page 5)

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

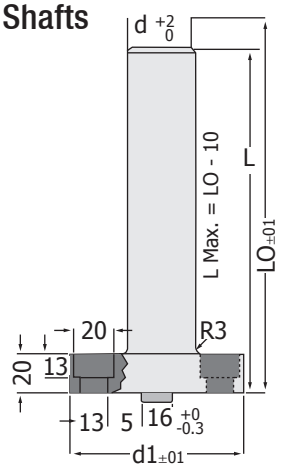
Bush Size	Ø 50	Ø 63	Ø 80	Ø 100	Ø 125	Ø 160
d1	50	63	80	100	125	160
d2	63	80	100	125	160	200
d3	71	90	112	140	180	220
d6	17.5	17.5	21.5	21.5	25.5	25.5
a	160	180	215	230	270	315
b	100	125	145	170	205	250
e	89	123	143	168	203	243
e1	118	132	160	168	203	243
e2	55	62	75	110	142	170
h	60	70	90	110	140	180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

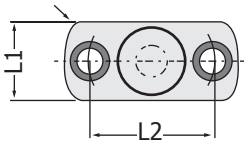
Order : **G.73 d1**

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

TIJ SHAFT G. 69

Ventilation Shafts





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

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

TIJ SHAFT G. 69
Ventilation Shafts

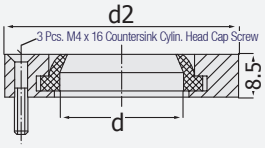
d	d1	L	L1	L2
36	90	175	40	65
36	90	250	40	65
36	90	360	40	65
45	100	175	50	75
45	100	250	50	75
45	100	360	50	75

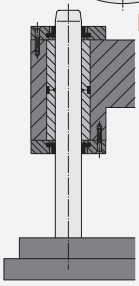
Order : **G.69** d x L

Material : CK 45
Work Tool Steel

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

G.22
PERFORATED FLANGE
Guide Pillar Protection - Flange





Mounting Example

Different Various usage areas can be created at mould sets.

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

Order : **G.22** d

Material : CK 45
Work Tool Steel

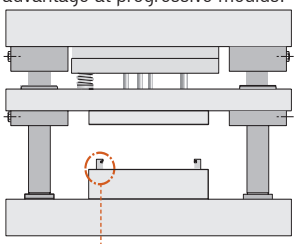
It is used at all Guide Pillar system and at other mould sets as extra.

PERFORATED FLANGE G.22
Guide Pillar Protection

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

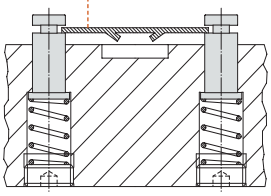
Mounting Example

Using of sheet lifting pin provides advantage at progressive moulds.



G.74 Retaining Spring

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



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

G.23
RETAIINING GUIDE PILLAR
Sheet Lifting Pin

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

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

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

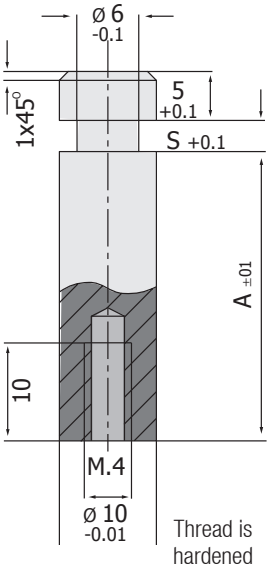
Material : 1.7131 (16 MnCr5)
Hardness : 58 - 60 HRC Depth ≥ 08 mm

Using of sheet lifting is provided advantage at progressive moulds

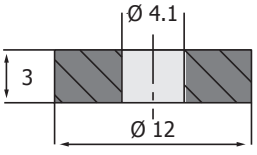
BOTH Produces Sells
Affordable Prices

GTH

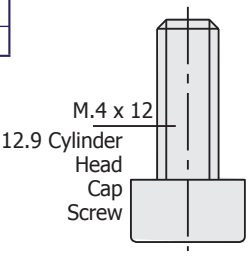
G.23
RETAINING GUIDE PILLAR
Sheet Lifting - Pin



Thread is hardened and grinded.



To secure lifter washer, cyanoacrylate can be used.



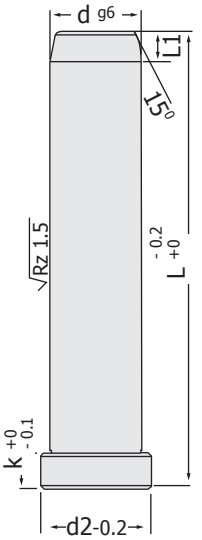
Retaining screws can be selected from our Cylinder Head Cap Screw page.

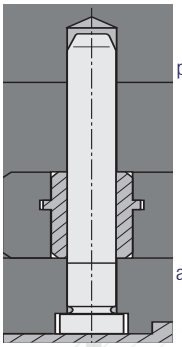
GUIDE PILLAR G.17 Unlubricated - Plain Type Guide Pillar

G.17

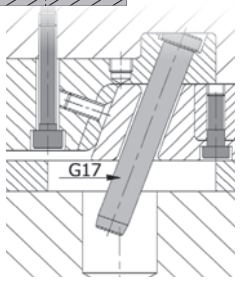
Unlubricated Plain Type Guide Pillar Diagonal Load Pillar

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.



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

d	L	L1	d2	k
20	60	7	24	8
	80			
	100			
	120			
	140			
	160			
	180			
	200			
	240			
22	80	7	26	15
	100			
	120			
	140			
	160			
	180			
	200			
	220			
	240			
	300			
24	80	7	28	15
	100			
	120			
	140			
	160			
	180			
	200			
	220			
	240			
	300			
30	100	7	36	15
	120			
	140			
	160			
	180			
	200			
	220			
	240			
	300			
	360			

d	L	L1	d2	k
40	160	10	48	15
	180			
	200			
	220			
	240			
	280			
	300			
	320			
	360			
50	160	10	58	15
	200			
	240			
	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

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.

Production GTH

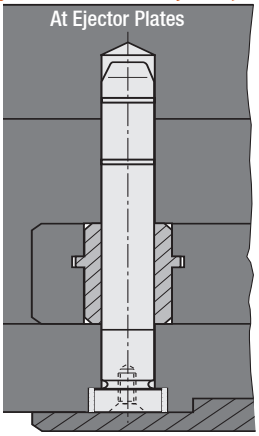
GUIDE PILLAR G.11 Oil Grooved (Chamfered) - Threaded Type

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

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

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

Injection Mould Mounting Example



Order : G.11. d x L

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

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

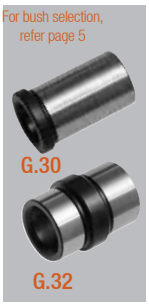
GTH Mould Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding).

GUIDE PILLAR Type

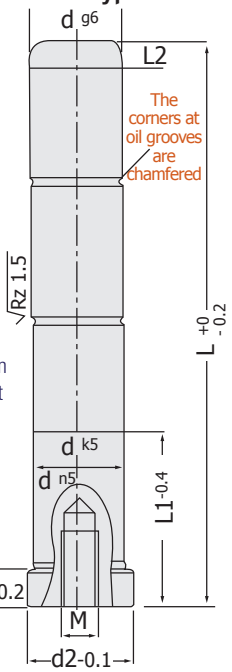
G.11

Oil Grooved (Chamfered) - Threaded Type

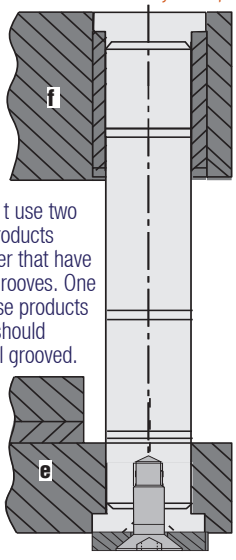
For bush selection, refer page 5



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

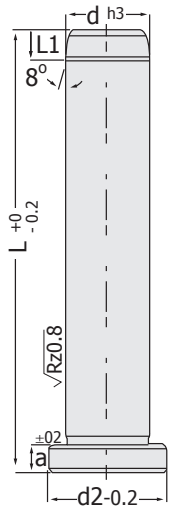


Press Mould Mounting Example



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

CAPPED PILLAR
Ball Type G. 18



Suitable Bushes at Page 5

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

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

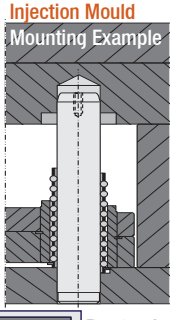
Order Form / Technical Data

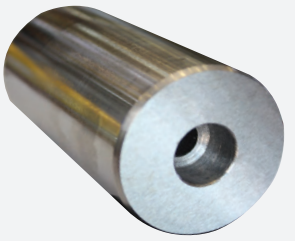
Order : G.18. d x L

Material : 1.7131
Hardness : 61 -63 HRC

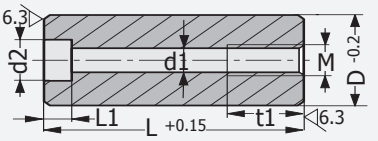
Operating Elements :
At ejector plates, ball bush precision ejector systems.

Injection Mould Mounting Example



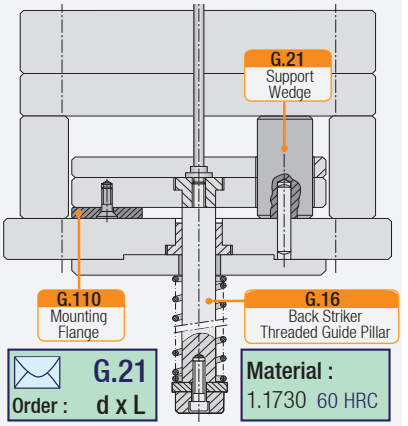


SUPPORT / WEDGE PILLAR
Support Plate - Ejector Plates G.21
Intermediate Thrust Post / Wedge



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

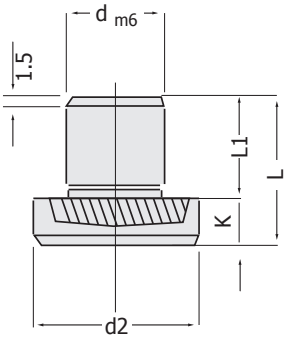
At injection moulds; Thrust wedge that can be used in order to avoid dent between support plate (H4) and bottom joint plate (H5A)also can be provided working of ejector plates more rigidly and sensitively, in order to avoid clicking (Gap), G.110 Mounting Flange can be used.



Order : G.21 d x L

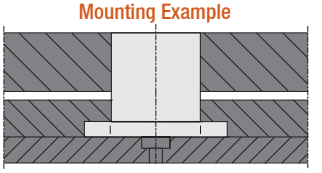
Material : 1.1730 60 HRC

THRUST PLATE G.120
Mould Plate, Thrust Stop Pin



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

Mounting Example



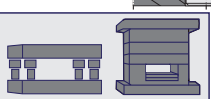
Mould Plate, Thrust Stop Pin

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

Order : G.120. d x L

Material : UNI 16 Cr Ni 4
Hardened and Grinded

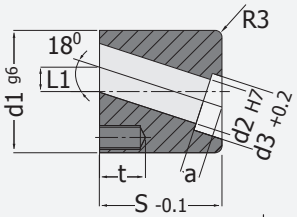
Operating Elements :
It is used as thrust or equipment at injection or press moulds and between holder plates.

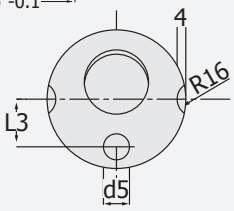


Production GTH

CORE ANGULAR BUSH G. 61

Inclined, Core Pin Holder





Cam Pin Bearing

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

Angular - Core Pin Bearing G. 61

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

Order : G.61. d2

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

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

Injection Core Guide Pillar G. 14

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

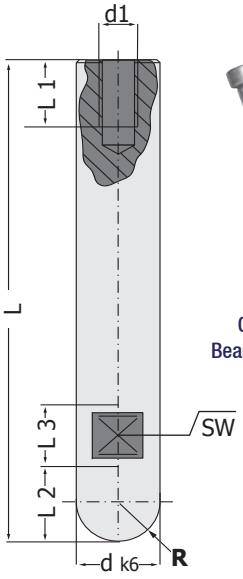
Order : G.14. d x L

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

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

Injection CORE GUIDE PILLAR G. 14

Inclined - Threaded, Veldon Guide Pillar

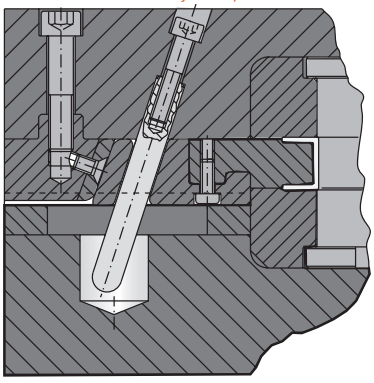


Cam Pin Bearing / Bush

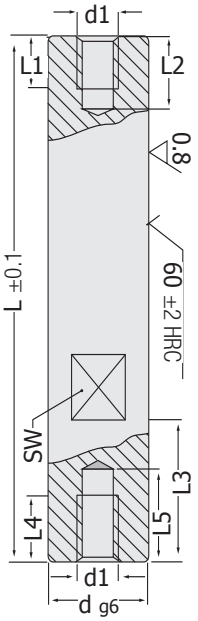
GTH Mould Guide Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding).

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

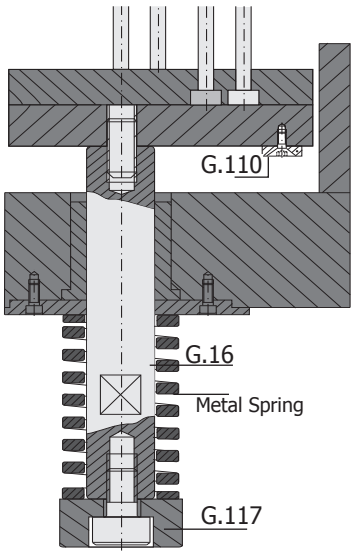
Mounting Example



VELDON EJECTOR - THREADED GUIDE PILLAR
Injection - Back Striker G.16



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



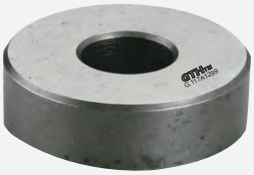
Injection - Back Striker G. 16

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

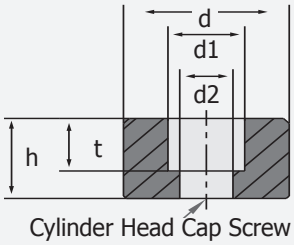
Order : **G.16. d x L**

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

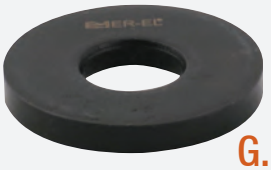


LOCKING WASHER G.117
Back Striker - Mounting Set



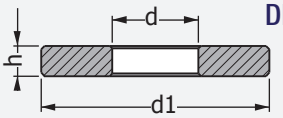
Back Striker - Mounting Set

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



G.114
THICK MOUNTING WASHER
Mould Inner Mounting Washer / Thick

DIN 6340



ER-EL

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

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

Material : Ck 45 DIN
Hardness : 35 -38 HRC

Operating Elements :
At mould inner mounting

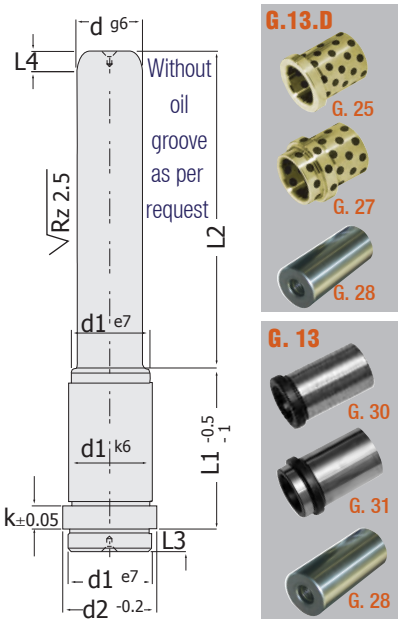
SHOULDERED GUIDE PILLAR With Collar, Shouldered

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

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

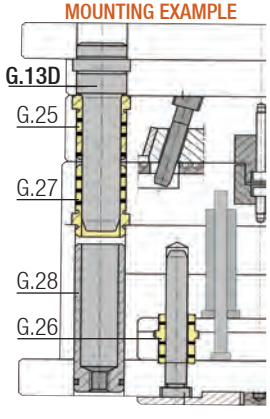
WITH COLLAR / SHOULDERED GUIDE PILLAR

Centering Guide Pillar with / without Oil Groove

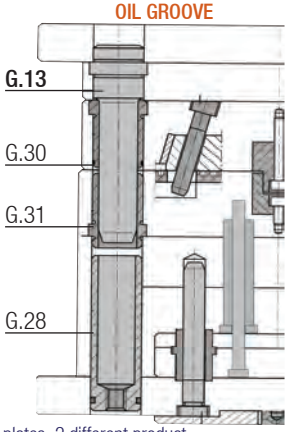


GTH Mould Guide Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding).

G 13D PLAINGUIDE PILLAR MOUNTING EXAMPLE



G 13 GUIDE PILLAR WITH OIL GROOVE



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

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

Contd 34

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

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

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

WITH COLLAR / SHOULDERED GUIDE PILLAR

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

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

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

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

With Oil Groove G.13.D

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

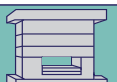
With Oil Groove G. 13

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

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

Contd 35

BOTH Produces Sells
Affordable Prices GTH

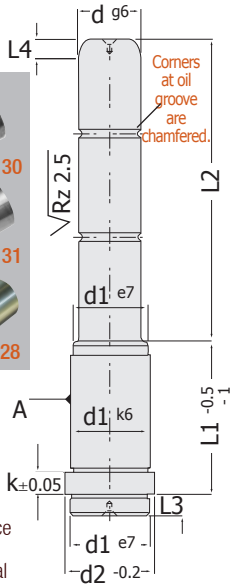


Section Injection Mould

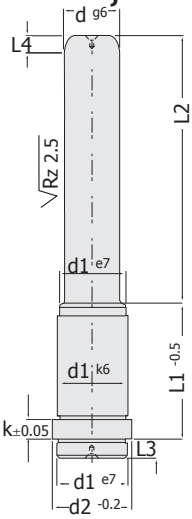
WITH COLLAR GUIDE PILLAR With/ Without Oil Groove G.13 /D

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

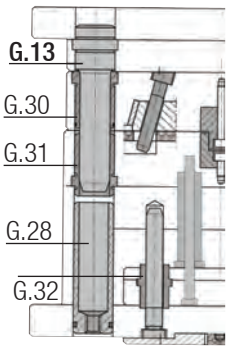
G.13
GUIDE PILLAR WITH COLLAR
With Oil Groove - Guide Pillar
With Collar Centering Guide Pillar



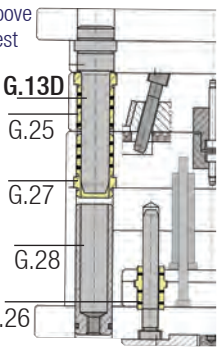
GUIDE PILLAR WITH COLLAR
Without Oil Groove G.13.D
Centering Guide Pillar



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



Without Oil Groove
As per request
G. 13.D



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

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

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

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

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

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

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

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

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

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

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

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

Section Injection Mould

GUIDE PILLAR SHOULDERED TYPE G. 12

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

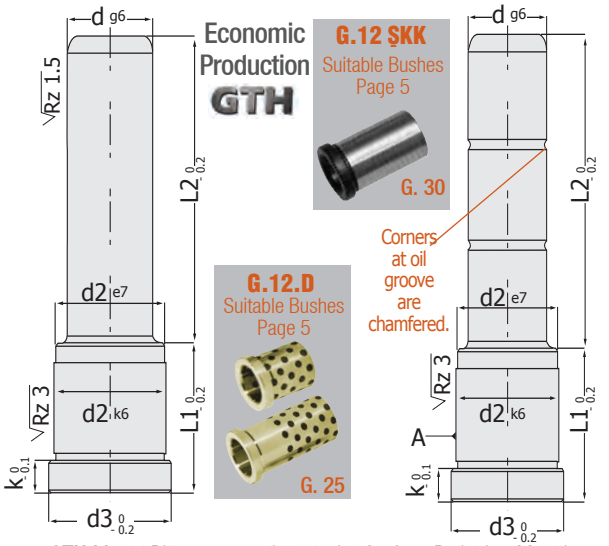
d	L1	L2	d2	d3	k
12	26	26	16	19	4
		36			
		46			
		56			
12	36	26	16	19	4
		36			
		46			
		56			
12	46	26	16	19	4
		36			
		46			
		56			
		66			
14	26	26	20	25	6
		36			
		46			
		56			
		66			
		76			
14	36	26	20	25	6
		36			
		46			
		56			
		66			
		86			
14	46	26	20	25	6
		36			
		46			
		56		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

Contd 36

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

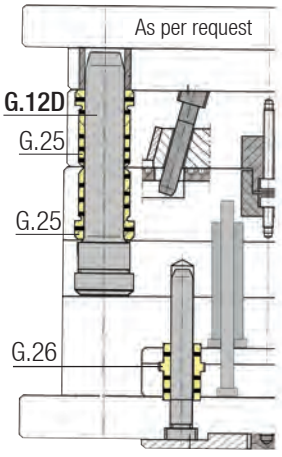
GUIDE PILLAR SHOULDERED TYPE G. 12 / D

Guide Pillar, With/Without Oil Groove

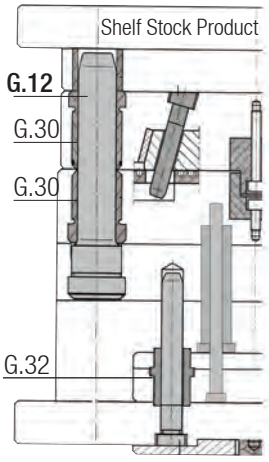


GTH Mould Pillars; are polished with Surface Polishing Machine (Surface Finish) at final stage of production (After grinding).

G 12D PLAIN GUIDE PILLAR MOUNTING EXAMPLE



G 12 GUIDE PILLAR WITH OIL GROOVE



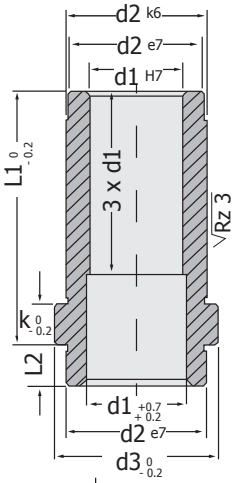
Material : 1.7131 (16 MnCr 5)
Hardness : 58 - 62 HRC
Hardness Depth : ≥ 1.8 mm
Case Hardening

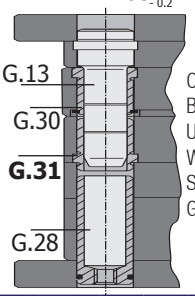
Order : G.12. G.12D. **d x L1 x L2**

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

Bush with Collar G.31

Steel Bush With Centre Collar





Centering Bushes Using With With Collar Shouldered Guide Pillar

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

Order : G.31. d1 x L1

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

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

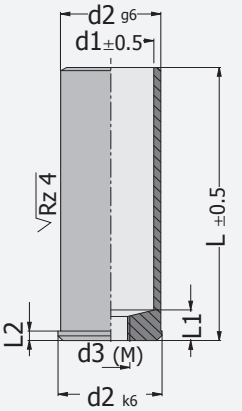
Bush With Collar G.31

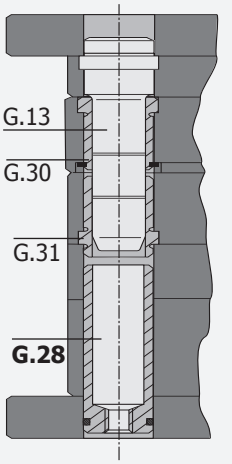
d1	L1	d2	d3	k	L2
18 **20**	17 22 27 36 46 56 66 76 86 96 106 116 136	26	31	6	9
22 **24**	17 22 27 36 46 56 66 76 86 96 106 116 136 156	30	35	6	9
32 **30**	27 36 46 56 66 76 86 96 106 116 126 136 156 196	42	47	6	9
42 **40**	46 56 66 76 86 96 116 136 156 196 246	54	60	10	12

RETAINING BUSH G.28

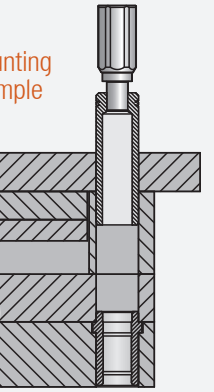
Centering Bush Steel

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





Mounting Example



Retaining Bush G.28

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

BOTH Produces Sells **Affordable Prices** GTH

Order : G.28. d2 x L

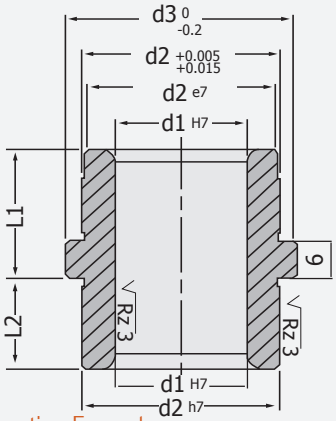
Material : 1.7131 (16 MnCr 5)
Hardness : 62 ± 2 HRC
Hardness Depth : ≥ 1.8 mm

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

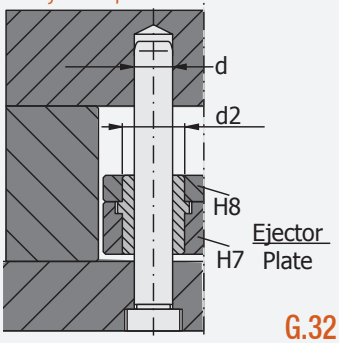
G.32

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

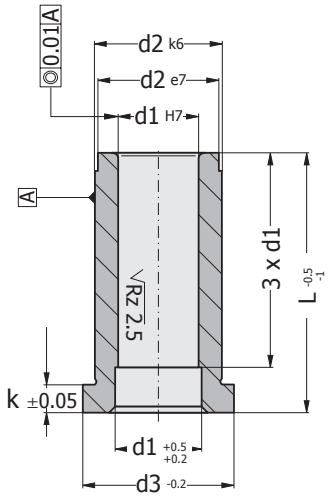
Operating Elements : G.11
Guide Pillar with Oil Groove

Steel Guide Bush G.30

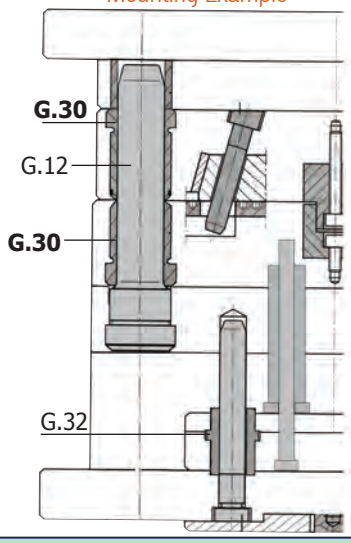
d1	L	d2	d3	k
12	26 36 46 56 66	16	19	4
14	26 36 46 56 66 76	20	25	6
16	26 36 46 56 66 76 86	24	28	6
18	26 36 46 56 66 76 86	26	31	6
20	26 36 46 56 66 76 86 96	28	32	6
25	26 36 46 56 66 76 86 96 106	34	38	8
30	36 46 56 66 76 86 96 106 116	39	43	10
40	46 56 66 76 86 96 106 116 126 136 146	54	58	10

GUIDE BUSH G.30

Steel Guide Bush



Mounting Example



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

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

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

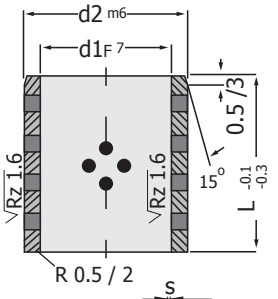
Working Direction

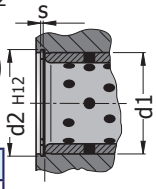
The bushes can be worked both radial and axial.

G.48 SELF-LUBRICATING BUSH

Plain Bronze Guide Bush

Graphite, Self-lubricating



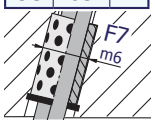


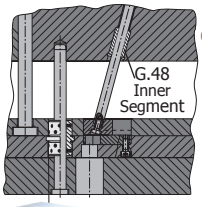
Inner Segment

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

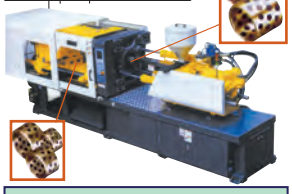
Hole Tolerance For Shrink Fit : H7

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





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



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

Material : Bronze Graphite Self-lubricating

d1	L	d2
8	8	12
	10	
	12	
	15	
10	10	14
	12	
	15	
	20	
12	10	18
	12	
	16	
	20	
	25	
	30	
16	12	22
	16	
	20	
	25	
	30	
	35	
	40	
18	20	24
	25	
	30	
	35	
	40	
20	20	28 30
	25	
	30	
	35	
	40	
25	20	33 35
	25	
	30	
	35	
	40	
	50	
30	25	38 40
	30	
	35	
	40	
	50	
	60	
32	25	38 42
	30	
	35	
	40	
	50	
	60	
35	30	44 45
	40	
	50	
	60	

d1	L	d2
40	25	50 55
	30	
	35	
	40	
	50	
	60	
45	30	55 60
	35	
	40	
	50	
	60	
50	30	60 65
	35	
	40	
	50	
	60	
	70	
	80	
	100	
60	30	74 75
	35	
	40	
	50	
	60	
	70	
	80	
	100	
70	35	85 90
	40	
	50	
	60	
	70	
	80	
	100	
80	40	96 100
	50	
	60	
	70	
	80	
	100	
	120	
	140	
100	50	120
	60	
	80	
	100	
	120	
	140	
120	80	140
	100	
	120	
	140	
150	100	170
	150	

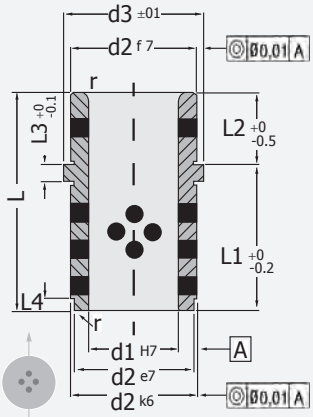
Self-lubricating used at ejector system with unlubricated Guide Pillar G. 17 at ejector plate pillaring system of injection moulds.

SELF-LUBRICATING - CCB. BUSH G.26

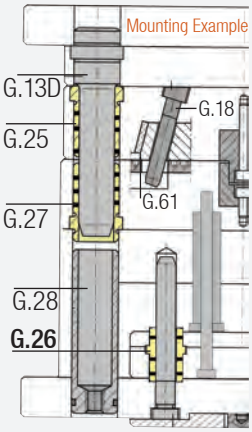
Bronze Bush with Centre Collar

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

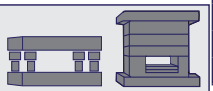
★Our Standard Stocks:
'd' 14 - 16 - 20
25 - 30

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

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

Material : Bronze Material Self-lubricating Providing Lubrication

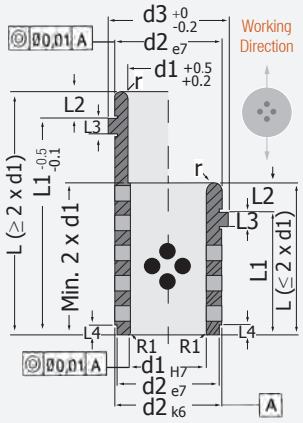
Usage: G.17 Guide Pillar without Oil Groove
G.15 Thick backed Guide Pillar (Press Moulds)



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

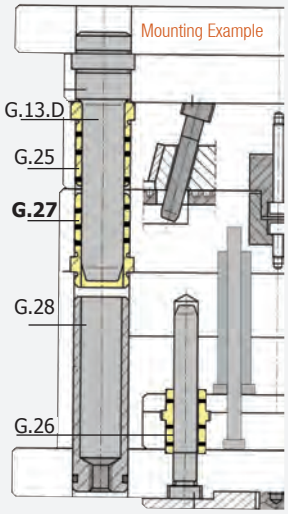
Self-lubricating Bushes Using with Guide Pillar with oil groove at mould pillaring.

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



Graphite, Self-lubricating

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



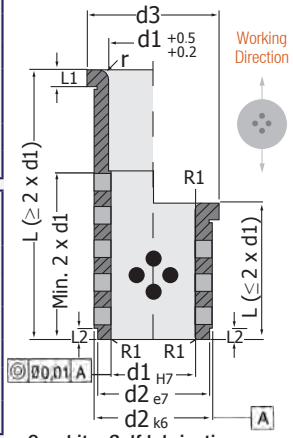
Order : G.27. d x L

Material : Bronze Graphite Self lubricating

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

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

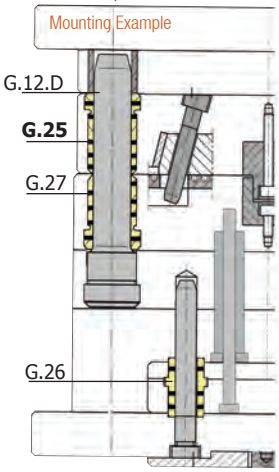
SELF-LUBRICATING - CB. BUSH
Bronze Bush G.25



Graphite, Self lubricating

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

Continuous, Stocked Products



Order : G.25. d x L

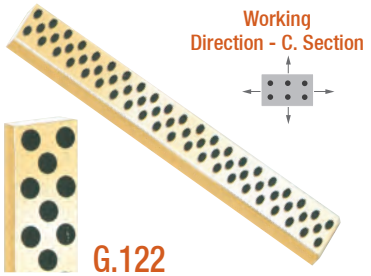
Material : Bronze Graphite Self-lubricating

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

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

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

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

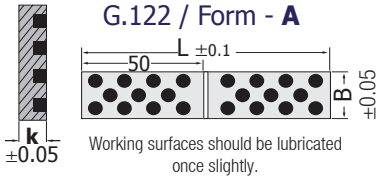


G.122

GRAPHITE-BRONZE(SELF-LUB.) PLATE

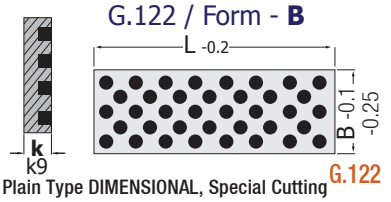
Plain Type DIMENSIONAL, Special Cutting

G.122 / Form - A



Working surfaces should be lubricated once slightly.

G.122 / Form - B

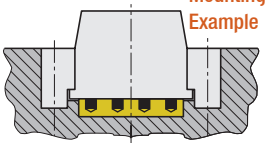


Plain Type DIMENSIONAL, Special Cutting G.122

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

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

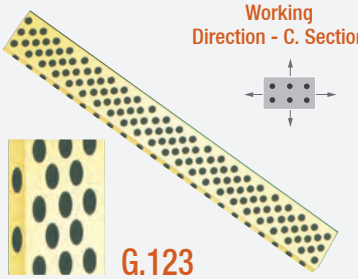
Mounting Example



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

Material : Bronze, Graphite Self lubricating Friction Plate

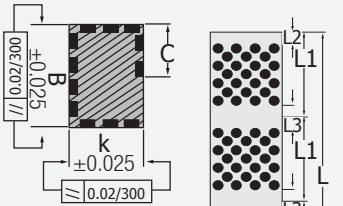
Operating Elements : Injection Moulds, Core Systems, Sliding Bearings etc.



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.

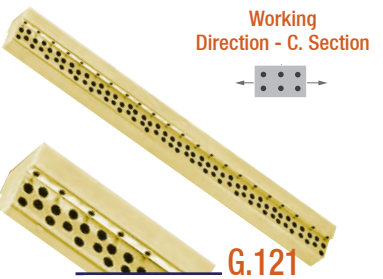
G. 123 (Double Side Self-lubricating)
Order : K x B x L

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

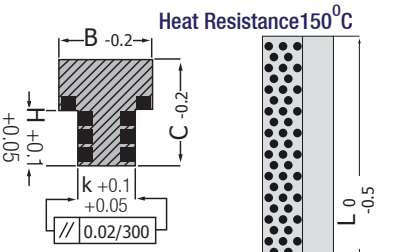


G.121

GRAPHITE-BRONZE(SELF-LUB.) PLATE

"T"Shape, DIMENSIONAL, Special Cutting

Heat Resistance150°C



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

Heat Resistance150°C

"T"Shape, DIMENSIONAL, Special Cutting

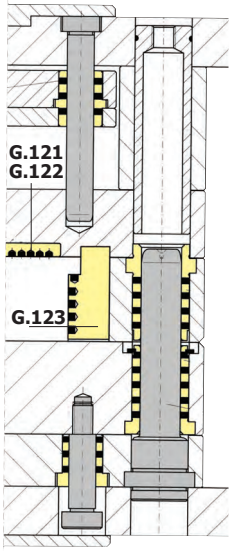
C	B	k	H	L
12	18	8	5	350
25	22	12	15	350
35	28	18	20	350

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

Material : Bronze, Graphite Self lubricating Friction Plate

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

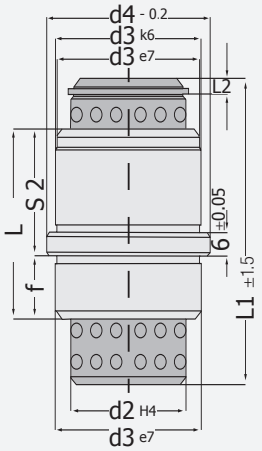
Self Lubricating Equipment provide above expected load carrying capacity at lower sliding speeds and wide temperature range, lubricant Self-lubricating orifices is positioned with suitable geometric structure. Thanks to it, maximum sliding motion provides along sliding motion. Especially, they perform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



BALL BUSH BEARINGS G.29

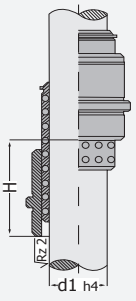
Ejector Plate Ball Bush Standard Set

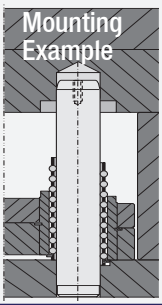
Steel Short Bush / Ball Bronze Cage



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

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





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

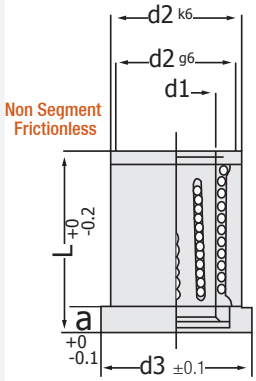
Material : Ball Materials : 1.3505 (100Cr6)
Cage : Ms58 - Steel Bush : 1.7131 (16 MnCr 5)

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

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

BEARING BUSH

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



Heat Resistance 230°C

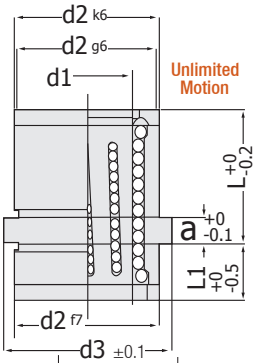
Order : **G. 74.** d1 x L

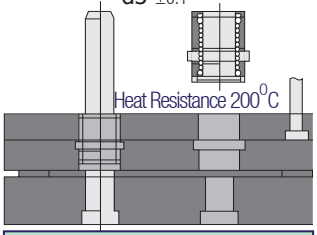
Ball Materials : 1.3505 (100Cr6)
Cage : Ms58 Bronze
Steel Bush : 1.7131 (16 MnCr 5)

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

BEARING BUSH WITH CENTRE COLLAR

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





Order : **G. 75.** d1 x L

GUIDE PILLAR

Refer page 30

Ball Type G. 18

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

Steel Bearing Bush G.74

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

Bearing Guide Bush with Centre Collar G.75

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

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

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

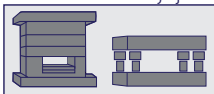
New Steel Bearing Bushes G.74 / G.75

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

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

The products marked with x are stocked.

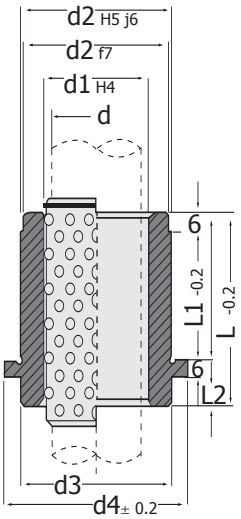
Centre Collar Ejector Plate Bush G.75; Rigidity in centering with free axial motion at long ejector systems of injection moulds - Unlimited Frictional Motion. Guide Bush G.74 - Quality Control Equipments - Practical and Reliable product for machine and mould production and device design. For maintenance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



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

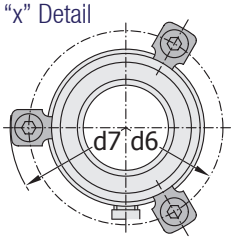
STEEL/SHORT TYPE-BALL CAGE BUSH G. 38

Press Mould Ball Cage Short Steel Guide Bush with Collar



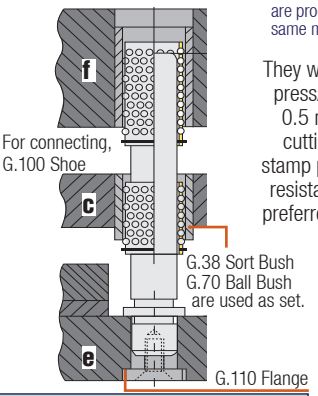
Ø d	L mm	Ø d1	Ø d2	Ø d3	Ø d4	d6 d7	L1 mm	L2 mm
15 **16**	35	21 / 22	30	30	34	35	23	12
19 **20**	35	25 / 26	32	32	40	52 64.7	23	12
24 **25**	35	30 / 31	40	40	48	60 72.7	23	12
32 **30**	42	40 / 38	48	48	55	79.7 67	30	12
38 **40**	52	46 / 48	58	58	55	77 89.7	37	15
48 **50**	65	56 / 58	70	70	80	91 104	47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

"x" Detail



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



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

Order: G. 38 d x L x L1

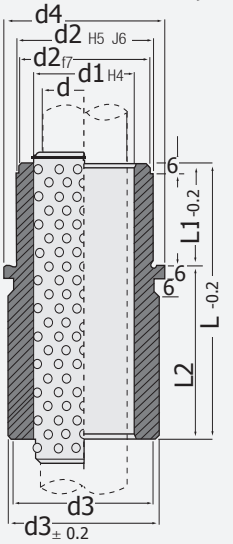
Material : 1.7131 (16 MnCr 5)
Hardness : 61 - 63 HRC

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

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

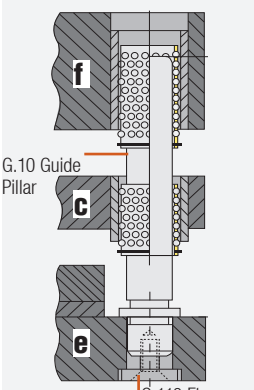


Ø d	L mm	Ø d1	Ø d2	Ø d3	Ø d4	d6 d7	L1 mm	L2 mm
15	43	21	30	32	34	35	23	20
16	59	22						36
19	43	25	32	39	40	52 64.7	23	20
20	59	26						36
24	59	30	40	46	48	60 72.7	23	36
25	79	31						56
32	75	40	48	53	55	79.7 67	30	45
30	93	38						63
38	82	46	58	63	65	77 89.7	37	45
40	108	48						71
48	97	56	70	77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

"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 100ºC.



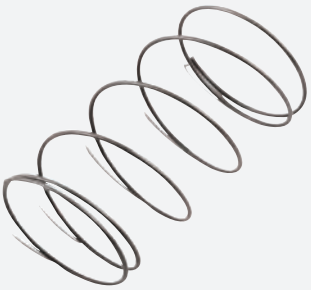
Order: G. 37 d x L x L1

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

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

BALL CAGE Bronze Bush G. 70

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



G.70.1

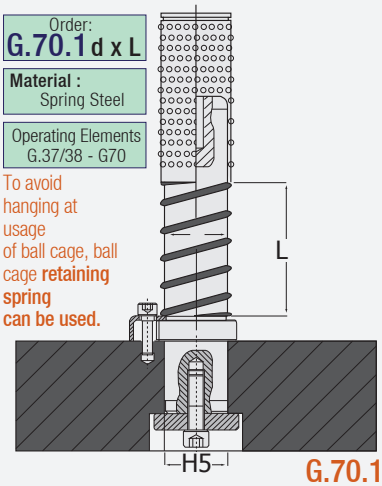
Ball Cage RETAINING SPRING

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

Material : Spring Steel

Operating Elements G.37/38 - G70

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



G.70.1

Ball Cage RETAINING SPRING

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

BALL CAGE Bronze Bush G. 70

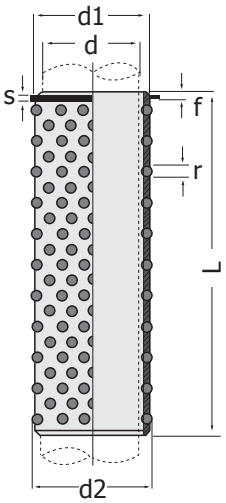
d mm	L mm	Ø d1	Ball d2	Ball r	Segment d3	Segment f	Segment s
12	40	15	16	2	20.5	2.5	1.2
	56						
15	45	20	21	3	29	2.7	1.2
	56						
16	71	21	22		30.2		
18	45	24	25	3	32.6	2.8	1.2
	56						
	71						
19	45	24	25	3	33.2	2.9	1.2
	56						
	71						
20	80	25	26		34.2		
	95						
24	45	29	30	3	40.5	3.2	1.5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

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

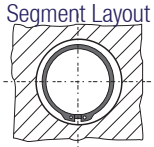
Heat Resistance of Ball Cage is 120° C.

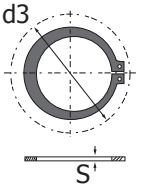
Ball Cages are presented with segment.

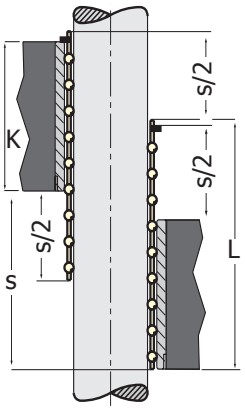
BALL CAGE Bronze Bush G. 70



Segment Layout







L = K + 0.5 x s

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

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

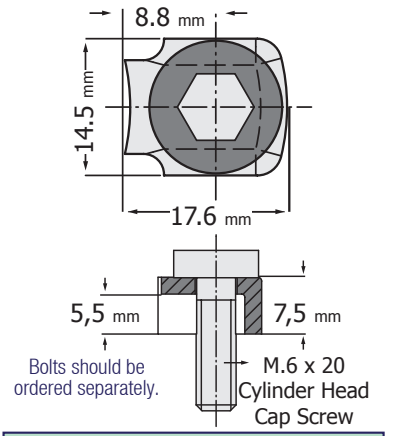
Operating Elements : Bush G 37 / G 38
Holder: G.70.1 (Spring). G70 / Segment

Production GTH

Section Press Mould

FISH PLATE G.100

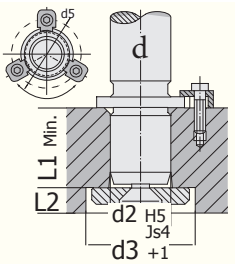
Clamping for Demountable Guide Pillar



Order : G.100

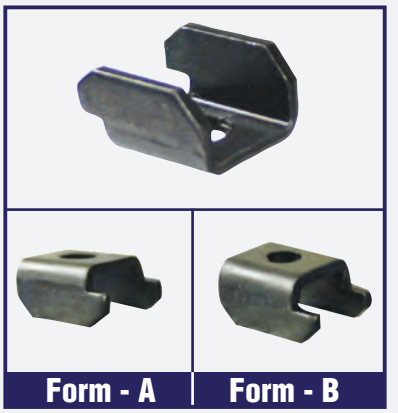
Guide Pillar Mounting Flange G.110

For product info, refer Page 16.



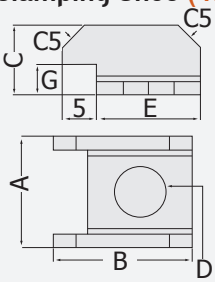
Mounting Dimensions and Tolerances of Demountable Mould Columns (Soft Shrink Fit)
Given Dimensions: Standard Centre Collar Guide Pillar G.10 has recommended for product.

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



BUSH HOLDER G.101

Clamping Shoe (NAAMS) A-B



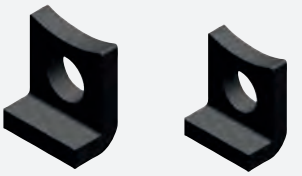
While using for Self-lubricating guide bushes and other bush components with bushes, for Ø ≤ 63' 2 Pcs. and for Ø ≥ 80' 3 Pcs. holders are used. Mounting bolts are supplied separately.

For Ø6.5 - M.6 - Ø8.5 - M.8

Clamping Shoes (NAAMS) A-B G.101

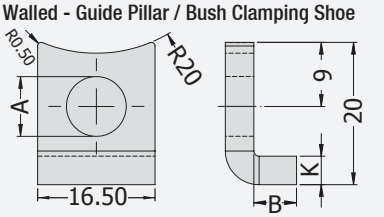
ø d BUSH	A mm	B mm	C mm	D mm	E mm	G mm	Form
32 / 40 50 / 63 63 / 80 100 115	17.5	22.5	12	6.5	18	6	A M.6 x 20
32 / 40 50 / 63 63 / 80 100 115 125	21	25.5	13.5	8.5	21	5.5	B M.8 x 20

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



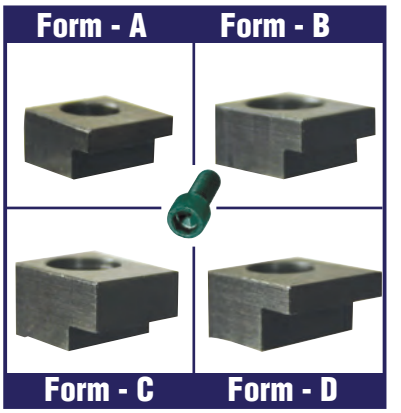
CLAMPING SHOES G.143

Walled - Guide Pillar / Bush Clamping Shoe



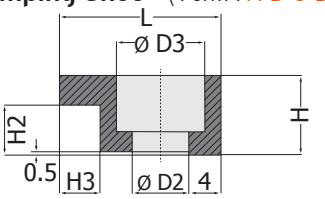
Form	A	B	K
M6	6.20	4.80	2.5
M8	8.40	5.80	4

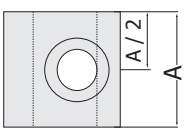
Order : G.143. (M6 - M8)



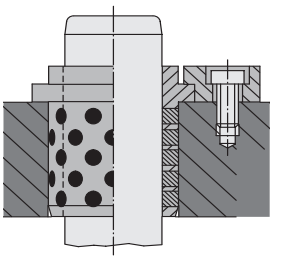
BUSH / PILLAR G.102

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





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



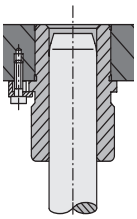
It is used to fix from cap or flange portion at guide pillar and Self-lubricating bush moulds. While using with bushes, for Ø ≤ 63'two pieces and for Ø ≥ 80' three pieces holders are used. Mould mounting bolts should be supplied separately.

Clamping Shoes G.102

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

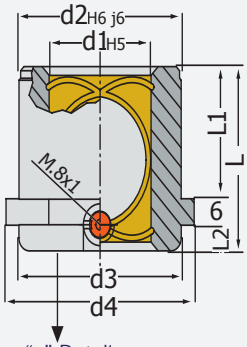
Pls. lubricate from grease nipple on bush occasionally.

Mounting Example

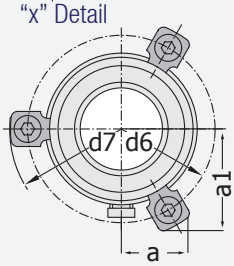


STEEL / SHORT TYPE - BRONZE BUSH

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



"x" Detail



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

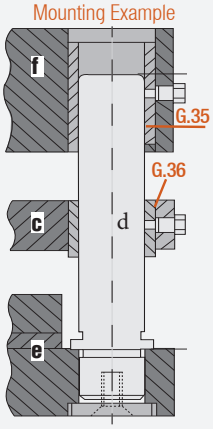
For spare shoes, refer Page 46.
Clamping shoe M.6 x 20
4 Pcs. Clamping shoes for
d1= 38 mm and long sizes.

Order:
G. 36 d1 x L x L1

Material : 1.0503 with induction d1 Bronze
Hardness : 80 HB

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

Mounting Example

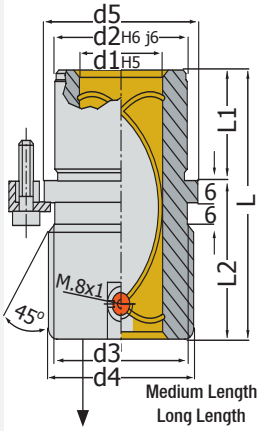


Ø 19 - 24 - 32 - 38 - 48 - 60 are produced as per request. In order to avoid reverse closing of mould, it can be used with 1 Pcs. Main Dimension.

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

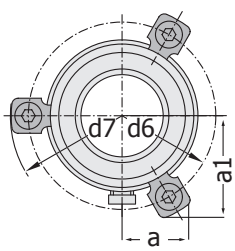
STEEL / LONG TYPE - BRONZE BUSH G. 35

Press Mould /With Collar -Bronze Bearing - Lubricated



Medium Length
Long Length
Options

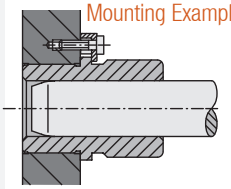
"x" Detail

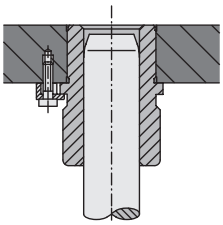


Ø d1	L mm	Ø d2	Ø d3	Ø d4	Ø d5	L1 mm	L2 mm	d6 d7
19 **20**	43 59	32	32	39	40	23	20 36	52 64.7
24 **25**	59 79	40	40	46	48	23	36 56	60 72.7
32 **30**	75 93	48	48	53	56	30	45 63	67 79.7
38 **40**	82 108	58	58	63	66	37	45 71	77 89.7
48 **50**	97 127	70	70	77	80	47	50 80	91 104
60 **63**	116 150	85	85	92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

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

Mounting Example





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

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

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

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

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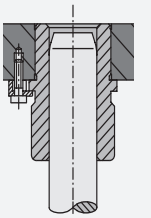
GTH

Section Press Mould

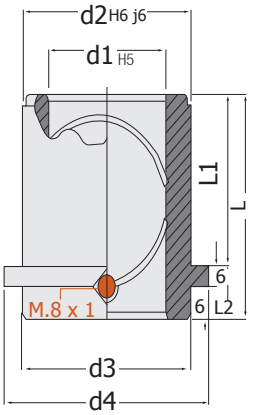
Pls. lubricate from grease nipple on bush occasionally.

Mounting Example



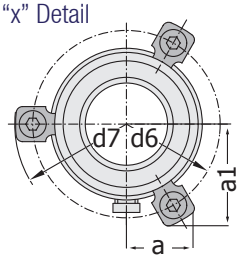
STEEL / THICK TYPE - SHORT BUSH

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



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

"x" Detail



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

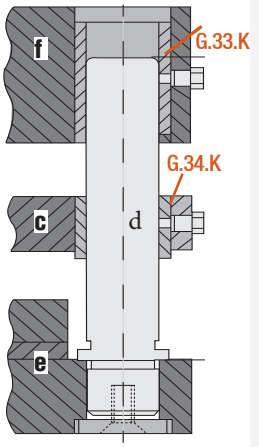
Order: **G. 34.K** d1 x L x L1

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

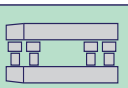
Operating Elements : G.01
Guide Pillar Type: G.15-G.10 G.24 G.11 - G.17and clamping shoe.

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

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



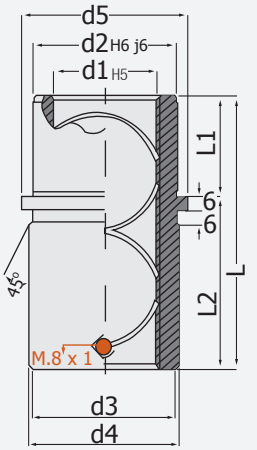
Page 48



Section Press Mould

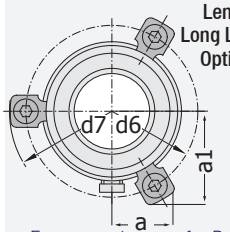
STEEL / THICK TYPE - LONG BUSH

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



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

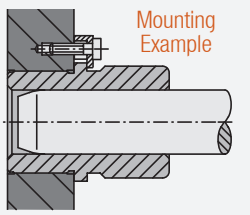
Medium Length
Long Length
Options

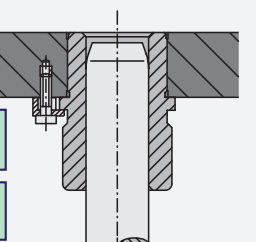


For spare shoes, refer Page 46. Clamping shoe M.6 x 20 4 Pcs. Clamping shoes for d1= 38 mm and long sizes.

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

Mounting Example





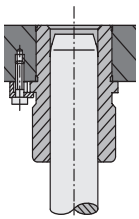
Order: **G. 33.K** d1 x L x L1

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

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

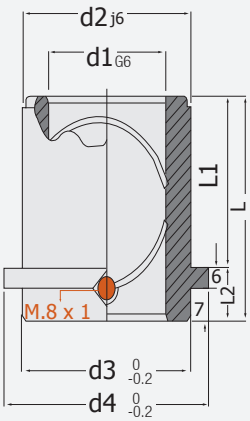
Pls. lubricate from grease nipple on bush occasionally.

Mounting Example



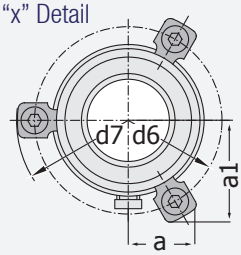
STEEL / THIN TYPE- SHORT BUSH

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



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

"x" Detail



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

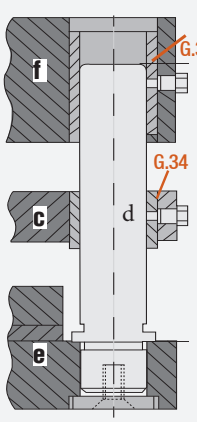
Order:
G. 34 d1 x L x L1

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

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

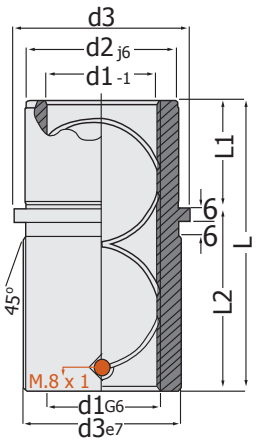
For being **GTH** Products having long life and maximum resistance against abrasion, unique sensitivity has provided at surface roughness. This is also created specific bearing system.

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

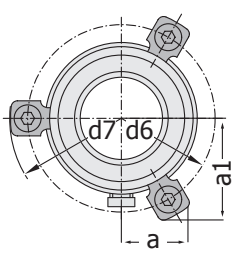


STEEL / THIN TYPE- LONG BUSH

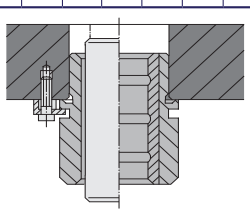
Press/ General Mould - With Collar - Lubricated **G. 33**



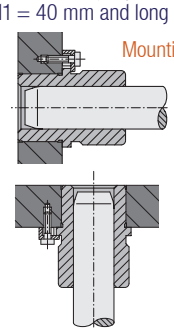
ø d1	L mm	ø d2	ø d3	L1 mm	L2 mm	a a1	d6 d7
20	70	28	34	23	47	20.7 30	52 64.7
						" x " Shoe	
25	80	34	39	23	57	22.7 33.4	60 72.7
30	90	39	44	37	53	24.4 36.4	67 79.7
40	100	50	54	37	63	35.3 35.3	77 89.7
50	120	60	64	47	73	40.2 40.2	91 104



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



Mounting Example



Order:
G. 33 d1 x L x L1

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

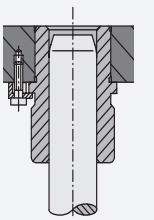
Operating Elements : G.01
Guide Pillar : G.15 - G.10 - G.19 - .24
G.17 - G.18 (At F Plate)

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

Section Press Mould

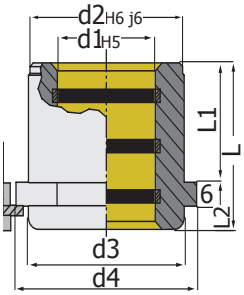
During mounting, should be lubricated once.

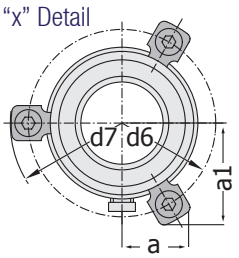
Mounting Example



SHORT TYPE, STEEL /BRONZE /SELF-LUBRICATING BUSH

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



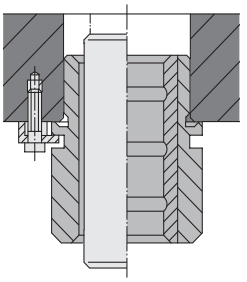


For spare shoes, refer Page 46. Clamping shoe M.6 x 20 4 Pcs. Clamping shoes for d1 = 38 mm and long sizes.

Order:
G. 49 d1 x L x L1

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

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



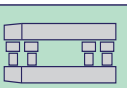
Self Lubricating Product

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

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

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

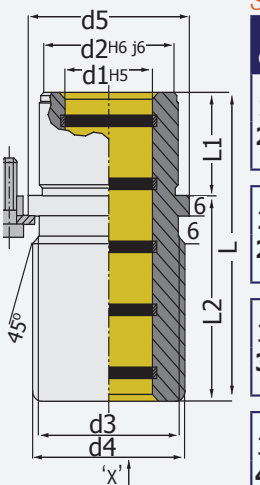
Page 50



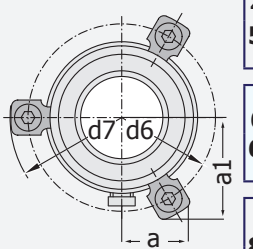
Section Press Mould

LONG TYPE, STEEL /BRONZE /SELF-LUBRICATING BUSH

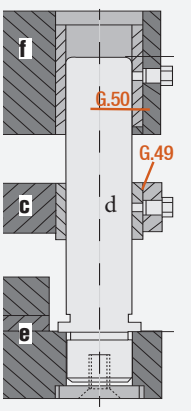
Press Mould / With Collar-Bronze Bearing / Self-Lubricating **G. 50**



Medium Length
Long Length
Options



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



Self Lubricating Product

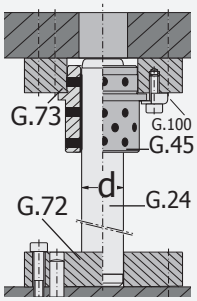
ø d1	L mm	ø d2	ø d3	ø d4	ø d5	L1 mm	L2 mm	d6 d7
19 **20**	43 59	32	32	39	40	23	20 36	52 64.7
24 **25**	59 79	40	40	46	48	23	36 56	60 72.7
32 **30**	75 93	48	48	53	56	30	45 63	67 79.7
38 **40**	82 108	58	58	63	66	37	45 71	77 89.7
48 **50**	97 127	70	70	77	80	47	50 80	91 104
60 **63**	116 150	85	85	92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

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

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

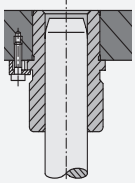
Material : 1.0503 (Ck 45) with induction
Bronze Hardness: 80Hb / Self-lubricating plated

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



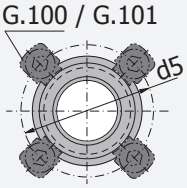
GRAPHITE / BRONZE GUIDE BUSH WITH CENTER COLLAR — G. 45

DIN 9834 / ISO 9448 Self Lubricating

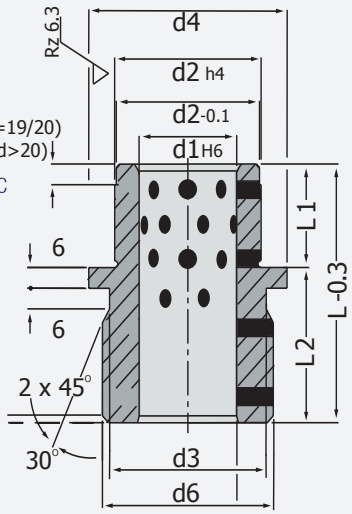


Heat Resistance : < 150°C

Working Direction



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



BRONZE GUIDE BUSH — G. 45

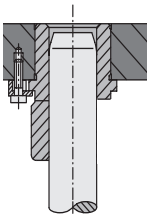
d d1	L mm	Ø d2	Ø d3	Ø d4	Ø d5	Ø d6	L1 mm	L2 mm
19 **20**	**32**	32	32	40	49	-	20	12
	50					34		30
	70					34		50
24 **25**	**35**	40	40	48	57	-	23	12
	60					42		37
	80					42		57
32 **30**	**42**	48	48	56	65	-	30	12
	75					50		45
	95					50		65
38 **40**	**50**	58	58	66	75	-	35	15
	80					60		45
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

Order : G. 45 d1 x L

Material : Bronze 190 - 220 HB
Graphite providing lubrication

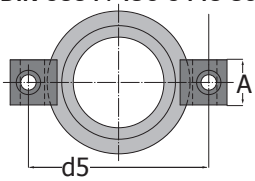
Operating Elements :
G. 24 - G.10
G.18 - G.19 - G.20

Mounting Example



GRAPHITE / BRONZE GUIDE BUSH WITH COLLAR — G. 44

DIN 9834 / ISO 9448 Self Lubricating

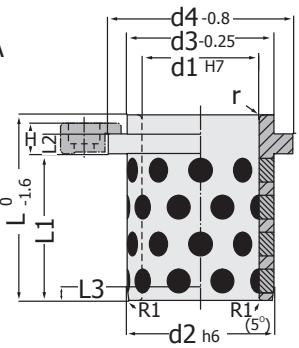


For clamping shoes, G.102 Form : A-B-C-D

2 Pcs. Holder can be used for each bush during mounting

The tolerance of bush opened for bush: H.7

Working Direction



Heat Resistance : < 150°C

DIN 9834 / ISO 9448 Self Lubricated — G. 44

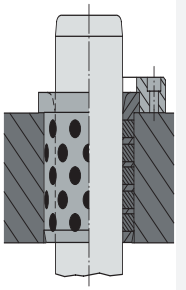
Ø d1	L mm	Ø d2	Ø d3	Ø d4	Ø d5	L1 mm	L2 mm	L3 mm	r	A	H
25	40	32	32	40	58	32	6.3	3	3	20	10
32	50	40	40	50	66	40	6.3	4	3	20	10
40	63	50	50	63	79	50	6.3	5	3	20	10
50	71	63	63	71	89	56	6.3	6.3	5	20	10
63	80	80	80	90	123	63	10	8	6	32	16
80	100	100	100	112	143	80	10	10	8	32	16
100	125	125	125	140	168	106	10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

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

Order : G. 44 d1 x L

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

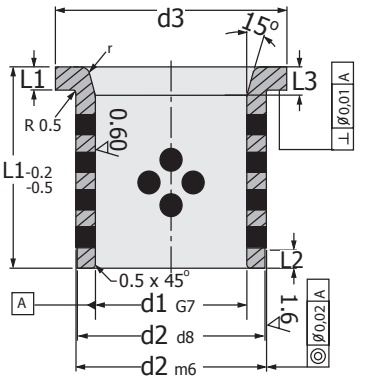
Operating Elements:
It is compatible to use with G.04 / G.05 / G.02 / G.03 G.06 / G.07 / G.09 Pillars.



GRAPHITE / BRONZE GUİDE BUSH

CNOMO EM 24. 52. 100 — G. 43

Graphite Bush Self Lubricating, Graphite

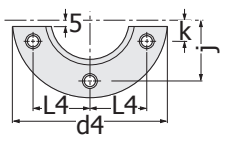


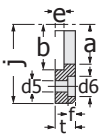
Working Direction

Heat Resistance : < 150°C

Shold be lubricated once during mounting.

Guide Bush, Holder (Shoe) — G.102





CNOMO EM 24. 52. 100 Bush Holders

Refer Page 46.

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

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

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

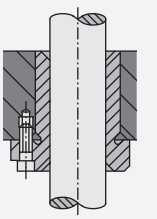
Operating Elements : **It is compatible to use with G.03 / G.04 / G.05** / G.06 / G.07 / G.09 Pillars.

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

Section Press Mould

BOTH Produces Sells Affordable Prices

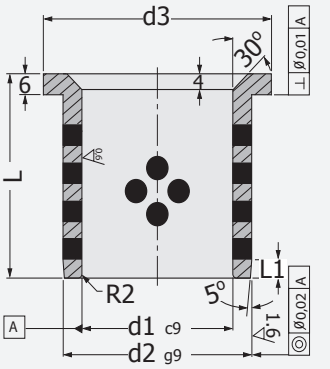
GTH



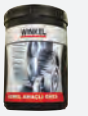
GRAPHITE / BRONZE GUİDE BUSH

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

Graphite Bush Self Lubricating, Graphite



Working Direction



Shold be lubricated once during mounting.

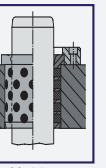
Self Stock / Continous Product

Heat Resistance : < 150°C

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

Form - A

Form - B



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

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

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

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

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.

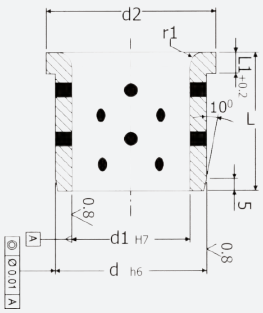
Material : Bronze /Graphite Providing Lubrication For Alternative Bush Holder, select G.104 from Page 46.

Should be lubricated once during mounting

GRAPHITE / THICK GUİDE BUSH

NAAMS FORD WDX 13 - 70 Graphite Bush G. 42

Self Lubricated, Graphite Heat Resistance : < 150°C



Guide Bush With collar, Holders G.102

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

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

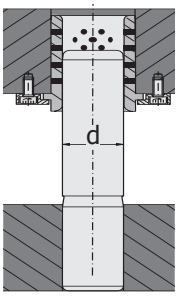
NAAMS FORD WDX 13 - 70 Graphite Bush G. 42

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

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

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

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

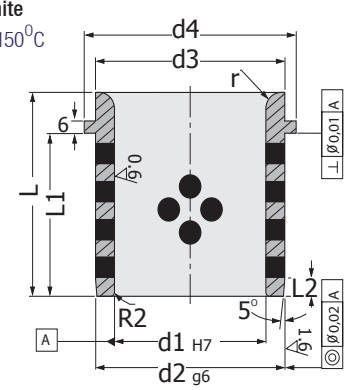


GRAPHITE / BRONZE GUIDE BUSH WITH COLLAR

NAAMS FORD WDX 13 -70 Graphite Bush G. 40

Self Lubricated, Graphite

Heat Resistance : < 150°C



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

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

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

NAAMS FORD WDX 13 -70 Graphite Bush G. 40

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

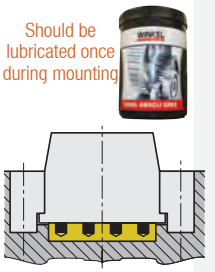
Order : **G. 40 d1 x L**

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

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

BOTH Produces Sells Affordable Prices GTH

Section Press Mould



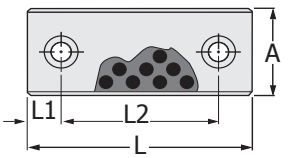
Mounting Example

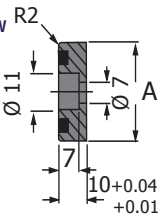
Bronze/Graphite (Self-Lubricating) GUIDE PLATES

G. 85

Thickness: 10 mm / 2 Connection Holes

Connection Bolt: 12.9 Cylinder Head Cap Screw





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

(For usage value, Refer Page 59.)

GRAPHITE - BRONZE GUIDE PLATES

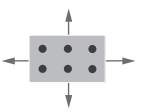
G. 85

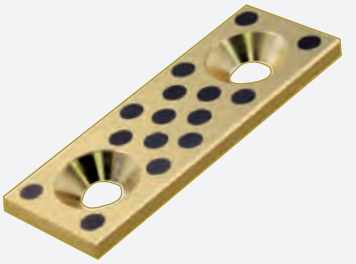
A	L	L1	L2	Hole	Bolt
G. 85 18	75	15	45	2 Pcs.	2 Pcs. M.6 x20
	100	25	50		
	125		75		
	150		100		
G. 85 28	75	15	45	2 Pcs.	2 Pcs. M.6 x20
	100	25	50		
	125		75		
	150		100		
G. 85 38	75	15	45	2 Pcs.	2 Pcs. M.6 x20
	100	25	50		
	125		75		
	150		100		
G. 85 48	75	15	45	2 Pcs.	2 Pcs. M.6 x20
	100	25	50		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

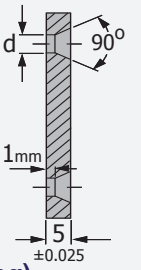
Order: G. 85 A x L

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

Working Direction - C. Section



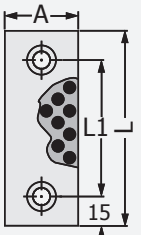




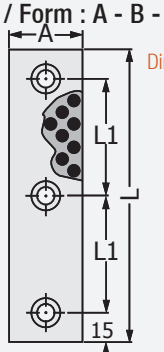
Bronze/Graphite (Self-Lubricating) GUIDE PLATES

G. 83

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

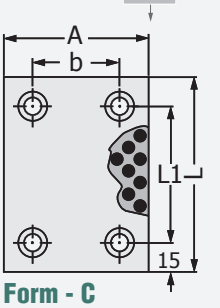


Form - A

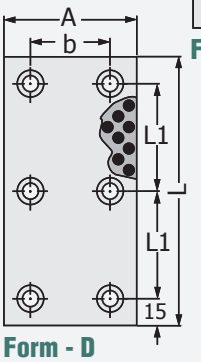


Form - B

Working Direction-C. Section



Form - C



Form - D

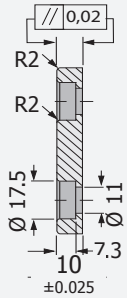
Graphite plates are preferred at large press moulds or injection moulds (at cores)due to their resistance against lateral loads, with its self lubricated feature, they work for long periods without requiring maintenance.

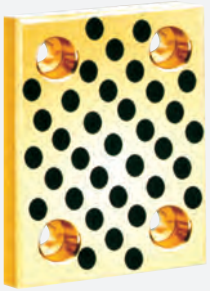
Connection Bolts: Countersunk head screws.

Order: G. 83 A x L Form

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

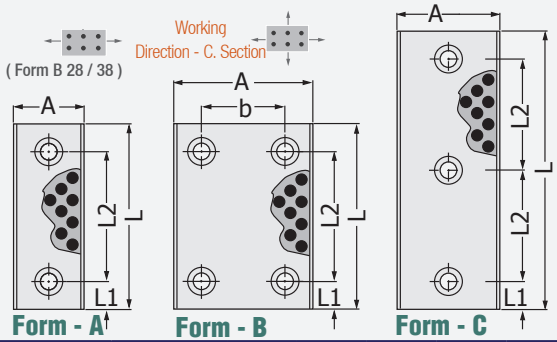
A	L	L1	b	d	Form	Bolt
G. 83 18	50	20	-	6.5	A	2 Pcs. M.6 x10
	75	45				
	100	70				
	150	60			B	3 Pcs.
G. 83 28	50	20	-	9	A	2 Pcs. M.8 x10
	75	45				
	100	70				
	150	60			B	3 Pcs.
G. 83 38	50	20	-	9	A	2 Pcs. M.8 x16
	75	45				
	100	70				
	150	60			B	3 Pcs.
G. 83 48	75	45	-	9	A	2 Pcs. M.8 x16
	100	70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





Bronze/Graphite (Self-Lubricating) GUIDE PLATES

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



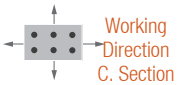
A	L	L1	L2	b	Form	Bolt
G. 84 **28**	75	15	45	-	A	2 Hole M10 x 20
	100	25	50			
	125		75			
	150		100			
G. 84 **38**	75	15	45	-	A	2 Hole M10 x 20
	100	25	50			
	125		75			
	150		100			
G. 84 **48**	75	15	45	-	A	2 Hole M10 x 20
	100	25	50			
	125		75			
	150		100			
	200	50	100			
G. 84 **58**	75	15	45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

Order: G. 84 A x L . Form

Material : Bronze - Graphite

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

Bronze - Steel Plate
Technical Details
are similar.



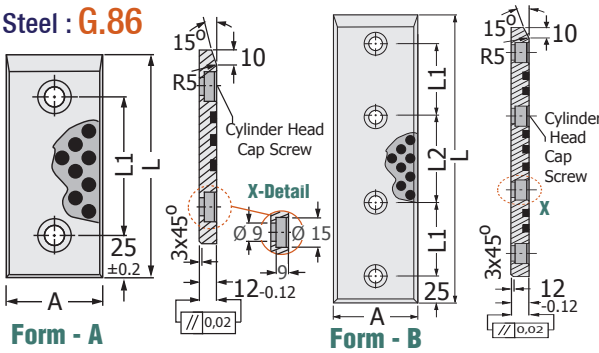
G. 86

G. 87

STEEL & BRONZE, GRAPHITE PLATES

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

Steel : G.86



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

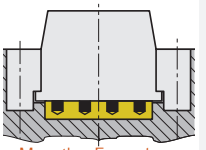
Order: G. 86 / 87 A x L . Form

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

BOTH Produces Sells Affordable Prices GTH

Section Press Mould

Should be lubricated once during mounting.

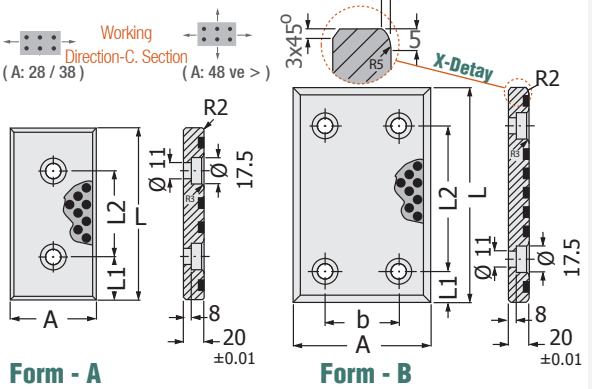


Mounting Example

Bronze/Graphite (Self-Lubricating) GUIDE PLATES

Thickness : 20 mm / Form: A - B

G. 88



GRAPHITE - BRONZE GUIDE PLATES

G. 88

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

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

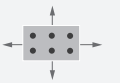
Mounting: Cylinder Head Cap Screw M10 x 20

Self Lubricating Plate Usage Advantages:

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

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

Working Direction- C. Section

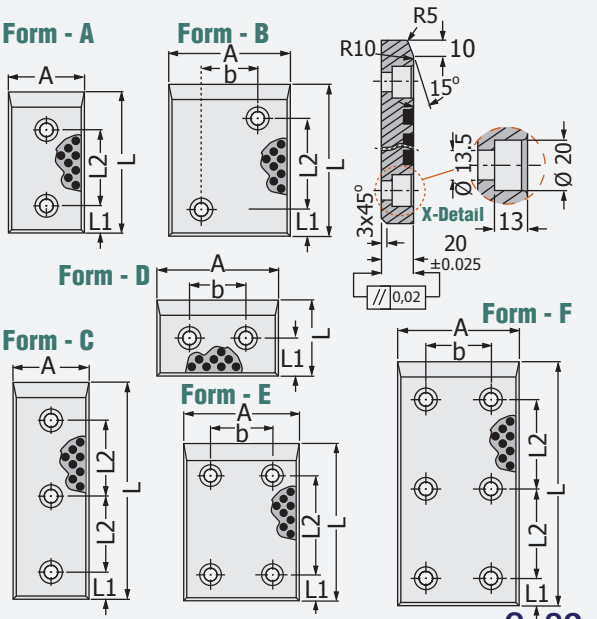


Referans : ISO 9183 - 1

Bronze/Graphite (Self-Lubricating) GUIDE PLATES

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

G. 89



GRAPHITE - BRONZE GUIDE PLATES

G. 89

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

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

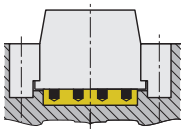
Reference : ISO 9183 -1 Type- A

Mounting: Cylin. Head Cap Screw M12 x 25

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

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

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



Mounting Example

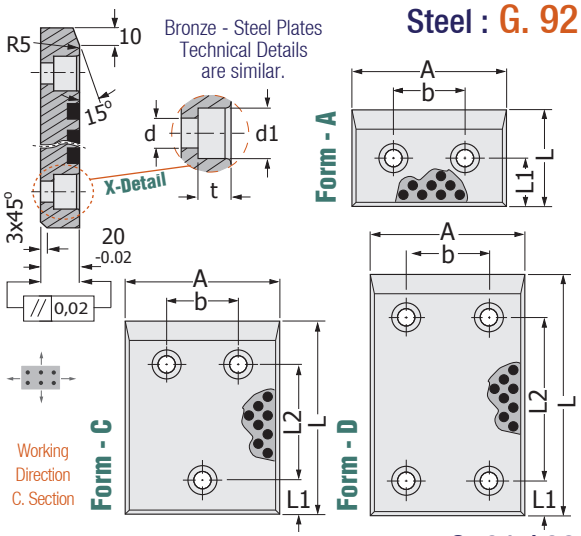
G. 92

G. 91

G. 90

STEEL & BRONZE GRAPHITE GUIDE PLATES

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



GRAPHITE - BRONZE GUIDE PLATES G. 91 / 92

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

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

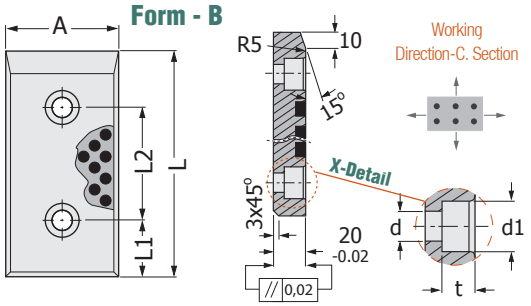
Material : Bronze - Graphite
Steel : 1.7131 **Hardness :**60-64 HRC

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

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

Bronze/Graphite (Self-Lubricating) GUIDE PLATES

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



GRAPHITE - BRONZE GUIDE PLATES G. 90

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

Order: G. 90 A x L . Form

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

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

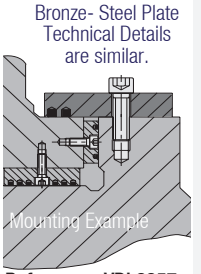
General Usage is up to 150ºC.
Continuous Product at Our Shelf Stock.

BOTH Produces Sells Affordable Prices GTH

Section Press Mould

G. 94

G. 95

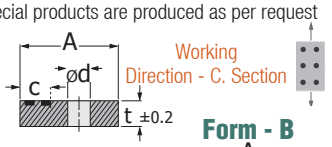


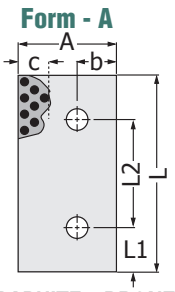
Reference : VDI 3357

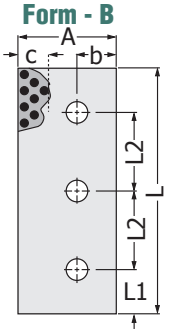
STEEL & BRONZE, GRAPHITE "E" TYPE PLATES

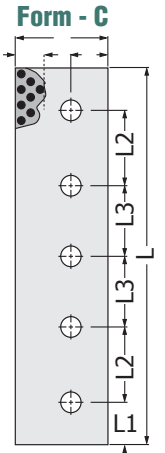
E - Type Steel : G. 94 **E-Type Bronze:** G. 95

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









GRAPHITE - BRONZE - STEEL PLATES G. 94 / 95

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

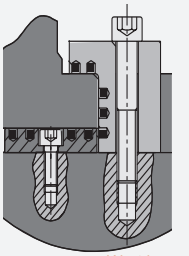
Order: G. 94 / 95 A x L Form

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

Section Press Mould

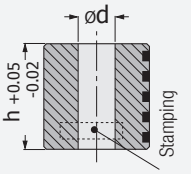
BOTH Produces Sells Affordable Prices GTH

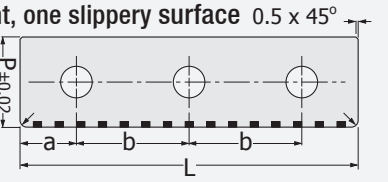
G. 93



Bronze/Graphite (Self-Lubricating) GUIDE PLATES

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





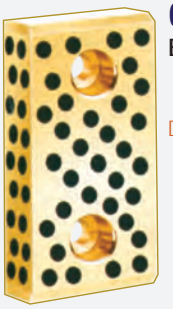
Reference : PSA E 24.52.535.G

Order: G. 93 P x L

Material : Bronze - Graphite

GRAPHITE - BRONZE GUIDE PLATE G. 93

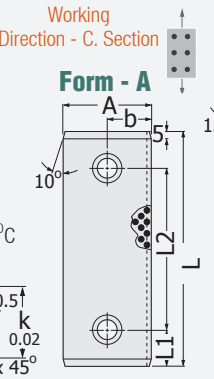
P	L	h	a	b	d	r
40	150	40	25	50	14	3
40	200	40		75	14	
50	150	60		50	18	
50	200	60		75	18	

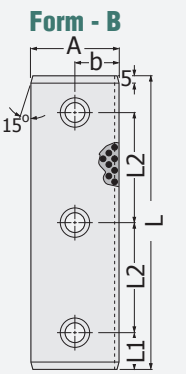


GRAPHITE PLATE G. 96

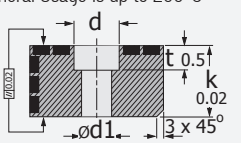
Block, Plate with two slipper surface.

Reference: VDI 3357 E TİPİ





General Usage is up to 200°C

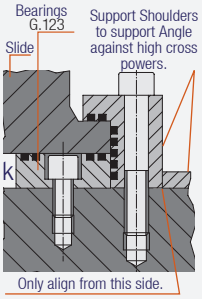


GRAPHITE - BRONZE - STEEL PLATES G. 96

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

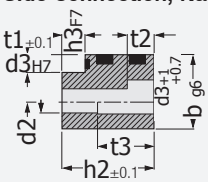
Order: G. 96 A x L Form

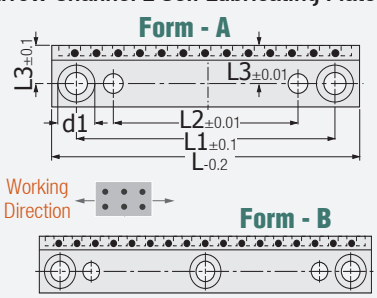
Material : Bronze - Graphite



BRONZE, GRAPHITE "L"TYPE PLATES G. 104

Side Connection, Narrow Channel L Self Lubricating Plate





GRAPHITE - BRONZE L- GUIDE PLATES G.104

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

Order: G.104 Form x b x L

Material : Bronze - Graphite

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

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

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

A = Used Bearing Area

USAGE VALUES

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

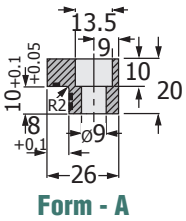
Surface Temp. Max. (N/cm^2)	Temp. (C^o)	Speed (m / Min.)	PV Value N/cm^{2}x m/Min.	Lubr.
5000	80	15	10.000	Mounting
3000	150	60	20.000	Lubrication With Pressure

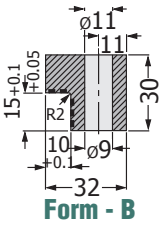
Reference :
CNOMO
EM 24 52.500

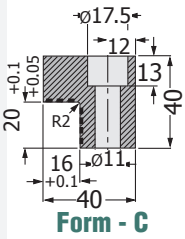
Should be lubricated once during mounting.

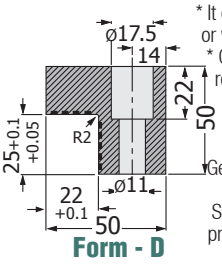
BRONZE, GRAPHITE "L" TYPE PLATES

Angular, Strip - Self Lubricated G. 105









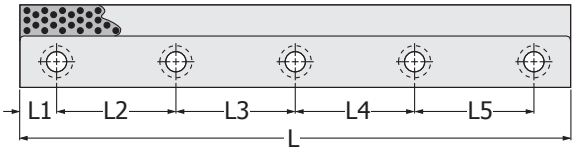
Working Direction

Advantages of Self Lubricated Equipment:

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

General Usage Area is up to 150ºC.

Special products can be produced as per request.



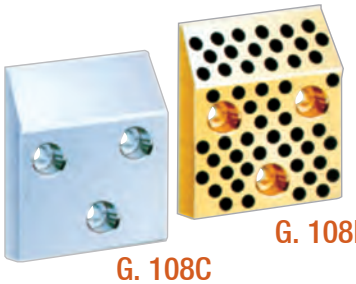
GUIDE - BRONZE L- GUIDE PLATES G.105

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

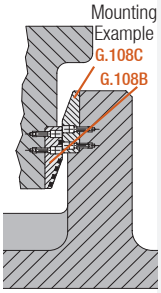
Order: G.105 Form x L

Section Press Mould

Page 59



G. 108C G. 108B



G. 107

G. 106

Bronze- Steel Plates Technical Details are similar.

Should be lubricated once during mounting.

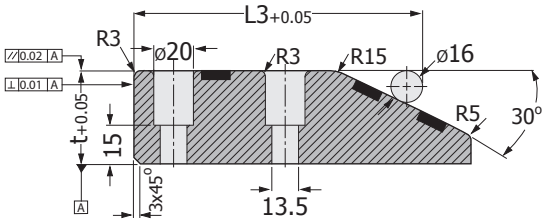
GRAPHITE / BRONZE, CAM GUIDE PLATES

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

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

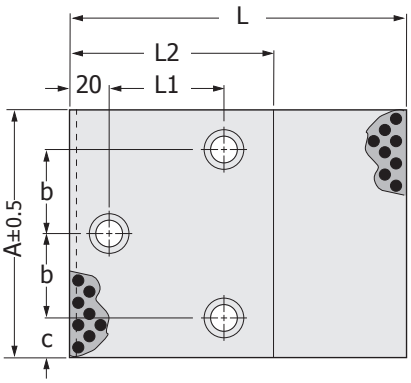
Working Direction

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



General Usage is up to 150° C.

Bronze Steel Plates Technical Details are similar.



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

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

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

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

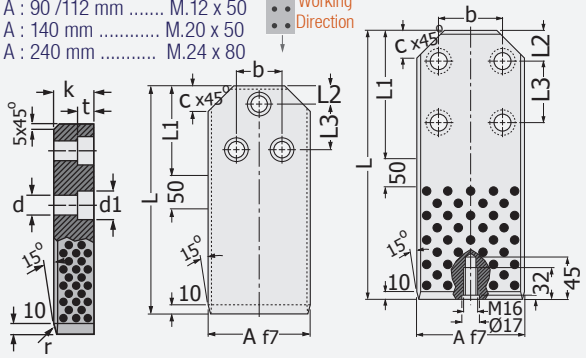
GRAPHITE / BRONZE GUIDE PLATES

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

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

Working Direction

Reference : VDI 3387
VW AUDI 39 V 1159



GRAPHITE - BRONZE - STEEL PLATES G. 106 / 107

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

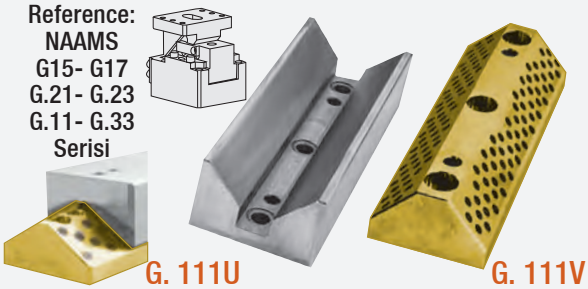
Order: G.106/107 A x L Form

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

Section Press Mould

BOTH Produces Sells Affordable Prices GTH

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



G. 111U G. 111V

GRAPHITE / BRONZE, CAM GUIDE PLATES

Bronze, Self Lubricated - "U / V" Bearings

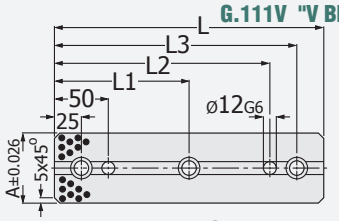
Reference : NAAMS G.15 - G.17 - G.21 - G.23

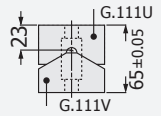
Steel : G. 111U

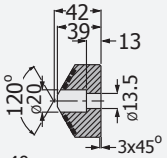
Bronze : G. 111V

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

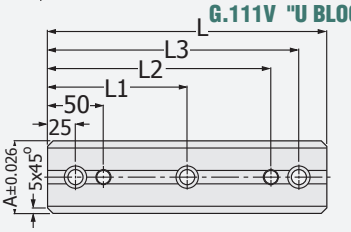
G.111V "V BLOCK"

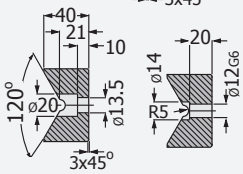






G.111V "U BLOCK"





CAM GUIDE BLOCKS LENGTH : 65 / 75

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

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

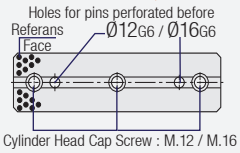
Between connection holes, ± 0.12 Tolerant
Between pin holes, ± 0.12 Tolerant.

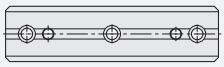
Order: G.111 U / V A x L

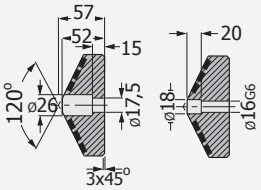
Material : Bronze and Graphite
1.503 (C45) Hardness: 56 - 60 HRC
Hardness Depth: > 1.0 mm

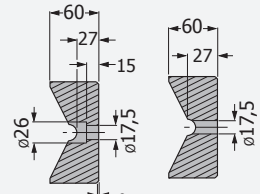
CAM BLOCK LENGTH : 125

Reference : NAAMS, G.31 G.33

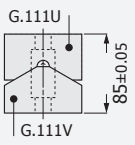




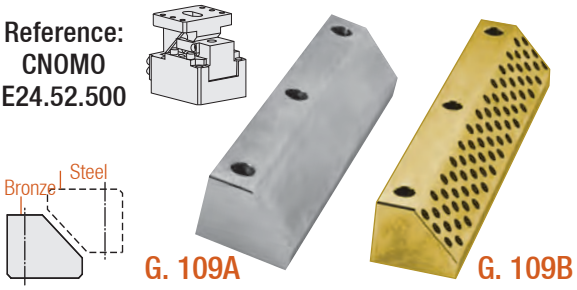




Bronze Steeel Plates Technical Details are similar.



Reference:
CNOMO
E24.52.500



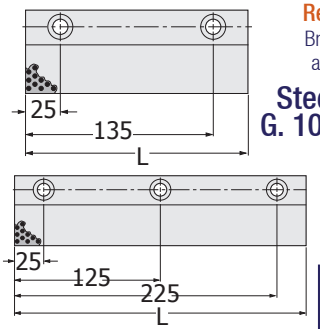
G. 109A G. 109B

GRAPHITE / BRONZE, CAM GUIDE PLATES

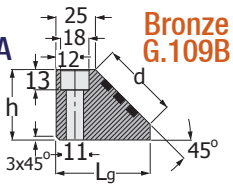
Bronze, Self Lubricated - Steel 'V' Bearings

Reference : CNOMO E24.52.500

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



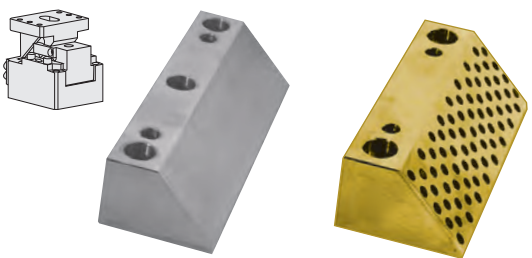
Steel G. 109A



Bronze G.109B

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

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



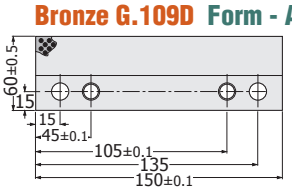
G. 109C G. 109D

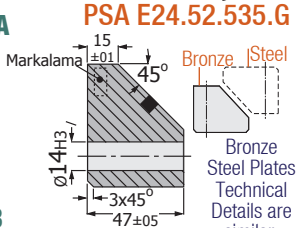
GRAPHITE - BRONZE, CAM GUIDE BLOCKS

Bronze, Self Lubricated - Steel 'V' Bearings

PSA E24.52.535.G

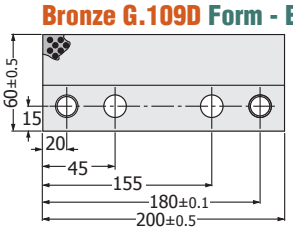
Bronze G.109D Form - A

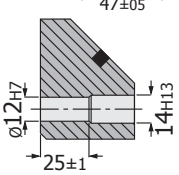




Bronze Steel Plates Technical Details are similar.

Bronze G.109D Form - B



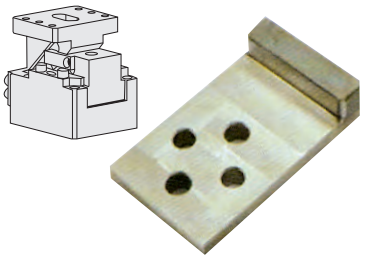


Bronze G.109.D

Steel G.109.C

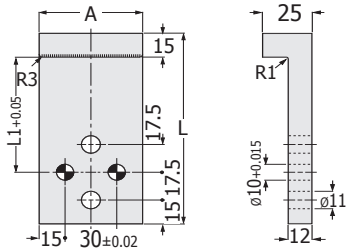
BOTH Produces Sells Affordable Prices GTH

Section Press Mould



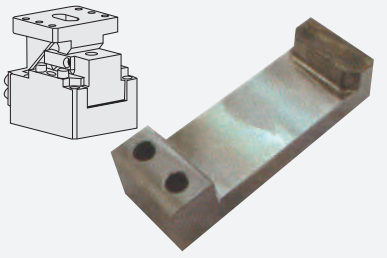
CAM RETURN PLATE G. 139

Steel, Mandatory Return-Support



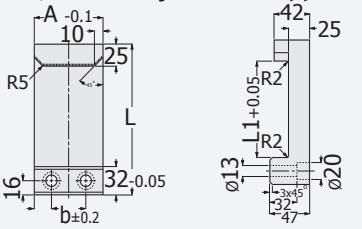
A	L	L1
60	100	52.5
	120	72.5

Order: G.139 A x L



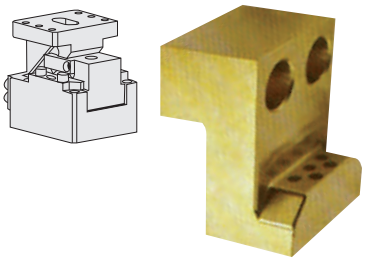
CAM RETURN PLATE G. 78

Steel, Mandatory Return-Support



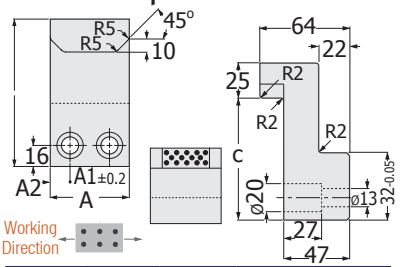
A	L	C	b	L1
60	171	30	15	114
	191			134
80	171	40	20	114
	191			134

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

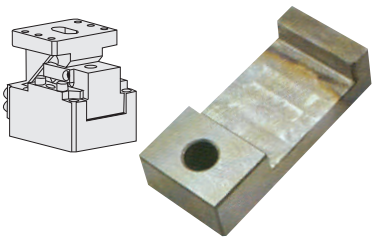


CAM SUPPORT PLATE G. 77

Bronze - Graphite Plate for Cam

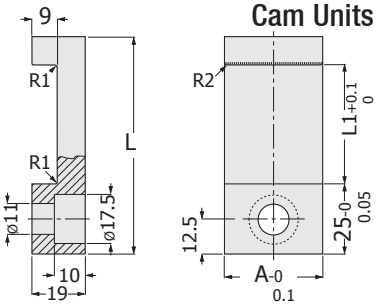


A	L	A1	A2	c
60	82	30	15	57
	102			77
	112			87
80	82	40	20	57
	102			77
	112			87



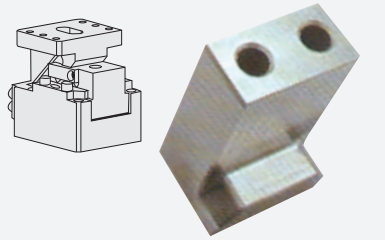
SMALL CAM SUPPORT G.138

Support Plate for Steel, Small Cam Units



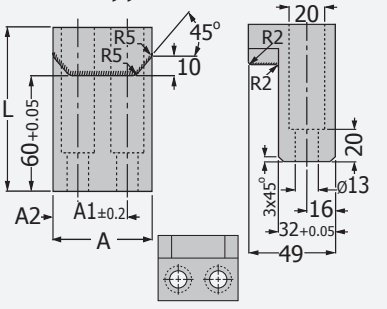
A	L	A2
30	67.5	32.4
35	77.5	42.4

Order: G.138 A x L



CAM SUPPORT PLATE G. 78.D

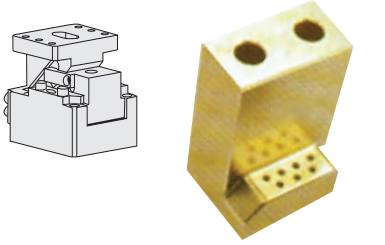
Steel - Support Plate for Cam



A	L	A1	A2
60	85	30	15
80		40	20

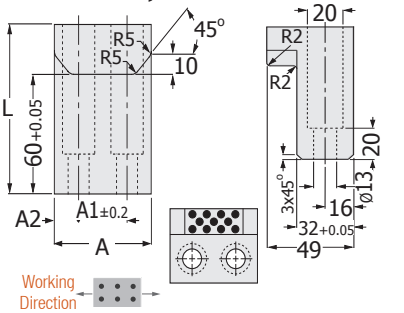
Order: G.78.Y - G.78.D A x L

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



CAM SUPPORT PLATE G. 77.D

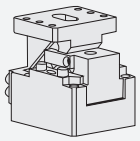
Bronze - Graphite Plate For Cam

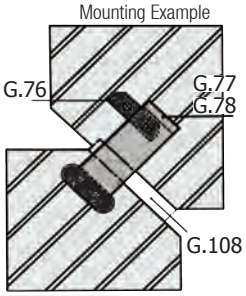


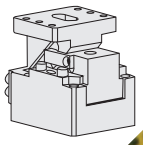
A	L	A1	A2
60	85	30	15
80		40	20

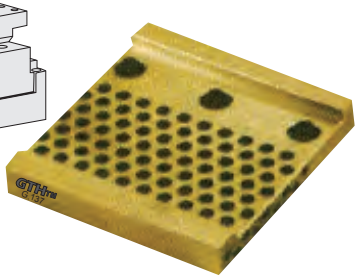
Order: G.77.Y - G.77.D A x L

Material : Bronze and Graphite Providing Lubrication





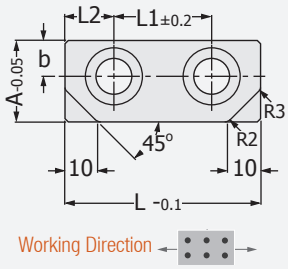




FIXED CAM RETURN PLATES

Bronze and Graphite, Self Lubricated

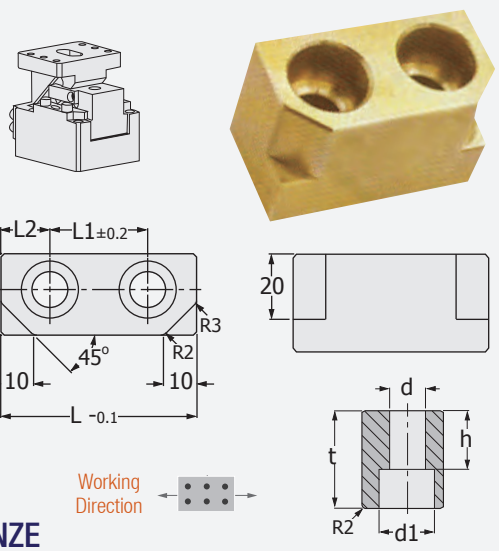
G.76.G



FIXED CAM RETURN PLATES
BRONZE, GRAPHITE (SELF LUBRICATED)

G. 76.G

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



BRONZE
FIXED CAM RETURN PLATES

G.76.B

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

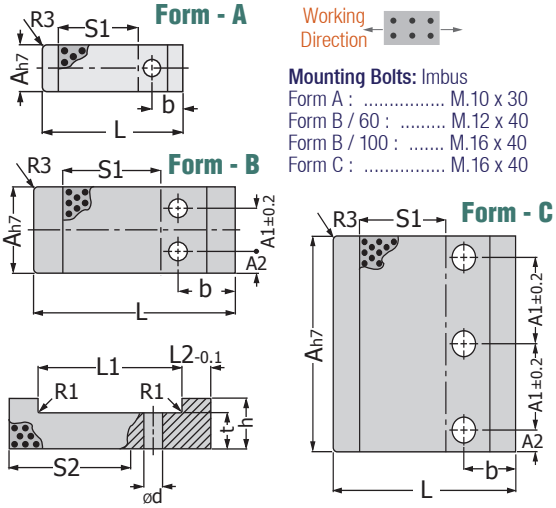
Order: G.76.G / G.76.B A x L

Material : Bronze and Graphite Bronze

SELF LUBRICATING - CAM PLATES

G. 137

Cam Motion Distance Adjusting Plate



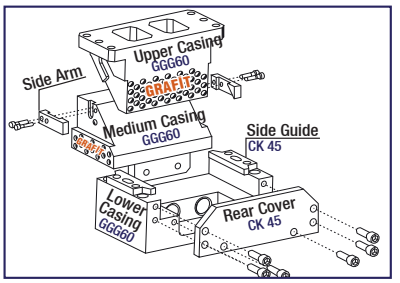
GRAPHITE - BRONZE - STEEL, CAM PLATES

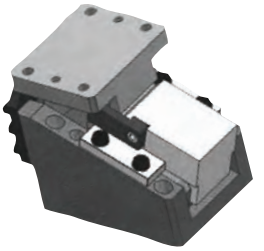
G. 137

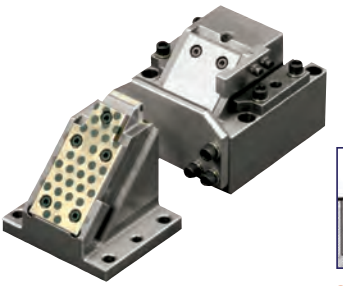
Form	A	L	h	L1	L2	A1	A2	S1	S2	b	d	t
A	30	70	17	50	10	-	-	30	40	20	11	12
		90		70				50	60			
B	45	70	25	50	10	22	11.5	30	40	20	11	15
		90		70				50	60			
B	60	120	35	80	20	30	15	40	60	40	13	25
		140		100				60	80			
		160		120				80	100			
B	100	120	35	80	20	70	15	40	60	40	18	25
		140		100				60	80		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

Order: G.137 Form x A x L

Material : Bronze - Graphite

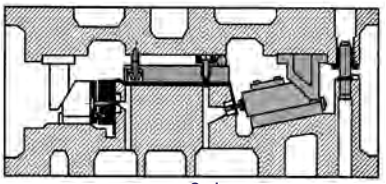


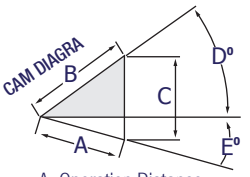




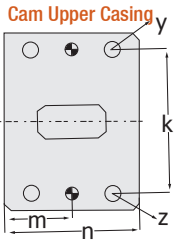
Mounting Example

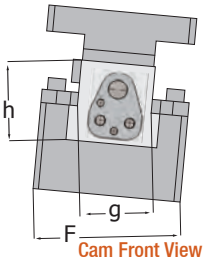
CAM UNITS, DKA Serial HORIZANTAL Self Lubricating ANGULAR CAM UNIT Serial: DKA



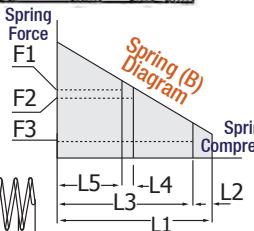


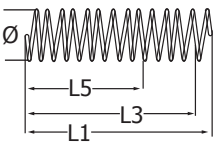
A: Operation Distance
B: Spring Motion Distance
C: Press Motion Distance
D⁰: Pushback Angle
E⁰: Operation Angle

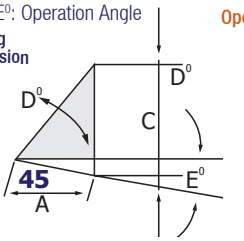




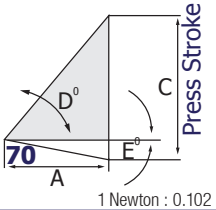
For spring diagram descriptions Refer Page 65



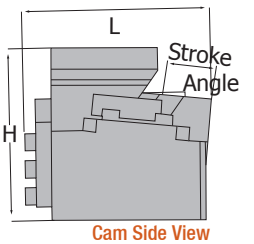




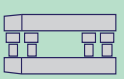
Operation



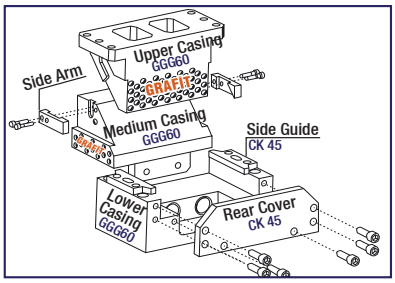
1 Newton : 0.102 Kg.

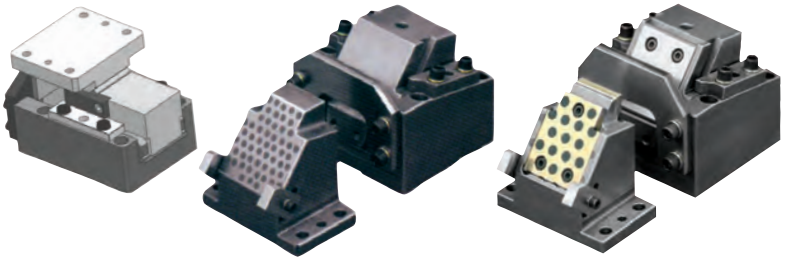


Order Type Model	Standard Operation (kN) Tone	Possible Operation Tone	CAM Stroke A	Press Stroke C	CAM Angle (E⁰)	Push Back D-E	Punch Space g /h	CAM Dimensions F x L x H	CAM Upper Casing k x m x n	Spring Force Newton F1 - F2 - F3	SPRING (B) Dimension x Operation Ø x L1	L2	L3	L4	L5	CAM Kg.
DKA 65 05 45	2 Ton Stamp 1.000.000	4 Ton Stamp 300.000	**45**	67.9	**5°**	55⁰ 5⁰	65 x70	130x177.5x160	130x50x100	743-680-176	25x127	16	111	5	66	19
DKA 65 05 70			**70**	105.7				130x178x160		974-918-190	25x178	20	158		88	22
DKA 65 10 45			**45**	60.6	**10°**	50⁰ 10⁰	65 x70	130x180x160	130x50x100	743-680-176	25x127	16	111	5	66	16
DKA 65 10 70			**70**	94.3				130x224x170		974-918-190	25x178	20	158		88	21
DKA 65 15 45			**45**	55.1	**15°**	45⁰ 15⁰	65 x70	130x183x170	130x50x100	743-680-176	25x127	16	111	5	66	22.3
DKA 65 15 70			**70**	85.7				130x227x170	130x55x110	974-918-190	25x178	20	158		88	22
DKA 65 20 45			**45**	50.8	**20°**	45⁰ 20⁰	65 x70	130x185x170	130x50x100	743-680-176	25x127	16	111	5	66	20.8
DKA 65 2070			**70**	79.21				130x227x170	130x55x110	974-918-190	25x178	20	158		88	21
DKA 100 05 45	4 Ton Stamp 1.000.000	8 Ton Stamp 300.000	**45**	67.9	**5°**	55⁰ 5⁰	100 x100	175x199x200	165x50x100	1109-1015-263	32x127	16	111	5	66	33
DKA 100 05 70			**70**	105.7				175x234x200	165x60x120	1149-1081-197	32x178	18	161		91	38
DKA 100 10 45			**45**	60.6	**10°**	50⁰ 10⁰	100 x100	175x205x200	165x50x100	1109-1015-263	32x127	16	111	5	66	28.4
DKA 100 10 70			**70**	94.3				175x240x200	165x60x120	1149-1081-197	32x178	18	161		91	33.7
DKA 100 15 45			**45**	55.1	**15°**	45⁰ 15⁰	100 x100	175x210x200	165x55x110	1109-1015-263	32x127	16	111	5	66	33
DKA 100 15 70			**70**	85.7				175x244x200	165x65x130	1149-1081-197	32x178	18	161		91	38
DKA 100 20 45			**45**	50.8	**20°**	40⁰ 20⁰	100 x100	175x213x200	165x55x110	1109-1015-263	32x127	16	111	5	66	28.5
DKA 100 20 70			**70**	79.21				175x246x200	165x65x130	1149-1081-197	32x178	18	158		91	34.8
DKA 150 05 45	6.6 Ton Stamp 1.000.000	10 Ton Stamp 300.000	**45**	67.9	**5°**	55⁰ 5⁰	150 x100	260x229x220	230x55x110	1805x1652x428	32x127	16	111	5	66	62
DKA 150 05 70			**70**	105.7				260x254x220	230x65x130	1848x1738x308	32x178	17	161		91	73
DKA 150 10 45			**45**	60.6	**10°**	50⁰ 10⁰	150 x100	260x236x220	230x55x100	1805x1652x428	32x127	16	111	5	66	53
DKA 150 10 70			**70**	94.3				260x260x220	230x65x130	1848x1738x308	32x178	17	161		91	57.6
DKA 150 15 45			**45**	55.1	**15°**	45⁰ 15⁰	150 x100	260x241x220	230x60x120	1805x1652x428	32x127	16	111	5	66	65
DKA 150 15 70			**70**	85.7				260x265x230	230x70x140	1848x1738x308	32x178	17	161		91	77
DKA 150 20 45			**45**	51	**20°**	40⁰ 20⁰	150 x100	260x244x220	230x60x120	1805x1652x428	32x127	16	111	5	66	53.7



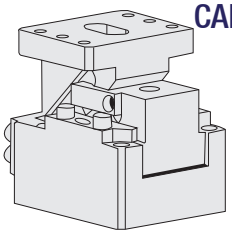
Required Stroke and Force Criteria at Angular Cams: Drive Angle - CAM Angle - Operation Stroke - Required Force (Drilling Force + Spring Force + Friction Force) - Press Force - Driver Force- Cam Force (Required Force / Drive Angle) - Press Stroke (Operation Stroke / Drive Angle)



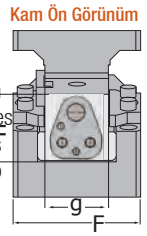


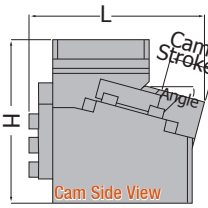
CAM UNITS, DK Serial HORIZONTAL (0⁰) / DIE MOUNTED CAM UNIT

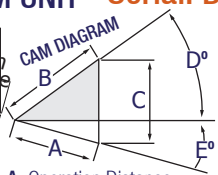
Serial: DK



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







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

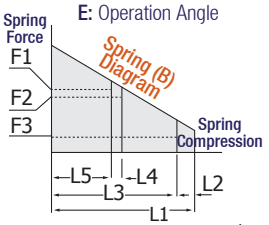
Also, upper casing holes can be finished (with Reamer / H7.K

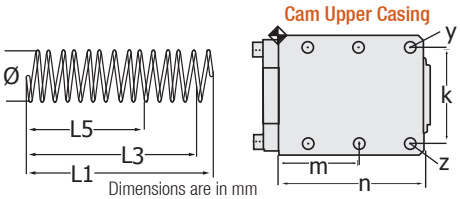
Cam Units: They are compact elements that can be turned press energy / motion from vertical motions to the different motions and can be connected to different angles. - They can be worked at wide force and stroke ranges.

Giving 10% Stroke tolerance is recommended.

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

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





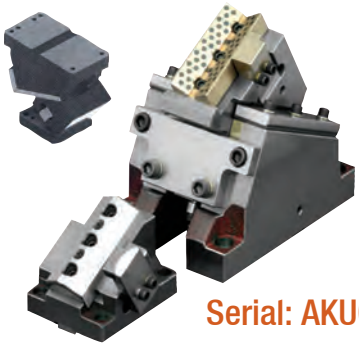
Dimensions are in mm

Serial : DK

1 Newton : 0.102 Kg.

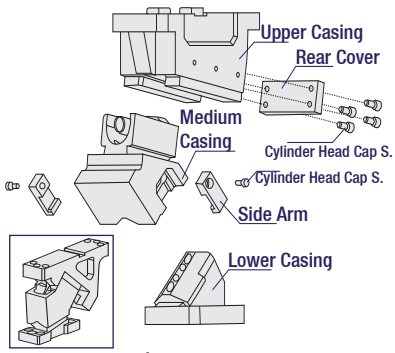
Order Type Model	Standard Operation (kN) Ton	Possible Operation Ton	Stroke A - C	Punch Space g /h	CAM Dimensions F x L x H	CAM Upper Casing k x m x n	Upper Hole Ø(y-z)	Spring Force Newton F1 - F2 - F3	SPRING (B) Dimension x Operation Ø x L1	L2	L3	L4	L5	CAM Weight Kg.
DK 52.25	1.5 Ton Stamp 1.000.000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

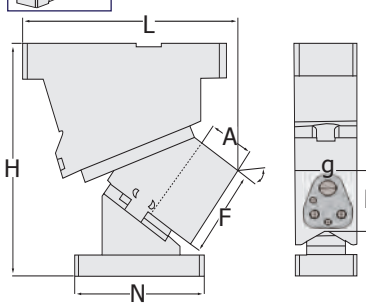
Required Stroke and Force Criteria at Die Mounted Cams: Drive Angle - CAM Angle - Operation Stroke - Required Force (Drilling Force + Spring Force + Friction Force) - Press Force - Driver Force- Cam Force (Required Force / Drive Angle) - Press Stroke (Operation Stroke / Drive Angle)



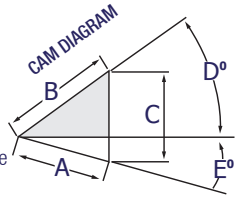
Serial: AKUC

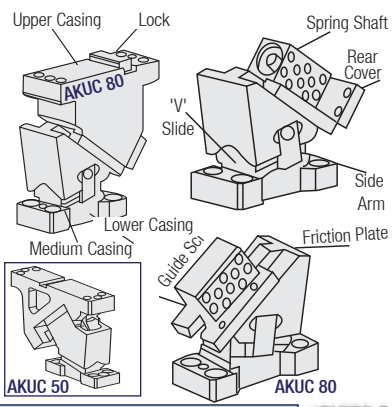
AERIAL CAM UNITS





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





AERIAL CAM UNITS — Serial: AKUC

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

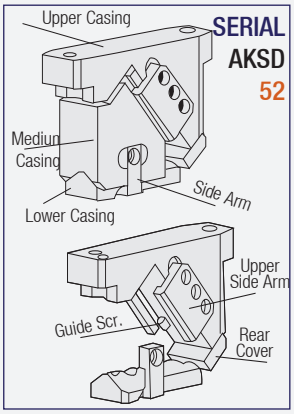
Serial Model	Stroke Angle E	Push Back D-E	Cam Stroke A	Press Stroke C	Punch Space g /h	Spring mm B	Dimensions N x F L x H	Cam Weight Kg.
AKUC 50. 0°	.0°	50°	30.2	36		47	118x122.5 225x200	12.7
AKUC 50. 5°	5°	45° 5°	30.5	33.1		43	127x121.5 227x200	12.3
AKUC 50. 10°	10°	40° 10°	30.3	30.3		39	134x120 223.7x200	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°	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

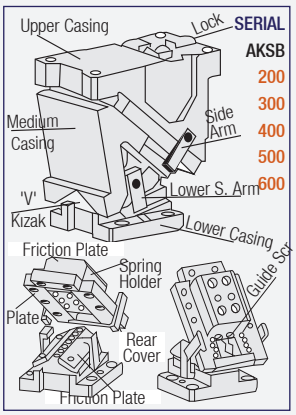
AKUC 80 : Standard working power is 4 Tons-possible working 8 Tons

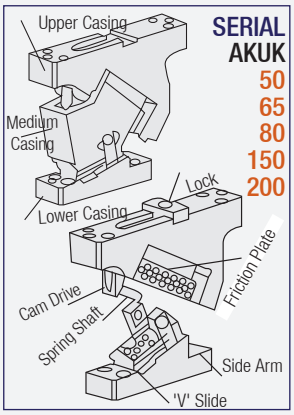
AKUC 80. 0°	.0°	50°	32.1	38.3		50	160x171 260x270	25.9
AKUC 80. 5°	5°	40° 5°	38.4	35.5		50	173x160.6 273x270	26.3
AKUC 80. 10°	10°	40° 10°	38.9	38.9		50	180x149.6 280x270	26.6
AKUC 80. 15°	15°	40° 15°	39.7	42.4		50	186x138 286x270	25.1
AKUC 80. 20°	20°	30° 20°	46.1	40.8		50	196x140.9 286x270	25.3
AKUC 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°	77.8	59.6		50	228x118.6 262.5x270	21.6
AKUC 80. 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

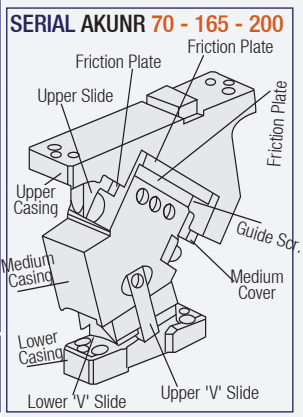
Order: AKUC 50... / AKUC 65... / AKUC 80... / AKUC 150...
Pls. request for products except Serial 50 / 80 Demounted
Shipping / Connection area can be extended.

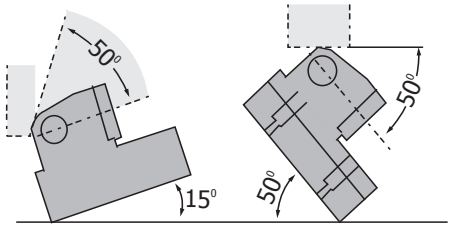
OTHER MODELS OF AERIAL CAM UNITS







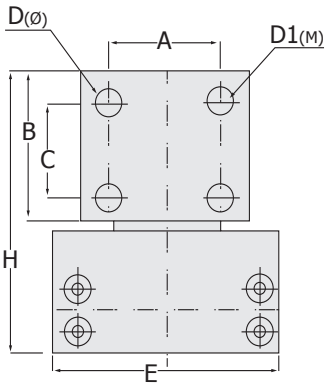


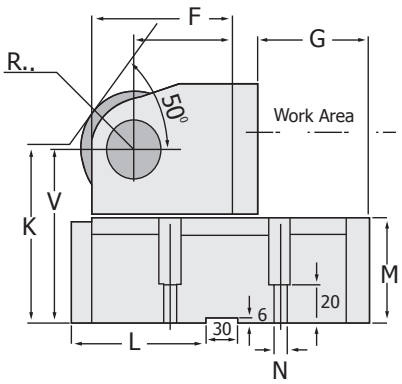


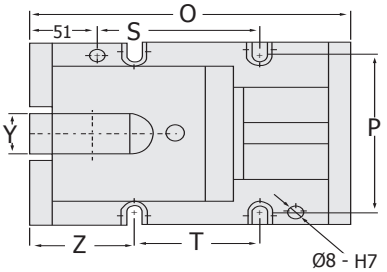
Cam Unit Handling Draft
Cylinders Eccentric Cylinders

SLIDE PLAIN UNIT - ROLLER CAM

Serial: RK







Detailed Dimensions of Product Technical Drawing

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

Product Technical Information

1 Newton : 0.102 Kg.

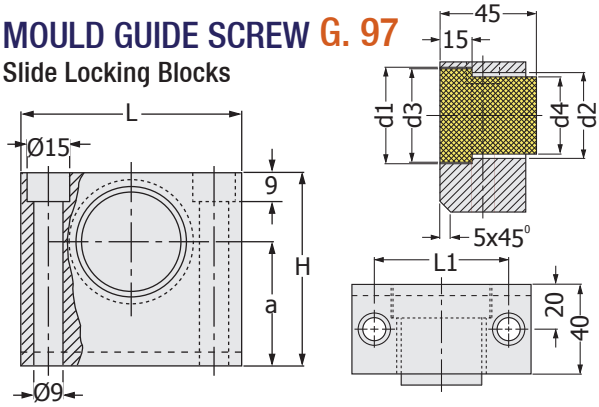
Model Order	Stroke mm	Recom. Stroke mm	Max. Progress Force	Return Force
RK.01 50	50	45	3000 daN	200 daN
RK.01 80	80	72		
RK.02 50	50	45	5000 daN	200 daN
RK.02 80	80	72		
RK.02 100	100	90		
RK.03 50	50	45	3000 daN	200 daN
RK.03 80	80	72		
RK.04 50	50	45	5000 daN	100 daN
RK.04 80	80	72		
RK.04 100	100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

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

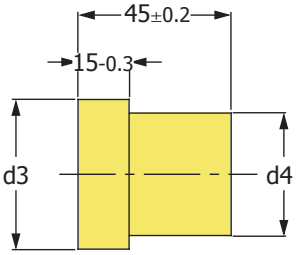
Order: G.97 L x H

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

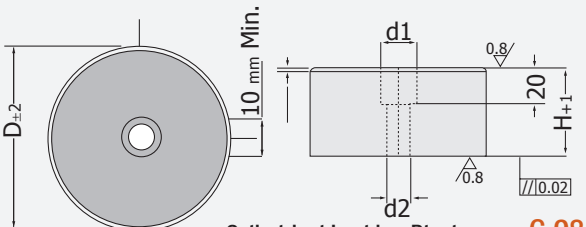
Order: G.97.A d2 x d3

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

Connection bolts (Imbus) should be supplied separately.

CYCLINDER MOULD GUIDE SCREW

Cylindrical Locking Blocks G.98



Cylindrical Locking Blocks G.98

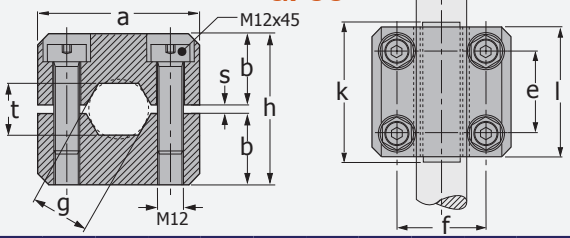
D	H	d1	d2	Bold
40	30	18	11	M.10
60	50	20	13.5	M.12
100		26	17.5	M.16
150		33	22	M.20

Order: G.98 D x H

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

Connection bolts (Imbus) should be supplied separately.

POWER ROUTING BLOCKS G. 99



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

Order: G.99 a x l

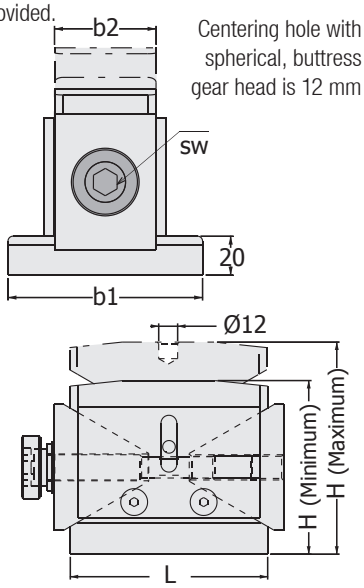
Material : 1.0038 (St 37)

BLOCK SUPPORT Serial: 1520

Straightening Wedges '' HERCULES ''

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

Centering hole with spherical, buttress gear head is 12 mm



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

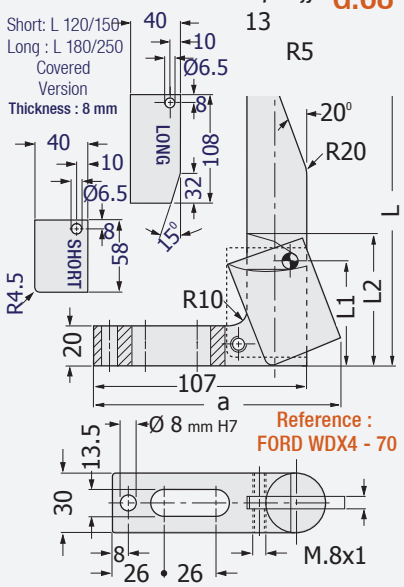
Straightening Wedges: Serial: 1520

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

Order: **1520 - H . b1**

CONTROL PART SHEET THRUST

Part Position Controlled and Springy G.68

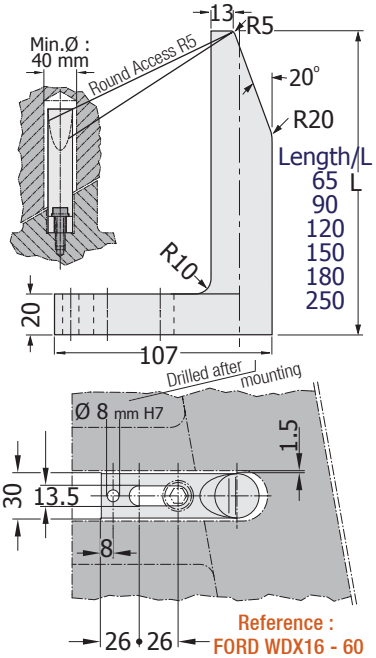


Control Part Mechanical Thrusts G.68

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

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

MECHANICAL SHEET THRUST G.67



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

L
65
90
120
150
180
250

Continous Stock

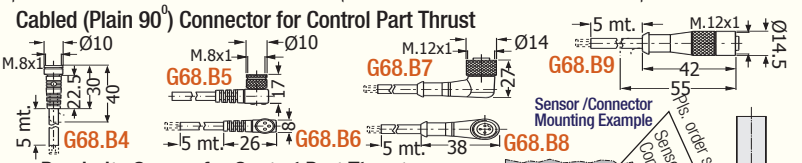
Order: **67.L**

Material : Ck 40 Forged

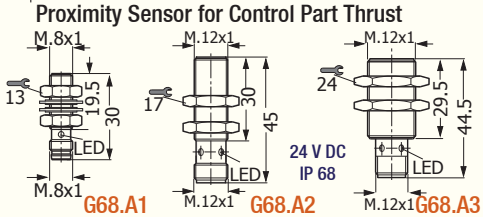
PROXIMITY SENSORS AND CONNECTORS FOR PART CONTROL THRUST

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

Cabled (Plain 90°) Connector for Control Part Thrust



Proximity Sensor for Control Part Thrust

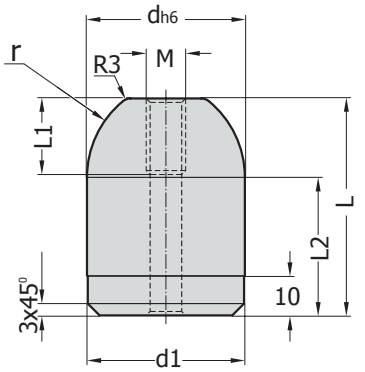


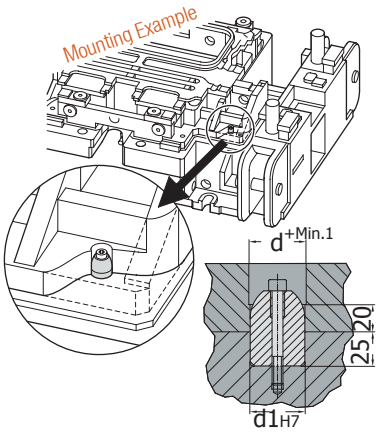
Section Press Mould
Page 69

CENTERING PIN G.65

At centering of perforated parts

Overhead Screw Type





Overhead Screw Centering Pin

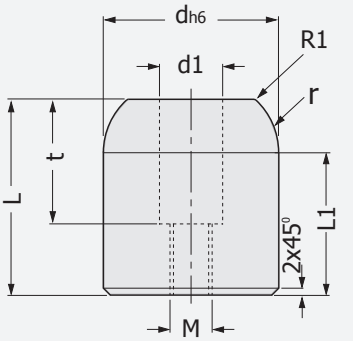
d	L	L1	L2	d1	M	r
22	45	16	35	21.95	M.8	15
22	55		45	21.95		
32	50	20	35	31.95	M.10	20
40	55		35	39.95		25
40	65		45	39.95		
50	55		35	49.95		

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

CENTERING PIN G.66

At centering of perforated parts

Countersunk Screw Type



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

Countersunk Screw Centering Pin

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

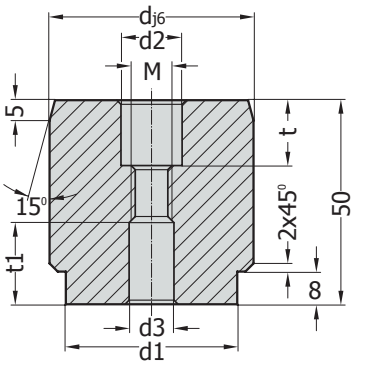
Order: **G.66 d x L**

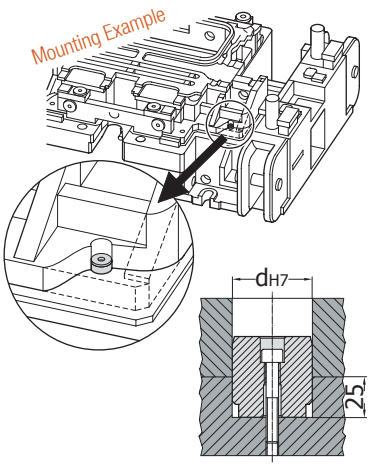
Material : 1.7131 (16 MnCr 5)
Hardness : 58 - 62 HRC Heat Threated

CENTERING PIN G.62

Centering Pin at Daimler Standard

Reference :
DAIMLER B8 0602 321 00 8 801





Centering Pin at Daimler Standard

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

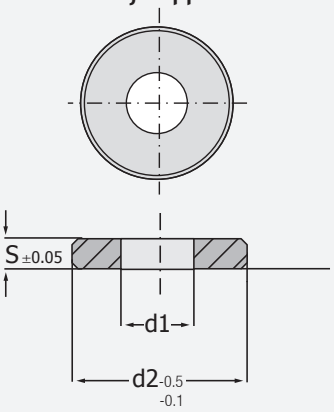
Order: **G.62 d x d1**

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

G. 59

CYLINDRICAL SUPPORT WASHER

Conical Locking Support Element

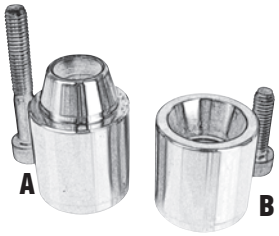


Conical Locking Support Element

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

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

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



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

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

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

Conical Locking G. 60

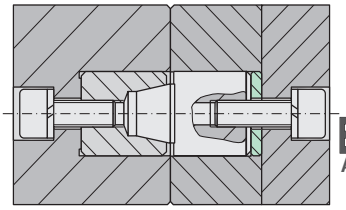
d1	L	L1	L2	L3	L4	L5	L6
12	34	16	4.5	9.6	8.6	8	7.5
14	34	16	6	12.4	6	7.5	8
16	34	16	6	12.4	5.8	7.5	8
20	54	26	9	19.7	10.6	12	9.5
25	54	26	10	19.7	9.2	11	11
30	72	35	14	25	12.2	15	13
32	72	35	14	25	12.2	15	13
42	92	45	18	27	16.8	16	13

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

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

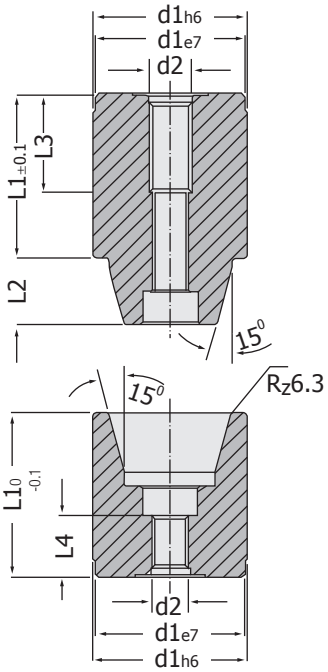
Operating Elements : Cylinder Head Cap Screw for fixing and Support Washer for Feeding (G.59)

Mounting Example with Support Washer

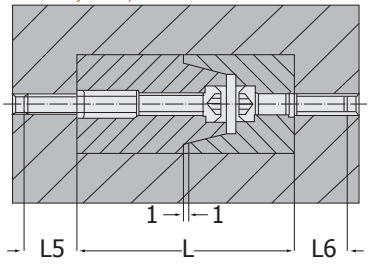


CONICAL LOCKING G. 60

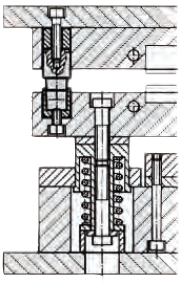
Cylindrical, Precision Centering



Mounting Example

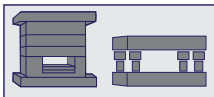


Conical Locking Units; It is to increase precision centering at moulds or repetition speed at mould (Injection / Press).



Continous Stock

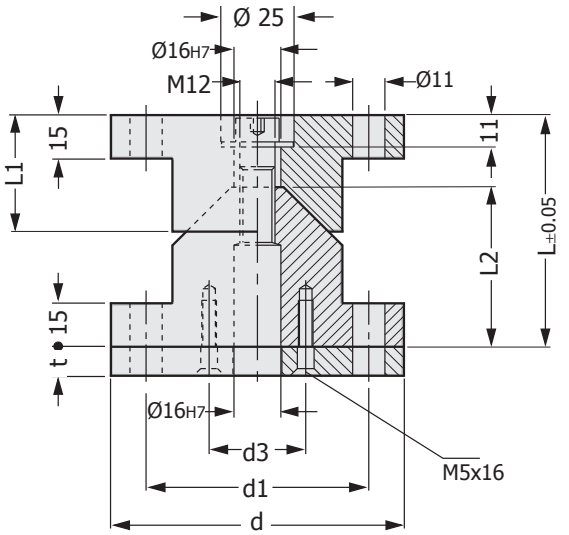
BOTH Produces Sells Affordable Prices GTH



Special Productions As per Request

CONICAL CENTERING UNIT G.64

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



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

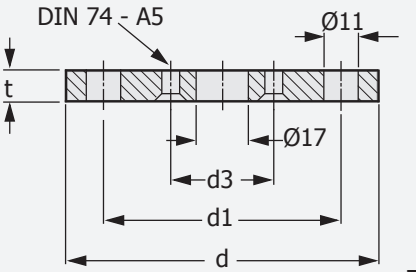
CONICAL CENTERING UNIT Special Productions As per Request

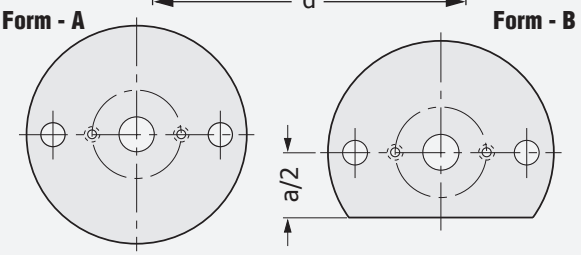
Adjusting plates, are with unit as standard and specified by their thickness with (t). Except this, other form (A - B - C) adjusting plates can be ordered as per request. Mounting bolts are excluded.

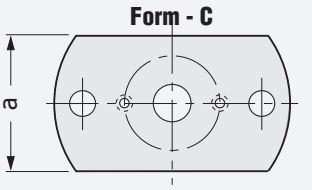
d	L	d1	d2	d3	L1	L2	t	Form
100	80	76	58	40.5	40	55	5.5	**A**
120	90	96	78	50.5	50	65		
100	80	76	58	40.5	40	55	5.5	**B**
120	90	96	78	50.5	50	65		
100	80	76	58	40.5	40	55	5.5	**C**
120	90	96	78	50.5	50	65		
100	80	76	58	40.5	40	55	10	**A**
120	90	96	78	50.5	50	65		
100	80	76	58	40.5	40	55	10	**B**
120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

ADJUSTING PLATES (CONICAL CENTERING) G.64.A

Adjusting Plates for Conical Centering Units



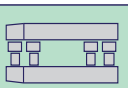




Note: The bolts using during mounting of products shall be supplied separately.

ADJUSTING PLATES FOR CONICAL CENTERING UNITS

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



Section Press Mould

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

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

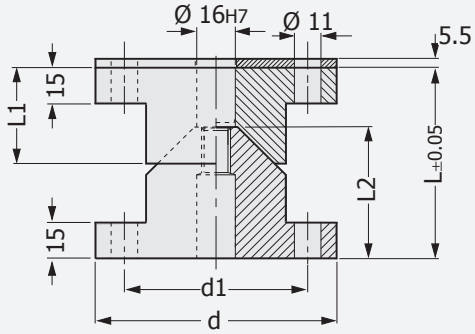
Material : 1.0503 (C 45) Work Tool Steel Heat Threated as per request

Usage : It is for G.64 conical centering unit

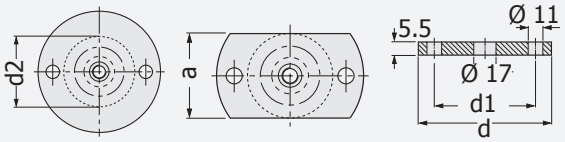
CONICAL CENTERING UNIT G.63

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

Referans: NAAMS G91



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



NAAMS Conical Centering Units G.63

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

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

Order : **G.63** d x L. Form

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

Usage : NAAMS G.91 Conical Centering Unit

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

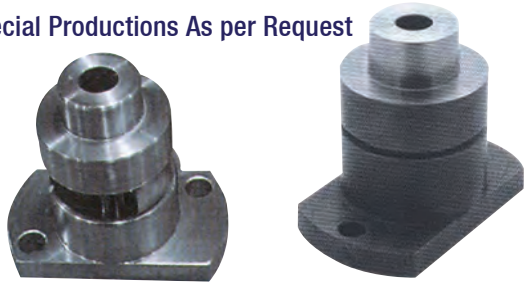
d	d1	a	Form
100	76	-	**A**
120	96	-	
100	76	58	**B**
120	96	78	

Order : **G.63.A** d x Form

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

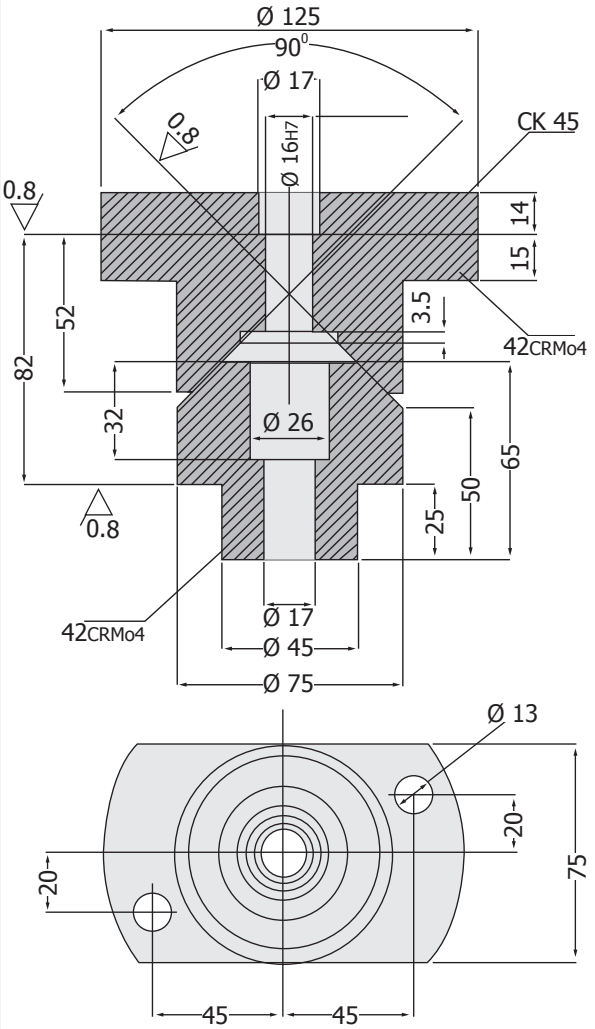
Usage : NAAMS G.91 Adjusting Plate

Special Productions As per Request



CONICAL LOCKING Guide Screw G.46

In addition, production in desired dimension as per request

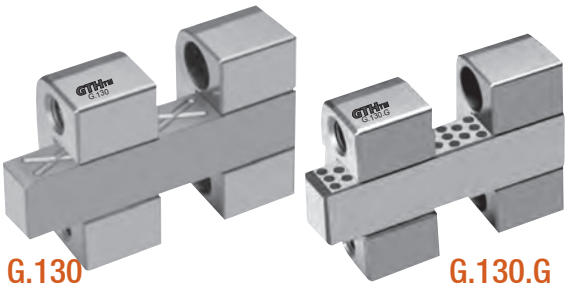


Note: In whole dimensions without tolerance, all corners are chamfered according to EN 22768 - 1 (m) standard.

Order : **G.46** Technical Drawing

Material : Technical Drawing Within Details

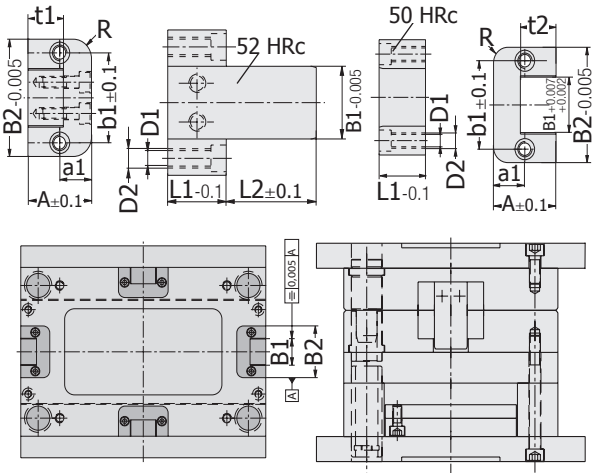
Usage : Special Production As Per Request



G.130 G.130.G

SLIDE CENTERING UNIT G.130

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



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

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

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

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

Material : 1.2343 Steel Heat Threated

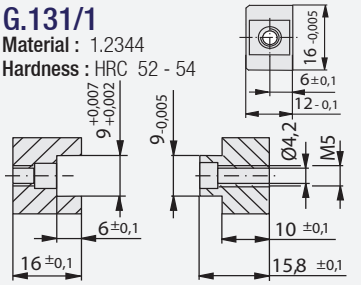
Usage : Injection Mould Centering Unit

Section Injection Mould

CENTERING BLOCKS

G.131/1

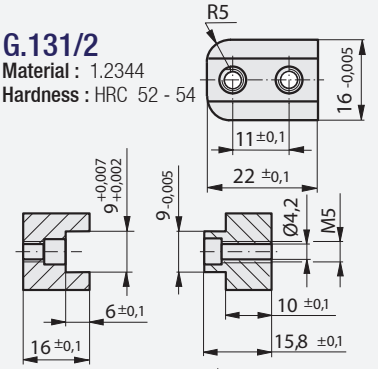
Material : 1.2344
Hardness : HRC 52 - 54

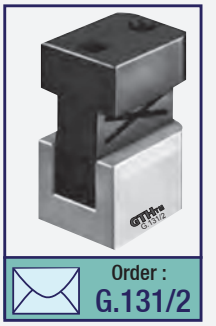


Order : G.131/1

G.131/2

Material : 1.2344
Hardness : HRC 52 - 54

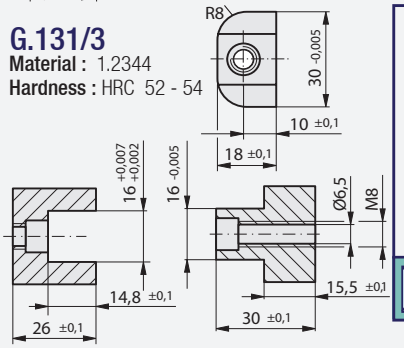




Order : G.131/2

G.131/3

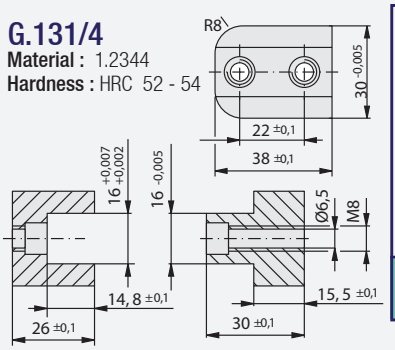
Material : 1.2344
Hardness : HRC 52 - 54



Order : G.131/3

G.131/4

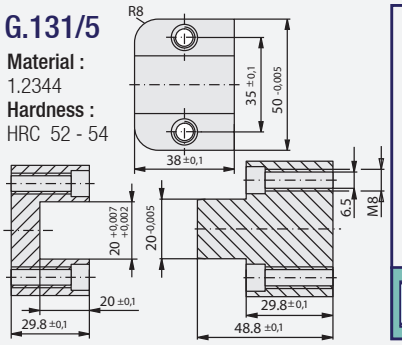
Material : 1.2344
Hardness : HRC 52 - 54

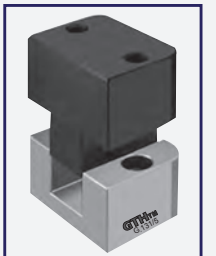


Order : G.131/4

G.131/5

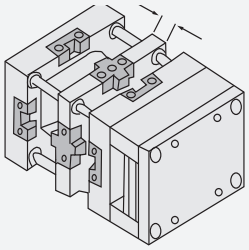
Material : 1.2344
Hardness : HRC 52 - 54





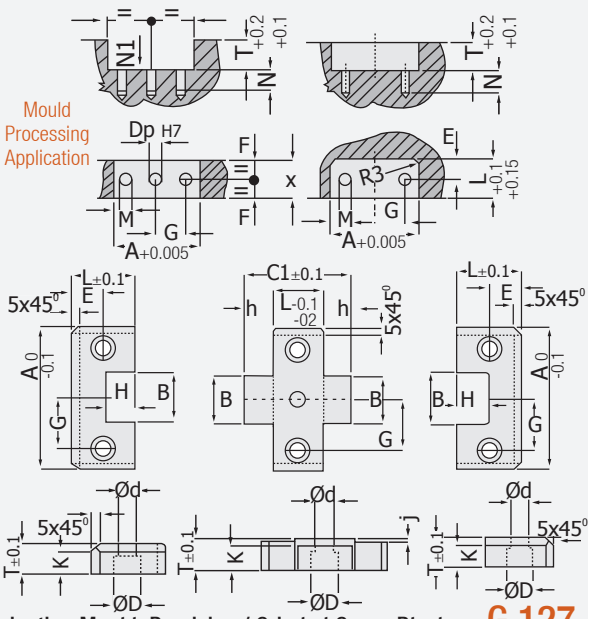
Order : G.131/5

Mounting Example



SQUARE LOCKING GROUP BLOCKS G.127

Mould Processing Application



Injection Mould, Precision / Grinded Group Blocks G.127

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

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

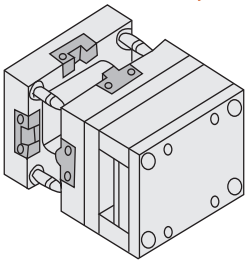
Connection bolts of centering unit products are supplied separately

Order : G.127 A . X

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

Usage : Injection Mould Locking Assembly

Mounting Example

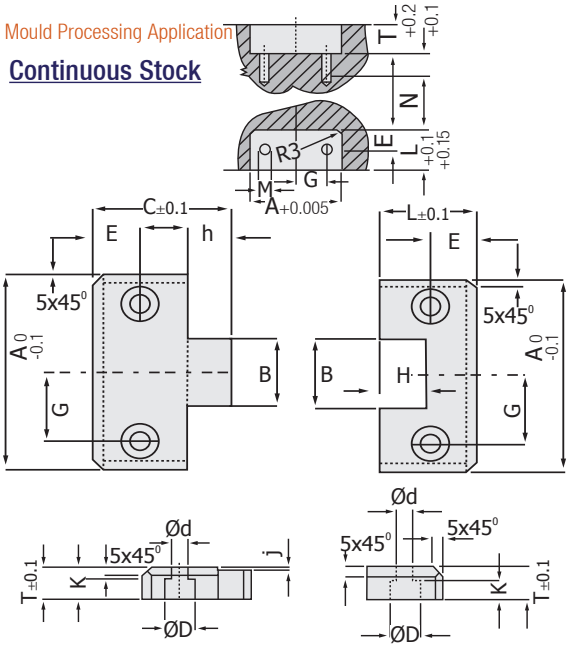


SQUARE LOCKING / CENTERING BLOCK G.128

Injection Mould, Precision / Grinded Blocks

Mould Processing Application

Continuous Stock



Injection Mould, Precision / Grinded Blocks G.128

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

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

Order : G.128 A

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

Usage : Injection Mould Locking Assembly

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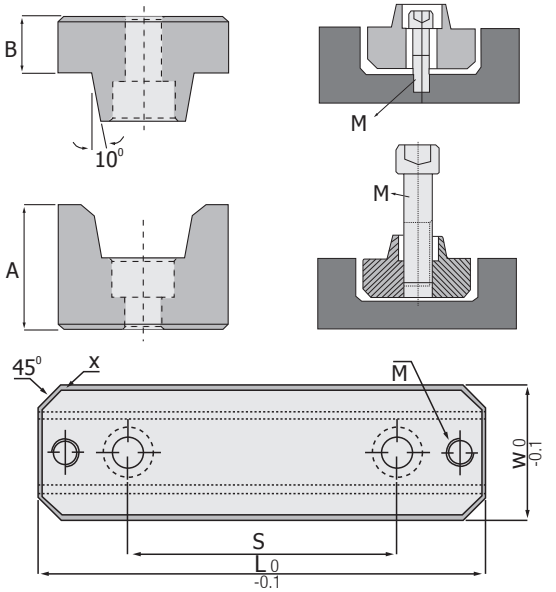
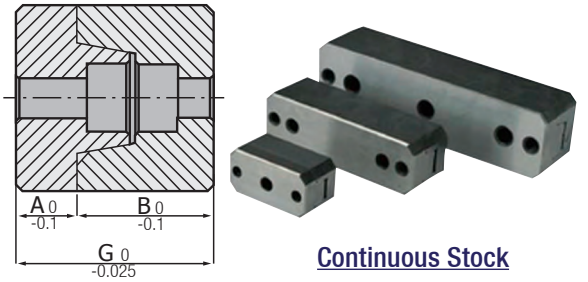
GTH

Section Injection Mould

PARALLEL CENTERING BLOCK G.132

Injection Mould, Intermediate Plate Long Thrust Block





Continuous Stock

Injection Mould, Intermediate Plate Long Thrust Block G.132

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

Connection bolts of centering unit products are supplied separately

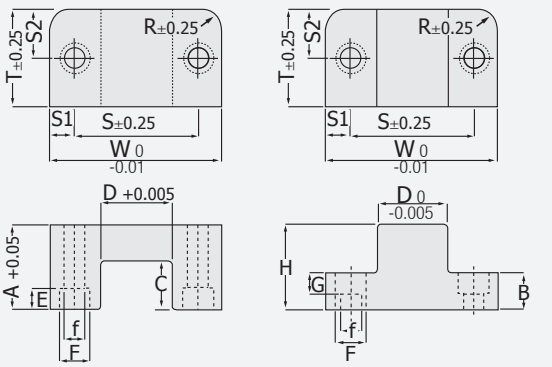
Order : G.132 W x L

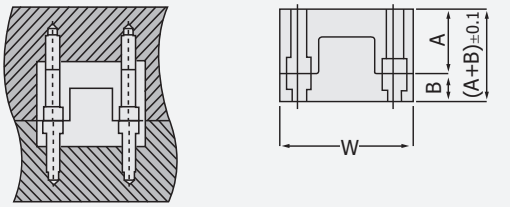
Material : 1.1625 Steel
Hardness : 52-54 HRC

Usage : Injection Mould Locking Assembly

CONICAL CENTERING BLOCK G.129

Injection Mould, Plate Positioning Block

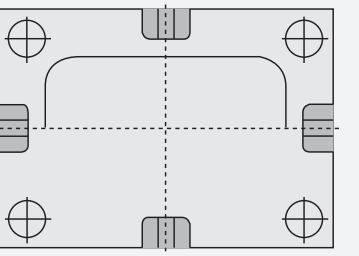




Two Part Set
Conical Centering Unit

Connection bolts of centering unit products are supplied separately.

Continuous Stock



Injection Mould, Plate Positioning Block G.129

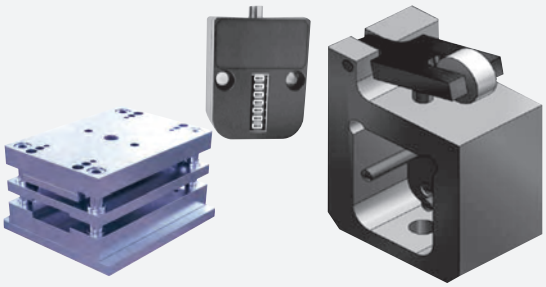
Type	W	T	A	B	C	D	E	İmbus
15	38.1	25.4	22.17	9.47	13.30	12.70	7	M5
25	63.5	38.1	34.87	15.82	19.48	25.4	8	M6
35	88.9	50.8	44.4	19	25.70	36.58	11	M8

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

Order : G.129 Type

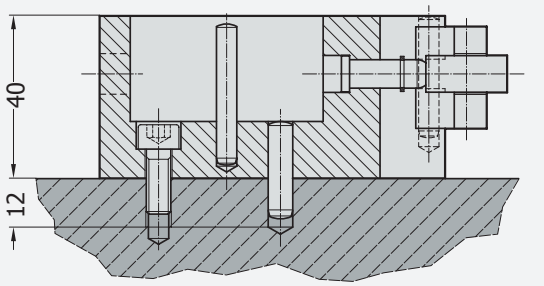
Material : 1.2510 Steel
Hardness : 52-54 HRC

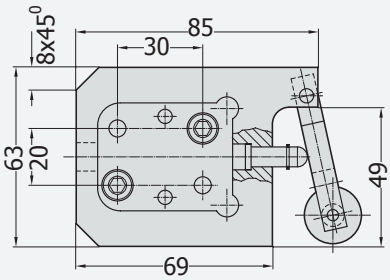
Usage : Injection Mould Locking Assembly

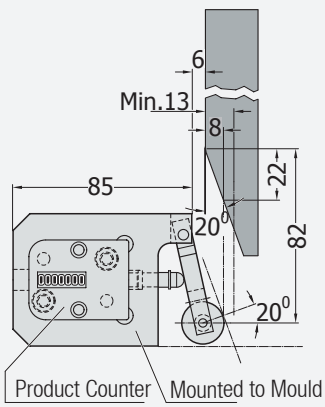


PRODUCT - COUNTER MOUNTED TO MOULD G.124P

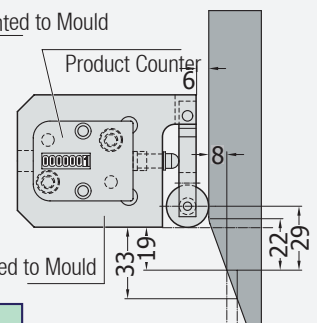
Mounting Slot to Press Mould







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



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

Order : G.124.P

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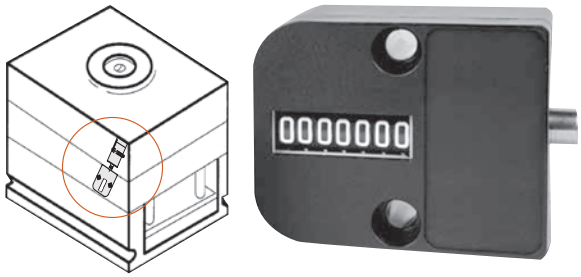
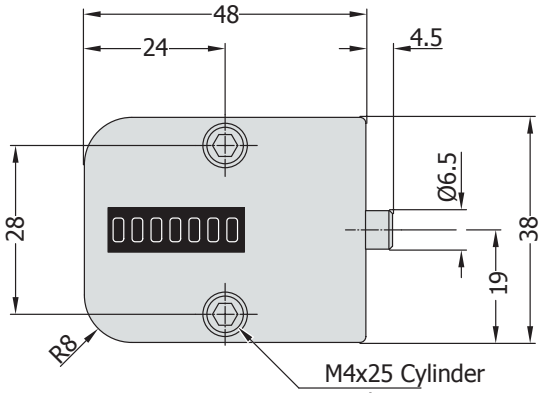
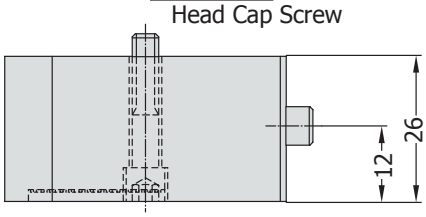


PRODUCT COUNTER G.124

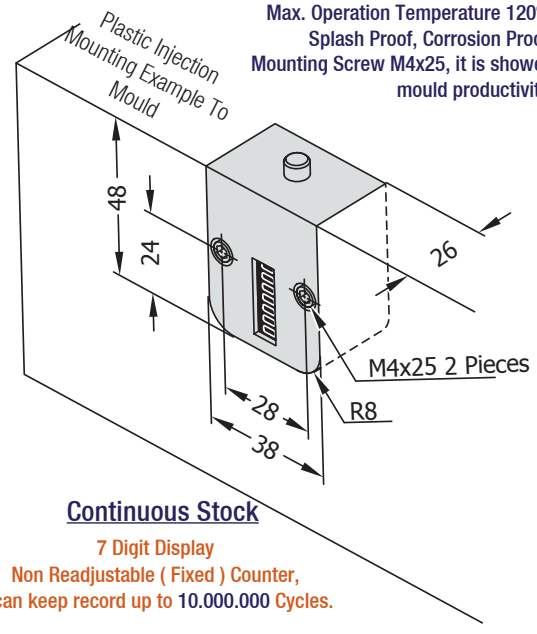
Non Resettable Counter Showing Mould Productivity



Counter Block will be generated by the user



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



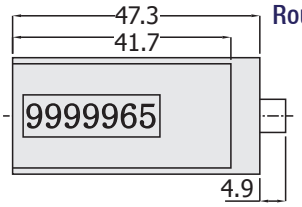
Continuous Stock

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

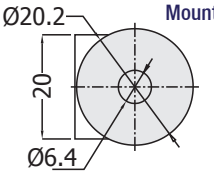
Order : G.124.E

ROUND TUBE, MOULD COUNTER G.142

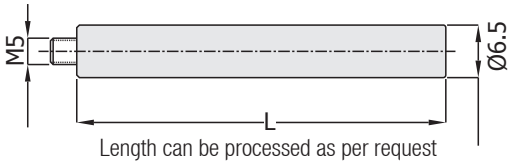
Injection Mould (Holder Plate) Practical Mount, Hole Inner



Round Mould Counter



Extension, Actuator Rod (Processable in desired dimension)



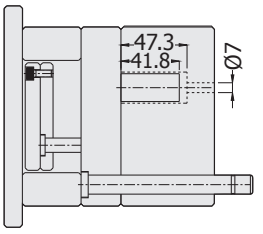
Length can be processed as per request

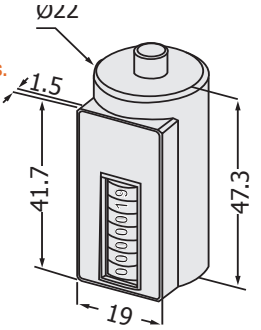
Round Mould Counter: Production Counter / Unite has round (cylindrical structure and can be mounted inside of holder plate according to the following drawings. (If your mould holder is in suitable position). In case your holder is high / long, additional operation can be provided with extension rod.

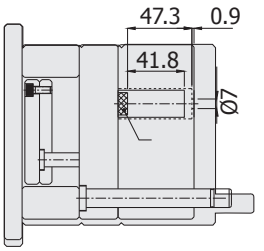
Max. OperationTemperature: 120ºC.

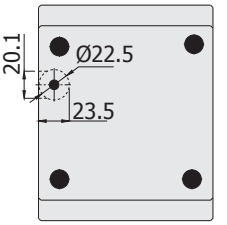
Processing Advantage: During mounting of round mould counter to mould, only mounting slot is opened with drill (22,5 mm), (42 x 17) window is generated, According to the standard model, it is provided mounting practicability at application.

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

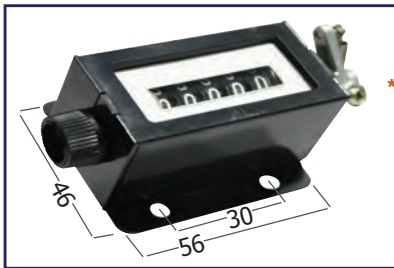








Order : G.142



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

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

Professional Model
* 5 Digit
* Overhead Multiple
* Side Zeroing

Order : RS-207 (Made in Japan)

Small Size
* 4 Digit
* Overhead Multiple
* Overhead Zeroing

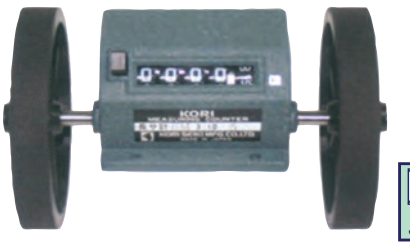
Order : RS-50 (Made in Japan)

Small Size
* 5 Digit
* Overhead Multiple
* Side Zeroing

Order : RS-204 (Made in Japan)

Rotary Model
* 5 Digit
* Overhead Pulsative
* Overhead Zeroing

Order : RL- 50 (Made in Japan)



Length Counter
* 5 Digit
* Wheeled
* Overhead Zeroing

Order : BM3-10 (Made in Japan)

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

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

Marking / Stamping Figure and Letter Sets - Order Table

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

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

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

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

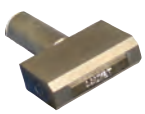
Minimum 2 pieces or maximum 3 pieces from existing letter and figures and blank (Unwritten) Characters for word formation are available in set. You can write the desired work or date by marking with hammering and also by coupling to press with press mounting arbour.

106 Pieces Letter /Figure Set (Wood Box)

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

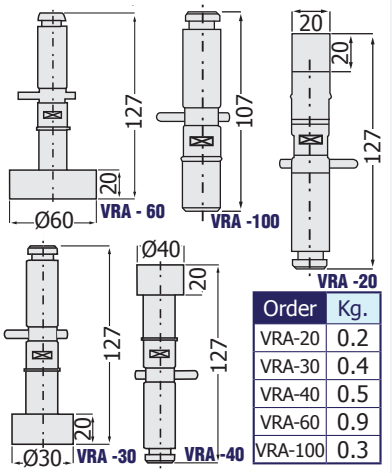
PRESS MOUNTING ARBOUR

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



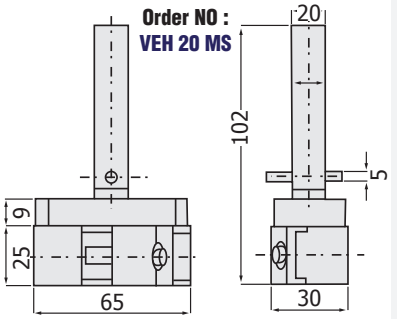
Order No	Dimension mm	Letter and Figure Array Head Connection Tool
15761	10 x 40	

SINKING EROSION HOLDERS
EDM Chucks Kit



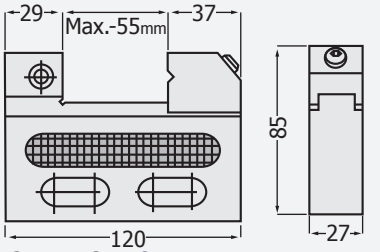
Order	Kg.
VRA-20	0.2
VRA-30	0.4
VRA-40	0.5
VRA-60	0.9
VRA-100	0.3

SINKING EROSION CLAMP
EDM Chucks Kit



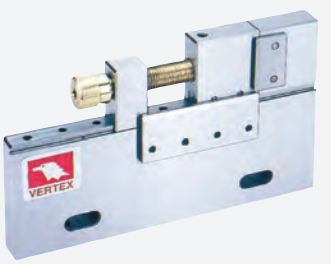
EDM Chucks vise Stainless
Steel - Hardened HRC 58
Parallelism Sensitivity:0.003 mm / 100 mm
Flatness Sensitivity: 0.005 mm / 100 mm

WIRE EROSION CHUCKS
Stainless Steel Holders

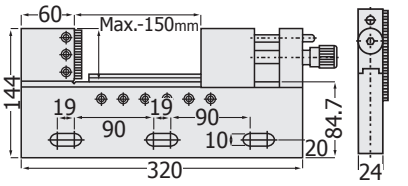


Order NO : VSTV - 50 W

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



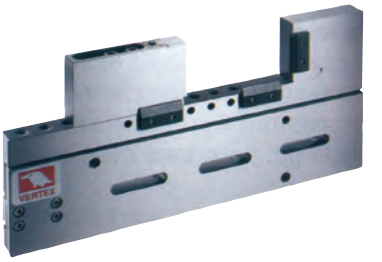
WIRE EROSION CHUCKS
Stainless Steel Holders



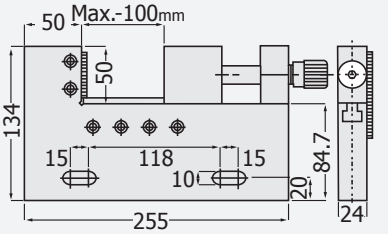
Order NO : VSTV - 150 W

Stainless Steel Clamps

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



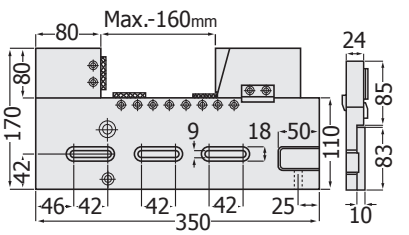
WIRE EROSION CHUCKS
Stainless Steel Holders



Order NO : VSTV - 100 W

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

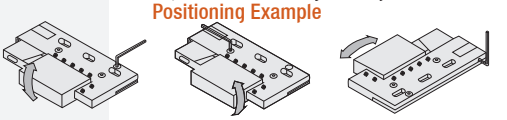
WIRE EROSION CHUCKS
Stainless Steel Holders



Order NO : VSTV - 320 W

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

Positioning Example



PERMANENT MAGNETIC CARRIER

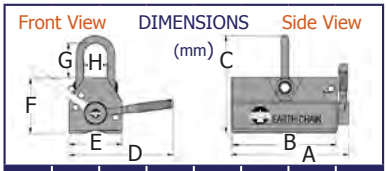
Load Bearing Magnetic Block

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

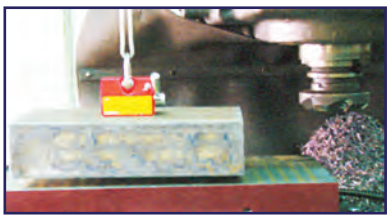
Order No / MODEL	Lifting Capacity – Balanced Lifting – Min. Load Surface Coarse	Lifting Capacity – Balanced Lifting – Max. Load Surface Clear	Platin Material – Min. Load Material Thickness Length mm	ELM Block Weight Kg.
ELM-100	100 kg	**220 kg**	15x1000	2.5 kg
ELM-300	300 kg	**660 kg**	25x1500	8.6 kg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

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

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

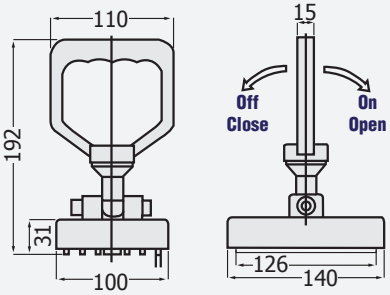


A	B	C	D	E	F	G	H
107	84	120	125	60	71	41	30
180	155	156	185	90	93	51	41
255	224	212	260	115	120	77	52
280	245	286	371	165	169	97	87
422	380	348	512	216	215	105	121
566	530	400	770	216	222	147	80



MAGNETIC SHEET PLATE CARRIER

Separates - Holds - Carries Sheet Plates

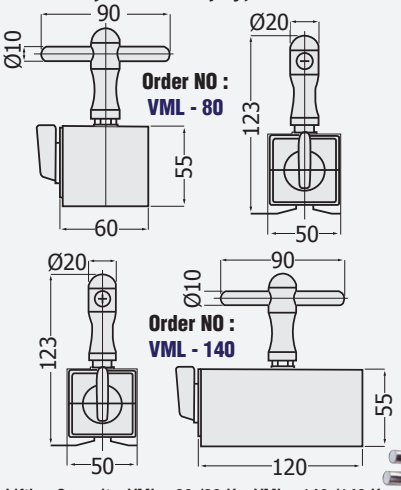


Lifting Capacity : 150 Kg.
Unit Weight : 2,5 Kg.

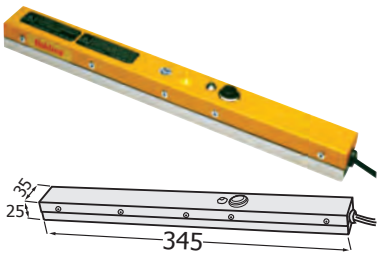
Order NO : VML - 150

MAGNETIC PART CARRIER FOOT

Self Magnetic Strong Type



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

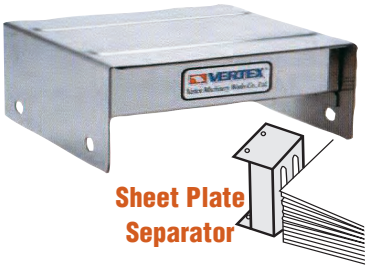


MOULD, MAGNETIC RECEIVER UNIT

Mould Inner Magnetic Absorber

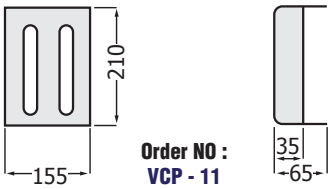
Especially removes the unwanted magnetization generated on press mould plates and guide pillar bushes. Protects mould from burrs and magnetic effects. It is worked excellent at places that are narrow and hard to reach, in addition wide surface. without demounting mould - The product demagnetizes place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

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



MAGNETIC EJECTOR - SHEET SEPARATOR

It is cleaned and separated sheet plates.



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

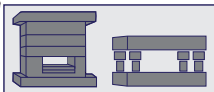
Weight : 4.2 Kg.

MAGNENTIC SEPARATOR

Raw Material - Burr Detacher

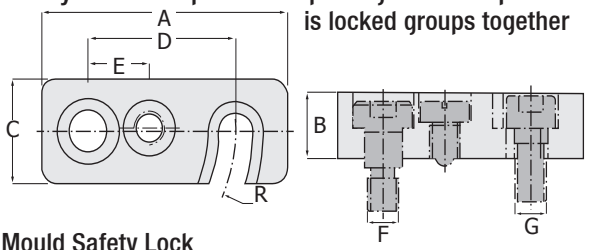
Injection machine holds unwanted metal wastes by sieving raw material that is at the bottom part of extruder.

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



MOULD SAFETY LATCH G.103

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



Mould Safety Lock

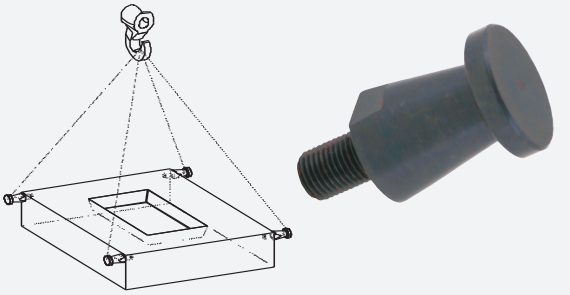
G.103 Product is produced by GTH Mould Components. G.103

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

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

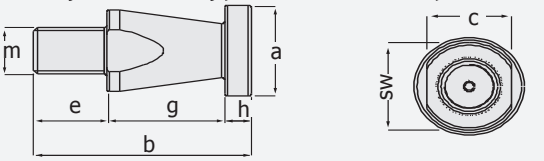
Mould Safety Lock: This system is mounted outside of mould. It is for moving mould as packet in safety way without opening. It is mounted to mould with an Cylinder Head Cap S., another Cylinder Head Cap S. slot is opened to the counters side, in addition, connection or easy dismantlement can be done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

Injection Moulds



MOULD TRANSPORT LUG / HEAVY DUTY

At turning and handling processes of mould plates



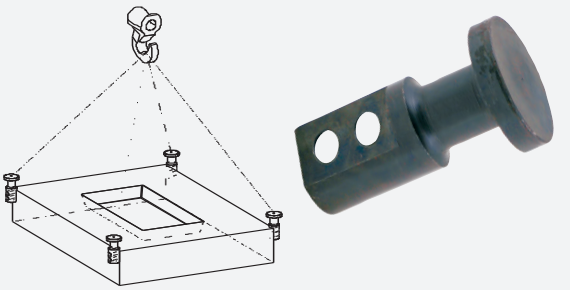
m	a	b	c	SW	e	g	h
M16 x 2	39	85	35	14 AA	30	33	9
M20 x 2.5	39	85	35	17 AA	30	33	9

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

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

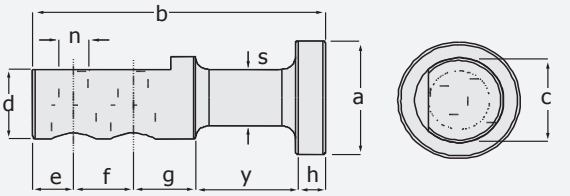
Lifting Force of A Lug : 2730.16 / 660 Kg.

2730.20 / 1000 Kg.



MOULD TRANSPORT LUG / HEAVY DUTY 2750

At turning and handling processes of mould plates



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

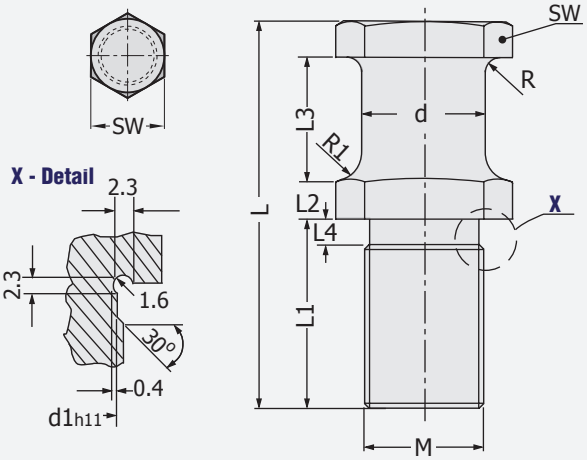
Order :	Material :	Usage :
2750 x a	CK 45 DIN Black Plated	At Lifting/ Turning Of Mould Plates.

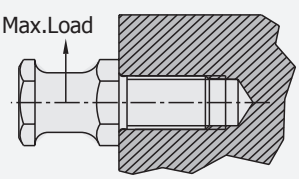
Lug Connection Bolt Dimensions : M10 x 35 Cylinder Head Cap Screw 12.9 x 2 Pcs.

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

THREADED, MOULD BASE LUGS G.47

VDI 3366 Standard Transport Lug





It can be mounted on lateral surface of mould plate.

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

Reference : VDI 3366
39V 1199 VW AUDI

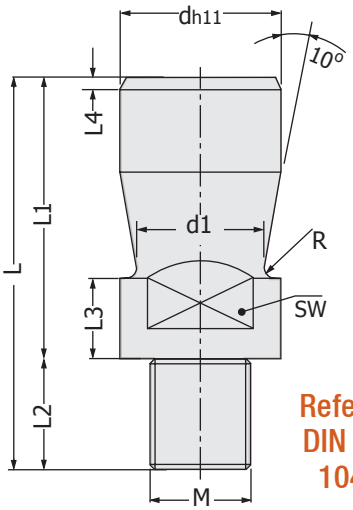
Threaded Mould Base Lugs G.47

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

Order : G.47 x M | Material : 1.0503 (C-45) 700-800 N mm² | Usage : At Lifting/ Turning Of Mould Plates

THREADED, MOULD BASE LUGS G.54

DIN EN ISO 10242 - 1 Transport Lugs



Reference : DIN EN ISO 1042 - 1

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

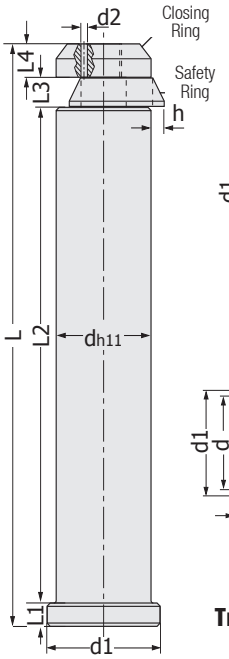
Threaded Mould Base Lugs Continous Stock G.54

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

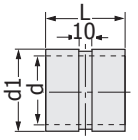
Order : G.54 M x d | Material : 1.0503 (C-45) | Usage : At Lifting/ Turning Of Mould Plates

MOULD TRANSPORT SHAFT G.52

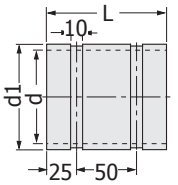
VDI 3366 Standard Mould Transport Shaft



G.52.1 Bush Form A



G.52.2 Bush Form B



VDI Standard VDI 3366 Transport Bushes

G.52 Transport Shaft

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

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

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

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

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

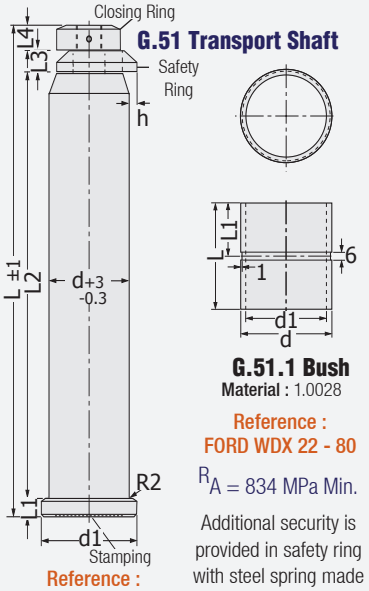
When using shafts, don't exceed the carrying capacity. For turning and loading mould, 2 Pin can be used. Don't use damaged shafts.

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

Material : 1.0503 (C-45)

MOULD TRANSPORT SHAFT G.51

FORD WDX22 - 60 Transport Shaft



G.51 Transport Shaft

G.51.1 Bush
Material : 1.0028

Reference :
FORD WDX 22 - 80

R_A = 834 MPa Min.

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

Reference :
FORD WDX 22 - 60

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

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

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

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

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

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

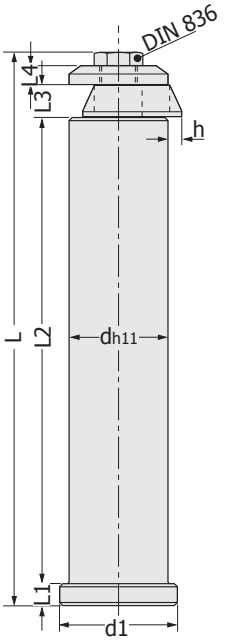
Don't use shafts with broken spring and damaged casing. When using shafts, don't exceed carrying capacity. While using for turning mould, loading should be done only with 2 Pcs. Pin.

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

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

MOULD TRANSPORT SHAFT G.55

FIAT STQ.40002 Transport Shaft



Reference :
FIAT STQ - 40002

FIAT STQ.40002 Transport Shaft G.55

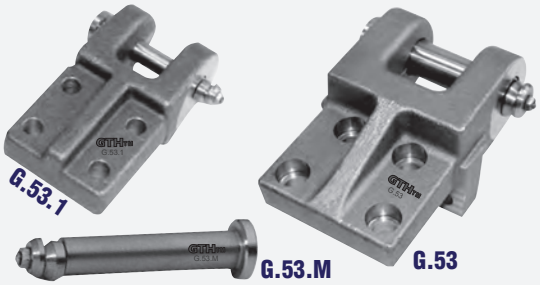
Max. Load Kg.	d mm	d1 mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	h mm
2000	**29**	38	178.5	6	150	9	6	4
3200	**33**	43	200.5	6	170	10	6	4
5000	**43**	53	233	8	195	12	8	6
8000	**53**	65	227	10	180	16	10	6
8000	**53**	65	282	10	235	16	10	7.5
13000	**63**	78	272.5	12	215	20	12	7.5
12000	**63**	78	352.5	12	295	20	12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

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

Order : G.55. x d

Material : 1.0503 (C-45)

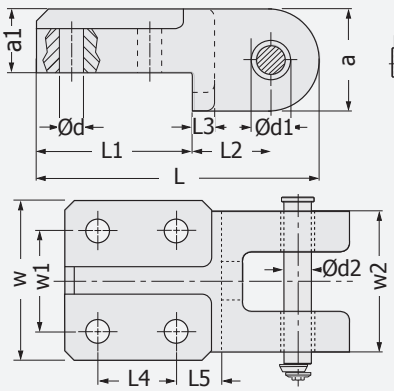
Usage: Shaft Bush Bracket



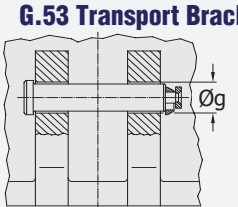
TRANSPORT BRACKET G.53

Shaft - Transport Flange

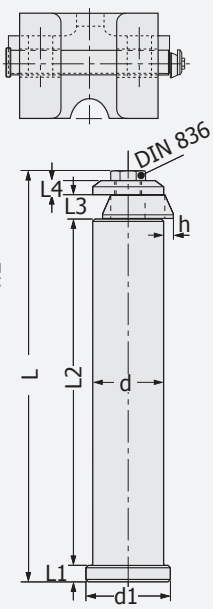
Reference : FIAT



G.53 Transport Bracket



Transport Shaft Application Example



G.53.M Transport Shaft

Shaft - Transport Flange — Transport Bracket G.53

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

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

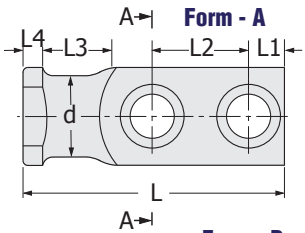
Transport Shaft — Reference : FIAT — G.53.M

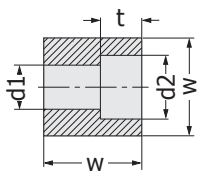
Max. Load Kg.	d mm	d1 mm	L mm	L1 mm	L2 mm	L3 mm	L4 mm	h mm	g
600	15.6	**25**	102.5	6	77	8	6.5	3.3	16
1000	20.6	**30**	113.5	6	86	8.5	6.5	3.3	21
2000	25.6	**35**	128.5	6	100	8.5	6.5	3.5	26

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

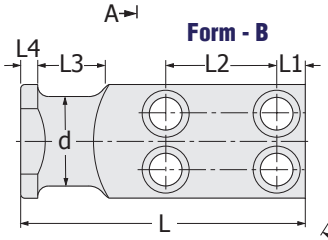
TRANSPORT BRACKET KTB / G.134

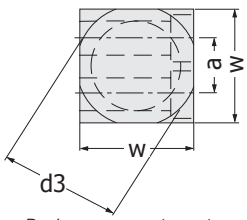
Lifting eyebolts with Cable Protection Equipment

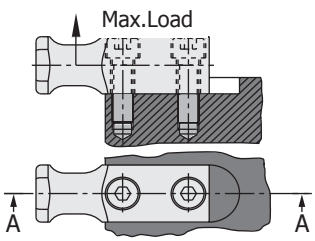




Reference :
VDI 3366
39D 876 VW AUDI







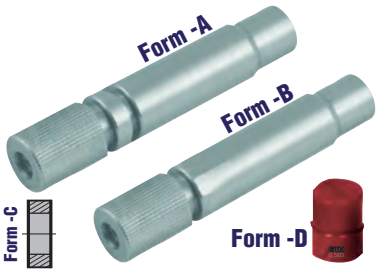
During usage, pls make sure that it is mounted to work piece smoothly. Don't exceed max load values specified in Table.

Continous Stock

Lifting Eyebolt with Cable Protection Equipment KTB

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

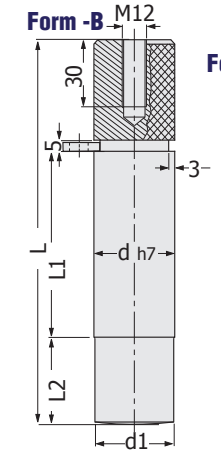
Order :	Material :	Usage :
KTB Form x W	1.0503 (C-45) 700-800 N mm^2	Mould Plates Lifting / Carrying



FIAT -SAFETY PINS G.56

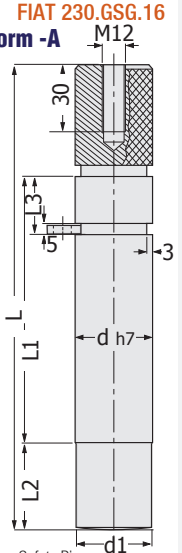
Press Mould, Hanger Broach Guide Pillars

Form -B

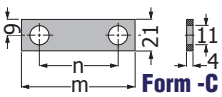


Reference : FIAT 230.GSG.16

Form -A



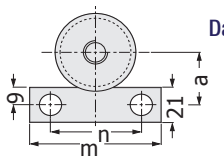
Safety Pin Holder



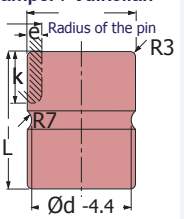
Form -C

Safety Pin
Material : 1.6511

Damper / Vulkollan



Vulkollan / Damper:
It is used with safety pins.



Reference : FIAT Q.08.15

Form -D

Hanger, Hanger Broach Guide Pillars G.56

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

Pin Holder **Form -C**

m	n
50	35
65	45
70	50

With Safety Pins

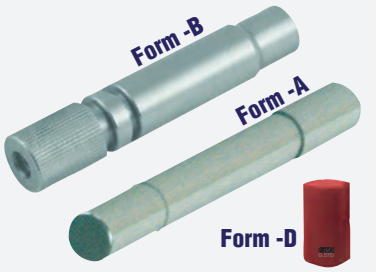
Safety Pins Damper Vulkollan **Form -D**

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

Page 86

Section Press Mould

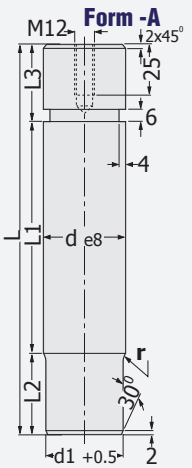
Order : G.56.d Form: A-B C-D



VDI - SAFETY PINS G.57

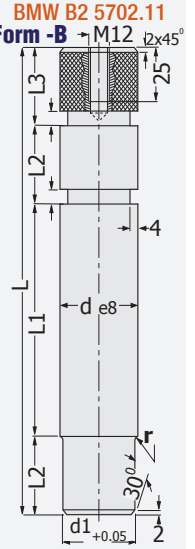
Press Mould, Hanger Broach Guide Pillars

Form -A

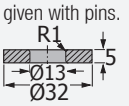


Reference : VW / ADUI 39D.854 BMW B2 5702.11

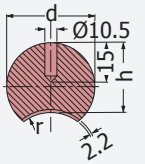
Form -B



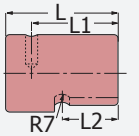
Safety Pin Washer
are given with pins.



Damper / Vulkollan for Safety Pins
Selection from Table according to the pin dia and max. flexion.



90 Shore Poliurethane



Press Hanger, Hanger Broach Guide Pillars G.57

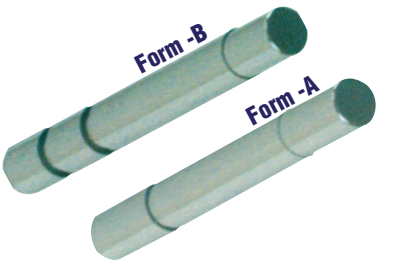
Form	d	L	d1	L1	L2	L3	r	Yük Kg.
Form A	25	100	22	58	20	22	3	1250
	32	122	29	75	25	22	4	2000
	40	139	37	75	32	32	5	3200
	50	192	47	120	40	32	6	5000
	63	237	60	155	50	32	6	9000
Form B	25	120	22	58	20	22	3	1250
	32	147	29	75	25	22	4	2000
	40	191	37	95	32	32	5	3200
	50	232	47	120	40	32	6	5000
	63	287	60	155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

Safety Pins, Damper Vulkollan **Form -D**

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

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

Material : 1.0503 (C-45) Polyurethane 90 Shore

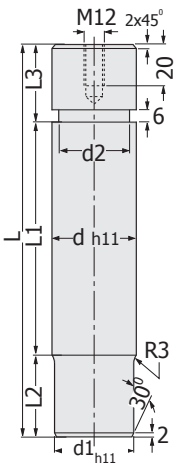


NAAMS -SAFETY PINS G.58

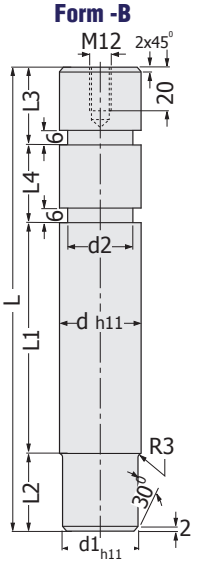
Press Mould, Hanger Broach Guide Pillars

Reference : NAAMS R41,R42 FORD WDX 14-60

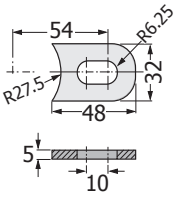
Form -A



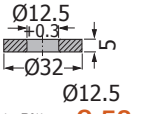
Form -B



Form - C Holder



Form - D Rondela



Press Hanger, Hanger Broach Guide Pillars G.58

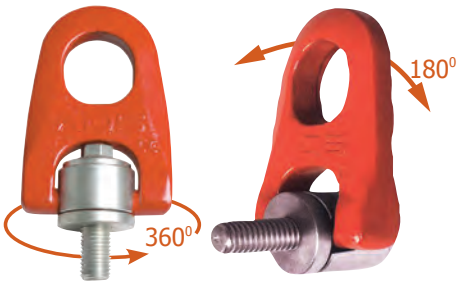
Form	d	L	d1	d2	L1	L2	L3	L4
Form A	25	110	22	17	50	25	35	-
	35	130	32	27	65	30	35	-
	50	170	47	42	100	35	35	-
	63	210	60	55	125	45	40	-
Form B	25	130	22	17	50	25	35	20
	35	155	32	27	65	30	35	25
	50	200	47	42	100	35	35	30
	63	250	60	55	125	45	40	40

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

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

Order : G.58.d Form A.B

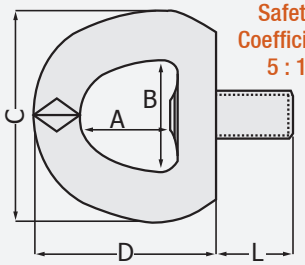
Material : 1.0503 (C-45) Holder / Washer

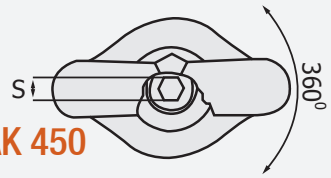


HEAVY TONNAGE EYEBOLT LUG — AK 450

Swivel (Axial Rotation) Lifting Lug

Class > 8CE Safety Coefficient 5 : 1





AK 450

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

Swivel (Axial Rotation) Lifting Lug

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

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

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

Order : AK 450 x M

Material : Class > 8CE Safety Certificate

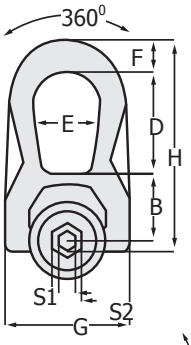
Usage : Axial Rotations in Tensile Direction

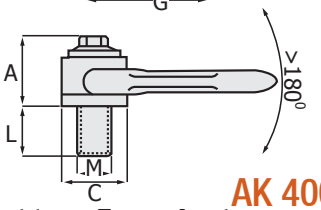
DOUBLE MOTION EYEBOLT LUG — AK 400

Swivel / Lug Chargable at Every Angle

Class > 8CE Safety Coefficient 5 : 1

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





AK 400

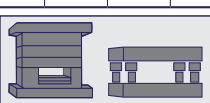
Swivel / Lug Attachable at Every Angle

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

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

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

Order : AK 400 xM



EYEBOLT POLYESTER SLING
Çift Katlı Polyester Dokuma GPS

Eyebolt Polyester Slings GPS

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

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

Lifting Position / Capacity,Tone

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

Order :
GPS x Colour (Load) x Length

SPANZET / POLYESTER TURN BUCKLE

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

SWIVEL HOOK FK..

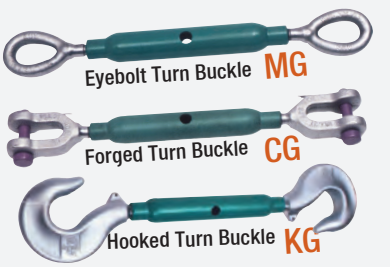
Pls. specify code for other products(AK)

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

ROPE ATTACHMENTS HE..

DIN 82 101 Straight Type Locked

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



CERTIFIED TURN BUCKLES

Forged Turn Buckle

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

Eyebolt Turn Buckle

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

Hooked Turn Buckle

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

WORK SAFETY SUPPLIES

Work Shoes

Order	Size	Economic Price
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)

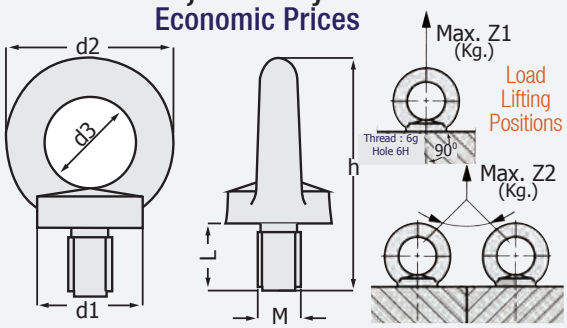
AK-582 S EYENUT Heavy Duty

AK-580 C EYEBOLT Heavy Duty

FIXED LIFTING EYEBOLT G.141

Screwable Hanger Load Eyebolt DIN 1580

Economic Prices



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

Screwable Hanger Cargo Eyebolt DIN 1580 G.141

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

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

Order : G.141 x M

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

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

EGM

High Quality / Grinded Thread

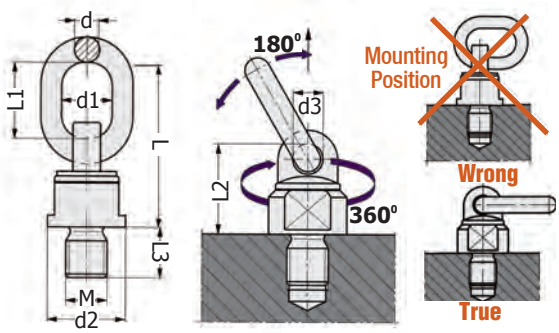
M X Thread	M X Thread
M8 x 1.25	**M20** x 2.50
M10 x 1.50	**M24** x 3.0
M12 x 1.75	**M30** x 3.50
M14 x 2.0	**M36** x 4.0
M16 x 2.0	**M42** x 4.50
M18 x 2.50	**M48** x 5.0

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

Order : EGM x M Class > 8CE

TWO SIDED ROTARY EYEBOLT G.140

Swivel / Lug Attachable at Every Angle



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

Swivel / Lug Attachable at Every Angle G.140

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

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

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

Order : G.140 x M

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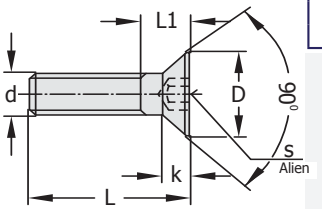
COUNTERSUNK HEAD SCREW HIC

Countersunk, Cylinder Head Cap Screw

Quality: 10.9 DIN 7991



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

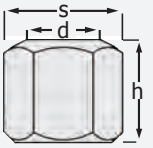
Order : **HIC d x L**

COUNTERSUNK HEAD SCREW HIC

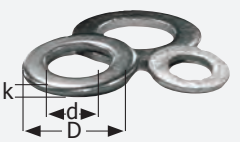
d (M)	L mm	L1	D	k	s
M12 x 1.75	20, 25, 30, 35, 40, 50, 60	11.8	24	6.5	8
M16 x 2	25, 30, 35, 40, 50, 60, 70	15.4	30	8.5	10

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

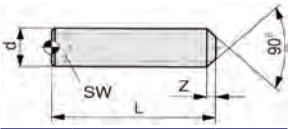


PLATED NUT KPM

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



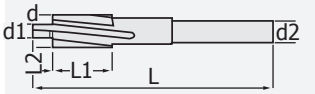
d	L mm	Z	SW
M3 x 05	8, 10, 15	0.5	1.5
M4 x 07	8, 10, 15, 20	0.7	2
M5 x 08	10, 15, 20, 25, 30	0.75	2.5
M6 x 1	10, 15, 20, 25, 30, 35, 40	1.0	3.0
M8 x 1.25	10, 15, 20, 25, 30, 35, 40, 45, 50	1.2	4.0
M10 x 1.50	10, 15, 20, 25, 30, 35, 40, 45, 50	1.5	5.0
M12 x 1.75	10, 15, 20, 25, 30, 35, 40, 45, 50, 55,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

LOCKING SCREWS SEC

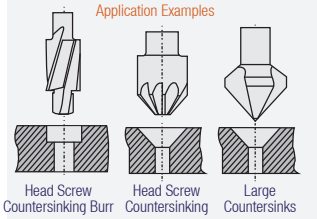
d	L mm	Z	SW
M14 x 2	20, 25, 30, 35, 40, 50, 60	2	0.7
M16 x 2	20, 25, 30, 35, 40, 50, 60	2	0.8

Order : **SEC d x L**

PILOT COUNTERSUNK HEAD SCREW Countersinking ICF



Application Examples



Head Screw Countersinking Burr | Head Screw Countersinking | Large Countersinks

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

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

Edged Burr - HSS - DIN 373

Order : **ICF M x d**

Cylinder Head Cap Screw 12.9

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

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

Smashing Prices at rush of orders

Order : IMB d x L

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

Cylinder Head Cap Screw 12.9

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

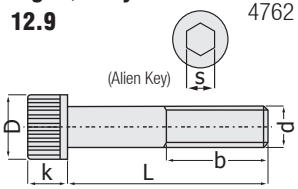
Cylinder Head Cap Screw 12.9

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

Cylinder Head Cap Screw IMB

High Quality
12.9

DIN ISO 4762

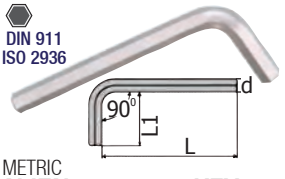


High Quality Cylinder Head Cap Screw 129
Unbroken /Unextended /Unwarped /Rigid Material

Cylinder Head Cap Screw IMB

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

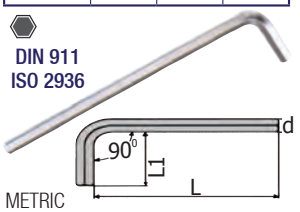
DIN 911
ISO 2936



METRIC
ALIEN (HEXAGONAL) KEY

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

DIN 911
ISO 2936



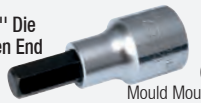
METRIC
LONG ALIEN KEY

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

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

2 YIL GARANTİ

MOULD MOUNTING KIT



1/2" Die Allen End

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

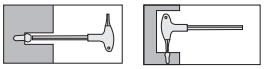
Order	d	L	Qty
111306	6	60 mm	One Serial Per Set
111308	8		
111310	10		
111312	12		
111314	14		

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

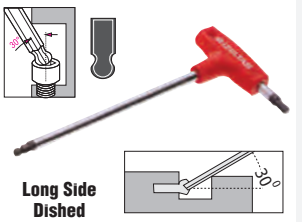
TORX ALIEN KEY

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.

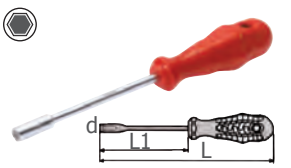
Order	d	L	L1
TA.20	2	139	52
TA.25	2.5	153	52
TA.30	3	153	55
TA.35	3.5	153	55
TA.40	4	179	70
TA.45	4.5	200	84
TA.50	5	200	84
TA.60	6	221	103
TA.70	7	236	106
TA.80	8	255	117
TA.100	10	285	132



Long Side Dished

ROUN HEAD 'T' ALIEN

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



METRIC
DIE ALIEN SCREWDRIVER

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

ALIEN WRENCH SET

Beta -İzeltaş -Ceta

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

ALIEN WRENCH SET

Beargrip

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

LONG 'T' ALIEN SET

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

ALIEN WRENCH SET

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

LONG ALIEN WRENCH S.

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

ROUND HEAD ALIEN S.

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

INCH ALLEN WRENCH S.

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

TORK ALIEN WRENCH S.

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

R. HEAD POCKETKNIFE ALIEN

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

BROKEN THREAD SPACE,REPAIR KIT

Pls. renew broken / damaged thread slots with V-Coil Kits ..!

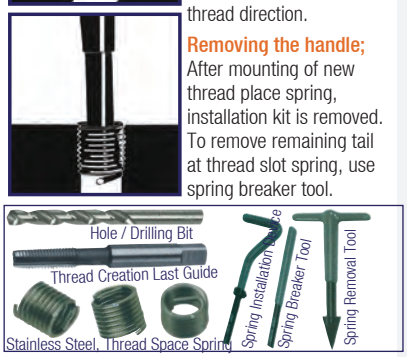
Drilling; Clean broken thread slot with standard drill bit, there is no need to clean for small holes. The sets up to M12 (1/2'') are included suitable drill bits. For fluteless quides, larger holes are required.

Control; Pls. control whether thread and steps of guides to be used at thread slots that will be recreated are paired or not and also place. These sets are also available at our company.

Thread Slot Opening Process;
For opening thread to the cleaned hole after drilling process, special V-COIL Thread Space creating guides are used. Suitable thread cutting oil related to usage should be used.

Thread Slot Repair Spring Placement Process;
After drilling and guiding process at thread slot, pls. insert thread spring to the new thread space to be created into spring installation tool and then insert adjustable ring until spring end is centered at slot end; curl the spring up to half turn downwards with slight pressure. Due that bit can be broken, hence the thread should not be turned to counter thread direction.

Removing the handle;
After mounting of new thread place spring, installation kit is removed. To remove remaining tail at thread slot spring, use spring breaker tool.



Application Areas; It is the most effective method for reparing the damaged threads, thread created that is depended on narrow and full tolerances, is normally more stronger position than original, also it is provided inch /metric changement. The Springs resistant to corrosion and abrasion have long life time, thread slot armour plating during repairing of threads, V-Coil Tools are used securily for more flexible materials having low shear resistance, For example: Machine Productions of Aluminium Alloys or Magnesium Alloys, Electric- Medical - Space etc. Industries.

Recyling the rejected materials is ensured.

Springs 1.5 D

Each Thread Spac
Application Set

THREAD SLOT REPAIR KITS

With Usage per each Thread - 1 Complete Set

M Guide	HSS Drill Bit	Spring Installation	Spring Breaker	Springs 1.5 D Stainless Thread Slot Spring
M2 x0.4	2.10 mm	No:2	No:2	20 Piece
M3 x0.5	3.20 mm	No:4	No:4	
M4 x0.7	4.20 mm	No:6	No:6	
M5 x0.8	5.20 mm	No:8	No:8	
M6 x1	6.30 mm	No:9	No:9	
M7 x1	7.30 mm	No:11	No:11	
M8 x1.25	8.30 mm			
M8 x1	8.30 mm			
M9 x1.25	9.30 mm	No:12	No:12	15 Piece
M10 x1.5	10.4 mm	No:13	No:13	
M10 x1.25	10.3 mm			
M10 x1	10.3 mm			
M11 x1.5	11.4 mm	No:14	No:14	10 Piece
M12 x1.75	12.4 mm	No:15	No:15	
M12 x1.5	12.4 mm			
M12 x1.25	12.3 mm			
M12 x1	12.3 mm			
M14 x2	-	No:16	-	
M14 x1.5	-		-	
M14 x1.25	-	No:17	-	
M14 x1	-		-	
M16 x2	-	No:18	-	
M16 x1.5	-		-	
M18 x2.5	-	No:20	-	5 Piece
M18 x2	-		-	
M18 x1.5	-		-	
M20 x2.5	-	No:21	-	
M20 x2	-		-	
M20 x1.5	-		-	
M22 x2.5	-	No:22	-	
M22 x2	-		-	
M22 x1.5	-		-	
M24 x3	-	No:23	-	

Usage Area of Spring Removal Device: It is used to remove incorrect inserted, deformed, damaged springs that were preinstalled.

Present a Kit Per Each Thread Slot

As per request, except set: You can supply each products (devices) externally from our company.

Order : M.(Thread) Repair Kit

Usage : Reparing and Renewing of Damaged Thread Slots

THREAD SLOT REPAIR KITS

Sets as Group (Economic Presentation)

M Klavuz	HSS Drill Bit	Spring Installation	Spring Breaker	Springs 1.5 D Stainless Thread Slot Spring
SET grouped from **M5** up to **M 12**				
M5 x0.8	5.20 mm	No : 8	No : 8	25 Piece
M6 x1	6.30 mm	No : 9	No : 9	25 Piece
M8 x1.25	8.30 mm	No : 11	No : 11	25 Piece
M10 x1.5	10.40	No : 13	No : 13	25 Piece
M12x1.75	12.40	No : 15	No : 15	10 Piece
SET grouped from **M6** up to **M 10**				
M6 x1	6.30 mm	No : 9	No : 9	25 Piece
M8 x1.25	8.30 mm	No : 11	No : 11	25 Piece
M10 x1.5	10.40	No : 13	No : 13	25 Piece
M12x1.75	12.40	No : 15	No : 15	10 Piece
M14x1.25	-	No : 17	-	10 Piece
PT Ignition Plug Guided From **M6** up to **M14**				
M6 x1	6.30 mm	No : 9	No : 9	25 Piece
M8 x1.25	8.30 mm	No : 11	No : 11	25 Piece
M10 x1.5	10.40	No : 13	No : 13	25 Piece
M12x1.75	12.40	No : 15	No : 15	10 Piece
M14x1.25	-	No : 17	-	10 Piece
SET grouped from **M6** up to **M 10**				
M6 x1	6.30 mm	No : 9	No : 9	25 Piece
M8 x1.25	8.30 mm	No : 11	No : 11	25 Piece
M10 x1.5	10.40	No : 13	No : 13	25 Piece

NOTE: Except metric thread specified in tables, all thread (UNF / UNC) types are available at our company as per request.

CHUCKS GROUP

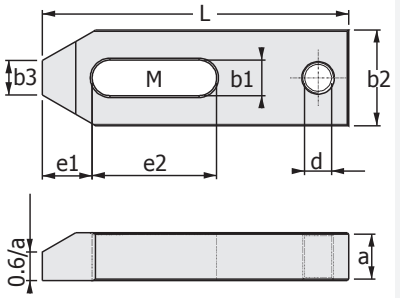
THREADED & LUG

Order : 1330

MOULD FASTENERS

PLAIN LUG

Order : 1350



The products should be specified as 1330 or 1350 separately during giving order.

Order : ..MxL

d	M	L	b1	a	b2	b3	e1	e2	Kg.
M8	M6	50	6.6	10	20	8	10	20	0.06
	M8	60	9	12	25	10	13	22	0.110
M10	M10	80	11	15	30	12	15	30	0.200
M12	M12	100	14.5	20	40	14	21	40	0.550
	M14	125						50	0.600
M16	M16	125	18.5	25	50	18	26	45	1.100
	M18	160						65	1.330
M20	M20	160	22.5	30	60	22	30	60	2.000
		200						80	2.200
	M22	250		35	70	30		100	2.500
M24	M24	160	26	30	70	26	35	60	1.900
		200		35				80	2.500
		250				30		100	3.750
		315		40	80	35		130	4.200
M24	M30	250	33	40	80	34	45	100	4.800
		315		50				130	7.600
M24	M36 M42	400	43	60	100	43	100	150	18 Kg.

DIFFERENT LUG SETS

PLAIN LUG

WORK PIECE SUPPORT ELEMENT

Rear Thrust for Plain Lugs

For Different method clamp-pings, straightening heads can be used.

Elevator Support Elemen

Trapezoid thread structure, makes product powerful in support riser position and is provided efficiency with different options in support usages, Ø 12mm hole locating on movable riser part provides other straightening heads according to different position. It is in connection of straight seating surface for large - Small work pie-ces, stacked and different device design suitability.

Support Elevator **Order : 1510.No**

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

WORK PIECE BALANCING / PLACEMENT

Straightening Heads- 'V' Bearings

Straightening Heads Radius Screwed Foots

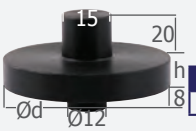
For Angular Surfaces

Order	d	h
1555	37	10

Straightening Heads 'V' Bearing Head

At Cylindrical Work Pieces

Order	d	h
1565	45	15



Straightening Heads Pinned Support Stopper

Between figured parts

Order	d	h
1570	50	12

Straightening Heads Ball Support

On rough surfaces

Order	d	h
1560	45	25

Straightening Heads Inter Centering Average

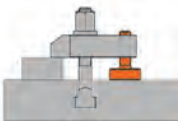
Lapped Usage

Order	d	h
1575	45	8

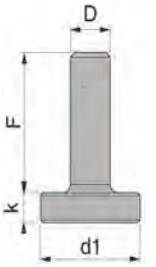
SCREWED LUG SET

SCREW LUG ELEVATOR

Support Elevator, Adjusting Bolt



In lug elevator process, the lengths of support bolt are used as not to exceed lug length proportionally. Trapezoid Thread Structure carries load safely.

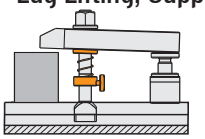


Support Elevator **Order : 1490.DxF**

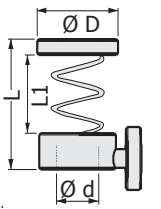
D	F	d1	k	Kg.
M10	42	30	8	0.06
M12	50	36	10	0.10
	95			0.15
M16	62	45	13	0.20
	97			0.25
	117			0.30
M20	62	50	13	0.34
	97			0.40
	117			0.43
M24	81	50	14	0.60
	116			0.85

T' LEGGED STUD BOLT, SPRING WASHER

Lug Lifting, Support Element

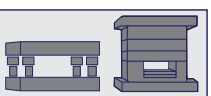


It is compact product that holds lug balancedly and has not any part having protrusion in connection and dismantle process.



Lug Support Spring **Order : 1970.M**

M	Ø D	Ø d	L	L1
M12	28	13	40	33
M14	28	15	40	30
M16	37	17	45	30
M18	37	19	45	40
M20	37	21	45	42
M24	45	25	50	45



'T' LEGGED STUD BOLT 1610

d M	L	b mm	a mm	e ⌀	k mm	Proc. Kg.
M30 x 3,5 d.36	125	80	35.6	54	22	1.86
	160	110				1.95
	200	135				2.25
	250	150				2.55
	315	200				2.95
	500	300				3.95
M36 x 4 d.42	160	100	41.6	65	26	3.22
	250	175				3.84
	400	250				4.95
	600	340				6.50
M42 x 4.5 d.48 İsteğe Göre Üretim	160	100	47.6	75	30	6.00
	250	175				6.90
	400	250				8.10
	600	340				10.20

'T' CHANNEL CLEANING / EQUIPMENT

Processing machines are practical and useful product suitable to use in order to clean bench plates, chips and similar wastes occurring between channel spacings.

'T' Channel Dimensions	Product Gr.
12 x 14 'T'Kanal İçin	40
16 x 18 'T'Kanal İçin	50
20 x 22 'T'Kanal İçin	55
24 x 28 'T'Kanal İçin	80

Order : 1950 'T' Channel

Usage: Processing machine at plate channel cleaning.

'T' LEGGED STUD BOLT 1610

d M	L	b mm	a mm	e ⌀	k mm	Proc. Kg.
M14 x 2 d.16	63	45	15.7	25	9	0.20
	80	55				0.22
	100	65				0.23
	125	75				0.28
	160	100				0.31
	200	120				0.35
	250	150				0.40
M16 x 2 d.16	63	45	15.7	25	9	0.25
	80	55				0.28
	100	65				0.29
	125	85				0.30
	160	100				0.42
	200	120				0.44
	250	150				0.53
M16 x 2 d.18	63	45	17.7	28	10	0.26
	80	55				0.31
	100	65				0.32
	125	85				0.36
	160	100				0.39
	200	120				0.45
	250	150				0.56
M18 x 2.5 d.20	80	55	19.7	32	12	0.42
	100	65				0.46
	125	85				0.49
	160	110				0.58
	200	125				0.61
	250	150				0.70
	315	190				0.93
M20 x 2.5 d.22	80	55	21.7	35	14	0.52
	100	65				0.56
	125	85				0.57
	160	110				0.68
	200	125				0.71
	250	160				0.80
	315	190				1.03
M24 x 3 d.24	100	70	23.7	40	16	0.91
	125	85				0.97
	160	110				1.04
	200	125				1.27
	250	150				1.41
	315	190				1.64
	400	240				1.80
M24 x 3 d.28	100	70	27.7	44	18	0.98
	125	85				1.01
	160	110				1.15
	200	125				1.24
	250	150				1.50
	315	190				1.73
	400	240				1.86
	500	290				2.31

DIN 787

'T' LEGGED STUD BOLT 1610

Set: Stud Washer CHUCKS

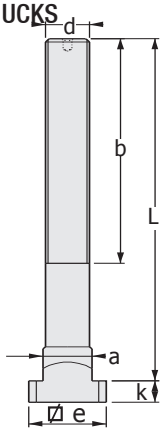
It is used at installation of lug sets.

Quality : 10.9

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

Material : 42 CrMo4 DIN Black Plated Cap Forged Heat Threated

Thread: Hardened (Scrub-bed) between two drum.

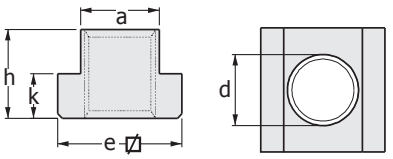


Order : 1610 d x L

a d M	L	b mm	a mm	e ⌀	k mm	Proc. Kg.
M10 x 1.5 d.10	40	30	9.7	15	6	0.07
	63	45				0.08
	80	50				0.09
	100	60				0.11
M10 x 1.5 d.12	50	35	11.7	18	7	0.1
	63	40				0.12
	80	55				0.13
	100	60				0.15
	125	75				0.18
	160	90				0.23
	200	120				0.27
M12 x 1.75 d.12	50	35	11.7	18	7	0.12
	63	40				0.13
	80	55				0.14
	100	65				0.15
	125	75				0.17
	160	100				0.20
	200	120				0.22
M12 x 1.75 d.14	50	35	13.7	22	8	0.13
	63	40				0.15
	80	55				0.16
	100	65				0.17
	125	75				0.18
	160	100				0.21
	200	120				0.24

'T' MOULD INNER / NUT 1750

Mould Connecting, Straight Stud Bolt Set



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

d	a mm	e ⍁	h mm	k mm	Product Kg.
M 6 x 8	7.7	13	10	6	0.009
M 8 x 10	9.7	15	12	6	0.012
M 8 x 12	11.7	18	14	7	0.022
M 10 x 12					0.020
M 8 x 14	13.7	22	16	8	0.040
M 10 x 14					0.037
M 12 x 14					0.035
M 8 x 16	15.7	25	18	9	0.060
M 10 x 16					0.050
M 12 x 16					0.050
M 14 x 16					0.045
M 8 x 18	17.7	28	20	10	0.090
M 10 x 18					0.087
M 12 x 18					0.080
M 14 x 18					0.075
M 16 x 18					0.065
M 16 x 20	19.7	32	24	12	0.110
M 18 x 20					0.105
M 16 x 22	21.7	35	28	14	0.175
M 18 x 22					0.160
M 20 x 22					0.155
M 16 x 24	23.7	40	32	16	0.260
M 20 x 24					0.230
M 22 x 24					0.220
M 16 x 28	27.7	44	36	18	0.380
M 20 x 28					0.350
M 22 x 28					0.340
M 24 x 28					0.320
M 24 x 36	35.6	54	44	22	0.700
M 30 x 36					0.600

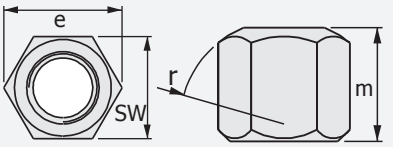
Dia. Products written as bold: They are specified our standard stocks. For endurance of 'T' Lug, stud bolt should be screwed to the all threaded portion.

Order : 1750 a.d

Material : CK 45 DIN
Hardness: 30-32 HRC

REINFORCED NUT 1790

Mould Connecting, Straight Stud Bolt Set

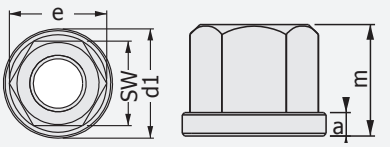


Reinforced Nut **Order : 1790.Thread**

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

NUT WITH WASHER 1810

Mould Connecting, Straight Stud Bolt Set

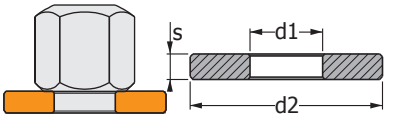


Nut with Washer **Order : 1810.Thread**

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

THICK, WASHER ASSEMBLY 1870

Mould Connecting, Straight Stud Bolt Set

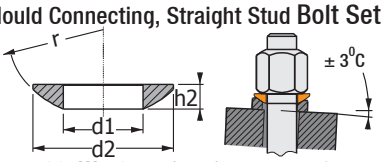


Reinforced Nut **Order : 1790.Dia.**

Stud Bolt	d1 mm	d2 mm	s mm	Product Kg.
M6	6.4	17	3	0.006
M8	8.4	23	4	0.010
M10	10.5	28	4	0.016
M12	13	35	5	0.035
M14	15	40	5	0.040
M16	17	45	6	0.060
M18	19	45	6	0.065
M20	21	50	6	0.075
M22	23	50	8	0.095
M24	25	60	8	0.170
M30	31	68	10	0.230
M36	38	80	12	0.350

SPHERICAL, WASHER ASSEMBLY 1890

Mould Connecting, Straight Stud Bolt Set



Assembly Washers: In using as a set (with two different products), 3º deviations are balanced, thus inclined position of seating surface is prevented.

Spherical Washer **Order : 1890.Dia**

Stud Bolt	d1 mm	d2 mm	h2 mm	r mm	Product Kg.
M6	6.4	12	2.3	9	0.002
M8	8.4	17	3.2	12	0.003
M10	10.5	21	4.0	15	0.005
M12	13	24	4.6	17	0.007
M14	15	28	5.0	22	0.010
M16	17	30	5.3	22	0.015
M20	21	36	6.3	27	0.025
M24	25	44	8.2	32	0.045
M30	31	56	11.2	41	0.085

QUALITY DIN 6379 : 12.9

Plain Stud Bolt 1690

Dismantled Set of Connecting Kit

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

Quality: 10.9

Security Certificated Product

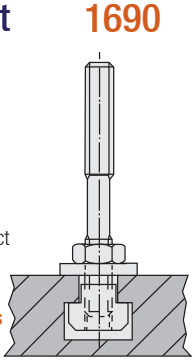
The products up to 180ºC are supplied separately.

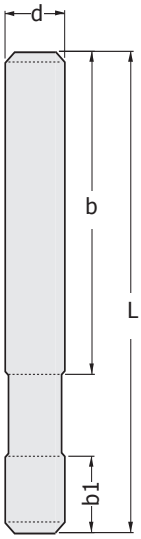
Our special production is available as per reqest.

Material: 42 CrMo4 DIN Black Plated Cap Forged Heat Threated

Thread: Hardened (Scrubbed) between two drums.

Two screw two stud bolt together, extension nut is used with plain stud bolt.





Modular Plain Stud Bolt **Order : 1690.d x L**

d M	L mm	b1 mm	b mm	Kg.
M8 x 1.25	40	11	20	0.010
	63		40	0.020
	80		50	0.025
	100		63	0.030
	125		75	0.035
	160		100	0.045
M10 x 1.5	50	13	25	0.025
	63		32	0.035
	80		50	0.040
	100		63	0.050
	125		75	0.060
	160		100	0.080
	200		125	0.100
M12 x 1.75	50	15	25	0.035
	63		32	0.045
	80		50	0.055
	100		63	0.070
	125		75	0.090
	160		100	0.115
	200		125	0.140
M14 x 2	63	17	32	0.095
	80		50	0.100
	100		63	0.110
	125		75	0.120
	160		100	0.150
	200		125	0.195
	250		160	0.240
M16 x 2	63	19	32	0.085
	80		50	0.105
	100		63	0.130
	125		75	0.160
	160		100	0.220
	200		125	0.280
	250		160	0.325
	315		180	0.425
	500		315	0.650
M18 x 2.5	80	23	50	0.130
	100		60	0.160
	125		75	0.200
	160		100	0.260
	200		125	0.320
	250		150	0.400
	315		180	0.500
M20 x 2.5	80	27	32	0.190
	100		60	0.220
	125		70	0.260
	160		100	0.330
	200		125	0.410
	250		160	0.510
	315		200	0.640
	400		250	0.815
	500		315	1.020
M22 x 2.5	160	31	100	0.430
	200		125	0.500
	250		160	0.670

Modular Plain Stud Bolt **Order : 1690.d x L**

d M	L mm	b1 mm	b mm	Kg.
M24 x 3	100	35	45	0.290
	125		70	0.380
	160		100	0.470
	200		125	0.580
	250		160	0.730
	315		200	0.920
	400		250	1.160
	500		315	1.450
	630		315	1.650
M30 x 3.5	125	43 Production As Per Request	56	0.600
	200		125	0.950
	250		160	1.230
	315		200	1.500
	500		315	2.360
	700		400	3.300
M36 x 4	160	51	80	1.100
	200		125	1.340
	250		160	1.710
	315		200	2.150
	400		250	2.700
	500		315	3.450
	700		400	4.750
M42 x 4.5	315	59 Production As Per Request	200	2.950
	400		250	3.750
	500		315	4.690

Including NUT and WASHER

WRENCH EDGED STUD BOLT

Usage Suitable to theThreaded Plate

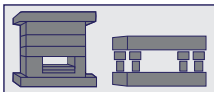
W. Edged Stud Bolt **Order : 1670.dxL**

d	L	b	b1	m	SW	Kg.
M12 x 1.75	130	65	24	14	14	0.16
	160	90				0.19
M14 x 2	130	65	28	15	15	0.22
	160	90				0.25
M16 x 2	140	70	32	16	17	0.30
	160	95				0.34
M18 x 2.5	150	70	35	19	19	0.40
	180	95				0.45
M20 x 2.5	150	70	40	22	22	0.50
	180	95				0.57
M22 x 2.5	150	70	40	22	24	0.65
	180	95				0.90
M24 x 3	170	75	47	22	27	0.85
	205	105				1.03
	250	140				1.20

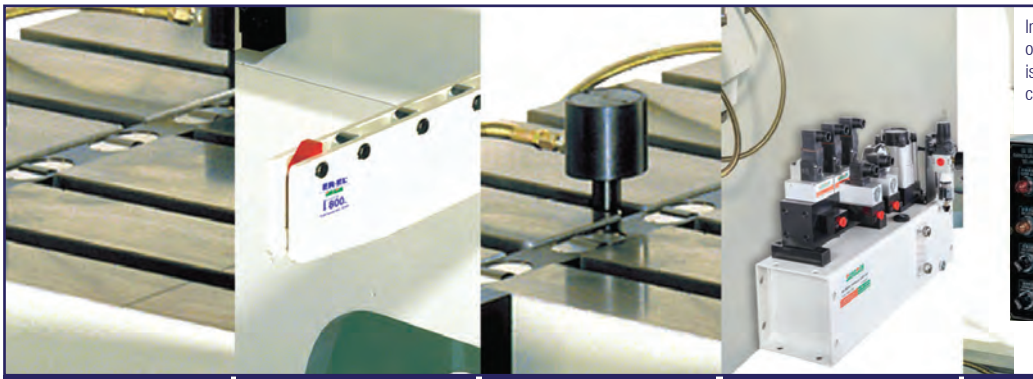
PLAIN STUD BOLT Order : 1690 .d x L

GTH

WRENCH EDGED STUD BOLT Order : 1670 .d x L



New Technology / Heavy Duty FAST MOULD CHANGEOVER SYSTEMS



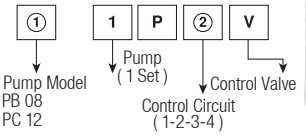
In order to avoid any operation error, safety is designed with control device.

MOULD LIFTING UNIT	MOULD SLIDING ARM	'T' CHANNEL, HYDRAULIC LUG	AIR DRIVE HYDRAULIC PUMP	OPERATION CONTROL PANEL
★ Hydraulic Type ★ 'T' or 'U' Channel Installation	★ 4 Different Usage Options ★ RC - RD - RE - RF - RS	★ CA (Cylinder Type) ★ CB (Block Type)	PB-1P1V Model Pump PB 08 PB-1PP3V Model Pump PC 12	It is equipped Interlock Control Switch related to Electronic Machine.

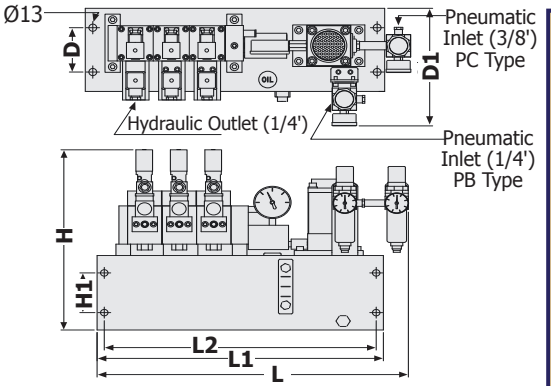
With fast development parallel with traditional press moulds, in our country where various light/ medium and heavy duty mould increase production efficiency with new technologies, new technology products are applying with high technology in all around the world and are used during mould process especially in automative - white appliances etc. industries, production; manufacturing stage based on moulds are changing quickly, in cases that types and total production are less, by decreasing mould changeover period and especially with work safety. It is high time to pass fast mould changeover system. Application Areas: Press and Hydraulic Press Machines.

HYDRAULIC AIR DRIVE PUMP UNIT

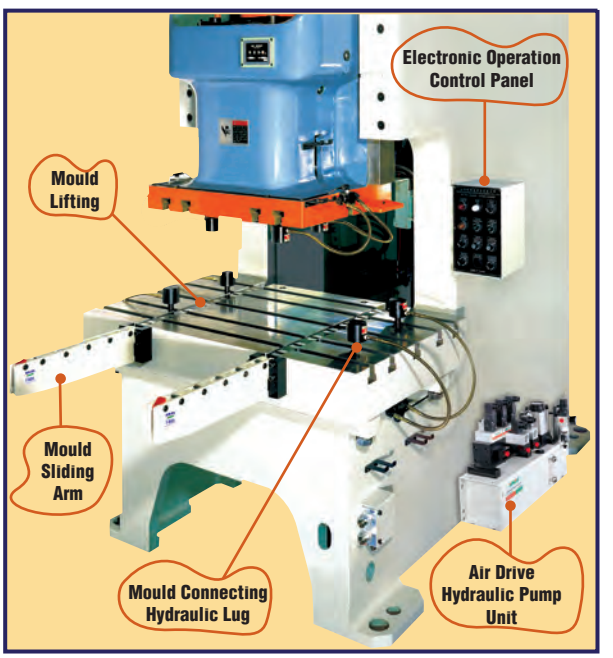
Hydraulic Pump Model Selection

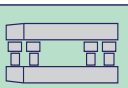


Air Drive, Hydraulic Pump Unit; Hydraulic pump is air driven, when hydraulic pressure reaches the adjusted level, it cuts pumping for saving. On the other hand, if working pressure is decreased, pressure continues automatically to ensure the pump continuity.
Circuit Control System is designed with possible leakage inspection and prevention function. Even when the pneumatic pressure is disabled, hydraulic pressure remains. Characteristics of pressure inspection and connecting to the other machines are available. When application is done with CA or CB -16 or 25 fishplates, to use PC12 Model pump is recommended. In system installation and model selections, our engineers will continue their supports.



Order - Model	L	L1	L2	H	H1	D1	D
1040 - PB0801P1V	-	378	353	367	80	235	80
1040 - PB0801P2V	-	438	413	367	80	235	80
1040 - PB0801P3V	-	498	473	367	80	235	80
1040 - PB0801P4V	-	588	563	367	80	235	80
1040 - PC1201P3V	560	-	473	367	80	-	80





Section Press Mould

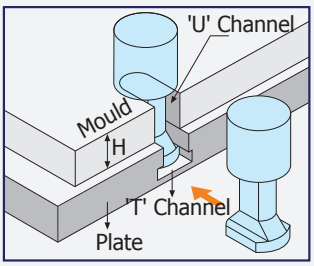
Before ordering: Computer Aided Practical / Running (%90), Preliminary Preparation, pls. call our company for examples.

Hydraulic Lugs

Rotatory Connecting

Model : CA (At Large plates)

HYDRAULIC LUG 1010 CA ..



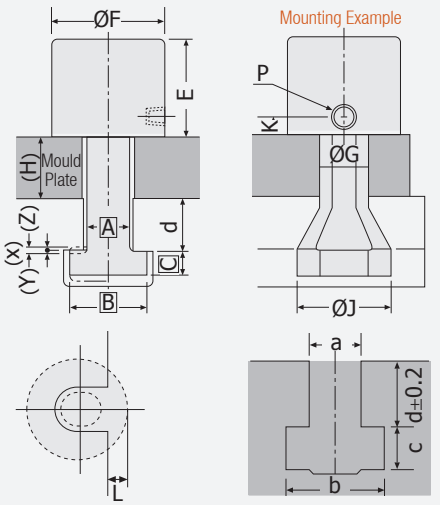
Hydraulic Lug Model CA / CB: In cases that mould connecting plates are large, it can be preferred at points that bench plate are equal to the lug location. Cylindrical hydraulic part of product makes tightening / compression downwards with pressure.

Hydraulic Lug Model: CA (Large Plates)

Hydraulic Pressure: 250 Kgf / cm² (For single unit)

Order - Model	CA 1	CA 2	CA 4	CA 6	CA 10	CA 16	CA 25
Connecting Capacity TON	1	2	4	6	10	16	25
Total Stroke (X) Downward Motion mm	6	8	8	8	8	8	8
Lug Stroke (Y) mm	3	4	4	4	4	4	4
Preserved Stroke (Z)	3	4	4	4	4	4	4
Cylinder Total Volume cc	3	7	13	21	32	54	76
Mould Connecting Plate Thickness Tolerance (H) mm	± 1.5	± 2.0 mm					

Before requesting product, 'pls inform T' channel (A-B-CD) size and mould connecting plate thickness (H) by specifying.



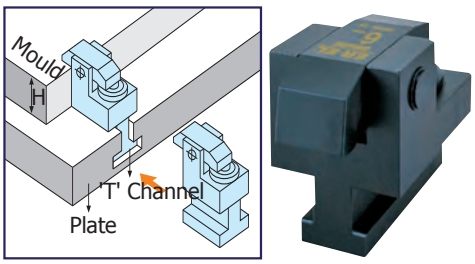
Model : CA (Large Plates) 1010 CA ..

Product Dimensions	ØF	E	ØG	ØJ	H+d Max	L max	a min	K	P
1010-CA01	44	48	12	30	60	12	8	9.5	PT1/8
1010-CA02	53	52	16	48	80	17	12	12	PT1/8
1010-CA04	65	58	23	58	90	20	16	15	PT1/4
1010-CA06	82	65	30	64	100	25	18	15	PT1/4
1010-CA10	99	71	38	78	110	30	22	15	PT1/4
1010-CA16	126	82	45	88	120	38	28	17	PT1/4
1010-CA25	150	100	55	98	140	45	36	23	PT1/4

Lug dimensions (A),(B) and (C) are specified depending on T-Channel. If lug dimension (H+d) is higher than aforementioned max. values, it is accepted as special production.

Model : CB (At Large plates)

HYDRAULIC LUG 1015 CB ..

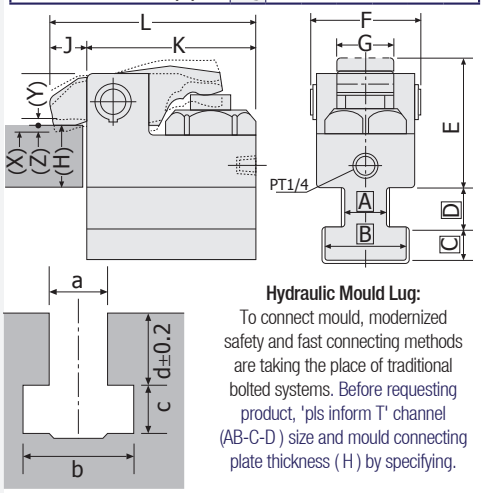


Hydraulic Lug Model CA / CB: It is made hydraulic pressing in conformity with traditional pressings. By heightening read piston, it tightens/ pressures lug.

Hydraulic Lug Model: CB (Large Plates)

Hydraulic Pressure: 250 Kgf / cm² (For single unit)

Order - Model	CB 1	CB 2	CB 4	CB 6	CB 10	CB 16	CB 25
Connecting Capacity TON	1	2	4	6	10	16	25
Total Stroke (X) Downward Motion mm	6	8	8	8	8	8	8
Lug Stroke (Y) mm	2.5	3	3	3	3	3	3
Preserved Stroke (Z)	3.5	5	5	5	5	5	5
Cylinder Total Volume cc	3	7.5	13	21	38	55	98
Mould Connecting Plate Thickness Tolerance (H) mm	± 1.5	± 2.0 mm					



Hydraulic Mould Lug:
To connect mould, modernized safety and fast connecting methods are taking the place of traditional bolted systems. Before requesting product, 'pls inform T' channel (AB-C-D) size and mould connecting plate thickness (H) by specifying.

Model : CB (Large Plates) 1015 CB ..

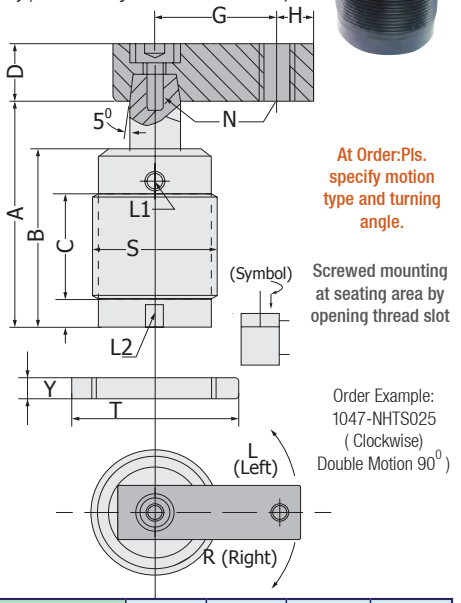
Ürün Ölçüleri	L	K	J	H	E	F	G	a	C	P
1015-CB01	74.5	60	14.5	25	42	44	20	10	6.5	1/8
1015-CB02	110	90	20	25	73	68	32	14	10	PT 1/4
1015-CB04	134	110	24	25	77	79	40	18	12	
1015-CB06	159	130	29	30	92	96	46	22	14	
1015-CB10	189	159	30	40	114	117	54	24	16	
1015-CB16	230	200	30	40	126	129	58	28	20	
1015-CB25	265	235	30	45	148	156	70	36	23	

Lug dimension (A),(B),(C) ve (D) are specified depending on T-Channel.

Section Press Mould
Page 99

NHTS HYDRAULIC ROTATORY COUPLING 1047

Threaded Adaption (Screwed Type) Single Arm (Perforated Lug) One Way Overhead Clamp



At Order:Pls. specify motion type and turning angle.

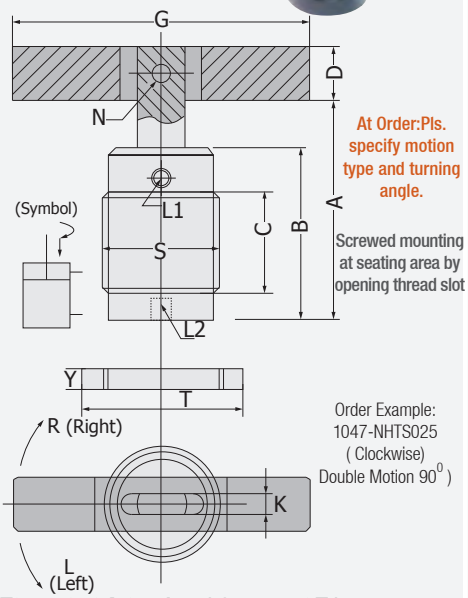
Screwed mounting at seating area by opening thread slot

Order Example: 1047-NHTS025 (Clockwise) Double Motion 90^0)

Order No Application	1047-NHTS 25	1047-NHTS 32	1047-NHTS 40	1047-NHTS 50
Connection Type	Threaded Casing (Screwed Type)			
Clamp /Arm	Single Arm Moveable			
Max. Pressure	70 Kg. / cm^2			
Normal Pressure	20 - 45 Kg. / cm^2			
Motion Type	Double Motion (Clockwise)			
Turning Angle	90^0 (0^0- 45^0 - 60^0 - 180^0) ± 2^0			
Turning Stroke	12	14	14	14
Connection Stroke	14	15	15	14
Hole Diameter	25	32	40	50
Piston Rod	18	20	20	20
Connecting Power (25Kg/cm^2)	59	125	200	600
Dismantle/**A**(mm)	100	111	113.6	120
B (mm)	70	76	80	87
C (mm)	35	45	45	50
D (mm) ☐	25.4	25.4	25.4	25.4
G (mm)	50	55	55	55
H (mm)	10	10	10	10
I (mm)	9	9	9	9
L1 / L2	Connecting /Dismantling 1.8 P/F			
N (Bolt)	M10x1.5	M10x1.5	M10x1.5	M10x1.5
S (Thread)	**M45 x1.5**	**M50x1.5**	**M55 x1.5**	**M65 x1.5**
T Lock Nut 2 Pcs.	Ø 65	Ø 70	Ø 75	Ø 85
Y (mm)	10	11	11	12
Weight	0.8	1.1	1.25	1.7

NHTSD 1050 HYDRAULIC ROTATORY COUPLING

Threaded Adaption (Screwed Double-Sided Clamping Arm



At Order:Pls. specify motion type and turning angle.

Screwed mounting at seating area by opening thread slot

Order Example: 1047-NHTS025 (Clockwise) Double Motion 90^0)

Threaded Adaption (Screwed T.) Double-Sided Arm Tightening Arm 1050

Order No Uygulama	1050-NHTSD 025	1050-NHTSD 032	1050-NHTSD 040	1050-NHTSD 050
Connection Type	Threaded Casing (Screwed Type)			
Clamp /Arm	Single Arm Moveable			
Max. Pressure	70 Kg. / cm^2			
Normal Pressure	20 - 45 Kg. / cm^2			
Motion Type	Double Motion (Clockwise)			
Turning Angle	90^0 (0^0- 45^0 - 60^0 - 180^0) ± 2^0			
Turning Stroke	12	14	14	14
Connection Stroke	14	15	15	14
Hole Diameter	25	32	40	50
Piston Rod	18	20	20	20
Connecting Power (25Kg/cm^2)	59	125	200	400
Dismantle/**A**(mm)	100	111	113.6	120
B (mm)	70	76	80	87
C (mm)	35	45	45	50
D (mm)	19	22	22	22
G (mm)	100	120	120	120
H (mm)	9	9	9	13
I (mm)	9	10	10	10
L1 / L2	Connecting /Dismantling 1.8 P/F			
N (Piston)	Ø8	Ø8	Ø8	Ø8
S (Thread)	**M45x1.5**	**M50x1.5**	**M55x1.5**	**M65x1.5**
T Lock Nut 2 Pcs.	Ø 65	Ø 70	Ø 75	Ø 85
Y (mm)	10	11	11	12
Weight	0.9	1.2	1.4	1.85

NHS -NHSD -NHTS NHTSD Hydraulic Rotatory Coupling

Application: While processing work piece with set, if putting and taking of work piece by operator are disabled and higher connecting power is required, Hydraulic Connecting Scylinders will be the best selection.

Function: This Cylinder has tensile property. Total stroke of it is equal to turning and tensile strokes.

Type: These cylinders are pressed downwards, double motion types in clockwise and anticlockwise are available. It is 90ºC and has 0º- 45º and 60º angles functionally. Single arm or double arm are included to the connection type. For threaded type and O-ring manifold type, bottom flange is included to connection type.

Material: Material of main casing is Aluminium Alloy.

Order Example: NHS (Base No)

T -(Type) Flange - 'T' Threaded

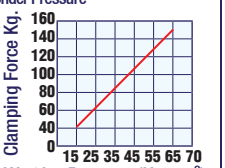
D -(Arm Type) 'D' Double Motion Empty: Single Motion

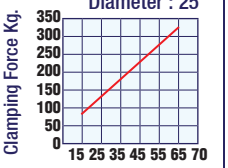
L -(Direction of rotation) 'L' Left / 'R' Right

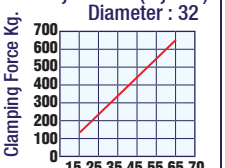
40 -(Piston Ø) 25 -32 -40 -50 -63

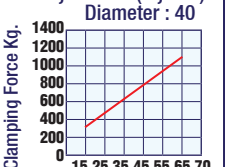
X 90⁰ - (Angle) 0^0 -45^0-60^0-90^0-180^0

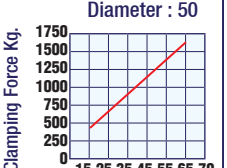
Theoretical Connection power Under Pressure

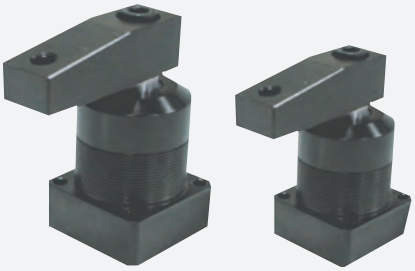






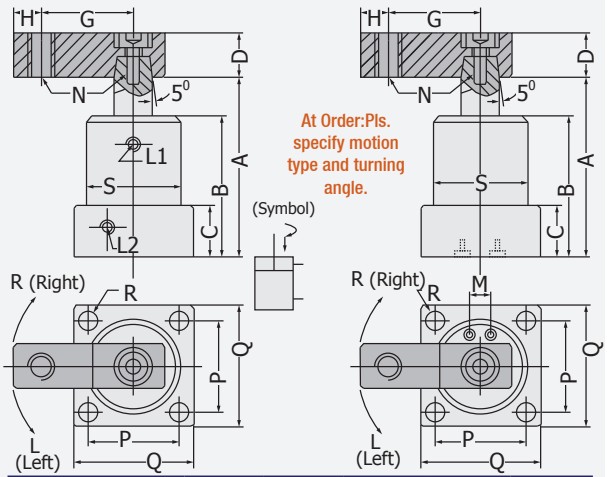




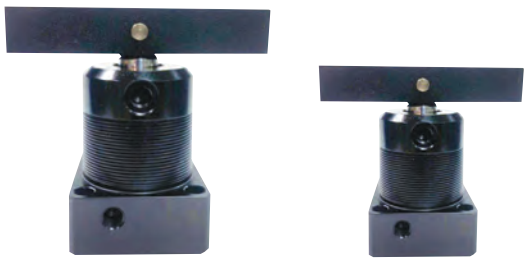


NHS HYDRAULIC ROTATORY COUPLING 1043

Flanged Adaptation, Single Arm / One Way Overhead Tighthening

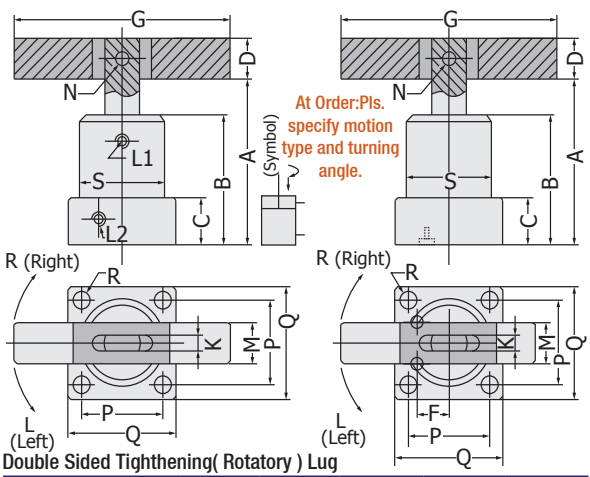


Order No / Application	1043-NHS 025	1043-NHS 032	1043-NHS 040	1043-NHS 050	1043-NHS 063
Connection Type	Perforated Block /Flanged				
Clamp /Arm	Single Arm Overhead Tightening				
Max. Pressure	70 Kg. / cm^2				
Normal Pressure	25 - 45 Kg. / cm^2				
Motion Type	Double Motion (Clockwise)				
Turning Angle	90^0 (0^0- 45^0 - 60^0 - 180^0) ± 2^0				
Turning Stroke	12	14	14	14	14
Connection Stroke	14	15	15	15	15
Hole Diameter	25	32	40	50	63
Piston Rod	18	20	20	20	25
Connecting Power (25Kg/cm^2)	59	125	200	400	600
Dismantle/**A**(mm)	100	111	113.6	114.5	118
B (mm)	70	76	80	80	85
C (mm)	23	25	27	27	32
D (mm) □	25.4	25.4	25.4	25.4	32
G (mm)	50	55	55	55	75
H (mm)	10	10	10	10	11
L1 /L2	Connecting /Dismantling			1.8 PF	
N (mm)	M10 x 1.5				M12
P (mm)	40	44	48	57	70
Q (mm)	50	55	62	74	88
R (mm) ø	6.5	6.5	8.5	8.5	10.5
S (mm) ø	45	50	54	65	80
O - rings	S 4				
M (mm)	18	24	26	30	40
F (mm)	15	17	20	25	30
Weight	0.8	1.0	1.1	1.4	2.3
Order Example	1043 -NHS 0 25 (Clockwise Double Motion 90^0)				



NHS HYDRAULIC ROTATORY COUPLING 1045

Flanged Adaptation, Double Arm / Center Two Way Tighthening



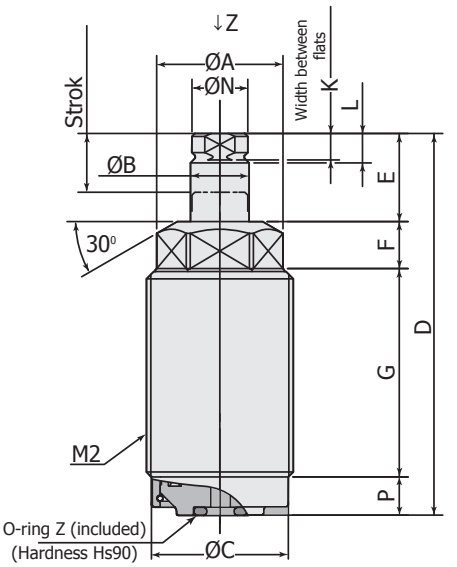
Double Sided Tighthening(Rotatory) Lug

Order No / Application	1045-NHSD 25	1045-NHSD 32	1045-NHSD 40	1045-NHSD 50	1045-NHSD 63
Connection Type	Perforated Block /Flanged				
Clamp /Arm	Single Arm Overhead Tightening				
Max. Pressure	70 Kg. / cm^2				
Normal Pressure	25 - 45 Kg. / cm^2				
Motion Type	Double Motion (Clockwise)				
Turning Angle	90^0 (0^0- 45^0 - 60^0 - 180^0) ± 2^0				
Turning Stroke	12	14	14	14	14
Connection Stroke	14	15	15	15	15
Hole Diameter	25	32	40	50	63
Piston Rod	18	20	20	20	25
Connecting Power (25Kg/cm^2)	59	125	200	400	600
Dismantle/**A**(mm)	100	111	113.6	114.5	118
B (mm)	70	76	80	80	85
C (mm)	23	25	27	27	32
D (mm) □	19	22	22	22	25.4
G (mm)	100	120	120	120	140
H (mm)	9	10	10	10	12
N (mm) ø	8	8	8	8	10
P (mm)	40	44	48	57	70
Q (mm)	50	55	62	74	88
R (mm) ø	6.5	6.5	8.5	8.5	10
S (mm) ø	45	50	54	65	80
O - rings	S 4	S 4	S 4	S 4	S 4
M (mm)	18	24	26	30	40
F (mm)	15	17	20	25	30
Weight	0.9	1.1	1.2	1.5	2.5
Order Example	1045 -NHSD 25 (Clockwise Double Motion 90^0)				
L1 /L2 Connecting / Dismantling	1.8 PF				

1055

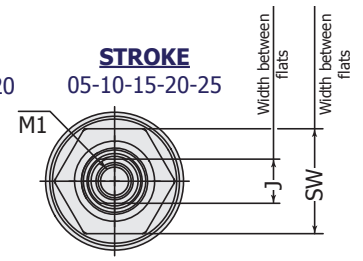
HYDRAULIC TENSILE THREADED CYLINDERS

Threaded Adaptation (Screwed Type) Kit with Connection Hole



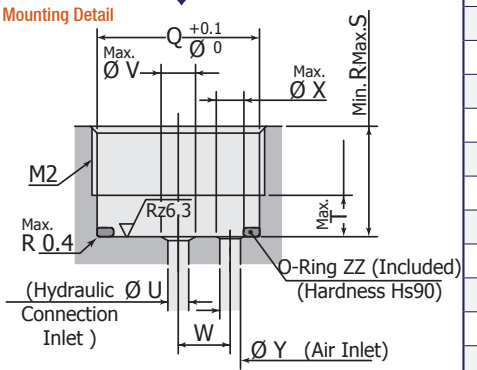
CMD 02-04-10-20

STROKE 05-10-15-20-25



Z Arrow Wide

Mounting Detail



HYDRAULIC TENSILE THREADED CYLINDERS 1055

Order Cylinder Information		1055 CMD 02		1055 CMD 04		1055 CMD 06		1055 CMD 10		1055 CMD 20	
Stroke / Pulse (mm)		5	10	5	10	10	20	10	20	10	20
Cylinder Power(kN)	Hydr. Pressure 3.5 MPa	0.3		0.4		0.7		1.2		2	
	Hydr. Pressure 7.0 MPa	0.5		0.9		1.5		2.5		4.3	
	Hydr. Pressure 25 MPa	2.1		3.4		5.6		9.3		15.8	
	Hydr. Pressure 35 MPa	2.9		4.8		7.9		13		22.2	
Cylinder Dia. (Inner) mm		16		18		22		28		36	
Cylinder Arm Dia.(mm)		10		10		12		16		20	
Cylinder Influence Area (cm^2)		0.84		1.37		2.29		3.76		6.40	
Max. Oil Flow Area		0.25		0.41		0.69		1.13		1.92	
Cylinder Capacity (cm^3)		0.5	0.9	0.7	1.4	2.3	4.6	3.8	7.5	6.4	12.8
Spring Back Draft Power (N)		30 ~ 56		43 ~ 77		65 ~ 120		100 ~ 193		170 ~ 267	
Cylinder Weight (Kg.)		0.1	0.12	0.12	0.15	0.23	0.3	0.35	0.46	0.69	0.89

Order Example	**NR1055**	**CMD**	**02**	**16**	**Strok**
	Order No.	Product Code	Serial A Extractor Threaded Cylinder	Piston Ø 16 18 22 28 36	Pulse 5 10

Threaded Adaptation (Screwed Type) Kit with Connection

Technical Drawing Details	1055 CMD 02		1055 CMD 04		1055 CMD 06		1055 CMD 10		1055 CMD 20	
Stroke / Pulse (mm)	5	10	5	10	10	20	10	20	10	20
Ø A (mm)	19		21.5		27		33		45	
B (mm)	10		10		12		16		20	
Ø C (mm)	20.3		23.3		28.3		34.3		46.3	
D (mm)	51	65	51	65	69	96	73	101	80	109
E (mm)	10	15	10	15	16	26	17	27	19	29
F (mm)	7.5		8		9.5		11.5		13.5	
G (mm)	27	36	26.5	35.5	35.5	52.5	35.5	53.5	35.5	54.5
SW (Wrench)	17		19		24		30		41	
J (Wrench)	8		8		10		14		17	
K (mm)	4.5		4.5		5.5		6.5		8.5	
L (mm)	5		5		6		7		9	
M1 (threaded end part)	M6x1-11		M6x1-11		M8x1.25		M10x1.5		M12x1.75	
M2 (Threaded Casing)	**M22** x1.5		**M25** x1.5		**M30** x1.5		**M36** x1.5		**M48** x1.5	
N (Wrench)	9.5		9.5		11.5		15.5		19.5	
P (mm)	6.5		6.5		8		9		12	
Ø Q (mm)	20.5		23.5		28.5		34.5		46.5	
R (mm)	13		14		15		17		20	
S (mm)	32.5	41.5	32	41	42.5	59.5	43.5	61.5	46.5	65.5
T (mm)	5.5		5.5		7		8		11	
U (Hydraulic Inlet)	3		3		3		4		6	
V (mm)	5		5		5		5		7	
W (mm)	7		7.5		9.5		12		15	
Ø X (mm)	4		4		4		4		4	
Ø Y (mm)	3		3		3		3		3	
O - Ring **Z**	P 6		P 6		P 6		P 6		P 8	
O - Ring **ZZ** AS 568	017		019		022		026		031	
Compressed Torque	8 N-m		9 N-m		10 N-m		14 N-m		30 N-m	

TC HYDRAULIC PUSH THREADED Cylinder

Order Example

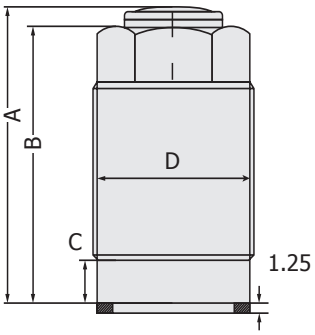
TC	12	A
Order No.	Piston Ø 12 16 20 25	Serial A: Without Female Thread B: With Female Thread

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

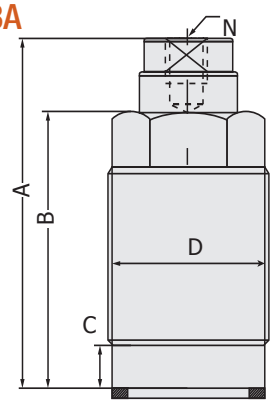
Type: A Serial Pushing out without Piston Gear
B Serial Ejector cylinders related with piston gear (equipment etc)

HYDRAULIC EJECTOR CYLINDER 1053A

Screwed Type, Out Pusher Single Plunger



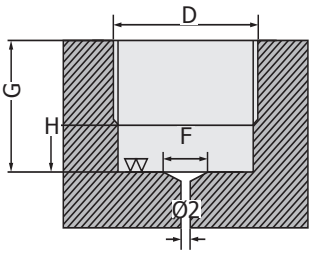
A Serial Single Plunger



B Serial Distributed Piston

HYDRAULIC EJECTOR CYLINDER 1053B

Screwed Type, Out Pusher Equipment Connected



Connecting Diagram

Ejector Cyclinders; While fast connecting the mould or positioning fast work piece or at areas that higher connecting power is required, and also for creating equipment for your tools, hydraulic cyclinders will be the best selection. TC Hydraulic Ejector Cylinders work with the work piece on it upwards at ejector position in certain stroke ranges.

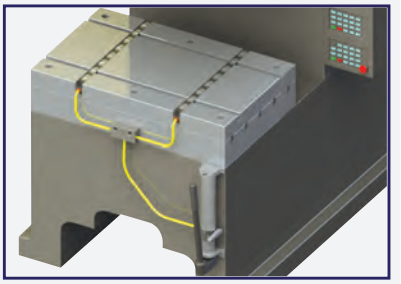
A Serial: It is placed with screwed casing by opening thread to the desired area. Ejector piston face is with radius, and works as point contact.

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

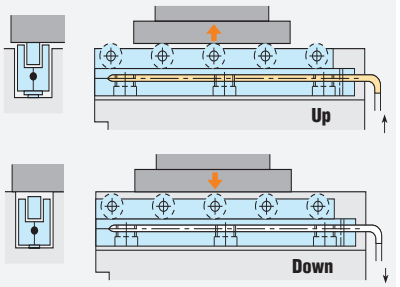
TC HYDRAULIC EJECTOR CYLINDERS 1053A / A Serial Cylinder 1053B / B Serial Cylinder

Order Technical Details	1053 TC12A	1053 TC16A	1053 TC20A	1053 TC25A	1053 TC12B	1053 TC16B	1053 TC20B	1053 TC25B
Working Oil Pressure	20 - 350 Kg / cm^2							
Motion Type	Single Motion							
Stroke **S** (mm)	10	12	15	16	10	12	15	16
Piston Rod **Ø** (mm)	12	16	20	25	12	16	20	25
Connecting Power (200 Kg/cm^2)	200 (Kg.)	400 (Kg.)	620 (kg.)	980 (Kg.)	200 (Kg.)	400 (Kg.)	620 (kg.)	980 (Kg.)
A (mm)	38	46.5	56	57	45	52	64.5	67
B (mm)	36	44.5	54	55	36	44.5	54	55
C (mm)	7	8	8	11	7	8	8	11
D (mm)	M22 x 1.5	M26 x 1.5	M30 x 1.5	M38 x 1.5	M22 x 1.5	M26 x 1.5	M30 x 1.5	M38 x1.5
F (mm)	12	16	20	25	12	16	20	25
G(mm)	16	20	24	28	16	20	24	28
H(mm)	6	7	7	10	6	7	7	10
N(mm)	-	-	-	-	M6 x 1	M6 x 1	M8 x 1.25	M8 x 1.25
Weight (Kg.)	0.07	0.14	0.22	0.37	0.08	0.15	0.24	0.4

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



HYDRAULIC MOULD LIFTING



D ① ② — ③ **Model Selection**

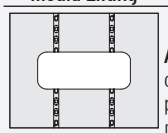
Model		Mould Lifting Width		Mould Lifting Length
L	Cylinder Type	28	28 mm	200 -1900
B	Ball Type	50	50 mm	200 - 2500
		80	80 mm	500 -2500

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

Mould Lifting Model Type

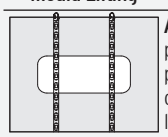
Standard Mould Lifting

Application : It can be connected to the normal plate or mould lifting plate.



Two Stepped Mould Lifting

Application: It can be connected to the center perforated plate or mould lifting plate.

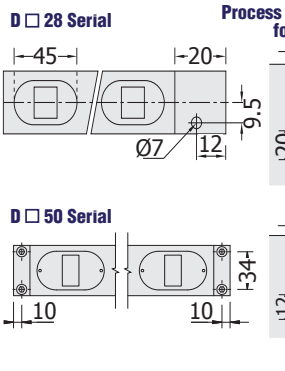


Demountable Mould Lifting

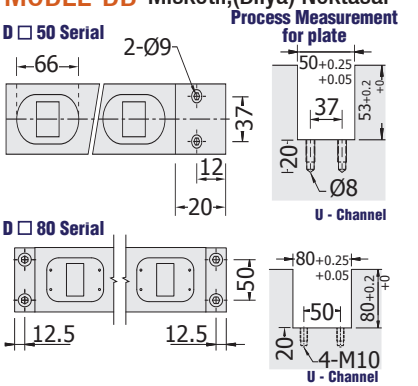
Application: Normal plates and center perforated plates can be dismantled with mould lifting, fast connecting connector.

Section Press Mould

MODEL-DL Needle Bearing, Roller



MODEL-DB Misketli,(Bilya) Noktasal



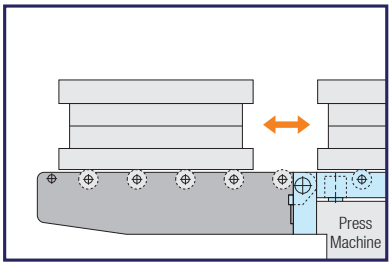
HYDRAULIC MOULD LIFTING Roller - Ball

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

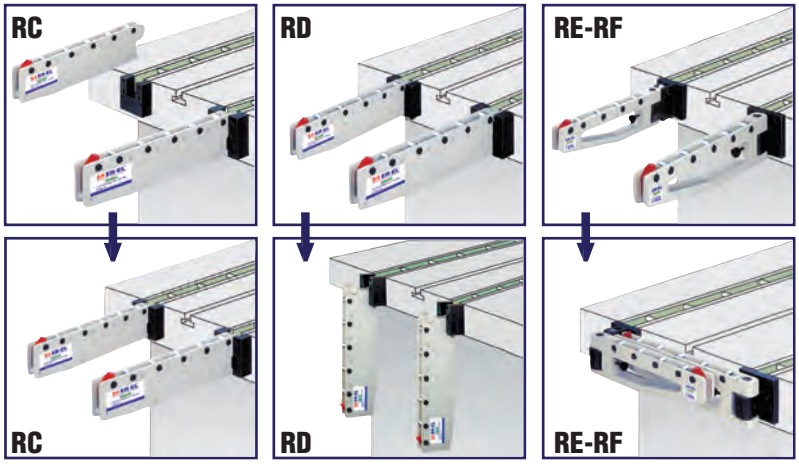
Support is used with 2 stepped mould lifting by changing with longitudinal (S) model.

Example: RC-16 > RC16 S // RC - 16 H > RC - 16 HS

Model Selection

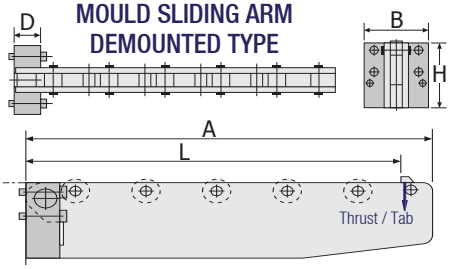
R ① — ②

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

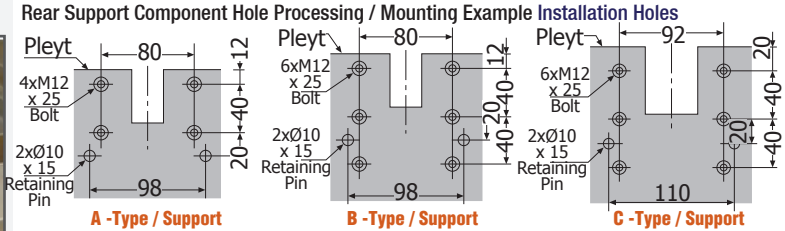


Model : RC

MOULD SLIDING ARM DEMOUNTED TYPE



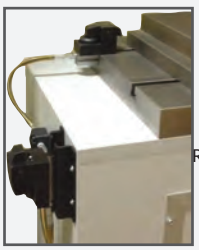
Rear Support Component Hole Processing / Mounting Example Installation Holes



SPARE ACCESSORIES

CA Model **Lug Hanger** Refer to Page 99.

CB Model **Lug Hanger** Refer to Page 99.



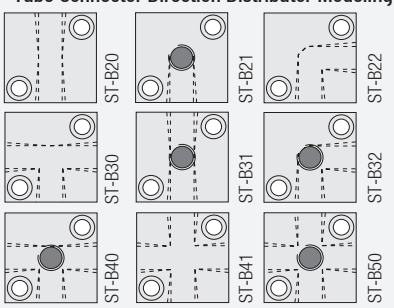
During installation of hydraulic lugs, it is an accessory unit to keep hydraulic lugs by mounting any place of press.

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



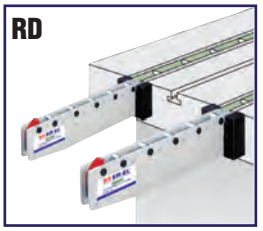
Mould Sliding Arm (Demounted)

Order No : 1025
Order No : 1027

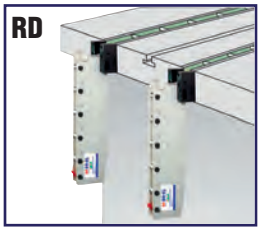
Order No. 1025 Reference	Support Model	Required Mould Length (L)	Max. Capacity (Kgf)	Total Length (A)	Rear Support Measures			Support Installation Holes	Roller Cylinder Qty
					D	B	H		
RC 580	RC-12	500	800	550	48	115	118	A -Type	5
RC 760	RC-12	700	600	750	48	115	118	A -Type	7
RC 880	RC-16	800	800	850	48	115	158	B -Type	8
RC 990	RC-20	900	900	950	48	115	188	B -Type	9
Order No : 1027									
RC 5125	RC-14H	500	1250	550	55	130	138	C -Type	7
RC 5160	RC-16H	500	1600	550	55	130	158	C -Type	7
RC 5200	RC-18H	500	2000	550	55	130	178	C -Type	7
RC 7125	RC-14H	700	1250	750	55	130	138	C -Type	9
RC 7160	RC-16H	700	1600	750	55	130	158	C -Type	9
RC 7200	RC-18H	700	2000	750	55	130	178	C -Type	9
RC 8125	RC-16H	800	1250	850	55	130	158	C -Type	10
RC 8160	RC-18H	800	1600	850	55	130	178	C -Type	10
RC 8200	RC-20H	800	2000	850	55	130	188	C -Type	10
RC 9160	RC-22H	900	1600	950	55	130	218	C -Type	11

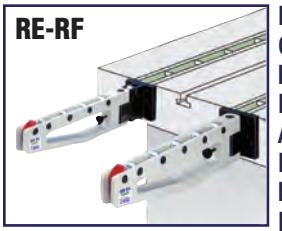
In RC Model, carrier arm or rear support can be ordered separately as per request. It can be used differently in accordance with the purpose.

Contd. 106

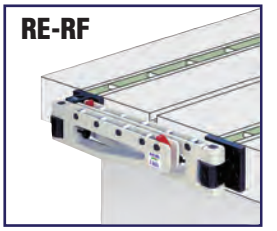


FOLDABLE MODEL

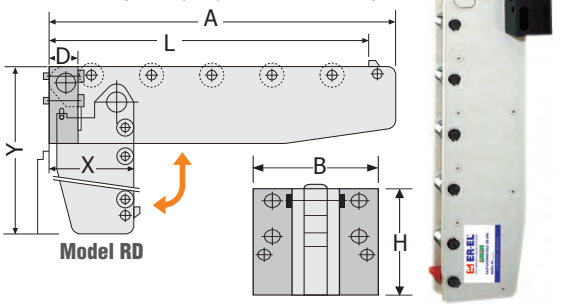




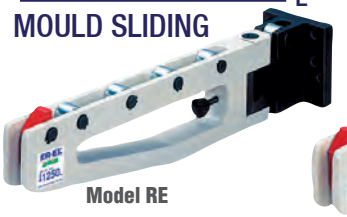
FOLDABLE MODEL

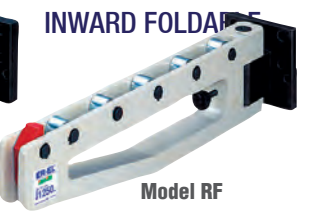


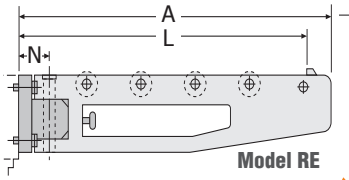
MOULD SLIDING FOLDABLE ARM
Model: RD (Hanging Down Model)

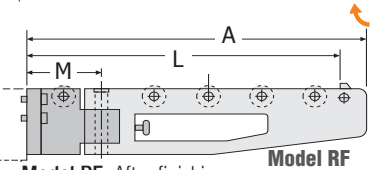


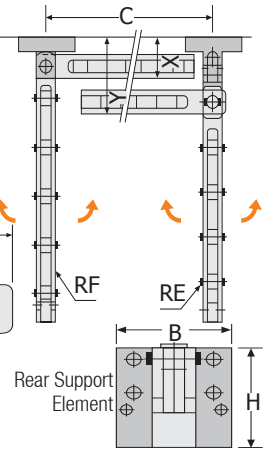
MOULD SLIDING INWARD FOLDABLE











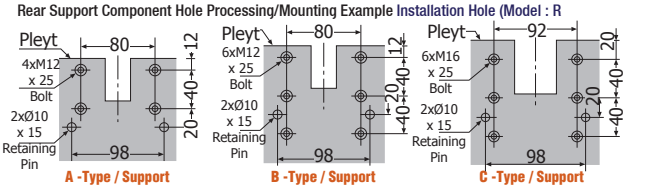
Model RE: After finishing mould placement process, unit is in foldable position to the right, left and inwards.

HANGING DOWN FOLDABLE ARM Order : 1030

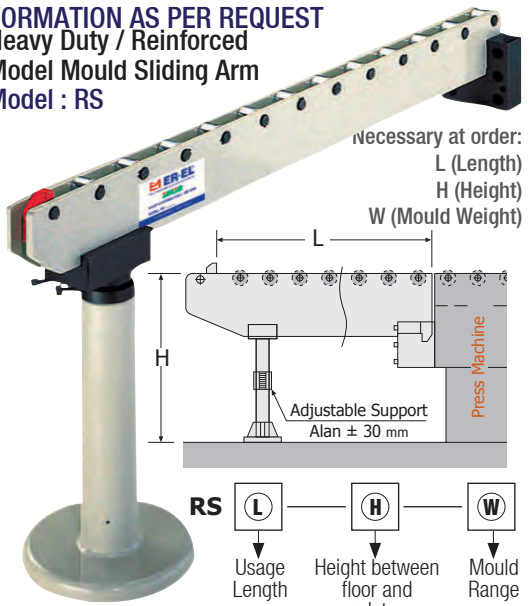
Height difference of mould sliding RD model between (Y) floor and V plate at hanging length should be lower during mounting.

Order No 1030	Your Mould Length Capa.	Max. Capa city	Arm Full Leng.	Hanging Measures X	Hanging Measures Y	Support Measurements D	Support Measurements B	Support Measurements H	Mounting Support	Roller Quantity
RD 580	500 mm	800 Kgf	550 mm	140 mm	620 mm	52 mm	115 mm	118 mm	A -Type	5
RD 760	700 mm	600 Kgf	750 mm	140 mm	820 mm	52 mm	115 mm	118 mm	A -Type	7
RD 880	800 mm	800 Kgf	850 mm	180 mm	960 mm	52 mm	115 mm	158 mm	B -Type	8
RD 990	900 mm	900 Kgf	950 mm	220 mm	1100 mm	52 mm	115 mm	188 mm	B -Type	9

Rear Support Component Hole Processing/Mounting Example Installation Hole (Model : R



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



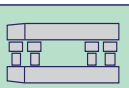
MOULD SLIDING ARM (Inward Foldable)

Order No : 1033
Order No : 1035

Order No. 1033 Reference	Your Mould Length Capa.	Max. Capa (Kgf)	Total Len. (A)	Min. Distance Required For Mounting	Measures When Folded X	Measures When Folded Y	Support Measures B	Support Measures H	Cylinder Quantity	M	N	Hole Shape For Mount-ing
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

PED 97/23/EC

CYLINDER, DIE GAS SPRINGS

Experienced and Reliable GTH Mould Components are the first Die Gas spring producer in our country and present Die Gas springs in your branded products selection, quaranteed products preferred with approval of mould producers and state-of-the-art technology with our sales support and we protect our national capital with **your supports.** Excluding **our standard series**, the products can be produced as per requests;

SN: ISO 9001 Serial Die Gas Springs

(For Practical Usage Information, Refer to Page 113).

Y: Similar with 'SN' Serial, But Higher Series As Force / Kg.

YO: Suitable to Turkey Mould Standard (Less Stroke - High Power)

G: Its power / pressure are the highest - however working life is lower.

KN: It is thin, long and has less power- it is used as extractor at male holders.

AD: They are limited in stocks and are compatible with 'EU (German)' Mould Standards.

KV: Bottom Mounted Threaded, Limited Stocks at 'EU (German)' Mould Standards

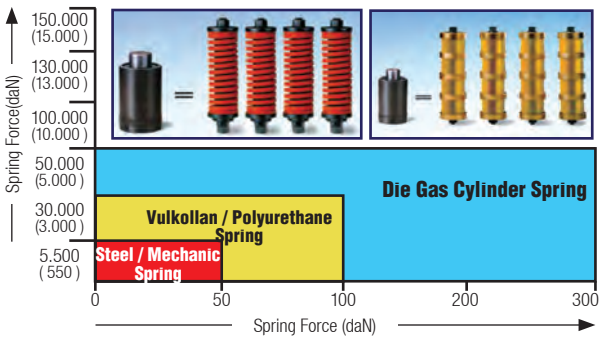
VD: Threaded Casing / Threaded Slot Placement at 'EU (German)' Mould Standards

NM: Threaded Slot diameters at different 'EU (German)' Mould Standards

YN: 5 mm longer than 'YO' series at 'Japan / China' Mould Standards

FN: Similar to G' Series Forces at 'Spain' Mould Standards.

Die Gas Spring Usage Advantages (Refer to Page 113)



We present the Die Gas springs to our customers with materials selected carefully during production, careful quality control at every stage of production, appropriate affordable prices and high quality by applying innovations oriented to research.

Die Gas Springs respond to higher requirements than traditional springs (vul-column / steel spring / dish KPA spring), for moulds requiringhigh force with minimum floor requirement or when long stroke lenght is desired, the solution is prodived with just one complex product. Gas used in Die Gas springs, is environ-ment-friendly Nitrogen (N2) gas found in market, cylinders have the max. 150 Bar (180) Bar filling pressure. This pressure is from 2 daN up to 20.000 daN depending on spring length and type. Provides power, due to that the Die Gas spring Cylinder is filled with nitrogen gase, it can be worked by itself. For safety usage, absolutely should be selected by persons who have Die Gas spring expe-rience in suitable measures and capacities / diversificaiton selection and should be used in accordance with mounting instructions. Different systems cause t hazards and accidents. Instructions are on the back page.

Standard Die Gas Spring Production Series (Stocks)

Order Serial	Course Stroke (mm)	Full Leng. (L)	Cylinder Length (L1)	Cylind. Casing (Ø)	daN	Page No.
SN 150	10 ~ 125	70 ~ 300	60 ~ 175	Ø 32	150	110
SN 250	10 ~ 125	70 ~ 300	60 ~ 175	Ø 38	250	110
SN 500	13 ~ 160	110.4~405	97.7 ~ 245	Ø 45	500	111
SN 750	13 ~ 300	120.4~695	107.7~395	Ø 50	750	111
SN 1500	25 ~ 300	160 ~ 710	135 ~ 410	Ø 75	1500	111
SN 3000	25 ~ 300	170 ~ 720	145 ~ 420	Ø 95	3000	112
SN 5000	25 ~ 300	190 ~ 740	165 ~ 440	Ø 120	5000	112
SN 7500	25 ~ 300	205 ~ 755	180 ~ 455	Ø 150	7500	113
SN 10000	25 ~ 300	210 ~ 760	185 ~ 460	Ø 195	10000	113
Y 300	10 ~ 125	70 ~ 300	60 ~ 175	Ø 32	250	114
Y 500	10 ~ 125	70 ~ 300	60 ~ 175	Ø 38	250	114
Y 700	13 ~ 160	110.4~405	97.7 ~ 245	Ø 45	700	115
Y 1000	13 ~ 300	120.4~695	107.7~395	Ø 50	1000	115
Y 2400	25 ~ 300	160 ~ 710	135 ~ 410	Ø 75	2400	115
Y 4200	25 ~ 300	170 ~ 720	145 ~ 420	Ø 95	4200	116
Y 6600	25 ~ 300	190 ~ 740	165 ~ 440	Ø 120	6600	116
YO 200	5 ~ 32	40 ~ 94	35 ~ 62	Ø 25	200	117
YO 300	5 ~ 125	40 ~ 280	35 ~ 155	Ø 32	300	117
YO 500	5 ~ 125	40 ~ 280	35 ~ 155	Ø 38	500	118
YO 700	10 ~ 125	52 ~ 282	40 ~ 157	Ø 45	700	118
YO 1000	10 ~ 125	58 ~ 288	48 ~ 163	Ø 50	1000	118
YO 1500	10 ~ 125	64 ~ 294	54 ~ 169	Ø 63	1500	119
YO 2400	10 ~ 125	65 ~ 295	55 ~ 170	Ø 75	1500	119
YO 4200	16 ~ 125	97 ~ 315	81 ~ 190	Ø 95	4200	120
YO 6600	16 ~ 125	107 ~ 325	91 ~ 200	Ø 120	6600	120
YO 11800	19 ~ 125	116 ~ 328	97 ~ 203	Ø 150	6600	120
G 40	10 ~ 50	75 ~ 195	65 ~ 140	Ø 25	400	121
G 75	10 ~ 50	75 ~ 195	65 ~ 140	Ø 32	400	121
G 100	6 ~ 50	61 ~ 230	51 ~ 180	Ø 38	1000	121
G 180	6 ~ 50	66 ~ 220	60 ~ 170	Ø 50	1800	122
G 470	10 ~ 50	80 ~ 240	70 ~ 190	Ø 75	4700	122
G 750	10 ~ 50	90 ~ 255	80 ~ 205	Ø 95	7500	123
G 1200	10 ~ 50	100 ~ 260	90 ~ 210	Ø 120	1200	123
KN 19	10 ~ 80	65 ~ 205	55 ~ 125	Ø 19	120	109
KN 25	10 ~ 125	65 ~ 295	55 ~ 170	Ø 25	150	109
HRM	Serial Connection, Junction (Hose /Coupling/Teflon)					124
KPA	Serial Connection, Application / Control Panel					125
DB	Serial Connection Distribution Blocks					126
HRM/EP	Die Gas Spring Clutch Pad / Crush Plates					127
G.144	Crush Plate Shock Absorber / Additional Information					128

CE 0062

BUREAU VERITAS

PED 97/23/EC

GTH

Die Gas SPRING CYLINDERS: 2 YEAR Maintenance Guaranty (From the date of sale) for the products. Intervention out of Warranty Coverage (Misusages / Heavy Applications, Intervantion to the Piston System / Damages on Cylinder Casing, Applications except Usage Instructions are not covered by the guarantee. Our company will not take any responsibility for these applications, if pressure loss occurs in long term use, this situation shows that the sealing gaskets are worn or damaged. In this case, pls. communicate with our company. All Die Gas cylinders are designed with stroke reserves between 1 and 3 mm.

All Standard Ready Cyclinders are delivered as filled with gas. Empty, refillable gas cylinders are used at serial connection designed systems, also catalogue data are available. While filling, follow the recommended values. Absolutely be sure that piston arm is removed (With 5 Bar Pressure). During unloading, keep the cylinder in the opposite direction. Before disposal of Die Gas spring, be sure that all pressure is discharged. Maintenance and Filling absolutely shoud be done by qualified personnel.

Usage Information: To calculate the first initial force of each cylinder, pls multiply max. pressure application value **(P)** with gasket, rod or piston area of sealing gasket **(S).**

To avoid course risk, it is recommended not to exceed 90% of stroke length.

Example: F(Force daN)= P (Bar / Psi) . S (cm^2)

To obtain different force than nominal **F** value and to specify required pressure level, pls. divide required force **(FN)** to rod or piston area of the sealing gasket **(S).**

In the spring selection, absolutely a spring above criteria should be selected.

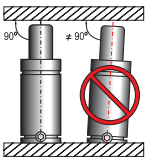
Example: P (Bar / Psi) = **F** (daN) ÷ **S** (cm^2)

Usage Instruction (Things to avoid)

B1

Don't use cylinder except in specified max. values!

B2



Bring Cylinder into vertical position!

B3

Don't make any mechanical process on casing or shaft!

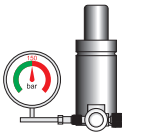
B4

Don't let to contaminte Cylinder surface with liquid or solid substance, in imperative piston, cyliner can be used as reverse

B5

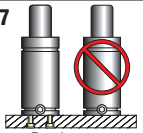
Don't charge cylinder with any gas except Nitrogen N_2

B6



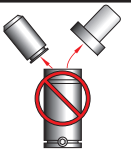
Don't charge cylinder with More Than 150 Bar Pressure !

B7



Don't mount Cylinder without securing!

B8

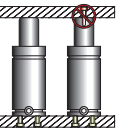


Never remove the cylinder!

B9

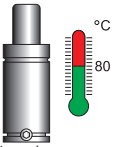
Don't let someone else to make maintenance except the incumbent

B10



While securing Cylinder, don't use hole over piston!

B11



While using gas Cylinder, don't let mould temperature to exceed 80^0

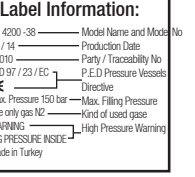
Die Gas Spring Production Series (As Per Request)

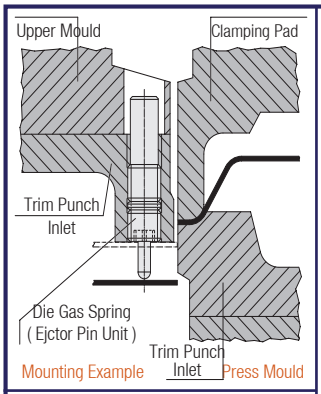
Order Serial	Course Stroke (mm)	Full Leng. (L)	Cylinder Length (L1)	Cylind. Casing (Ø)	Piston Dia.	daN
AD 500	6 ~ 125	62 ~ 300	56 ~ 175	Ø 45	Ø 20	500
AD 750	6 ~ 125	62 ~ 300	56 ~ 175	Ø 50	Ø 25	750
AD 1500	25 ~ 100	110 ~ 260	85 ~ 160	Ø 70	Ø 36	1500
AD 3000	25 ~ 100	120 ~ 270	95 ~ 170	Ø 95	Ø 50	1500
KV 250	13 ~ 100	75.4 ~ 250	62.7 ~ 150	Ø38 Diş M12	Ø 15	250
KV 1000	10 ~ 100	58 ~ 238	48 ~ 138	Ø50 Diş M16	Ø 28	750
VD 250	13 ~ 80	57 ~ 191	44 ~ 111	M 36	Ø 15	250
VD 500	13 ~ 100	56 ~ 230	43 ~ 130	M 45	Ø 20	500
VD 750	13 ~ 100	63.4 ~ 238	50.4 ~ 138	M 50	Ø 25	750
NM 120	10 ~ 125	62 ~ 295	52 ~ 170	M 24	Ø 10	120
NM 150	10 ~ 125	62 ~ 295	52 ~ 170	M 28	Ø 12	150
YN 200	7 ~ 100	46 ~ 232	39 ~ 132	Ø 25	Ø 12	200
YN 300	7 ~ 100	53 ~ 239	46 ~ 139	Ø 32	Ø 16	300
YN 570	7 ~ 125	51 ~ 287	44 ~ 162	Ø 120	Ø 22	500
YN 750	12 ~ 100	74 ~ 250	62 ~ 150	Ø 45	Ø 25	700
YN 1000	12 ~ 100	74 ~ 250	62 ~ 150	Ø 50	Ø 30	1000
YN 1500	12 ~ 100	84 ~ 260	72 ~ 160	Ø 63	Ø 36	1500
YN 2500	12 ~ 100	84 ~ 260	72 ~ 160	Ø 75	Ø 45	2500
YN 4000	25 ~ 100	120 ~ 270	95 ~ 170	Ø 95	Ø 60	4000
FN 300	10 ~ 80	75 ~ 220	65 ~ 140	Ø 25	Ø 15	300
FN 500	10 ~ 80	75 ~ 225	65 ~ 145	Ø 32	Ø 18	500
FN 1000	10 ~ 80	75 ~ 240	65 ~ 160	Ø 38	Ø 25	1000
FN 1800	15 ~ 80	95 ~ 145	80 ~ 165	Ø 50	Ø 35	1800
FN 4700	15 ~ 80	100 ~ 250	85 ~ 170	Ø 75	Ø 56	4700
FN 7500	15 ~ 80	115 ~ 260	100 ~ 180	Ø 95	Ø 55	7500
FN 12000	15 ~ 80	115 ~ 265	100 ~ 185	Ø 120	Ø 70	4700

Note: Technical data of the series in the table are not available in our catalogue. When required, pls request from our company. The products are stocked partially.

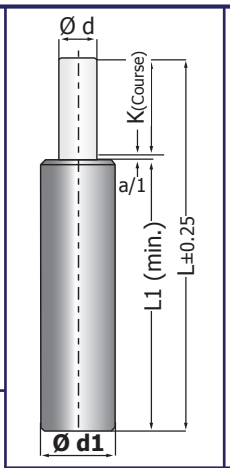
www.guvenal.net

Label Information:

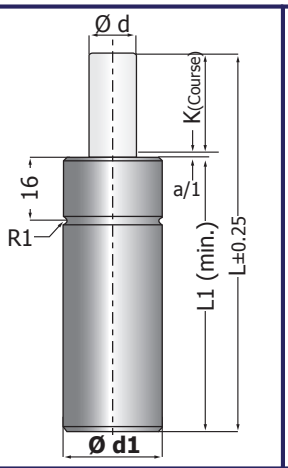




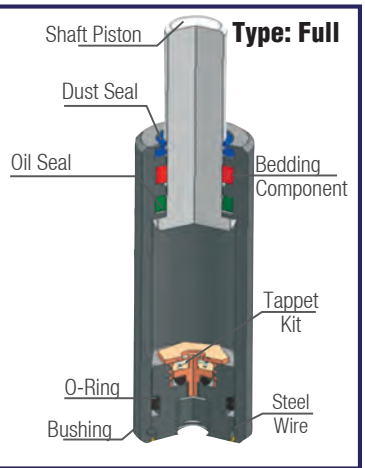
Spring ejectors are used as ejector, damper (pedal) stabilizer and retaining pin, Die Gas spring, press mould burnisher remover in many industries such as mould, fixture production.



KN 19 Die Gas Spring Remover



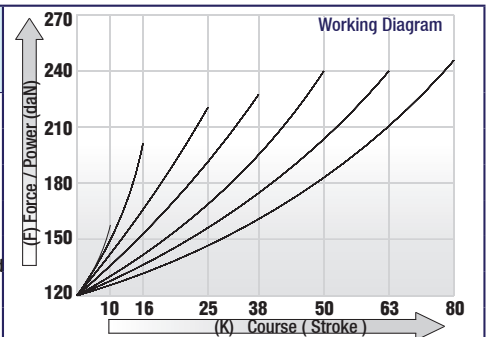
KN 25 Die Gas Spring Remover



Standard: Die Gas Spring Cylinder

KN Serial Die Gas Springs Thin/ Long - With less force (Press Mould, Male Holder Remover)

Order Code KN 19..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
KN 19 -10	d: 10 mm **d1: 19** a: 1 mm	10	65	55		0.09	Pressure Gase N_2 **Max. Pressure (P)** 150 Bar **Min. Pressure** 25 Bar **Working Temp.** 0^0C ve + 80^0C **Max. Working Speed** 0.8 m / s **Piston Area (S)** 0.5 cm^2
KN 19 -16		16	77	61		0.10	
KN 19 -25		25	95	70	**(F)** 120 daN	0.11	
KN 19 -38	Bottom Connection Hole M6 X3	38	121	83		0.14	
KN 19 -50		50	145	95		0.15	
KN 19 -63		63	171	108		0.18	
KN 19 -80		80	205	125		0.20	

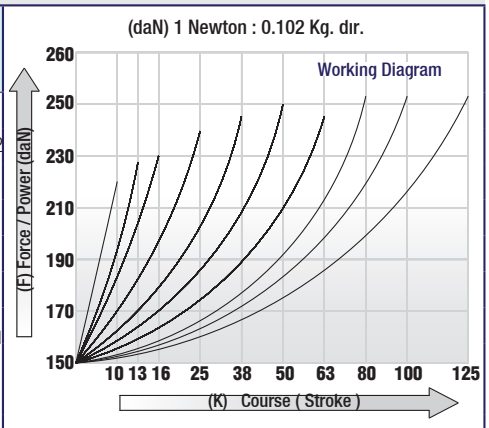


Cylinder Coupling Fastening			
	At slot, volume Ø +1.0 +0.5	 Bottom Screwed Coupling M6	 Supported Volume Ø +1.0 +0.5

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

Serial :KN 19

Order Kod KN 25..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
KN 25 -10	d: 12 mm **d1: 25** a: 1 mm	10	65	55		0.15	Pressure Gase N_2 Nitrogen **Max. Pressure (P)** 150 Bar **Min. Pressure** 25 Bar **Working Temp.** 0^0C ve + 80^0C **Max. Working Speed** 0.8 m / s **Piston Area (S)** 1.13 cm^2
KN 25 -13		13	71	59		0.16	
KN 25 -16		16	77	61		0.17	
KN 25 -25	Bottom Connection Hole M6 X4	25	85	70	**(F)** 150 daN	0.19	
KN 25 -38		38	121	83		0.22	
KN 25 -50		50	145	95		0.25	
KN 25 -63		63	171	108		0.29	
KN 25 -80		80	205	125		0.33	
KN 25 -100		100	245	145		0.38	
KN 25 -125		125	295	170		0.45	

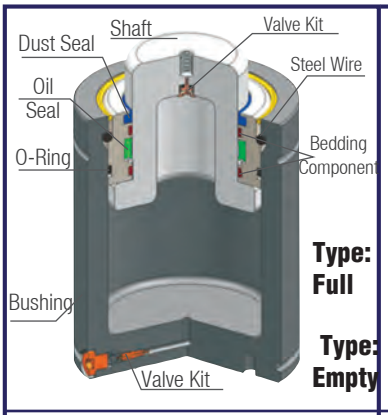


Cylinder Coupling Fastening			
	At slot, volume Ø +1.0 +0.5	 Bottom Screwed Coupling M6	 Supported Volume Ø +1.0 +0.5

Generally for other connection position of Die Gas springs that are completed their mounting by exhausting with bolt from base in compliance with your mould, select connection type specified at drawing (with code) and request information (technical drawing) for details from our company.

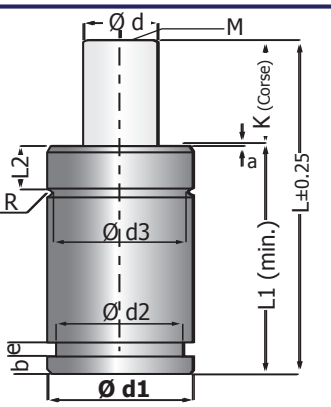
Serial :KN 25

Usage Advantages of Die Gas Spring Cylinder: * Significiant decrease at the required surface area, height, occupied volume and quantity of fixer unit that should be preloaded, directed and fitted. * Mould unit (occupied less space) providing significiant decrease at height for same working range and power * None preload, easier and quick assembly * Always same force at each contact point. Forces can be placed at required place precisely, system pressure is monitored continously (Fixed production are provided) etc.



Serial Connection: Gasless (With Valve)

Standard: Die Gas Spring (Ready /Full)



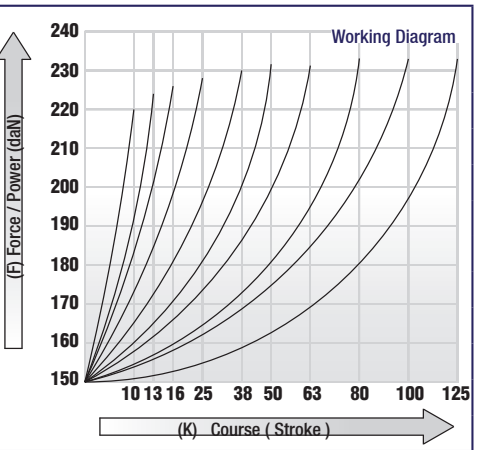
SN Serial Die Gas Spring Technical Drawing Detail

S N Serial Die Gas Springs Compatible with ISO 11901 / Serial Connection / Wide Options

Order Code KN 150	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.
SN 150 - 10	d: 12 mm **d1: 32** d2: 27 mm d3: 30 mm a: 2 mm b: 4 mm e: 3.5 mm L2: 10.5 R: 1 M: 6	10	70	60	(F) 150 daN	0.28
SN 150 - 13		13	75.4	62.7		0.29
SN 150 - 16		16	82	66		0.30
SN 150 - 25		25	100	75		0.33
SN 150 - 38		38	126	88		0.36
SN 150 - 50		50	150	100		0.40
SN 150 - 63		63	177	113.5		0.44
SN 150 - 80	Base Hole M8 x7	80	210	130		0.49
SN 150 - 100		100	250	150		0.55
SN 150 - 125		125	300	175		0.64

Technical Specifications

Pressure Gase N_2
Max. Pressure (P)
150 Bar
Min. Pressure
25 Bar
Working Temp.
0^0C ve + 80^0C
Max. Working Speed
1.8 m / s
Piston Area (S)
1.13 cm^2
PED 97/23/EC ISO 11901-1



Silindir Bağlantı Sabitleme

At slot, volumeØ +1.0 +0.5

Bottom Screwed Coupling M8

BT 32

BY 32

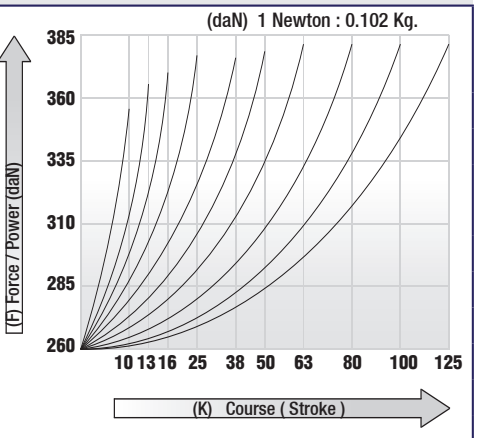
Generally for other connection position of Die Gas springs that are completed their mounting with exhausting with bolt from base in compliance with your mould, select connection type specified at drawing (with code) and request information (technical drawing) for details from our company.

Serial: SN 150

Order Code SN 250..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.
SN 250 - 10	d: 15 mm **d1: 38** d2: 33 mm d3: 36 mm a: 2 mm b: 4 mm e: 3.5 mm L2: 10.5 R: 1 M: 6	10	70	60	(F) 250 daN	0.40
SN 250 - 13		13	75.4	62.7		0.41
SN 250 - 16		16	82	66		0.43
SN 250 - 25		25	100	75		0.48
SN 250 - 38		38	126	88		0.54
SN 250 - 50		50	150	100		0.60
SN 250 - 63		63	177	113.5		0.66
SN 250 - 80	Base Hole M8 x7	80	210	130		0.74
SN 250 - 100		100	250	150		0.81
SN 250 - 125		125	300	175		0.98

Technical Specifications

Pressure Gase N_2
Max. Pressure (P)
150 Bar
Min. Pressure
25 Bar
Working Temp.
0^0C ve + 80^0C
Max. Working Speed
1.8 m / s
Piston Area (S)
1.77 cm^2
PED 97/23/EC ISO 11901-1



Cylinder Coupling Fastening Components

At slot, volume Ø +1.0 +0.5

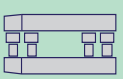
Bottom Screwed Coupling M8

BT 38

BY 38

Serial: SN 250

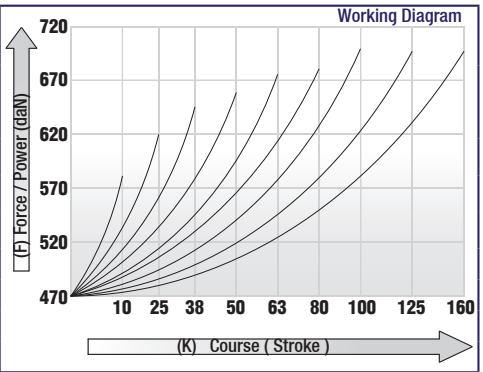
Contd. 110-113



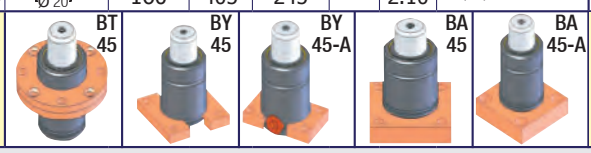
Section Press Mould

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

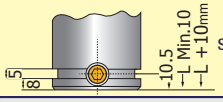
Order SN 500..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
SN 500 -13	d: 20 mm **d1: 45** d2: 40 mm d3: 43 mm a: 2 mm b: 4 mm e: 3.5 mm L2: 14.5 R: 1 / M: 8	13	110.4	97.7	(F) 500 daN	0.90	Pressure Gase N_2
SN 500 -25		14	135	110		1.00	Max. Pressure (P) 150 Bar
SN 500 -38		38	161	123		1.10	Min. Pressure 25 Bar
SN 500 -50		50	185	135		1.20	Working Temp. 0°C ve + 80°C
SN 500 -63		63	212	148.5		1.30	Max. Working Speed 1.8 m / s
SN 500 -80	2 Hole M8 x13 Ø 20	80	245	165		1.40	Piston Area (S) 4.91 cm^2
SN 500 -100		100	285	185		1.60	PED 97/23/EC ISO 11901-1
SN 500 -125		125	335	210		1.80	
SN 500 -160		160	405	245		2.10	



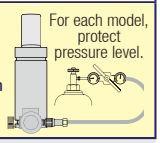
Cylinder Coupling Fastening



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

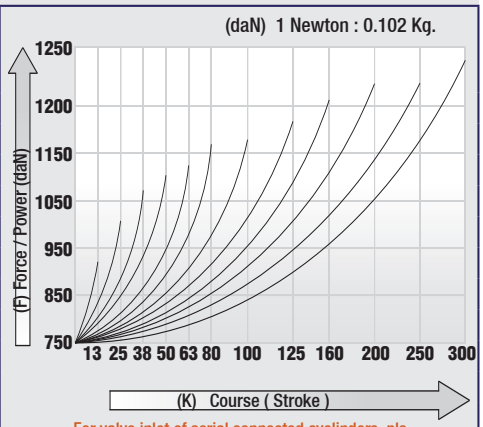


Example: Serial Connection SN 500 S



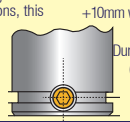
For each model, protect pressure level.

Order Code SN 750..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
SN 750 -13	d: 25 mm **d1: 50** d2: 43 mm d3: 46 mm a: 3 mm b: 8 mm e: 5 mm L2: 14.5 R: 1 M:8	13	120.4	107.7	(F) 750 daN	1.25	Pressure Gase N_2
SN 750 -25		25	145	120		1.38	Max. Pressure (P) 150 Bar
SN 750 -38		38	171	133		1.53	Min. Pressure 25 Bar
SN 750 -50		50	195	145		1.65	Working Temp. 0°C ve + 80°C
SN 750 -63		63	222	158.5		1.80	Max. Working Speed 1.8 m / s
SN 750 -80		80	255	175		1.96	Piston Area (S) 3.14 cm^2
SN 750 -100		100	295	195		2.09	PED 97/23/EC ISO 11901-1
SN 750 -125		125	345	220		2.33	
SN 750 -160	2 Hole M8 x13 Ø 20	160	415	255		2.68	
SN 750 -200		200	495	295		3.10	
SN 750 -250		250	595	345		3.60	
SN 750 -300		300	695	395		4.10	



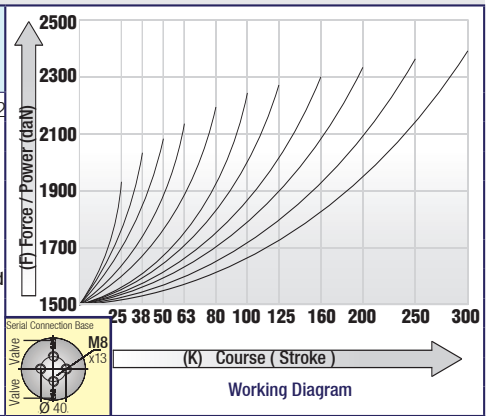
For valve inlet of serial connected cyclinders, pls. specify options as 1's or 2's valves !

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



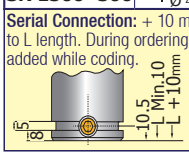
Serial Connection: +10mm will be added to L Length. During ordering, (S) should be added while coding.

Order Code SN 1500..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
SN 1500 -25	d: 36 mm **d1: 75** d2: 67 mm d3: 70 mm a: 3 mm b: 8 mm e: 5 mm L2: 18 R:2.5 M:8	25	160	135	(F) 1500 daN	3.64	Pressure Gase N_2
SN 1500 -38		38	186	148		3.91	Max. Pressure (P) 150 Bar
SN 1500 -50		50	210	160		4.15	Min. Pressure 25 Bar
SN 1500 -63		63	237	173.5		4.47	Working Temp. 0°C ve + 80°C
SN 1500 -80		80	270	190		4.81	Max. Working Speed 1.8 m / s
SN 1500 -100		100	310	210		5.22	Piston Area (S) 10.18 cm^2
SN 1500 -125		125	360	235		5.75	PED 97/23/EC ISO 11901-1
SN 1500 -160	4 Hole M8 x13 Ø 40	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	

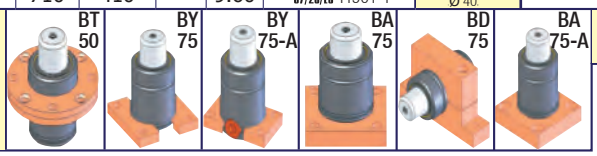


Working Diagram

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

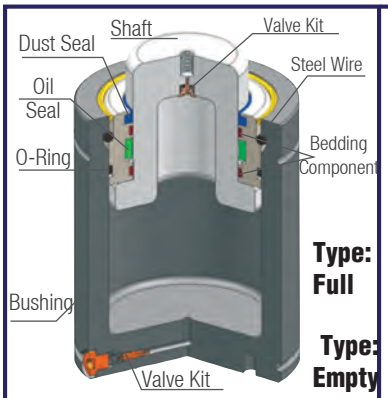


Example Serial Connection SN 1500 S



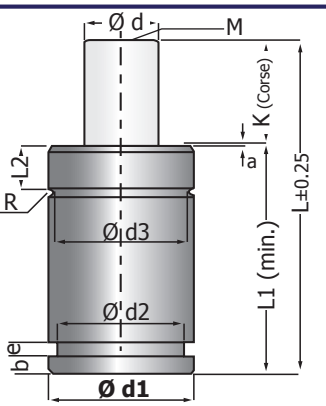
Cylinder Coupling Fastening

Section Press Mould



Serial Connection: Gasless (With Valve)

Standard: Die Gas Spring (Ready /Full)

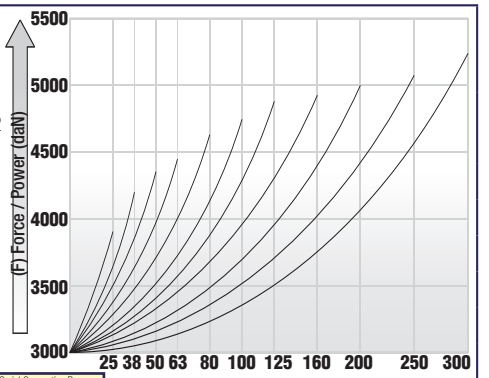


SN Serial Die Gas Spring Technical Drawing Detail

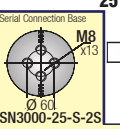
SN Serie Die Gas Springs Compatible with ISO 11901 / Serial Connection / Wide Options

Order Code SN 3000..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
SN 3000 -25	d: 50 mm	25	170	145		6.36	Pressure Gase N_2
SN 3000 -38	**d1: 95**	38	196	158		6.75	Max. Pressure (P)
SN 3000 -50	d2: 87 mm	50	220	170		7.35	150 Bar
SN 3000 -63	d3: 90 mm	63	247	183.5		7.87	Min. Pressure
SN 3000 -80	a: 3 mm	80	280	200	(F)	8.44	25 Bar
SN 3000 -100	b: 8 mm	100	320	220		9.03	Working Temp.
SN 3000 -125	e: 5 mm	125	370	245		10.1	0^0C ve + 80^0C
SN 3000 -160	L2: 21	160	440	280		11.3	Max. Working Speed
SN 3000 -200	R:2.5	200	520	320		12.8	1.8 m / s
SN 3000 -250	M:8	250	620	370		14.5	Piston Area (S)
SN 3000 -300	4 Hole M8 x13 Ø 60	300	720	420	3000 daN	16.2	19.63 cm^2

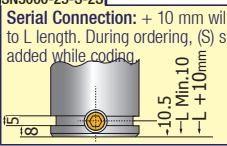
PED 97/23/EC ISO 11901-1



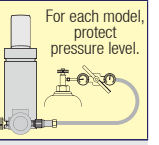
(daN) 1 Newton : 0.102 Kg.



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



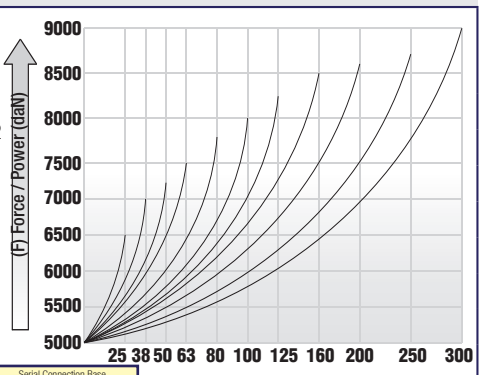
Example Serial Connection SN 3000 S

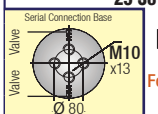


For each model, protect pressure level.

Order Code SN 5000..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
SN 5000 -25	d: 65 mm	25	190	165		12.2	Pressure Gase N_2
SN 5000 -38	**d1:120**	38	216	178		12.9	Max. Pressure (P)
SN 5000 -50	d2:112 mm	50	240	190		13.7	150 Bar
SN 5000 -63	d3:115 mm	63	267	203.5		14.5	Min. Pressure
SN 5000 -80	a: 3 mm	80	300	220	(F)	15.4	25 Bar
SN 5000 -100	b: 8 mm	100	340	240		16.7	Working Temp.
SN 5000 -125	e: 5 mm	125	390	265		18.3	0^0C ve + 80^0C
SN 5000 -160	L2: 22.5	160	460	300		20.1	Max. Working Speed
SN 5000 -200	R:2.5	200	540	340		22.3	1.8 m / s
SN 5000 -250	M:8	250	640	390		24.8	Piston Area (S)
SN 5000 -300	4 Hole M10 x13 Ø 80	300	740	440	5000 daN	27.3	33.18 cm^2

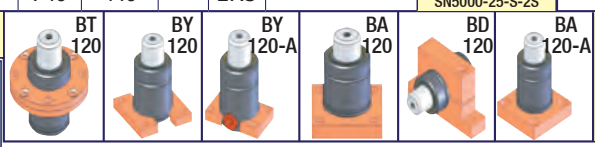
PED 97/23/EC ISO 11901-1



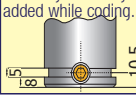


For valve inlet of serial connected cyclinders, pls specify options as 1's or 2's valves !

Cylinder Coupling Fastening



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

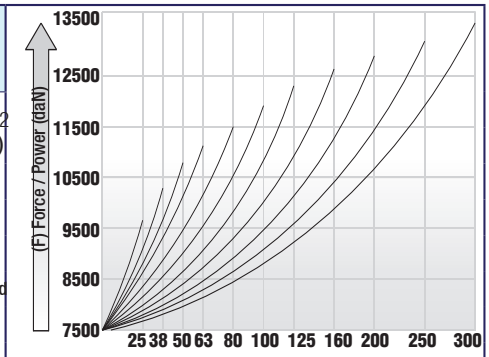


Example Serial Connection SN 5000 S

Section Press Mould

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

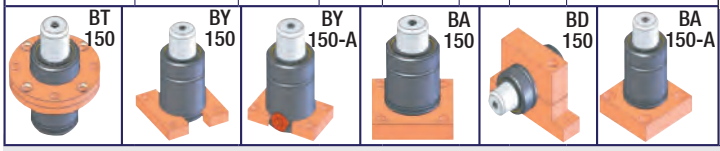
Order Code SN 7500..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
SN 7500 -25	d: 80 mm	25	205	180		19.8	Pressure Gase N_2
SN 7500 -38	**d1:150**	38	231	193		21.0	Max. Pressure (P) 150 Bar
SN 7500 -50	d2:142 mm	50	255	205		21.8	Min. Pressure 25 Bar
SN 7500 -63	d3:145 mm	63	282	218.5		22.6	Working Temp. 0^0C ve + 80^0C
SN 7500 -80	a: 3 mm	80	315	235	(F)	24.4	Max. Working Speed 1.8 m / s
SN 7500 -100	b: 8 mm	100	355	255	7500 daN	26.1	Piston Area (S) 50.27 cm^2
SN 7500 -125	e: 5 mm	125	405	280		28.0	PED 97/23/EC ISO 11901-1
SN 7500 -160	L2: 24.5	160	475	315		31.4	
SN 7500 -200	R:2.5	200	555	355		35.0	
SN 7500 -250	M:8	250	655	405		38.5	
SN 7500 -300	4 Hole M10 x13 Ø 100	300	755	455		42.4	



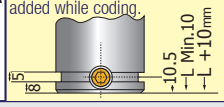
Serial Connection Base M10 x13 Ø 100 SN7500-25-S-2S

(daN) 1 Newton : 0.102 Kg.

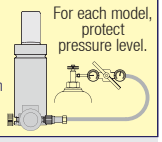
For valve inlet of serial connected cyclinders, pls. specify options as 1's or 2's valves !



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

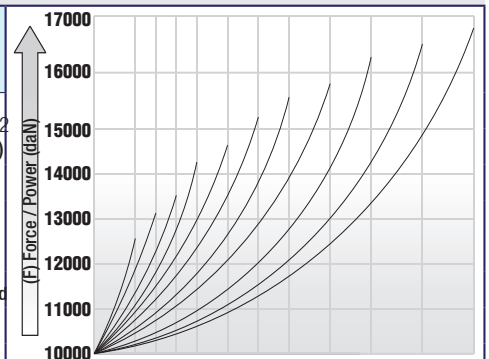


Example Serial Connection SN 7500 S



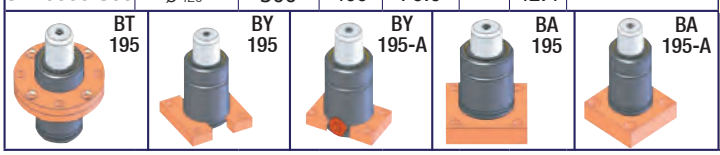
For each model, protect pressure level.

Order Code SN 10000..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
SN10000-25	d: 95 mm	25	185	34.8		19.8	Pressure Gase N_2
SN10000-38	**d1:195**	38	198	36.7		21.0	Max. Pressure (P) 150 Bar
SN10000-50	d2:187 mm	50	210	38.5		21.8	Min. Pressure 25 Bar
SN10000-63	d3:190 mm	63	223.5	40.5		22.6	Working Temp. 0^0C ve + 80^0C
SN10000-80	a: 3 mm	80	240	43.0	(F)	24.4	Max. Working Speed 1.8 m / s
SN10000-100	b: 8 mm	100	260	46.0	10000 daN	26.1	Piston Area (S) 70.88 cm^2
SN10000-125	e: 8 mm	125	285	49.8		28.0	PED 97/23/EC ISO 11901-1
SN10000-160	L2: 30	160	320	55.0		31.4	
SN10000-200	R:2.5	200	360	61.0		35.0	
SN10000-250	M:8	250	410	68.5		38.5	
SN10000-300	4 Hole M12 x16 Ø 120	300	460	76.0		42.4	

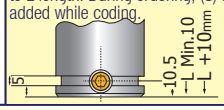


Serial Connection Base M12 x16 Ø 120 SN10000-25-S-2S

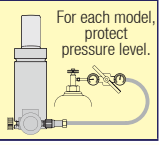
For valve inlet of serial connected cyclinders, pls. specify options as 1's or 2's valves !



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



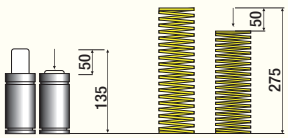
Example Serial Connection SN 10000 S



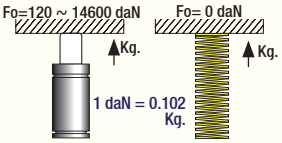
For each model, protect pressure level.

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

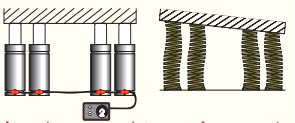
By using thew Die Gas spring, required application area, height, occupied volume, retaining springs for preloading are decreased significantly.



Together with same study course and force increment, significant length decrease, length saving, spring structure advantage are provided.

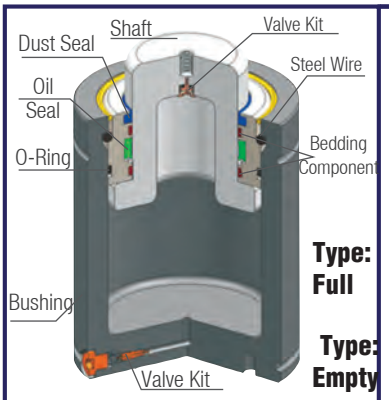


Higher performance, easier and fast mounting is provided with small preloading (0.5 - 1 mm).



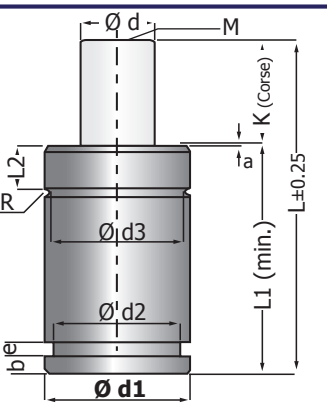
At each contact point, same forces can be placed to the pure desired point continously, system can be monitored in terms of pressure.

Practical Information Using Die Gas Spring; At Die Gas spring press sheet mould, more larger - volume high forces can be preferred. In your Die Gas spring selection, piston spring - course - load capacity information are important selection criterias, your designs can be created with working diagrams diameter of our page. Using of Die Gas spring at press sheet moulds in our country, is selected in similar system with practical methods and force balance of mechanical springs. According to this: **Example:** for selection of Die Gas spring can be done 20 % stretching with 6000 Kg. load coefficient and be given 20 mm's course value, it is completetdh with that 10 Pieces Mechanic Steeel Yellow Spring ~ (6000 Kg.). In case of that Die Gas Spring is selecteed instead of this, by using **YO 700 - 25** Serial (Ø 45 mm / Length: 82 mm) **Course:** 25mm - **Diagram:** 1330 Kg. x 4 Pieces is sufficient. 5850 Kg. (10 Pieces Mechanic Yellow Spring) ÷ 1330 Kg. = 4 Pieces Die Gas Springs are sufficient for this position. Thus, (6 Pieces) Steel Saving are provided. By increasing **examples**, at greater diameters; spring quantities will be decreased / forces are increased. First and foremost, spring area will be decreased at your mould, technologic and economic gains will be supplied.



Serial Connection: Gasless (With Valve)

Standard: Die Gas Spring (Ready /Full)

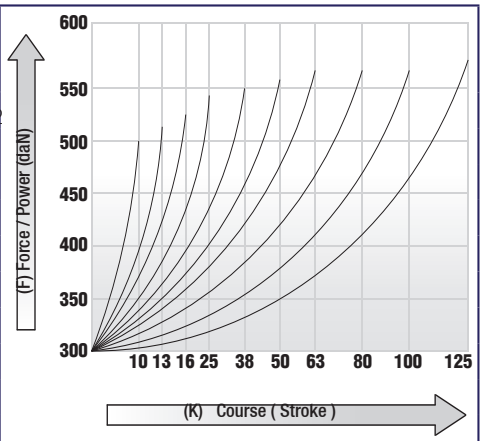


Y Serial Die Gas Spring Technical Drawing Detail

Y Serie Die Gas Springs Model Designed For Area Saving From SN / ISO Serial

Order Code Y 300..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
Y 300 - 10	d: 16 mm	10	70	60		0.29	Pressure Gase N_2
Y 300 - 13	**d1: 32**	13	74.4	62.7		0.30	Max. Pressure (P) 150 Bar
Y 300 - 16	d2: 27 mm	16	82	66		0.31	Min. Pressure 25 Bar
Y 300 - 25	d3: 30 mm	25	100	75	(F)	0.34	Working Temp. 0^0C ve + 80^0C
Y 300 - 38	a: 2 mm	38	126	88		0.38	Max. Working Speed 1.8 m / s
Y 300 - 50	b: 4 mm	50	150	100	300 daN	0.43	Piston Area (S) 2.01 cm^2
Y 300 - 63	e: 3.5 mm	63	177	113.5		0.48	
Y 300 - 80	L2: 10.5	80	210	130		0.54	PED 97/23/EC
Y 300 - 100	R: 1	100	250	150		0.61	
Y 300 - 125	M: 6	125	300	175		0.69	

Base Hole M8 x6



Cylinder Coupling Fastening

At slot, volumeØ +1.0 +0.5

Bottom Screwed Coupling M8

BT 32

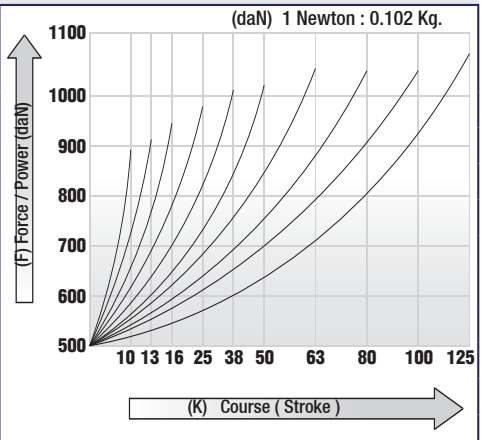
BY 32

Generally for other connection position of Die Gas springs that are completed their mounting by exhausting with bolt from base in compliance with your mould, select connection type specified at drawing (with code) and request information (technical drawing) for details from our company.

Serial: Y 300

Order Code Y 500..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
Y 500 - 10	d: 20 mm	10	70	60		0.29	Pressure Gase N_2
Y 500 - 13	**d1: 38**	13	75.4	62.7		0.30	Max. Pressure (P) 150 Bar
Y 500 - 16	d2: 33 mm	16	82	66		0.31	Min. Pressure 25 Bar
Y 500 - 25	d3: 36 mm	25	100	75	(F)	0.34	Working Temp. 0^0C ve + 80^0C
Y 500 - 38	a: 2 mm	38	126	88		0.38	Max. Working Speed 1.8 m / s
Y 500 - 50	b: 4 mm	50	150	100	500 daN	0.43	Piston Area (S) 3.14 cm^2
Y 500 - 63	e: 3.5 mm	63	177	113.5		0.48	
Y 500 - 80	L2: 10.5	80	210	130		0.54	PED 97/23/EC
Y 500 - 100	R: 1	100	250	150		0.61	
Y 500 - 125	M: 6	125	300	175		0.69	

Base Hole M8 x6



Cylinder Coupling Fastening

At slot, volume Ø +1.0 +0.5

Bottom Screwed Coupling M8

BT 38

BY 38

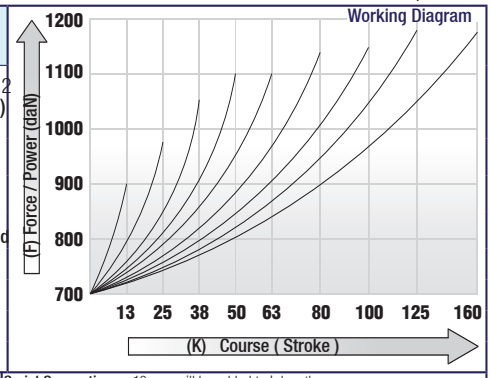
Serial: Y 500

Contd 114-116

Section Press Mould

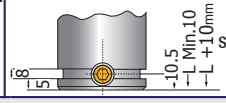
Y Serie Die Gas Springs (For technical drawing details, pls. refer next page upper section)

Order Y 700..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
Y 700 -13	d: 24 mm **d1: 45** d2: 40 mm d3: 43 mm a: 2 mm b: 4 mm e: 3.5 mm L2: 14.5 R: 1 / M: 8	13	110.4	97.7	(F) 700 daN	0.98	Pressure Gase N_2 Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0^0C ve + 80^0C Max. Working Speed 1.8 m / s Piston Area (S) 4.52 cm^2 PED 97/23/EC
Y 700 -25		25	135	110		1.07	
Y 700 -38		38	161	123		1.16	
Y 700 -50		50	185	135		1.25	
Y 700 -63		63	212	148.5		1.35	
Y 700 -80	2 Hole M8 x13 Ø 20	80	245	165		1.47	
Y 700 -100		100	285	185		1.72	
Y 700 -125		125	335	210		1.80	
Y 700 -160		160	405	245		2.05	

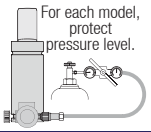


Cylinder Coupling Fastening

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

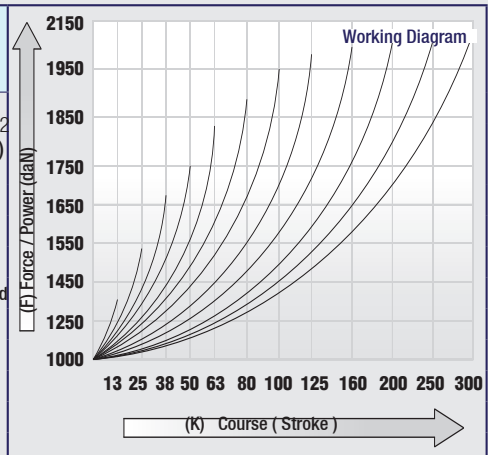


Example: Serial Connection Y 700 S

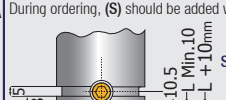


For each model, protect pressure level.

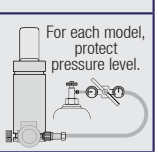
Order Code Y 1000..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
Y 1000 -13	d: 30 mm **d1: 50** d2: 43 mm d3: 46 mm a: 3 mm b: 8 mm e: 5 mm L2: 14.5 R: 1 M:8	13	120.4	107.7	(F) 1000 daN	1.35	Pressure Gase N_2 Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0^0C ve + 80^0C Max. Working Speed 1.8 m / s Piston Area (S) 7.07 cm^2 PED 97/23/EC
Y 1000 -25		25	145	120		1.44	
Y 1000 -38		38	171	133		1.59	
Y 1000 -50		50	195	145		1.68	
Y 1000 -63		63	222	158.5		1.83	
Y 1000 -80		80	255	175		1.99	
Y 1000 -100		100	295	195		2.19	
Y 1000 -125		125	345	220		2.43	
Y 1000 -160	2 Hole M8 x13 Ø 20	160	415	255		2.77	
Y 1000 -200		200	495	295		3.16	
Y 1000 -250		250	595	345		3.64	
Y 1000 -300		300	695	395		4.13	



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

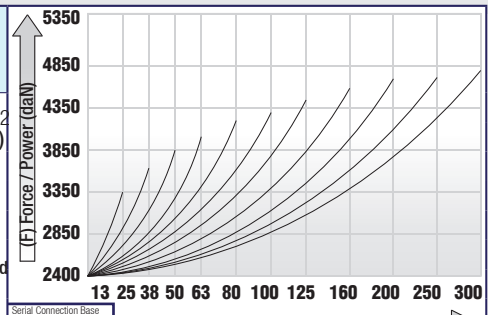


Example: Serial Connection Y 1000 S



For each model, protect pressure level.

Order Code Y 2400..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
Y 2400 -25	d: 45 mm **d1: 75** d2: 67 mm d3: 70 mm a: 3 mm b: 8 mm e: 5 mm L2: 18 R:2.5 M:8	25	160	135	(F) 2400 daN	3.70	Pressure Gase N_2 Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0^0C ve + 80^0C Max. Working Speed 1.8 m / s Piston Area (S) 15.09 cm^2 PED 97/23/EC
Y 2400 -38		38	186	148		3.96	
Y 2400 -50		50	210	160		4.21	
Y 2400 -63		63	237	173.5		4.50	
Y 2400 -80		80	270	190		4.81	
Y 2400 -100		100	310	210		5.23	
Y 2400 -125		125	360	235		5.67	
Y 2400 -160	4 Hole M8 x13 Ø 40	160	430	270		6.48	
Y 2400 -200		200	510	310		7.49	
Y 2400 -250		250	610	360		9.36	
Y 2400 -300		300	710	410		11.23	

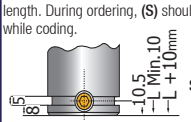


Serial Connection Base M8 x13 Ø 40 Y 2400 -25-S-2S

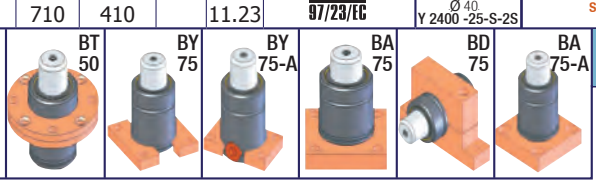
(daN) 1 Newton : 0.102 Kg.

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

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

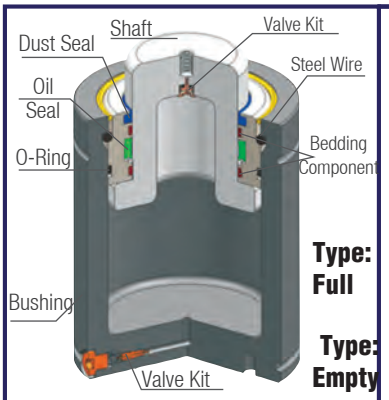


Example: Serial Connection Y 2400 S



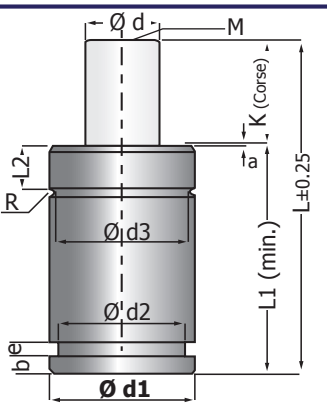
Cylinder Coupling Fastening

Section Press Mould



Serial Connection: Gasless (With Valve)

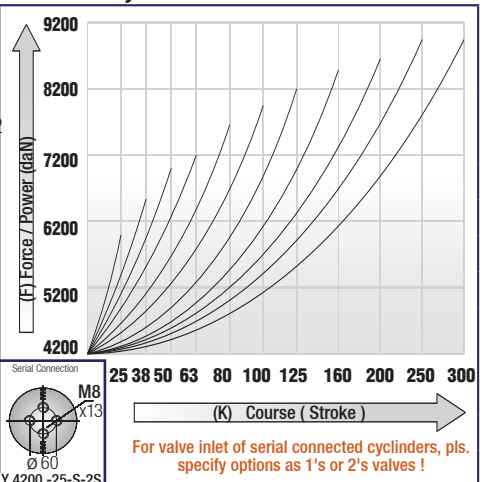
Standard: Die Gas Spring (Ready /Full)



Y Serial Die Gas Spring Technical Drawing Detail

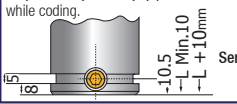
Y Serie Die Gas Springs Model Designed For Area Saving From SN / ISO Serial Model

Order Kod Y 4200..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
Y 4200 -25	d: 60 mm	25	170	145		6.54	Pressure Gase N_2
Y 4200 -38	**d1: 95**	38	196	158		7.00	Max. Pressure (P) 150 Bar
Y 4200 -50	d2: 87 mm	50	220	170		7.37	Min. Pressure 25 Bar
Y 4200 -63	d3: 90 mm	63	247	183.5		7.84	Working Temp. 0^0C ve + 80^0C
Y 4200 -80	a: 3 mm	80	280	200	(F)	8.35	Max. Working Speed 1.8 m / s
Y 4200 -100	b: 8 mm	100	320	220	4200 daN	9.30	Piston Area (S) 28.27 cm^2
Y 4200 -125	e: 5 mm	125	370	245		9.80	
Y 4200 -160	L2: 21	160	440	280		10.5	
Y 4200 -200	R:2.5	200	520	320		11.3	
Y 4200 -250	M:8	250	620	370		12.3	PED 97/23/EC ISO 11901-1
Y 4200 -300	4 Hole M8 x13 Ø 60	300	720	420		13.3	



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

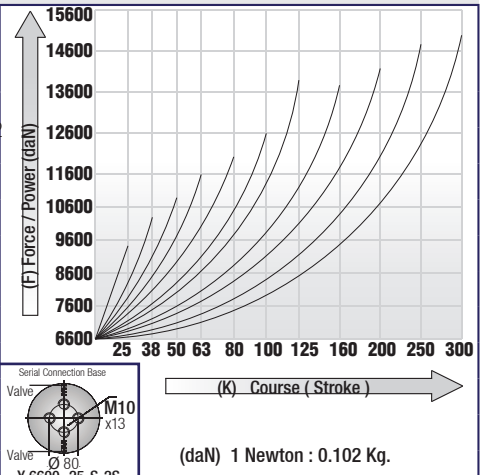
Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



Example: Serial Connection Y 4200 S

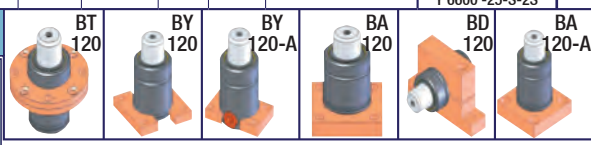
For each model, protect pressure level.

Order Code Y 6600..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
Y 6600 -25	d: 75 mm	25	190	165		12.1	Pressure Gase N_2
Y 6600 -38	**d1:120**	38	216	178		13.7	Max. Pressure (P) 150 Bar
Y 6600 -50	d2:112 mm	50	240	190		15.1	Min. Pressure 25 Bar
Y 6600 -63	d3:115 mm	63	267	203.5		15.5	Working Temp. 0^0C ve + 80^0C
Y 6600 -80	a: 3 mm	80	300	220	(F)	16.1	Max. Working Speed 1.8 m / s
Y 6600 -100	b: 8 mm	100	340	240	6600 daN	17.5	Piston Area (S) 44.18 cm^2
Y 6600 -125	e: 5 mm	125	390	265		19.3	
Y 6600 -160	L2: 22.5	160	460	300		21.8	
Y 6600 -200	R:2.5	200	540	340		24.7	
Y 6600 -250	M:8	250	640	390		28.3	PED 97/23/EC ISO 11901-1
Y 6600 -300	4 Hole M10 x13 Ø 80	300	740	440		31.9	

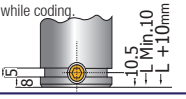


(daN) 1 Newton : 0.102 Kg.

Cylinder Coupling Fastening

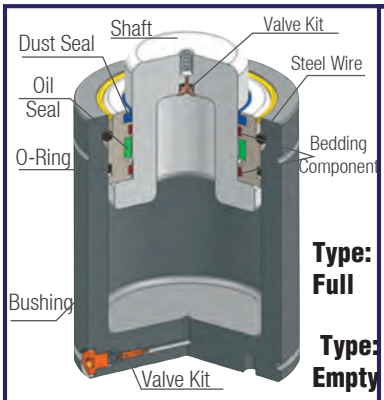


Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



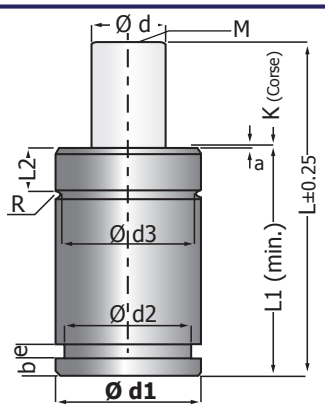
Example: Serial Connection Y 6600 S

Section Press Mould



Serial Connection: Gasless (With Valve)

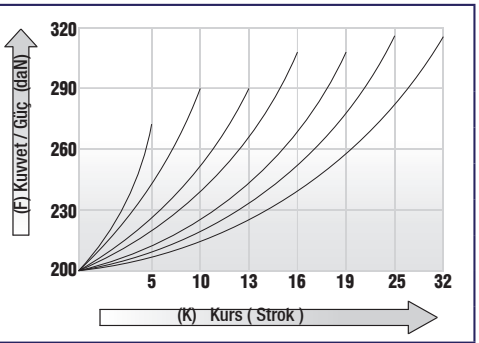
Standard: Die Gas Spring (Ready /Full)



YO Serial Die Gas Spring Technical Drawing Detail

YO Serie Die Gas Springs Area Saving - Short Length - High Forces

Order Code YO 200..	Cylinder Measures Flat Cylinder	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
YO 200 - 5	d: 12 mm **d1: 25** d2 : 23 a : 1 mm b-e-d3 : - L2 :8 R:1/M:6	5	40	35	(F) 200 daN	0.09	Pressure Gase N_2 Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0^0C ve + 80^0C Max. Working Speed 1.8 m / s Piston Area (S) 1.13 cm^2
YO 200 - 10		10	50	40		0.10	
YO 200 - 13		13	56	43		0.10	
YO 200 - 16		16	62	46		0.11	
YO 200 - 19	Base M6 X3	19	68	49		0.12	
YO 200 - 25		25	80	55		0.13	
YO 200 - 32		32	94	62		0.16	



Cylinder Coupling Fastening

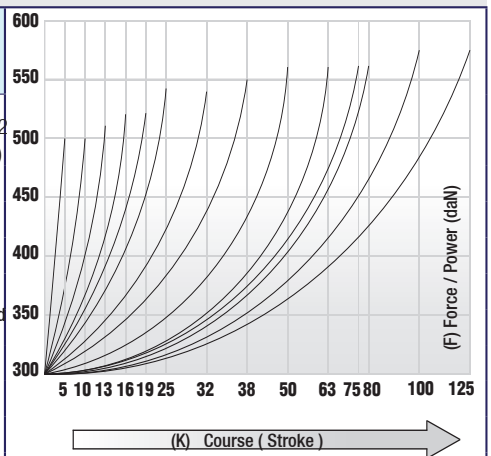
At slot, volume Ø +1.0 +0.5

Bottom Screwed Coupling M6

Generally for other connection position of Die Gas springs that are completed their mounting by exhausting with bolt from base in compliance with your mould, select connection type specified at drawing (with code) and request information (technical drawing) for details from our company.

Serial: YO 200

Order Code YO 300..	Cylinder Measures Ø	Course Stroke (K)	Full Length (L)	Cylinder Length (L1)		Kg.	Technical Specifications
YO 300 - 5	d: 16 mm **d1:32** d2:28 mm d3:30 mm a: 1 mm Corse 5~16 b - e : - b: 4 mm e: 3.5 mm L2: 10.5 R:1 M:6	5	40	35	(F) 300 daN	0.17	Pressure Gase N_2 Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0^0C ve + 80^0C Max. Working Speed 1.8 m / s Piston Area (S) 2.01 cm^2
YO 300 - 10		10	50	40		0.18	
YO 300 - 13		13	56	43		0.19	
YO 300 - 16		16	62	46		0.20	
YO 300 - 19		19	68	49		0.22	
YO 300 - 25		25	80	55		0.25	
YO 300 - 32		32	94	62		0.27	
YO 300 - 38		38	106	68		0.29	
YO 300 - 50		50	130	80		0.34	
YO 300 - 63	Bottom Connection Base M8 X4	63	156	93		0.39	
YO 300 - 75		75	180	105		0.42	
YO 300 - 80		80	190	110		0.45	
YO 300 - 100		100	230	130		0.53	
YO 300 - 125		125	280	155		0.68	

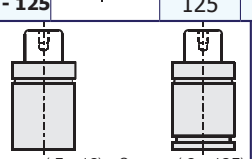


PED 97/23/EC

Contd 117-120

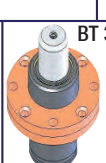
(daN) 1 Newton : 0.102 Kg.

Serial :YO 300



At slot, volume Ø +1.0 +0.5

Bottom Screwed Coupling M6



BT 32

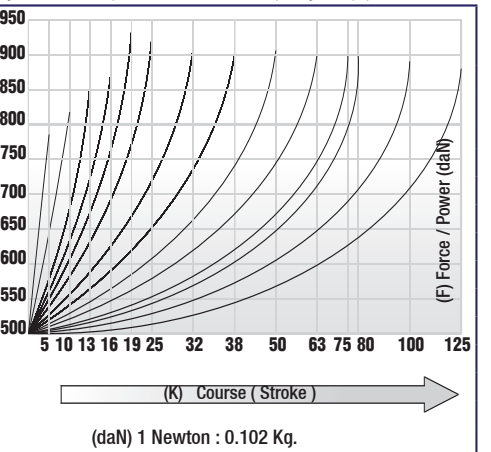
BY 32

Cylinder Coupling Fastening

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

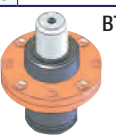
Order YO 500..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.
YO 500 - 5	d: 20 mm **d1:38** d2:34 mm d3:36 mm a: 1 mm Corse 5~16 b - e : - b: 4 mm e: 3.5 mm L2: 10.5 R:1 M:6 Bottom Connection Base M8 x4	5	40	35	(F) 500 daN	0.25
YO 500 - 10		10	50	40		0.27
YO 500 - 13		13	56	43		0.29
YO 500 - 16		16	62	46		0.31
YO 500 - 19		19	68	49		0.33
YO 500 - 25		25	80	55		0.36
YO 500 - 32		32	94	62		0.40
YO 500 - 38		38	106	68		0.44
YO 500 - 50		50	130	80		0.50
YO 500 - 63		63	156	93		0.57
YO 500 - 75		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

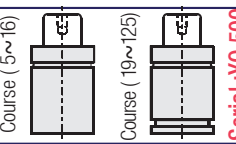
Technical Specifications
Pressure Gase N_2
Max. Pressure (P) 150 Bar
Min. Pressure 25 Bar
Working Temp. 0^0C ve + 80^0C
Max. Working Speed 1.8 m / s
Piston Area (S) 3.14 cm^2
PED 97/23/EC



(daN) 1 Newton : 0.102 Kg.

Cylinder Coupling Fastening

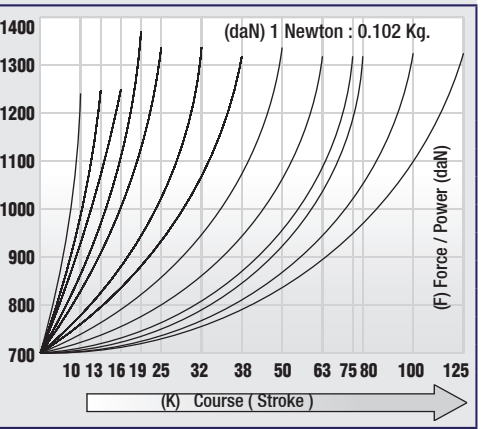




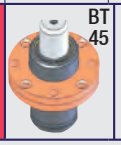
Serial :YO 500

Order YO 700..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.
YO 700 - 10	d: 24 mm **d1: 45** d2: 40 mm d3: 46 mm a: 1 mm b: 4 mm e: 3.5 mm L2: 14.5 R:1 M:8 2 Hole M8 x4 Ø 20	10	52	42	(F) 700 daN	0.39
YO 700 - 13		13	58	45		0.42
YO 700 - 16		16	64	48		0.45
YO 700 - 19		19	70	51		0.48
YO 700 - 25		25	82	57		0.53
YO 700 - 32		32	96	64		0.58
YO 700 - 38		38	108	70		0.62
YO 700 - 50		50	132	82		0.71
YO 700 - 63		63	158	95		0.81
YO 700 - 75		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

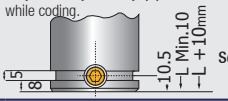
Technical Specifications
Pressure Gase N_2
Max. Pressure (P) 150 Bar
Min. Pressure 25 Bar
Working Temp. 0^0C ve + 80^0C
Max. Working Speed 1.8 m / s
Piston Area (S) 4.52 cm^2
PED 97/23/EC



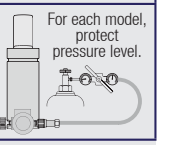
Cylinder Coupling Fastening



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



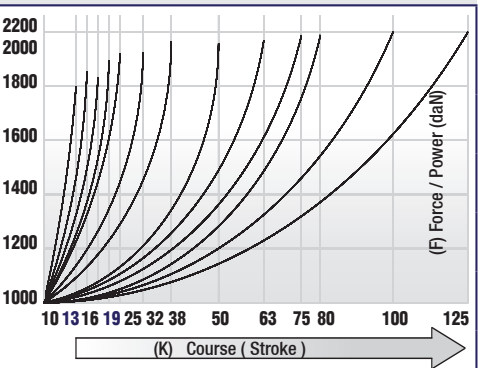
Example: Serial Connection YO 700 S



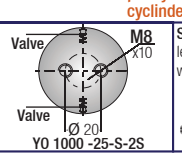
For each model, protect pressure level.

Order SN 1000..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.
SN 1000 - 10	d: 30 mm **d1: 50** d2: 46 mm d3: 46 mm a: 1 mm b: 5 mm e: 4.5 mm L2: 14.5 R:2 M:8 2 Hole M8 x6 Ø 20	10	58	48	(F) 1000 daN	0.57
SN 1000 - 13		13	64	51		0.59
SN 1000 - 16		16	70	54		0.62
SN 1000 - 19		19	76	57		0.65
SN 1000 - 25		25	88	63		0.70
SN 1000 - 32		32	102	70		0.77
SN 1000 - 38		38	114	76		0.83
SN 1000 - 50		50	138	88		0.94
SN 1000 - 63		63	164	101		1.07
SN 1000 - 75		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

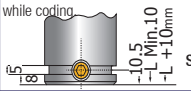
Technical Specifications
Pressure Gase N_2
Max. Pressure (P) 150 Bar
Min. Pressure 25 Bar
Working Temp. 0^0C ve + 80^0C
Max. Working Speed 1.8 m / s
Piston Area (S) 7.07 cm^2
PED 97/23/EC



Pls. specify valve inlet of specify serial connection cyclinders as with 1 or 2 valve options !

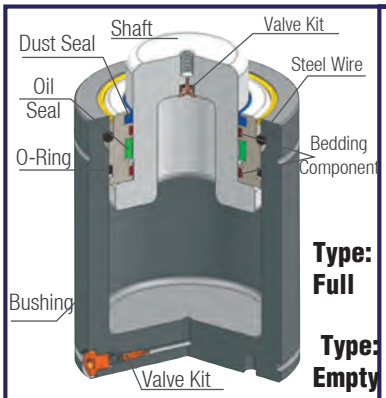


Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



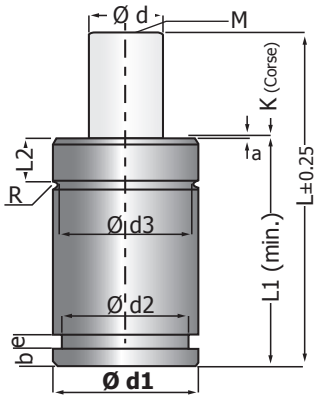
Example: Serial Connection YO 1000 S

Section Press Mould



Serial Connection: Gasless (With Valve)

Standard: Die Gas Spring (Ready /Full)

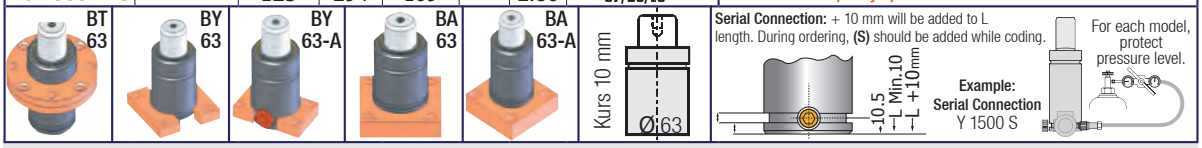


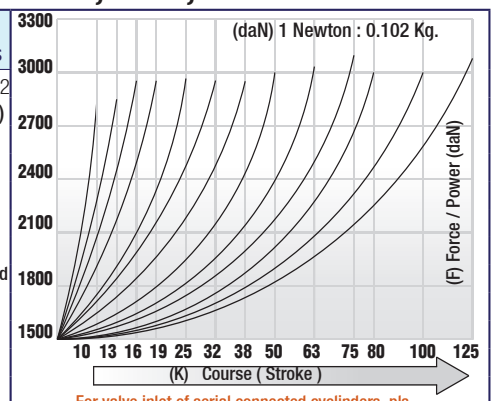
YO Serial Die Gas Spring Technical Drawing Detail

YO Serie Die Gas Springs

Area Saving - Short Length - High Forces

Order YO 1500..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
YO 1500 - 10	d: 36 mm	10	64	54		1.02	Pressure Gase N_2
YO 1500 - 13	**d1: 63**	13	70	57		1.05	Max. Pressure (P)
YO 1500 - 16	d2: 58 mm	16	76	60		1.10	150 Bar
YO 1500 - 19	d3: 59 mm	19	82	63		1.15	Min. Pressure
YO 1500 - 25	a: 1 mm	25	94	69		1.25	25 Bar
YO 1500 - 32	b: 8 mm	32	108	76	(F)	1.35	Working Temp.
YO 1500 - 38	e: 5 mm	38	120	82		1.44	0^0C ve + 80^0C
YO 1500 - 50	L2: 18	50	144	94	1500 daN	1.61	Max. Working Speed
YO 1500 - 63	R:2	63	170	107		1.81	1.8 m / s
YO 1500 - 75	M:8	75	194	119		1.90	Piston Area (S)
YO 1500 - 80	2 Hole	80	204	124		2.06	10.18 cm^2
YO 1500-100		100	244	144		2.38	PED 97/23/EC
YO 1500-125		125	294	169		2.86	





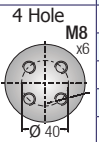
For valve inlet of serial connected cyclinders, pls. specify options as 1's or 2's valves !

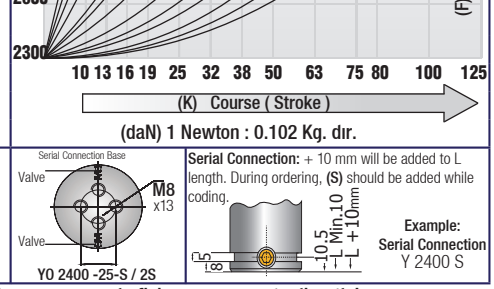
Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.

Example: Serial Connection Y 1500 S

For each model, protect pressure level.

Order YO 2400..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
YO 2400 - 10	d: 45 mm	10	65	55		1.47	Pressure Gase N_2
YO 2400 - 13	**d1: 75**	13	71	58		1.52	Max. Pressure (P)
YO 2400 - 16	d2: 69 mm	16	77	61		1.58	150 Bar
YO 2400 - 19	d3: 70 mm	19	83	64		1.65	Min. Pressure
YO 2400 - 25	a: 1 mm	25	95	70		1.77	25 Bar
YO 2400 - 32	b: 8 mm	32	109	77	(F)	1.93	Working Temp.
YO 2400 - 38	e: 5 mm	38	121	83		2.05	0^0C ve + 80^0C
YO 2400 - 50	L2: 18	50	145	95	2400 daN	2.30	Max. Working Speed
YO 2400 - 63	R:2	63	171	108		2.55	1.8 m / s
YO 2400 - 75	M:8	75	195	120		2.75	Piston Area (S)
YO 2400 - 80	4 Hole	80	205	125		2.85	15.90 cm^2
YO 2400-100		100	245	145		3.28	PED 97/23/EC
YO 2400-125		125	295	170		3.93	





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

Example: Serial Connection Y 2400 S

Pls. always mount Die Gas springs via threaded holes on base or example fixing components directly!

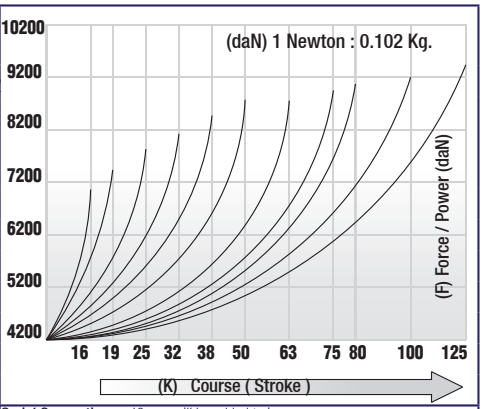
YO Serie Die Gas Springs (For technical drawing details, pls. refer next page upper section)

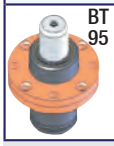
Order YO 4200..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)	Kg.
YO 4200 - 16	d: 60 mm	16	97	81	3.40
YO 4200 - 19	**d1: 95**	19	103	84	3.45
YO 4200 - 25	d2: 88 mm	25	115	90	3.65
YO 4200 - 32	d3: 90 mm	32	129	97	3.82
YO 4200 - 38	a: 1 mm	38	141	103	4.00
YO 4200 - 50	b: 8 mm	50	165	115	4.44
YO 4200 - 63	e: 5 mm	63	191	128	4.95
YO 4200 - 75	L2: 21	75	215	140	5.20
YO 4200 - 80	R:2	80	225	145	5.41
YO 4200 -100	M:8	100	265	165	6.00
YO 4200 -125	4 Hole M8 x7 Ø 60	125	315	190	6.70

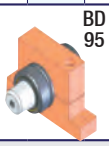
(F) 4200 daN

Technical Specifications
- Pressure Gase N_2
- Max. Pressure (P) 150 Bar
- Min. Pressure 25 Bar
- Working Temp. 0^0C ve + 80^0C
- Max. Working Speed 1.8 m / s
- Piston Area (S) 28.27 cm^2

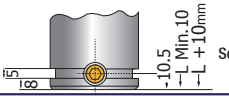
PED 97/23/EC



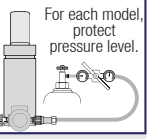




Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.



For each model, protect pressure level.

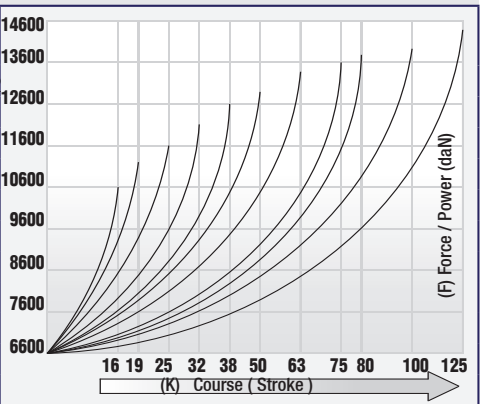


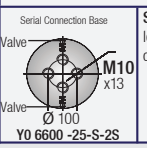
Order YO 6600..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)	Kg.
YO 6600 - 16	d: 75 mm	16	107	91	6.60
YO 6600 - 19	**d1: 120**	19	113	94	6.65
YO 6600 - 25	d2: 112mm	25	125	100	6.82
YO 6600 - 32	d3: 115mm	32	139	107	7.18
YO 6600 - 38	a: 1 mm	38	151	113	7.57
YO 6600 - 50	b: 8 mm	50	175	125	8.18
YO 6600 - 63	e: 5 mm	63	201	138	8.81
YO 6600 - 75	L2: 22.5	75	225	150	8.95
YO 6600 - 80	R:2.5	80	235	155	9.10
YO 6600 -100	M:8	100	275	175	10.7
YO 6600 -125	4 Hole M10 x13 Ø 80	125	325	200	12.5

(F) 6600 daN

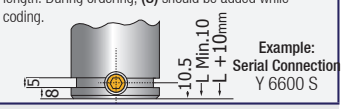
Technical Specifications
- Pressure Gase N_2
- Max. Pressure (P) 150 Bar
- Min. Pressure 25 Bar
- Working Temp. 0^0C ve + 80^0C
- Max. Working Speed 1.8 m / s
- Piston Area (S) 44.18 cm^2

PED 97/23/EC





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



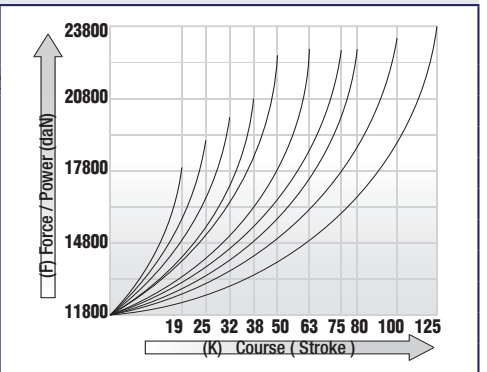
Order YO 11800.	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)	Kg.
YO 11800 -19	d: 100 mm	19	116	97	9.57
YO 11800 -25	**d1: 150**	25	128	103	9.96
YO 11800 -32	d2: 142mm	32	142	110	10.41
YO 11800 -38	d3: 145mm	38	154	116	10.81
YO 11800 -50	a: 1 mm	50	178	128	11.59
YO 11800 -63	b: 8 mm	63	204	141	11.88
YO 11800 -75	e: 5 mm	75	228	153	12.21
YO 11800 -80	L2: 24.5	80	238	158	12.43
YO11800-100	R:2.5	100	278	178	13.51
YO11800-125	M:8	125	328	203	15.14

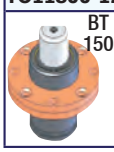
4 Hole M10 x13 Ø 100

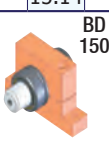
(F) 11800 daN

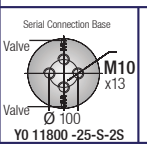
Technical Specifications
- Pressure Gase N_2
- Max. Pressure (P) 150 Bar
- Min. Pressure 25 Bar
- Working Temp. 0^0C ve + 80^0C
- Max. Working Speed 1.8 m / s
- Piston Area (S) 78.54 cm^2

PED 97/23/EC

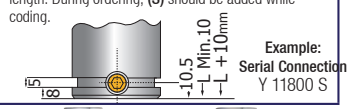


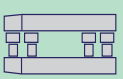






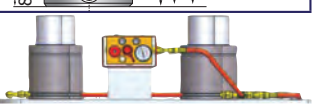
Serial Connection: + 10 mm will be added to L length. During ordering, **(S)** should be added while coding.

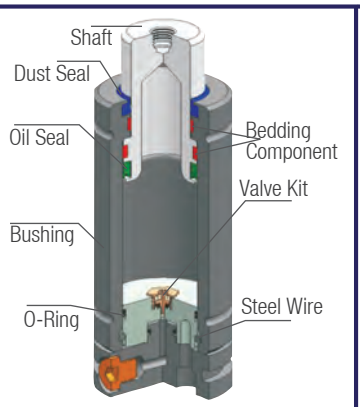




Section Press Mould

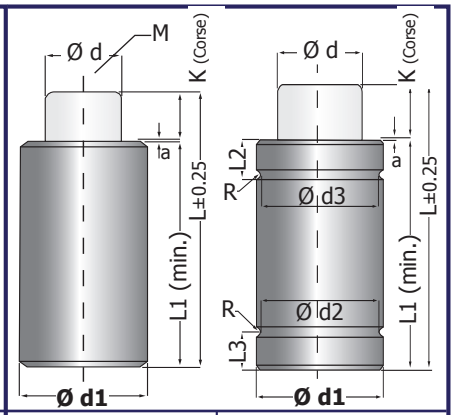
Pls. specify valve inlet of specify serial connection cyclinders as with 1 or 2 valve options !





Serial Connection: Gasless (With Valve)

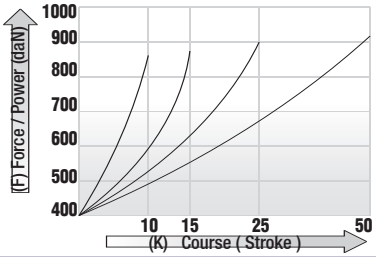
Standard: Die Gas Spring (Ready /Full)



Serial : G 40 - G 75 | Serial : G 100

G Serie Die Gas Springs High Pressure - The Strongest Spring - Less Working Life

Order G 40..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 40 - 10	d: 14 mm **d1: 25** a: 1 mm M:8	10	75	65	(F) 400 daN	0.18	Pressure Gase N_2 Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0°C ve + 80°C Max. Working Speed 1.8 m / s Piston Area (S) 2.84 cm^2
G 40 - 15		15	90	75		0.20	
G 40 - 25		25	120	95		0.24	
G 40 - 50		50	195	145		0.35	

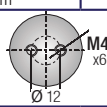


Cylinder Coupling Fastening

At Slot, Volume Ø +1.0 +0.5

Supported Volume Ø +1.0 +0.5

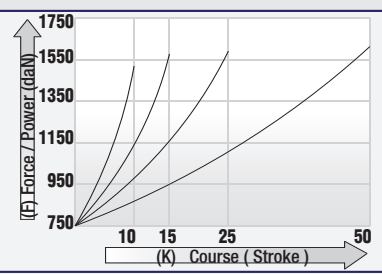
2 Hole



Generally for other connection position of Die Gas springs that have completed their mounting by exhausting with bolt from base in compliance with your mould, select connection type specified at drawing (with code) and request information (technical drawing) for details from our company.

Seri : G 40

Order G 75..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 75 - 10	d: 19 mm **d1: 32** a: 1 mm M:8	10	75	65	(F) 400 daN	0.18	Pressure Gase N_2 Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0°C ve + 80°C Max. Working Speed 1.8 m / s Piston Area (S) 4.91 cm^2
G 75 - 15		15	90	75		0.20	
G 75 - 25		25	120	95		0.24	
G 75 - 50		50	195	145		0.35	

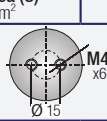


Cylinder Coupling Fastening

At Slot, Volume Ø +1.0 +0.5

Supported Volume Ø +1.0 +0.5

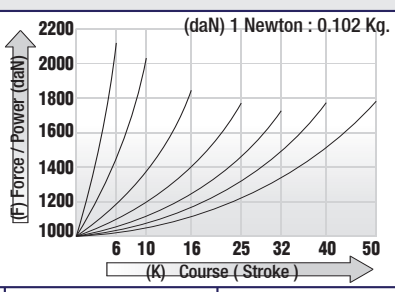
2 Hole



Note: During spring selection, absolutely a spring above criterias should be selected, by assuming that the quality continuity of processed sheet material can be changed, usage criteriar should be adjusted.

Seri : G 75

Order G 100..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 100 - 6	d: 20 mm **d1: 38** d2: 36mm d3: 36mm a: 1 mm L2: 9.5 L3: 10.5 R:1 M:8	6	61	55	(F) 1000 daN	0.36	Pressure Gase N_2 Max. Pressure (P) 150 Bar Min. Pressure 25 Bar Working Temp. 0°C ve + 80°C Max. Working Speed 1.8 m / s Piston Area (S) 7.07 cm^2
G 100 - 10		10	75	65		0.41	
G 100 - 16		16	100	84		0.48	
G 100 - 25		25	135	110		0.58	
G 100 - 32		32	167	135		0.62	
G 100 - 40		40	195	155		0.68	
G 100 - 50		50	230	180		0.74	

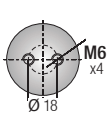


Cylinder Coupling Fastening

At Slot, Volume Ø +1.0 +0.5

Supported Volume Ø +1.0 +0.5

2 Hole

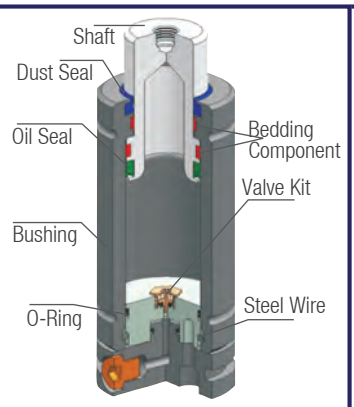


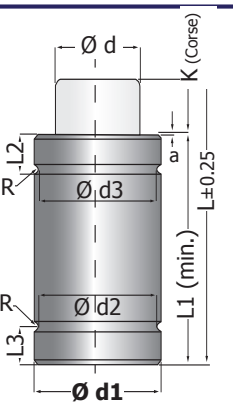
BT 38

Contd 121-123

Pls. always mount Die Gas springs via threaded holes on base or example fixing components directly!

Seri : G100

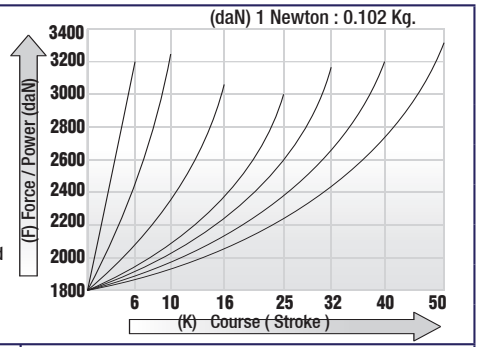




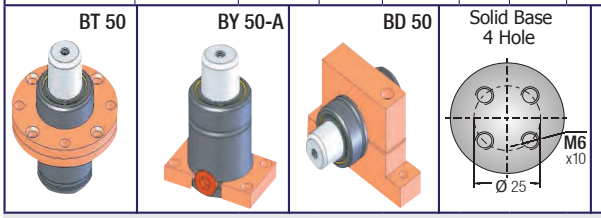
Serial Connection: Gasless (With Valve) | Standard: Die Gas Spring (Ready /Full)

G Serie Die Gas Springs High Pressure - The Strongest Spring - Less Working Life

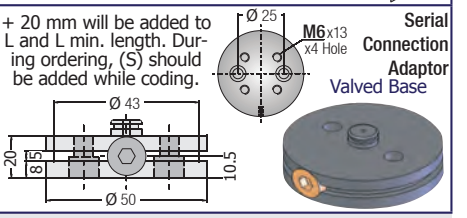
Order G 180..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 180 - 6	d: 30 mm	6	66	60		0.71	Pressure Gase N_2
G 180 - 10	**d1: 50**	10	80	70		0.78	Max. Pressure (P) 150 Bar
G 180 - 16	d2: 46mm d3: 46mm	16	106	90	(F)	0.91	Min. Pressure 25 Bar
G 180 - 25	a: 1 mm	25	135	110	1800 daN	1.04	Working Temp. 0°C ve + 80°C
G 180 - 32	L2: 13.5 L3: 14.5	32	162	130		1.12	Max. Working Speed 1.8 m / s
G 180 - 40	R:2 M:8	40	190	150		1.21	Piston Area (S) 12.57 cm^2
G 180 - 50		50	220	170		1.33	



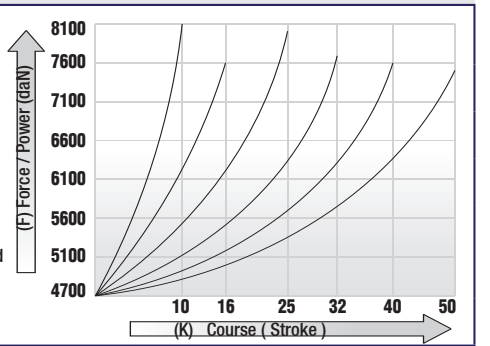
BT 50 | BY 50-A | BD 50 | Solid Base 4 Hole



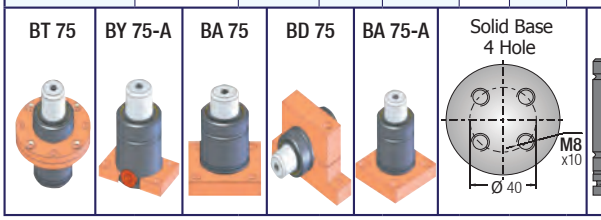
+ 20 mm will be added to L and L min. length. During ordering, (S) should be added while coding.



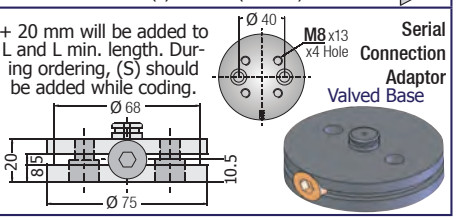
Order G 470..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 470 - 10	d: 50 mm	10	80	70		1.85	Pressure Gase N_2
G 470 - 16	**d1: 75** d2: 70mm	16	106	90		2.11	Max. Pressure (P) 150 Bar
G 470 - 25	d3: 70mm a: 1 mm	25	135	110	(F)	2.34	Min. Pressure 25 Bar
G 470 - 32	L2: 17 L3: 18	32	167	135	4700 daN	2.54	Working Temp. 0°C ve + 80°C
G 470 - 40	R:2.5 M:8	40	200	160		2.77	Max. Working Speed 1.8 m / s
G 470 - 50		50	240	190		3.06	Piston Area (S) 31.17 cm^2



BT 75 | BY 75-A | BA 75 | BD 75 | BA 75-A | Solid Base 4 Hole

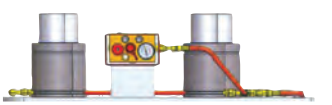


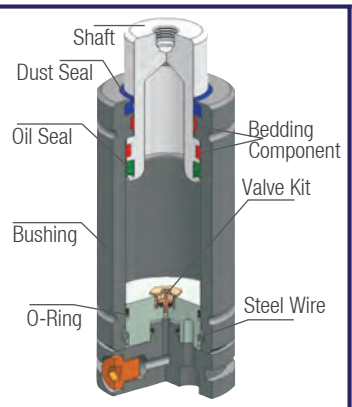
+ 20 mm will be added to L and L min. length. During ordering, (S) should be added while coding.



Section Press Mould

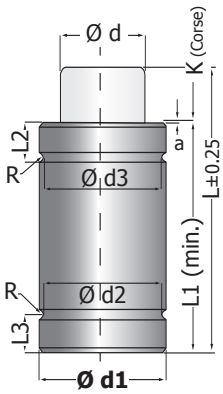
Pls. specify valve inlet of specify serial connection cyclinders as with 1 or 2 valve options !





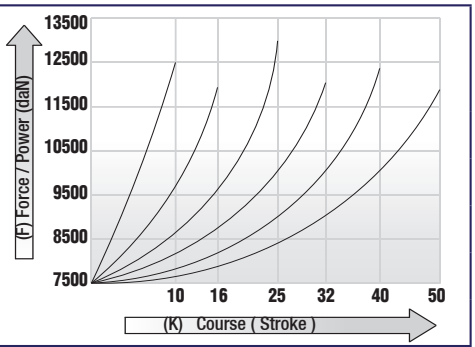
Serial Connection: Gasless (With Valve)

Standard: Die Gas Spring (Ready /Full)

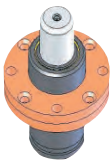


G Serie Die Gas Springs High Pressure - The Strongest Spring - Less Working Life

Order G 750..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 750 - 10	d: 55 mm	10	90	80	(F) 7500 daN	2.94	Pressure Gase N_2
G 750 - 16	**d1: 95**	16	116	100		3.32	Max. Pressure (P) 150 Bar
G 750 - 25	d2: 90mm d3: 90mm	25	145	120		3.73	Min. Pressure 25 Bar
G 750 - 32	a: 1 mm L2: 20	32	182	150		4.32	Working Temp. 0^0C ve + 80^0C
G 750 - 40	L3: 21 R:2.5	40	210	170		4.72	Max. Working Speed 1.8 m / s
G 750 - 50	M:8	50	255	205		5.38	Piston Area (S) 50.27 cm^2

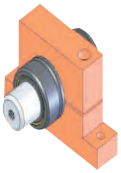


BT 50

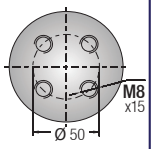


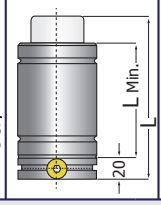
BY 50-A

BD 50

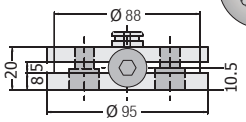


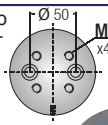
Solid Base 4 Hole





+ 20 mm will be added to L and L min. length. During ordering, (S) should be added while coding.



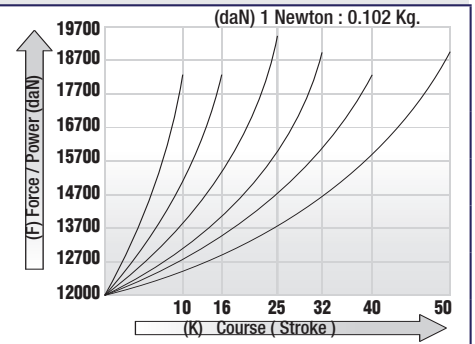


Serial Connection Adaptor

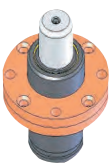
Valved Base

Order G 1200..	Cylinder Measures	Stroke (K)	Length (L)	Cylinder (L1)		Kg.	Technical Specifications
G 1200- 10	d: 70 mm	10	100	90	(F) 1200 daN	5.47	Pressure Gase N_2
G 1200- 16	**d1: 120**	16	126	110		6.07	Max. Pressure (P) 150 Bar
G 1200- 25	d2:115mm d3:115mm	25	155	130		6.80	Min. Pressure 25 Bar
G 1200- 32	a: 1 mm L2: 21.5	32	187	155		7.60	Working Temp. 0^0C ve + 80^0C
G 1200- 40	L3: 22.5 R:2.5	40	220	180		8.38	Max. Working Speed 1.8 m / s
G 1200- 50	M:8	50	260	210		9.39	Piston Area (S) 78.54 cm^2

(daN) 1 Newton : 0.102 Kg.

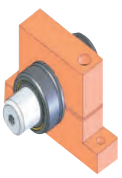


BT 120

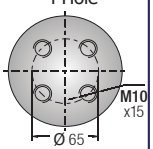


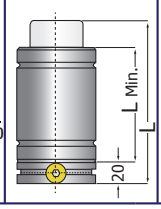
BY 120 - A

BD 120



Solid Base 4 Hole





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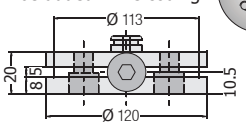
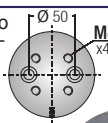
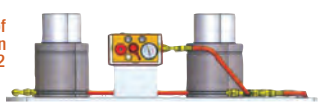


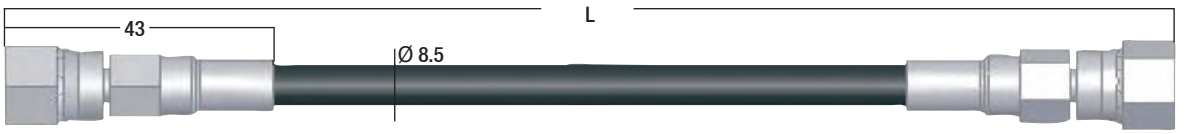


Serial Connection Adaptor

Valved Base

Pls. specify valve inlet of specify serial connection cyclinders as with 1 or 2 valve options !





SERIAL CONNECTION; HOSE (JUNCTION) SYSTEMS

GHS

Order Code	L (Length) mm
GHS 180	180
GHS 200	200
GHS 300	300
GHS 400	400
GHS 500	500
GHS 630	630
GHS 800	800
GHS 1000	1000
GHS 1250	1250
GHS 1500	1500
GHS 2000	2000

Order : HRM.. x L (Length)

Hose Systems:

From Serial SN 500 to SN 1000

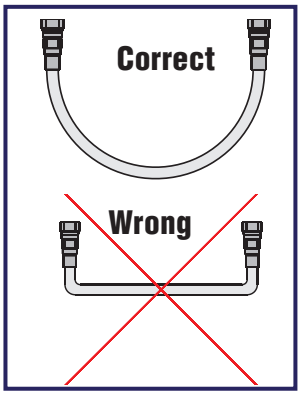
From Serial Y 700 to Y 6600

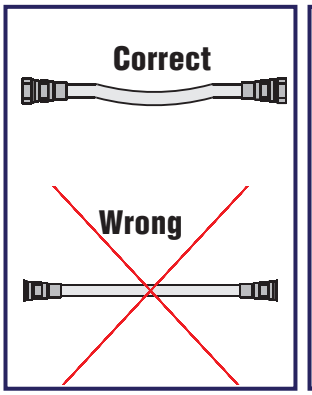
From Serial YO 700 to YO 11800

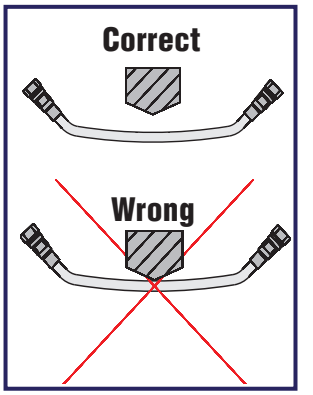
From Serial G 180 to G

1200 Includes Die Gas cyclinders.

Criterias in order to insert hoses in a correct way



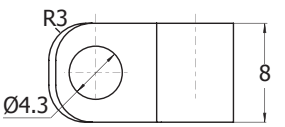


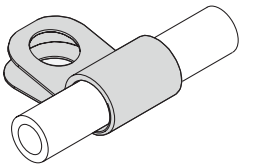


Before beginning this process, ensure that all pressure is discharged and piston is withdrawn completely. In cases that any mounting / inserted part is removed, ensure that control pressure is discharged completely over control panel. Hoses should be stable in flat position in the system.
(Bending diamater is 13 mm)
Working Temp. : 40 ÷ + 100^{0}C'dir.

HOSE CLIPS

HK

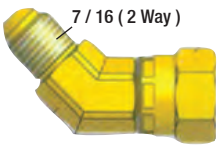




It is used as hose clips in fastening systems.
It can be added to 2 Piece HK 'L' length in your hose order.

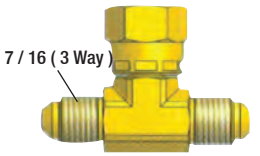
SERIAL CONNECTION: JUNCTION ADAPTORS

Yellow Material for Die Gas Spring / Pressure Systems



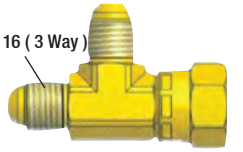
Nut 45º Elbow

Order : SD 45 7/16''UNF



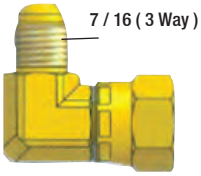
Nut 'T' Coupling

Order : SBT 7/16''UNF



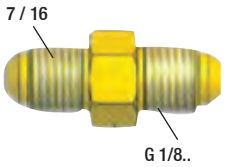
Nut Side 'T' Coupling

Order : SBYT 7/16''UNF



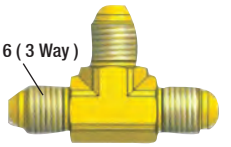
Nut 90º Elbow

Order : SD 90 7/16''UNF



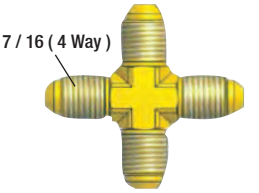
Threaded Reduction

Order : DR 7/16''UNF - G1/8''



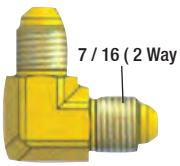
Threaded 'T'

Order : DT 7/16''UNF



Threaded Quartet Coupling

Order : DDB 7/16''UNF



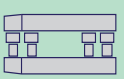
Threaded Elbow

Order : DD 7/16''UNF

PIPE COUPLERS / SEALING - TEFLON BAND WINKELL

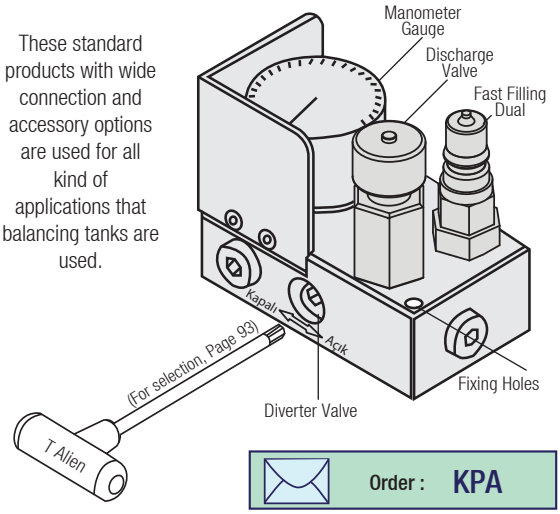
Pipe coupler with/without couplers are sealed threaded bolts against water, oil, gas and chemicals safely.
* It is the newest product used instead of hemp, teflon etc.
* High Quality Filling * 150 - 200oC Heat Protective

Order	Packing
678.511.5	50 ml.
678.511.25	250 ml.



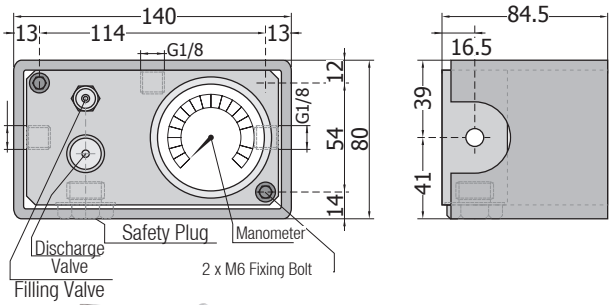
Section Press Mould

These standard products with wide connection and accessory options are used for all kind of applications that balancing tanks are used.



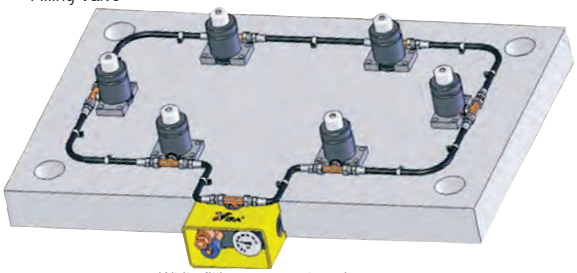
SERIAL CONNECTION: CONTROL PANEL KPA

Serial Connection Systems, Router Unit

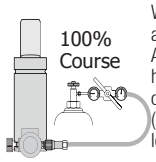


Order : **KPA**

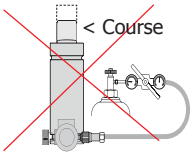
Standard Control Panel to change pressure, to adjust and to control fastening system.
It is consisted from manometer connected, steel plate, filling and discharge valves, 3 Pieces Outlet and steel casing that safety disc can be connected when desired.

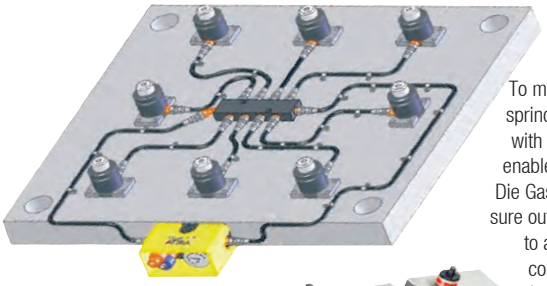


SERIAL CONNECTION, PRACTICAL EXAMPLES



While filling, ensure that piston arm is **100 %** removed.
At cyclinders not having threaded hole on rod, to remove arm completely, first fill up to **Bar 5** (**75 psi**), then fill up to required level.

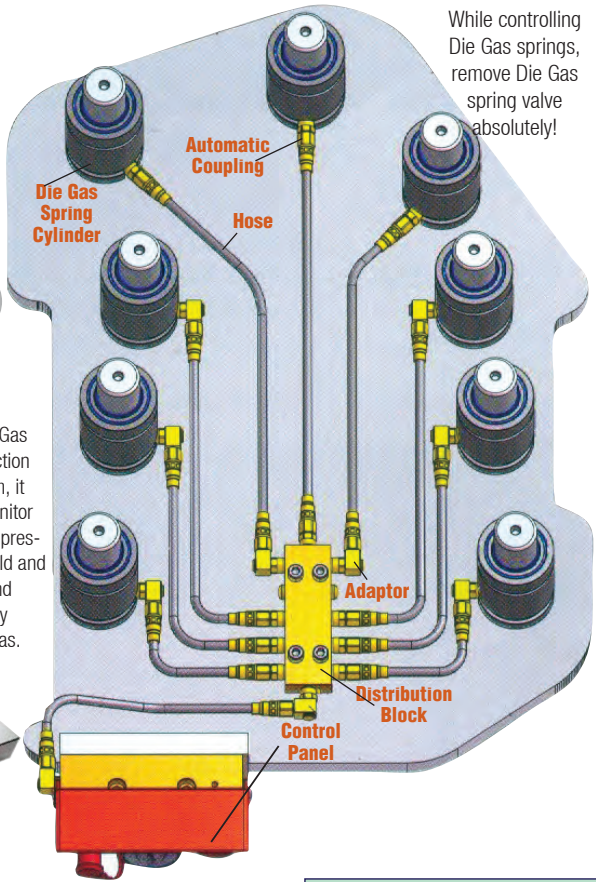


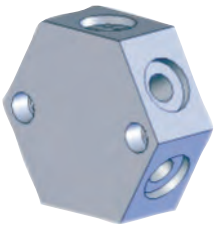


To make Die Gas spring connection with a system, it enables to monitor Die Gas spring pressure out of mould and to adjust and correct it by reincrease gas.

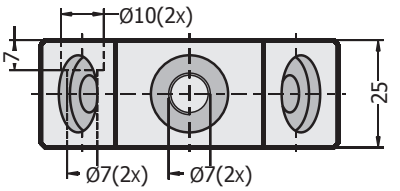
Controlled Ganifold Systems assy Spring
Designed by the User

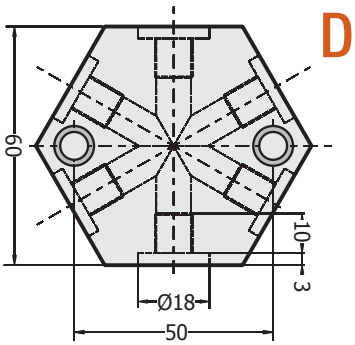
While controlling Die Gas springs, remove Die Gas spring valve absolutely!

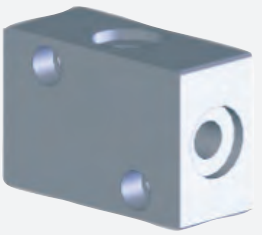




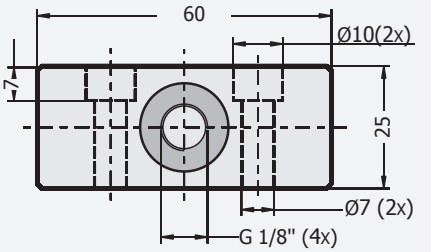
Order :
DBC 6

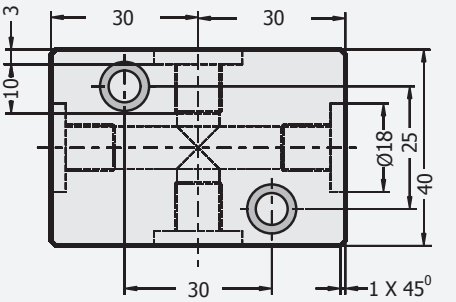


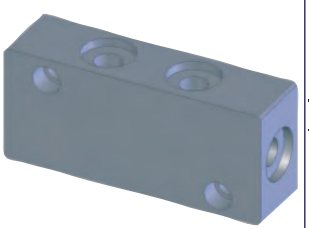




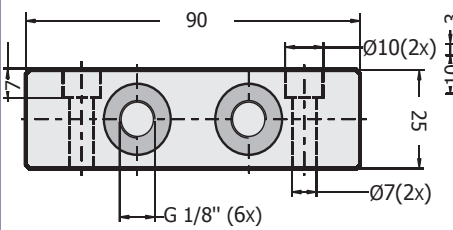
Order :
DB 4

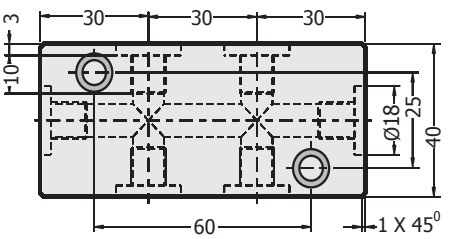


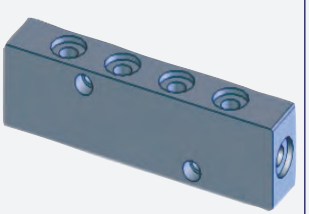




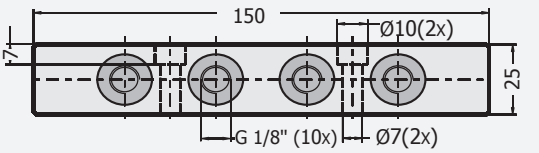
Order :
DB 6

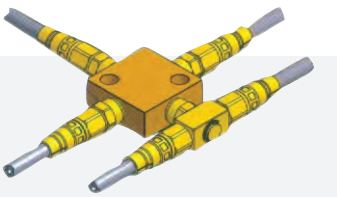


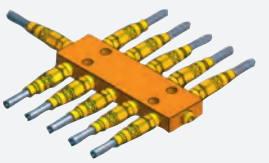


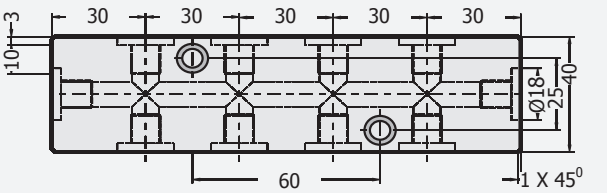


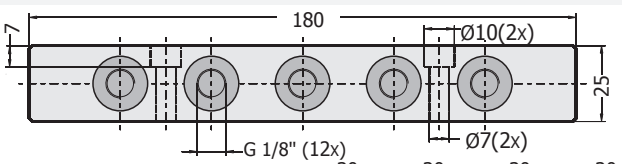
Order :
DB 10

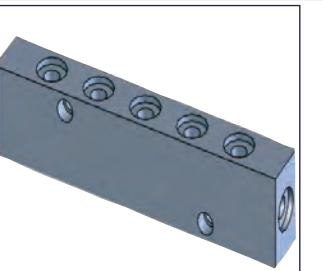




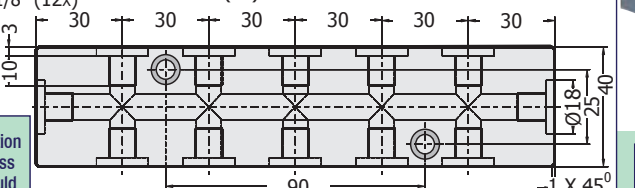


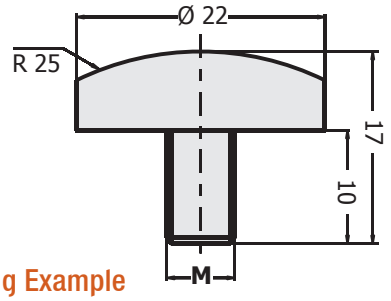




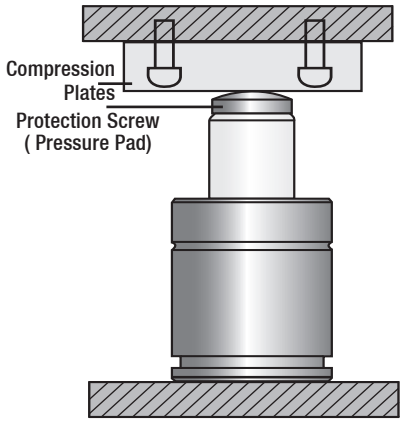


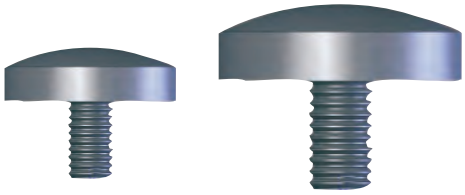
Order :
DB 12





Mounting Example





Die Gas Spring CLUTCH PADS HRM

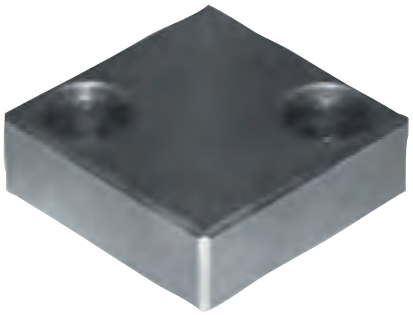
Piston Protection (Balancing / Straightening) Head

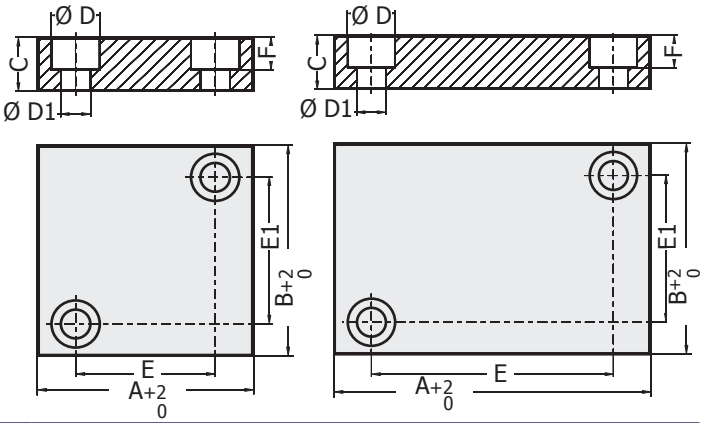
Order Codeu	M
HRM 6	M6 x 10
HRM 8	M8 x 10

Order : **HRM X M**

Material : 1.1731
Superficially hardened

For M6 and M8 Threaded Piston Shaft, Die Gas Springs:
It is a useful product that protects piston head and absorbs clamping occurred on mould. Our company also recommends to use Die Gas Springs. In cases that stamp comes inclined or if there are parts that are displaced laterally, hardened compression pad decreases lateral pressure. Using pressure plate with compression pads, lateral load resistance of Die Gas Springs is increased. This is made by decreasing friction, even in cases that compression pad is not used, using the compression plate will be very useful for your system.





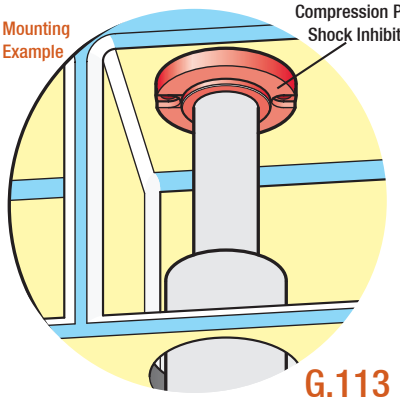
COMPRESSION PLATES FOR Die Gas Springs CRUSH PLATES EP

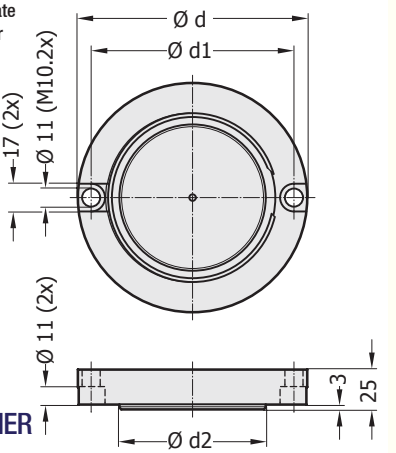
Order	A mm	B mm	C mm	Ø D	Ø D1	E	E1	F	Die Gas Spring Model
EP 40	40	40	15	15	9	21	21	10	SN:150-250-500 / Y:300-500 / YO:300-500 / G:40-75-100
EP 56	56	56	20	18	11	32	32	13	SN:750-1500 / Y:700-1000 / YO:700-1000-1500 / G:180
EP 71	71	71	20	18	11	48	48	13	SN:3000-5000 / Y:2400 / YO:2400-4200 / G:470-750
EP 50	50	25	12	11	7	32	8	8	SN:250 / Y:300 / YO:300
EP 55	55	30	12	11	7	40	14	8	SN:500 / Y:500 / YO:500 / G:40-75-100
EP 70	70	35	15	15	9	48	14	10	SN:750 / Y:700 / YO:700
EP 75	75	50	15	15	9	56	30	10	SN:1500 / Y:1000 / YO:1000-1500 / G:180
EP 85	85	60	15	15	9	66	40	10	SN:3000 / Y:2400 / YO:2400 / G:470
EP 100	100	80	20	18	11	72	56	12	SN:5000 / Y:4200 / YO:4200 / G:750
EP 110	110	100	20	18	11	85	45	12	SN:7500-10000 / Y:6600 / YO:6600-11800 / G:1200

Note: Especially at Die Gas Springs having wide stroke capacity, we recommend to use pad and compression plate combination... !

Order : **EP .A x B**

Material : 1.2842
Hardened





G.113

COMPRESSION PLATE SHOCK DAMPENER

Shock Dampener / Noise Preventer

(daN) 1 Newton : 0.102 Kg.

Order	Die Gas Spring Force F: (daN)	d	d1	d2
G.113.58	750 - 1500	108	91	58
G.113.92	> 1500 - 6600	143	126	92
G.113.122	> 6600 - 10000	167	150	112

Shock dampener clutch plates are designed to minimize main problems of press mould in sheet processings. Specially designed shock inhibitor unit has been developed to reduce following the issues.

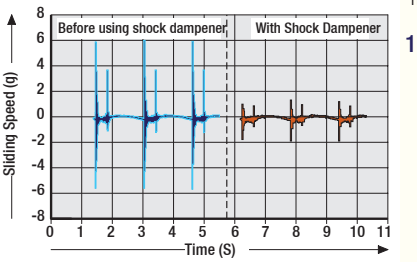
- Excessive Impact Amount
- In terms of press and high costs developed correspondingly
- High Volume Levels
- Low Quality Production Risk

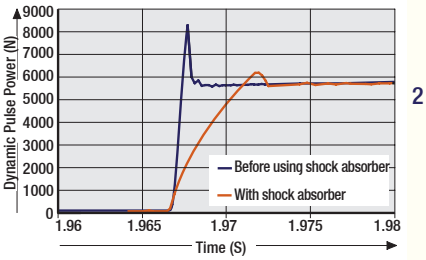
In case of using shock inhibitor clutch plate Die Gas Springs:

* After maximum 3 mm's shock dampener course, Die Gas Spring shock dampener compression plate reaches its previous spring Power.
* Shock inhibitor compression plate should be mounted between mould plate and Die Gas Spring piston shaft.

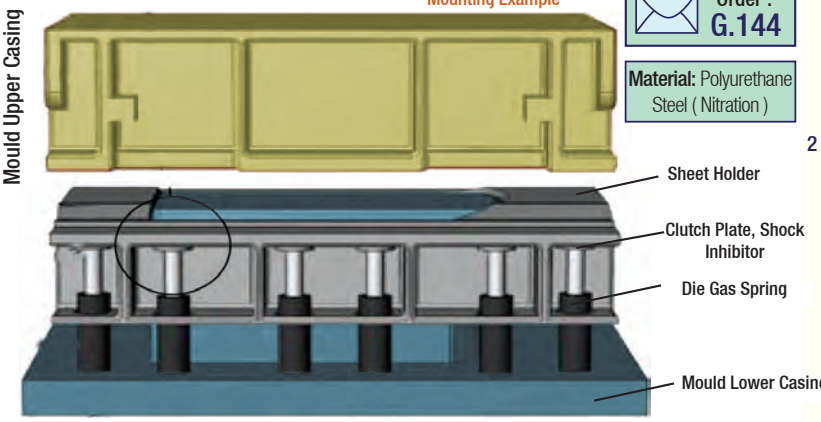
Working Temperature : Between 0°C and 80°C
Recommended Stroke / Min : 20
Max. Stroke Speed : 1.6 m / s
Max. Shock Inhibitor Course : 3 mm

Shock Dampener, Working Diagram (Function)





Mounting Example



Order : G.144

Material: Polyurethane Steel (Nitration)

APPLICATION OF

Die Gas Springs faciliate storing and preparation of moulds for production .

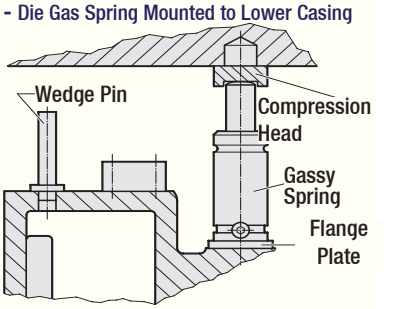
Using Die Gas Springs at great sheet mould is becoming increasingly popular. This system faciliates to storage moulds and shortens the time between storage and production. Die Gas Springs are mounted to both upper and lower casings. The processes over Die Gas Springs should be done after removing the mould from the press.

At application example 1 and 2, special compression head is shown, when these products are in mould press, before compressing, Die Gas Spring is placed to the place that piston will be pressed. During removing from press or storage, upper mould casing stays on Die Gas Springs. Wedge pins are for security after Die Gas Spring. When moulds are stacked, increased weight can cause crushing of springs, in this case, they are fitted on upper mould wedge pins. When upper moulds are removed, Die Gas Springs lift the upper casing again.

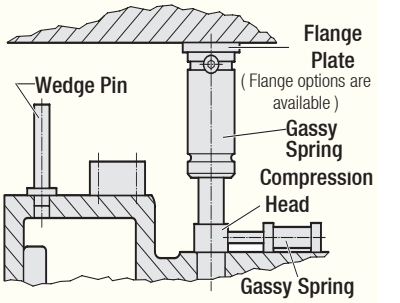
While preparing for production, springs enable reach various parts of moulds. When mould is connected to mould press, before stamping, wedge pins and head should be removed.

In significant Status: Warning signs should be placed on the mould. Die Gas Springs on mould may not be visible from the outside.

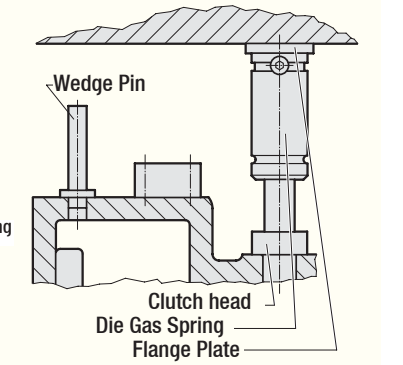
1 - Die Gas Spring Mounted to Lower Casing



2 - Die Gas Spring Mounted to Lower Casing

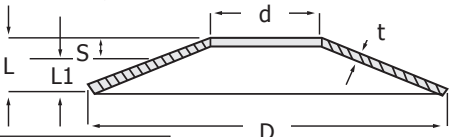


2 - Die Gas Spring Mounted to Upper Casing



DISC / DISH SPRINGS DCY

Short Springs Fixed With DIN 2093 Shaft



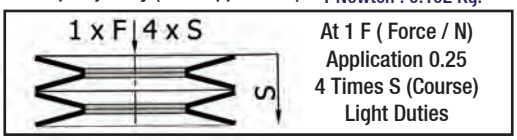
d: Spring Inner Hole Dia
D: Outer Spring Dia.
t: Spring Thickness
L: Free length
L1: Loading Length
F max: Flex Force
S: Flex Length Course / Motion

Disc Springs: At very short working courses, it provides resistance to higher forces. The advantage of springs with very short spring is that when the pressure is applied, it produces high power with less motion. Disc springs sometimes can be used alone and also as stacked Array Sets.

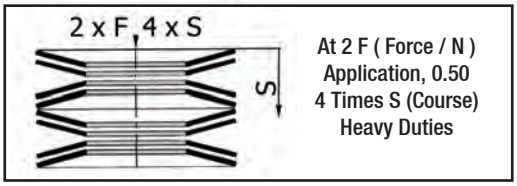
50 CrV (-15 / +1500 Resistance) Heat Resistance N (-25 / + 200) Voltage

Dish Spring Working Courses: Applied Forces (F/ N) should be designed according to the working courses. Specifying the working courses should be according to the hole thickness (t) internal wall. L: 0.25 (1/4) or 0.50 (1/2) of free length. In addition, with motion up to 0.75 (3/4), different forces (F/N) per each course value may be applied . F =N / S = mm / course

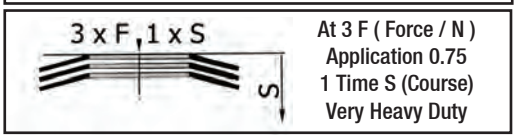
Dish Spring Array (Load Application) 1 Newton : 0.102 Kg.



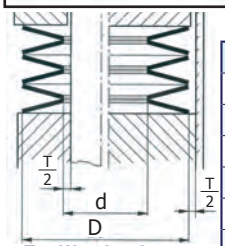
At 1 F (Force / N)
Application 0.25
4 Times S (Course)
Light Duties



At 2 F (Force / N)
Application, 0.50
4 Times S (Course)
Heavy Duties



At 3 F (Force / N)
Application 0.75
1 Time S (Course)
Very Heavy Duty



T = Working Space

Fixing with Dish Spring Shaft

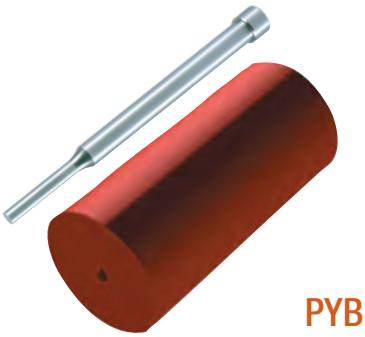
D	T
> 8 - 16	0.2
> 16 - 20	0.3
> 20 - 26	0.4
> 26 - 34	0.5
> 34 - 50	0.6
> 50 - 100	0.8

DISC / DISH SPRINGS (Plate Springs) DCY

d Ø	D Ø	t mm	L mm	L1 mm	F Nw	Order
3.2	8	0.30	0.55	0.36	104	100 Piece
		0.50	0.70	0.55	357	
4.2	8	0.40	0.60	0.45	209	
3.2	10	0.30	0.65	0.39	98	100 Pieces Package
		0.40	0.70	0.48	179	
4.2	10	0.50	0.75	0.56	294	
		0.60	0.85	0.66	502	
5.2	10	0.40	0.70	0.48	209	
		0.50	0.75	0.56	325	
4.2	12	0.40	0.80	0.50	178	100 Pieces Package
		0.50	0.85	0.59	284	
5.2	12	0.50	0.90	0.60	349	
		0.60	0.95	0.69	506	
6.2	12	0.50	0.85	0.59	326	
		0.60	0.95	0.69	551	
6.2	12.5	0.50	0.85	0.59	293	
		0.70	1.00	0.78	659	
7.2	14	0.50	0.90	0.60	279	50 Pieces Package
		0.80	1.10	0.87	796	
5.2	15	0.40	0.95	0.54	175	
		0.60	1.05	0.71	407	
6.2	15	0.50	1.00	0.63	289	
		0.70	1.10	0.80	577	
8.2	15	0.70	1.10	0.80	665	
		0.80	1.20	0.90	982	
8.2	16	0.40	0.90	0.53	154	50 Pieces Package
		0.60	1.05	0.71	410	
		0.90	1.25	0.99	1012	
6.2	18	0.50	1.10	0.65	245	
		0.70	1.25	0.84	552	
8.2	18	0.80	1.30	0.92	582	
		1.00	1.40	1.10	1181	
9.2	18	0.70	1.20	0.83	566	
		1.00	1.40	1.10	1253	
8.2	20	0.60	1.30	0.77	412	50 Pieces Package
		0.80	1.40	0.95	751	
		1.00	1.55	1.14	1294	
10.2	20	0.80	1.35	1.94	748	
		1.00	1.55	1.14	1414	

d Ø	D Ø	t mm	L mm	L1 mm	F Nw	Order
8.2	23	0.80	1.55	0.99	718	50 Pieces Package
		0.90	1.60	1.07	918	
10.2	23	1.00	1.70	1.17	1315	
12.2	25	0.70	1.60	0.92	599	
		0.90	1.60	1.07	862	
10.2	28	0.80	1.75	1.04	661	
		1.00	1.90	1.23	1129	
14.2	28	0.80	1.80	1.05	801	
		1.00	1.80	1.20	1107	
16.3	31.5	1.25	2.15	1.48	1912	
		1.50	2.40	1.73	3228	
12.3	34	1.25	2.35	1.53	1814	25 Pieces Package
		1.50	2.50	1.75	2719	
14.3	34	1.25	2.40	1.54	1988	
		1.50	2.55	1.76	2982	
16.3	34	1.50	2.55	1.76	3153	
		2.00	2.85	2.21	5779	
14.3	40	1.50	2.75	1.81	2544	
		2.00	3.05	2.26	4766	
16.3	40	1.50	2.80	1.83	2748	
		2.00	3.10	2.28	5166	
20.4	40	2.00	3.10	2.28	5698	
		2.50	3.45	2.74	9384	
22.4	45	1.75	3.05	2.08	3644	
		2.50	3.50	2.75	7712	
20.4	50	2.00	3.50	2.38	4685	
		2.50	3.85	2.84	7915	
25.4	50	2.00	3.40	2.35	4760	
		2.50	3.90	2.85	9058	
		3.00	4.10	3.28	11970	
20.5	60	2.50	4.03	2.95	7293	
		3.00	4.70	3.42	11563	
30.5	60	3.00	4.70	3.42	13219	
		3.50	5.00	3.88	18143	
40.5	70	4.00	5.06	4.04	23338	10 Pieces Package
		5.00	6.20	5.30	33653	
31	80	4.00	6.10	4.50	19384	
41	80	3.00	5.30	3.58	10512	
		5.00	6.70	5.42	33541	
41	100	5.00	7.75	5.69	32344	
51		6.00	8.20	6.55	47995	

Order : DCY. d x D x t

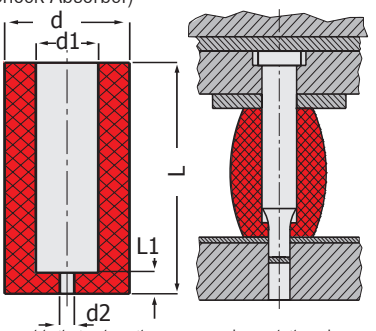


PYB

POLYURETHANE PUNCH STRIPPER

HSS Overspreads on HSS Punch

(Shock Absorber)



At moulds that polyurethane scraper is used, there is no need to dismantle scraper plate to make repair whetting and modificaiton on mould components, there is not any effect on presicion parts, it is excellent for all painted / anodized, plastic plated and polished parts. It is compatible to use with oil and grease. Overspreads on poliurethane scraper punch. Placement is done according to the scraper hardness. There is no need for extra holder. Stepped-Punch hole will be opened at first stroke of press and scraper edge. Especially, at large moulds requiring very wide scraper plate, this product is very compatible.

Poliurethane Springy, Scraper/ Ejector-Bushes

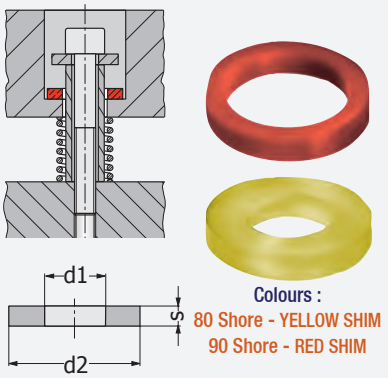
Order	d1 Ø	d Ø	d2 Ø	L1 mm	L mm	Punch Length
PYB.445	4.0	17	1.6	5.0	45	56 / 63
PYB.655	6.0	19			55	63 71 80 90
PYB.855	8.0	21	3.0 Punch Hole			
PYB.1055	10	23				
PYB.1355	13	26				
PYB.1655	16	30				
PYB.2071	20	38				100
PYB.2550	25	50				

d2: (1.6 - 3.0 mm) (d1) While opening hole diameter / drilling, polyurethane (punch) bush should be applied and drilled in pressed (S max) position. Spring load is obtained while extending outwards.

At S.max flexion, load coefficient data daN / Kg.

Da mm		17	19	21	23	26	30	38	50
Smax	60	65	65	70	90	110	140	310	370
	110	12	120	130	160	190	210	380	650
	-	180	180	210	240	300	370	550	1020

S max: Load coefficient daN = Kg. / (10 Newton), while poliurethane bush Smax in pressed, load data is advisory.



Colours :
80 Shore - YELLOW SHIM
90 Shore - RED SHIM

POLYURETHANE SHIM (Washers)

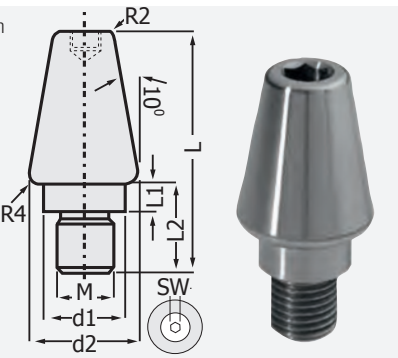
Shock / Noise / Vibration Inhibitor Shims

Shock dampener washers are designed to minimize main problems at press mould during sheet processing.

Including Yellow / Red

d2	d1	s
Ø 16	6.5	3 mm
	11	4 mm
Ø 20	8.5	3 mm
	11	4 mm
	13	5 mm
Ø 25	10.5	3 mm
	12	4 mm
	14	5 mm
Ø 32	13.5	3 mm
	18	4 mm
	21	5 mm
	23.5	6 mm
	25	7 mm
Ø 40	13.5	5 mm
	17	6 mm
	21	7 mm
	32	8 mm
Ø 50	17	6 mm
	26	7 mm
	32	8 mm
	37	10 mm
Ø 63	17	6 mm
	32	10 mm
Ø 80	21	8 mm
	42	10 mm
Ø 100	21	10 mm

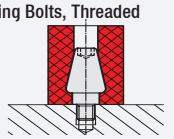
Order :
PRP (Hardness/Colour) x d1 x d2 x s



POLYURETHANE DOWELS

Polyurethane Springs, Centering Bolts, Threaded

Cylindrical polyurethane springs cut in the desired dimensions is fixed and centered with centering bolts. **Threaded model**

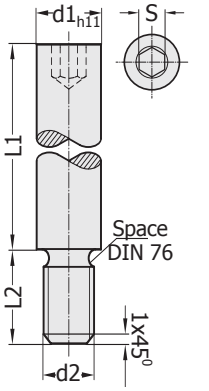


POLIURETHANE DOWELS **PSP**

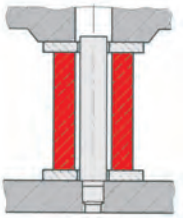
P. SPRING	M	L	d1	d2	L1	L2	SW
Ø 63	M12	56	19	28	8	26	6
		64	18	28	10	24	6
Ø 80 Ø 100	M16	68	22	32	10	28	6
		74	22	32	10	34	8
Ø 125 Ø 140	M20	72	28	38	10	32	10
		100	28	38	15	45	10

Order :
PSP. M x L

Material : 1.0503 (CK 45)



POLYURETHANE GUIDE PINS PYP



During guiding of polyurethane springs, countersunk allen head metric thread connected guide columns can be used as single spring as well as cluster by dividing springs.

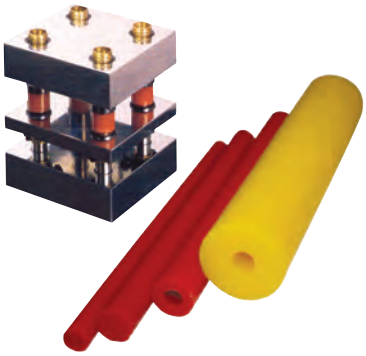
P.SPRING	d1	L1	d2	L2	S
Ø 16 x 6.5	Ø 6 mm	20	M4	6 mm	3 Alien
		25			
		32			
Ø 20 x 8.5	Ø 8 mm	25	M6	9 mm	4 Alien
		32			
		40			
		50			
Ø 25 x 10.5	Ø 10 mm	25	M8	15 mm	5 Alien
		32			
		40			
		50			
		63			
Ø 32 /40 x 13.5	Ø 13 mm	32	M10	15 mm	6 Alien
		40			
		50			
		63			
		80			
		95			
Ø 50 /63 x 17	Ø 16 mm	32	M12	18 mm	8 Alien
		40			
		50			
		63			
		80			
		95			
		118			
		140			
Ø 80 /100 x 21	Ø 20 mm	40	M16	25 mm	10 Alien
		50			
		63			
		80			
		95			
See page 132 for support in mounting, shim selections		118			
		140			
		180			

Order :
PYP. d1x L1

Material : 1.7131
Hardness 58 - 62 HRC

Continous Stock Product

GTH



POLYURETHANE SPRINGS PY...

Circular Section, Solid and Perforated Type

Colours According to Hardness Values :

80 SHORE Hardness (Flexion %35) - YELLOW SPRING
90 SHORE Hardness (Flexion %25) - RED SPRING

80 SHORE

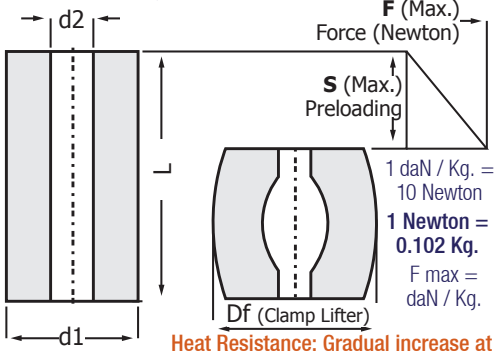
d1 Ø	d2 Ø	L mm
16	Loaded 6.5	310
20	Loaded 8.5	310
25	Loaded 10.5	310
32	Loaded 13.5	310
40	Loaded 13.5	310
50	Loaded 17	310
63	Loaded 17	310
80	Loaded 21	310
100	Loaded 21	310
125	Loaded 37	310

90 SHORE

d1 Ø	d2 Ø	L mm
16	Loaded 6.5	310
20	Loaded 8.5	310
25	Loaded 10.5	310
32	Loaded 13.5	310
40	Loaded 13.5	310
50	Loaded 17	310
63	Loaded 17	310
80	Loaded 21	310
100	Loaded 21	310
125	Loaded 37	310

Polyurethane / Elastomer Springs:
In cases that parts will be produced in small amounts, making expensive mould designs are not recommended. For such situations, we present the **GTH** affordable alternatives in our catalogue. Polyurethane springs such as cushion Guide Screw, scrapers, extractors, forming pads and spring components.

POLYURETHANE, MOULD COMPRESSION SPRINGS



PM...

Heat Resistance: Gradual increase at hardness under70^{0}C / 18^{0}C

Polyurethane Springs: They do not create any problem at water / oil emulsions (resistance to thermal shock). There do not have any abrasion effecs that can be distinguished with fixed and high load under normal temperature and environmental conditions at serial motion moulds. Especially, they are efficient in ambients that do not require magnetization. Forming elastomers can be processed with ordinary machine tools as well as can be process with traditional cutting tools (with sharp cutting edge). Polyurethane compression spring is incompressible material, spring load is obtained by extending outwards. Most of the expansion is reflected outwards, **when desired higher flexion, selected spring is cut into two pieces from center, then metal thick shim is inserted, thus flexion is increased two times. Pin Diameter** of polyurethane compression springs should be less than the inner diameter of spring.

According to the flexion rate, selection of perforated polyurethane spring (Yellow / Red)

d1 Ø	L mm	d2 Ø	Smax=Lx%25 Smax	Fmax	Df	Smax=Lx%35 Smax	Fmax	Df
16	12	6.5	3.5	172	20	5.0	46	22
	16		4.8	178		6.5	45	
	20		6.0	180		8.0	44	
	25		7.5	185		10	43	
20	16	8.5	4.8	250	25	6.5	67	27
	20		6.0	258		8.0	65	
	25		7.5	260		10	62	
	32		9.6	260		12.8	60	
25	20	10.5	6.0	525	32	8.0	100	34
	25		7.5			10	95	
	32		9.6			12.8	92	
	40		12			16	95	
32	32	13.5	9.6	630	40	12.8	250	44
	40		12	650		16	260	
	50		15			20	260	
	63		19			25.2	250	
40	32	13.5	9.6	1100	50	12.8	470	54
	40		12	1150		16	440	
	50		15			20	430	
	63		19	1200		25.2	430	
	80		24			32	420	
50	32	17	9.6	1820	63	12.8	810	68
	40		12	1860		16	780	
	50		15	1840		20	750	
	63		19	1800		25.2	720	
	80		24	1470		32	700	
	100		30	1620		40	720	
63	32	17	9.6	2800	80	12.8	1400	85

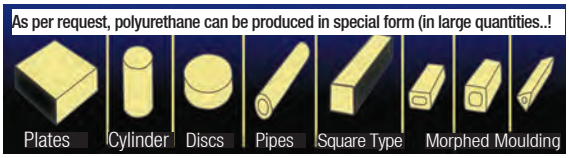
d1 Ø	L mm	d2 Ø	Smax=Lx%25 Smax	Fmax	Df	Smax=Lx%35 Smax	Fmax	Df
63	40	17	12	2950	80	16	1380	85
	50		15	3000		20	1360	
	63		19	3100		25.2	1300	
	80		24	3100		32	1300	
	100		30	3100		17	1280	
	125		37.5	3000		50	1280	
80	32	21.0	9.6	5000	100	12.8	2100	108
	40		12.0	5100		16.0	2080	
	50		15.0	5200		20.0	2000	
	63		19.0	5200		25.2	1980	
	80		24.0	5200		32.0	1960	
	100		30.0	5100		40.0	1960	
	125		37.5	5000		50.0	2000	
100	32	21.0	9.6	9800	125	12.8	3900	135
	40		12.0	10000		16.0	3750	
	50		15.0	10500		20.0	3600	
	63		19.0	11000		25.2	3400	
	80		24.0	11000		32.0	3300	
	100		30.0	9700		40.0	3250	
	125		37.5	9000		50.0	3250	
125	32	27.0	9.6	15000	158	12.8	6600	170
	40		12.0	15200		16.0	6300	
	50		9.6	15300		20.0	6200	
	63		12.0	15300		25.2	6000	
	80		9.6	15800		32.0	5900	
	100		12.0	15300		40.0	5750	
	125		9.6	15000		50.0	5600	
	160		12.0	14200		64.0	5500	

New Design: Polyurethane springs can be ordered as 310 mm in our sales system. **In addition, it** can be ordered as cut/short length from our stocks as per request (By following the table).

Order **PY...: B** (Empty)**-D** (Full) Colour: **S** (Yellow)**-K** (Red)

Example : **PYSB . Ø** (Perforated yellow) **d1 / d2**
PYSB.16 (Yellow colour perforated / Empty Type)
PYKD.16 (Red colour Full Type)

As per request, polyurethane can be produced in special form (in large quantities..!

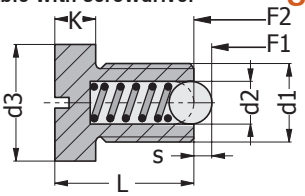


Order : Short Length
PM.. Colour (S /K) **d1 x L**

Section Press Mould

SPRING EJECTOR

Fixable with screwdriver **SBS**



It is for locking, compressing upwards and downwards. It can be dismantled with screwdriver.

Heat Resistance Maximum : 250^{0}C.

d1	L	s	d2	d3	F1	F2	K
M6	14	1	3.5	10	11	18	5
M8	16.5	1.5	4.5	13	18	31	5
M10	20	2	6	16	24	45	6
M12	22	2.5	8	18	26	49	7

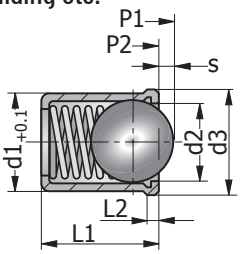
Order : **SBS** x d1

Material : Steel Quality 5.8

SPRING STOPS

For systems such as elevator and sliding etc.

KBS



Hole Mounting with Reamer

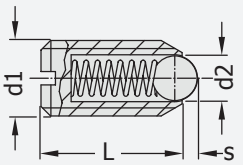
d1	L1	d2	d3	L2	s	P1(N)	P2(N)
4	5	3.0	4.6	1	0.90	2	5
5	6	4.0	5.6		1.00	4	7
6	7	5.0	6.5		1.50	6	12
8	9	6.5	8.5		1.80	6	12

Order : **KBS** x d1

Material : Steel Quality 5.8

SPRING STOPS

Fixable with screwdriver **BSM**

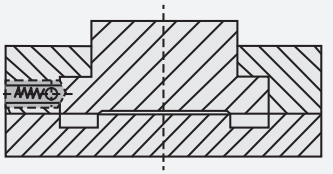


Usage Area:
- Fixation
- Pulling, pushing
- Extractor
- Compressing

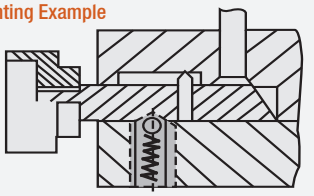
It is used as core lock etc. in injection mould, as stamp extractor in press mould and also can be used for bedding of female shafts, limiting the torque tools and positioning of level adjuster.

Processable Steel Busking - Hardened Bearing Steel Ball - Winding steel spring

Maximum Heat Resistance 250º



Mounting Example



SPRING STOPS BSM

d1 Thread	L mm	S mm	d2 mm	Initial Force	Final Force
M4	9	08	2.5	6 Nw	12 Nw
M5	12	09	3.0	7 Nw	13 Nw
M6	14	1.0	3.5	9 Nw	15 Nw
M8	16	1.5	5.0	20 Nw	35 Nw
M10	19	2.0	6.0	25 Nw	45 Nw
M12	22	2.5	8.0	35 Nw	60 Nw
M16	24	3.5	10	65 Nw	110 Nw

1 Newton 0.102 Kg. 1daN / Kg = 10 Newton

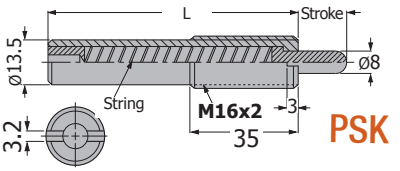
*** Don't exceed the force values.**

Order : **BSM** x d1

Material :5.8 Steel Polished Hard Ball

SPRINGY, BUSHING EJECTOR, SCREW

Fixable with Springy Ejector Mounting Kit



PSK

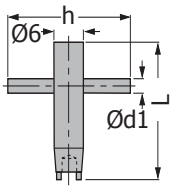
Protective plating that prevents oxidation on the part surface is available. The ball is from steel material and is hardened and polished. **Don't exceed force values specified in the table.**

SPRINGY, BUSHING EJECTOR, SCREW PSK

Stroke	L mm	Initial Force	Final Force
20	80	24 Nw	186 Nw
40	150	59 Nw	177 Nw
60	150	11 Nw	45 Nw
80	200	2 Nw	38 Nw

Order : **PSK** x Strok

Material : Pin 1.625 Hardness : 40 HRC



SPRINGY EJECTOR MOUNTING KIT PMT

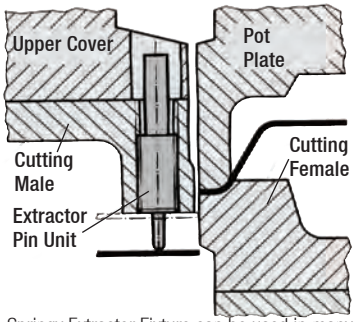
Springy Ejector, Mounting Kit PMT

Springy Ejector (M)	h mm	d Ø	d1 Ø	L mm
M5 - M6	40	6	3	40
M8	45	8	4	45
M10	45	10	4	45
M12	80	12	5	50
M16	70	16	8	52
M24	80	24	12	62
M30	100	30	15	73

Order : **PMT** d x L

Material :5.8 Steel Hardness : 36-40 HRC

Mould Component Production GTH



SPRING EJECTORS

It is secured with Alien and is locked with podger.

It is for locking, compressing upwards and downwards, the lock prevents the reaching of liquids and oils to the pin. **PS1**

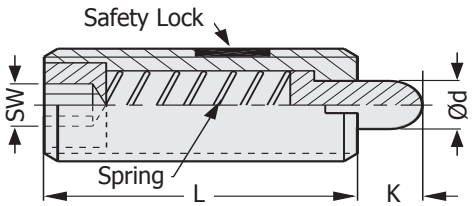
Working Temperature: From -30ºC to +80ºC

Pin: Polished Steel

Don't exceed force values specified in the table.

Springy Extractor Fixture can be used in many designs such as mould and equipment production. Especially, it is operated as extractor - dampener - stabilizer and retaining pin.

Podger
(Page 132)



SPRING EJECTORS

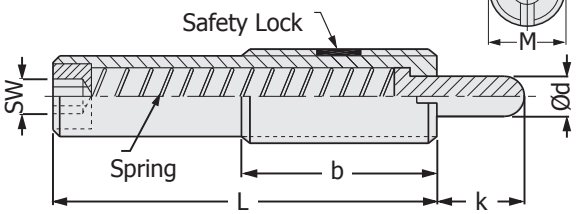
It is secured with Alien and is locked with podger.

It is for locking, compressing upwards and downwards, the lock prevents the reaching of liquids and oils to the pin. **PS2**

Working Temperature: From -30ºC to +80ºC

Pin: Polished Steel

Don't exceed force values specified in the table.



SPRING EJECTORS PS1

Serial	M Thread	k mm	L mm	d Ø	SW	Initial Force N (Kgf)	Final Force N (Kgf)
1	**M3**x0.5	1.5	10	1.0	0.8	0.4 (0.05)	2.9 (0.3)
2	**M4**x0.7	2.0	12	1.6	0.8	1.9 (0.2)	9.8 (1.0)
3	**M5**x0.8	3.0	20	2.0	1.5	3.9 (0.4)	19.6 (2.0)
4	**M5**x0.8	3.0	13	2.0	1.5	1.9 (0.2)	7.8 (0.8)
5	**M5**x0.8	3.0	20	2.0	1.5	1.9 (0.2)	9.8 (1.0)
6	**M6**x1.0	3.0	25	2.5	2.0	2.9 (0.3)	9.8 (1.0)
7	**M6**x1.0	3.0	25	2.5	2.0	7.8 (0.8)	29.4 (3.0)
8	**M8**x1.25	3.0	25	3.1	2.5	2.9 (0.3)	9.8 (1.0)
9	**M8**x1.25	3.0	25	3.1	2.5	7.8 (0.8)	29.4 (3.0)
10	**M10**x1.5	5.0	30	3.8	3.0	2.9 (0.3)	14.7 (1.5)
11	**M10**x1.5	5.0	30	3.8	3.0	9.8 (1.0)	49.0 (5.0)
12	**M12**x1.75	5.0	30	5.5	4.0	1.9 (0.2)	9.8 (1.0)
13	**M12**x1.75	5.0	30	5.5	4.0	9.8 (1.0)	49.0 (5.0)

Order : **PS1.** Serial -M

Material : Bushing 1.7220
Pin : 1.1273 / HRC 36-40

SPRING EJECTORS PS2

Serial	M Thread	k mm	L mm	b mm	d Ø	SW	Initial Force N (Kgf)	Final Force N (Kgf)
14	**M12**x1.75	10	43	35	5.5	4	3.9 (0.4)	19.6 (2)
15	**M12**x1.75	10	43	35	5.5	4	6.8 (0.7)	39.2 (4)
16	**M16**x2.0	10	50	35	8	5	9.8 (1)	49.0 (5)
17	**M16**x2.0	10	50	35	8	5	19.6 (2)	98.0 (10)
18	**M16**x2.0	10	60	35	8	5	12.7 (1.3)	39.2 (4)
19	**M16**x2.0	10	60	35	8	5	26.4 (2.7)	78.4 (8)
20	**M16**x2.0	15	60	35	8	5	9.8 (1)	39.2 (4)
21	**M16**x2.0	15	60	35	8	5	14.7 (1.5)	78.4 (8)
22	**M16**x2.0	20	60	35	8	5	12.7 (1.3)	39.2 (4)
23	**M16**x2.0	20	85	35	8	5	16.6 (1.7)	78.4 (8)
24	**M16**x2.0	30	125	35	8	5	17.6 (1.8)	39.2 (4)
25	**M16**x2.0	30	125	35	8	5	19.6 (2)	78.4 (8)
26	**M16**x2.0	50	155	35	8	8	19.6 (2)	49.0 (5)
27	**M16**x2.0	50	155	35	8	5	29.4 (3)	98.0 (10)
28	**M24**x3.0	15	60	45	10	8	19.6 (2)	98.0 (10)
29	**M24**x3.0	15	60	45	10	8	39.2 (4)	196.1 (20)
30	**M30**x3.5	20	70	45	15	12	29.4 (3)	147.0 (15)
31	**M30**x3.5	20	70	45	15	12	49.0 (5)	294.1 (30)

Order : **PS2.** Serial -M

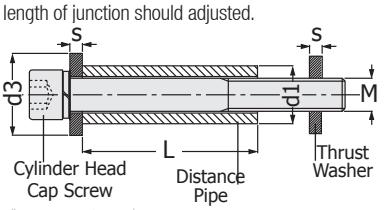
G.71

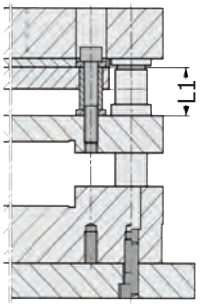
INTERMEDIATE DISTANCE SAFETY BOLT

Installation of press mould springs and inter support

Assembly of spring and gap unit :

Guide Screw Plugs are grinded equally after mounted to punch holder. When punch are grinded, for loosing distance pipe as 1 mm, the length of junction should adjusted.





Mounting Example press progressive mould intermediate safety bolt

Note :
This product is with O Ring and O-Ring should be removed before mounting.

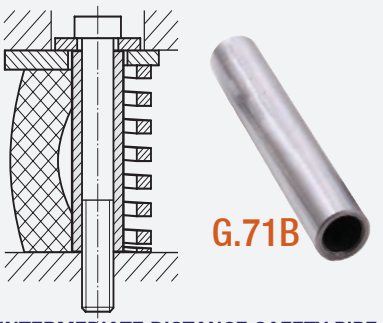
G.71
INTERMEDIATE DISTANCE SAFETY BOLT

d1	L1	d3	L	s	M
13	33	18	29	4	M8 x50
	43		39		M8 x60
	53		49		M8 x70
	63		59		M8 x80
	73		69		M8 x90
15	33	20	29	4	M10 x60
	43		39		M10 x70
	53		49		M10 x80
	63		59		M10 x90
	73		69		M10 x100

Complete Product: Mounting can be adjusted with installation at general press and injection moulds.

Order : G.71 d1 x L1

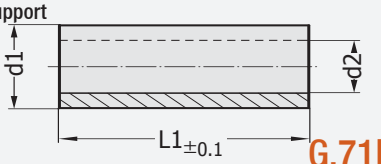
Material Pipe :1.7131
Hardness : 58±2 HRC



G.71B

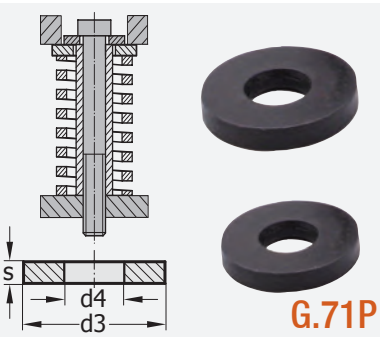
INTERMEDIATE DISTANCE SAFETY PIPE

Installation of press mould springs and inter support



G.71B
INTERMEDIATE DISTANCE SAFETY BOLT

Order	d1	L1	d2
G.71B.1329	13	29	8.2
G.71B.1339		39	8.2
G.71B.1349		49	8.2
G.71B.1359		59	8.2
G.71B.1369		69	8.2
G.71B.1529	15	29	10.2
G.71B.1539		39	10.2
G.71B.1549		49	10.2
G.71B.1559		59	10.2
G.71B.1569		69	10.2

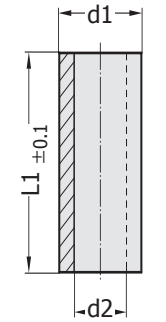


G.71P

INTERMEDIATE DISTANCE SAFETY BOLT

Installation of press mould springs and inter support

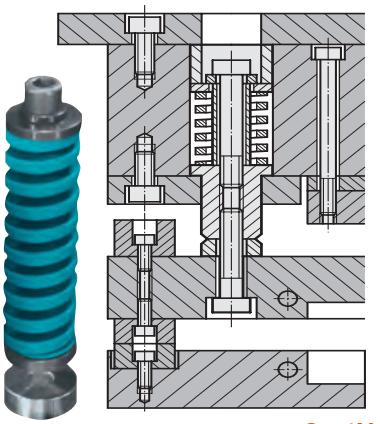
Order	d3	d4	s
G.71P.18	18	8.4	4
G.71P.20	20	10.5	4



G.71Y

SPRING AND GAP DISTANCE PIPE

Assembly of spring and gap unit



SPRING AND GAP DISTANCE PIPE G.71Y

d1	L1	d2
10 Ø 20 Spring	20	6.5
	25	
	30	
	32	
	40	
	50	
	63	
	80	
	100	
12 Ø 25 Spring	20	8.5
	25	
	30	
	40	
	50	
	63	
	80	
	100	
	125	
	140	
16 Ø 32 Spring	30	11
	40	
	50	
	63	
	80	
	100	
	125	
	140	
	160	

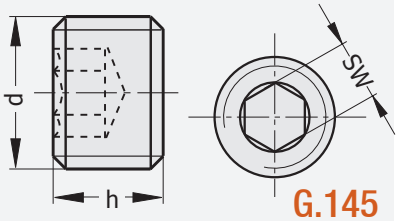
d1	L1	d2
20 Ø 40 Spring	30	13
	40	
	50	
	63	
	80	
	100	
	125	
	140	
	160	
	200	
25 Ø 50 Spring	40	17
	50	
	63	
	80	
	100	
	125	
	140	
	160	
	200	
	250	
38 Ø 63 Spring	63	25
	80	
	100	
	125	
	140	
	160	
	200	
	250	

Order : G.71Y d1 x L1

Material :1.7131
Hardness : 58±2 HRC

SPRING COMPRESSOR SET SCREW

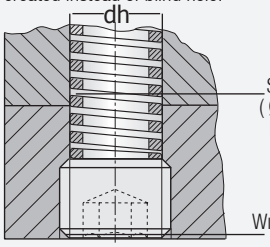
Adjustable Spring GUIDE SCREW (Ø10~40 mm)



G.145

These set screws can be used as adjustable spring stoppers.

From Ø 10 mm up to 40 mm. They are available at our stock for all standard steel springs. Spring tension can be adjusted from bottom plug (set screw) with allen without doing any dismantle process. Steel springs can be changed from bottom plug (set screw) slot without dismantling mould. To place spring, open hole should be created instead of blind hole.



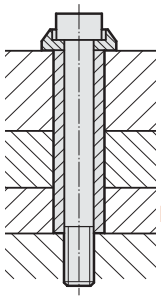
G.145

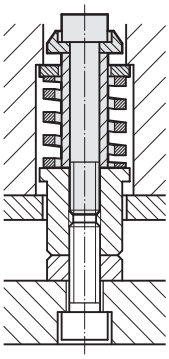
SPRING CLAMPING SCREW

d Thread	Spring Dia.	dh Slot	h Len.	SW Alien
M.12 x 1.5	**10**	10.5	10	6
M.14 x 1.5	**12.5**	12.5	10	6
M.18 x 1.5	**16**	16.5	10	8
M.22 x 1.5	**20**	20.5	10	8
M.28 x 1.5	**25**	26.5	12	10
M.35 x 1.5	**32**	33.5	12	10
M.42 x 1.5	**40**	40.5	12	10

Order : G.145 x d

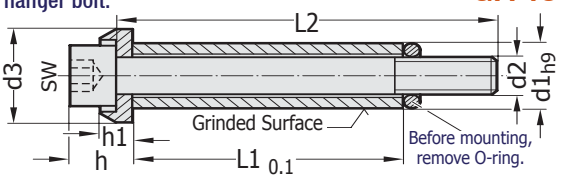
Material : 1.0503 (C 45)





This product is an alternative of the hanger bolt.

SPRING FIXING /GUIDE SCREW G.146



Spring Fixing and Guide Screw Equipment: Due to that it has been grinded, it provides very precision length setting that can be adjusted. Different usage types can be created (Mounting Examples) Interval Tube (Pipe) Tensile Force: 1200 -1300 N / mm^2 Externa diameter is grinded at h9 tolerance. It is with Cylinder Head Cap Screw. Guide Screw equipment is supplied with O-ring, O-ring should be removed before mounting.

REFERENCE : PSA E 24.55 410.G

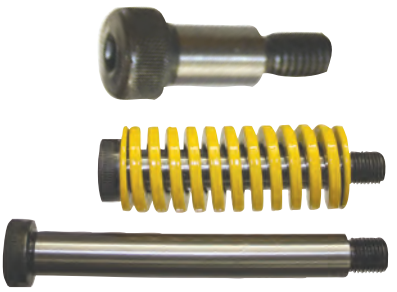
d1 Ø	d2 M	L1 mm	L2 mm	d3 Ø	h mm	h1 mm
15	**M.10**	70	90	23	15	7.5
		80	100			
		90	110			
		100	120			
		120	140			
17.5	**M.12**	40	60	27	18	9 SW 10 Alien
		45	65			
		50	70			
		55	80			
		60	90			
		70	100			
		80	110			
		90	120			
		100	130			
		110	140			
		120	150			
		140	180			
23	**M.16**	50	80	34	24	11 SW 14 Alien
		60	90			
		70	100			
		80	110			
		90	120			
		100	130			
		110	140			
		120	150			
		140	180			
		150	180			
		160	200			

Order : G.146 .d2 x d1 x L1

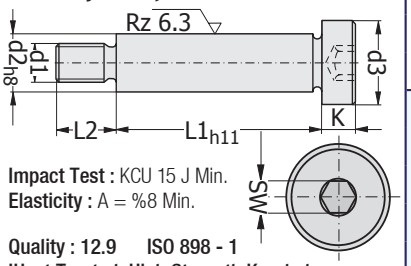
Material : Cylinder Head Cap Screw
Pipe : 1.7131 (58 HRC)

SPRING FIXING /GUIDE SCREW G.146

d1 Ø	d2 M	L1 mm	L2 mm	d3 Ø	h mm	h1 mm
10	**M.6**	20	35	15	10	5.5 SW 5 Alien
		25	40			
		30	45			
		35	50			
		40	55			
		45	60			
		50	65			
		55	70			
		60	80			
		70	90			
		80	100			
		90	110			
12.5	**M.8**	30	45	19	13	6.5 SW 6 Alien
		35	50			
		40	55			
		45	60			
		50	65			
		55	70			
		60	80			
		70	90			
		80	100			
		90	110			
		100	120			
15	**M.10**	30	50	23	15	7.5 SW 8 Alien
		35	55			
		40	60			
		45	65			
		50	70			
		55	75			
		60	80			



GUIDE SCREWS G.39
Locking Component



Impact Test : KCU 15 J Min.
Elasticity : A = %8 Min.

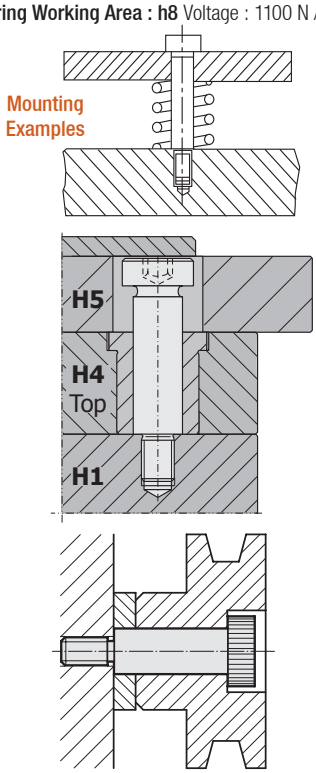
Quality : 12.9 **ISO 898 - 1**
IHeat Treated, High Strength Knurled Steel Head (Anti Slip)

IN SPRING USE (STEEL / POLIURETHANE SPRING)
For precise and secure placement, also suitable to setting position.

GUIDE SCREWS SHOULD BE USED.
Our production is available in desired dimensions / materials and lengths.

Spring Working Area : h8 Voltage : 1100 N / mm^2

Mounting Examples



LOCKING COMPONENT G.39

d2 Ø	L1 mm	d1 M	d3 Head	L2 mm	K Head	SW Alien
6	10	M5	10	9.5	4.5	3 Alien
	12					
	16					
	20					
	25					
	30					
	35					
	40					
	45					
	50					Tightening Torque **Nm** : 7
8	10	M6	13	11	5.5	4 Alien
	12					
	16					
	20					
	25					
	30					
	35					
	40					
	45					
	50					
	55					
	60					
	65					
	70					
	80					
	90					Tightening Torque **Nm** : 13
10	16	M8	16	13	7	5 Alien
	20					
	25					
	30					
	35					
	40					
	45					
	50					
	55					
	60					
	65					
	70					
	80					
	90					
	100					Tightening Torque **Nm** : 32

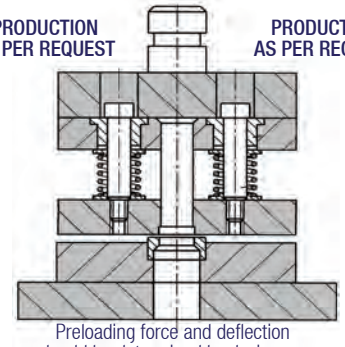
G.39
Order : d1 x d2 x L1

Material:1.7131 Steel
Hardness : 39 - 44 HRC

GUIDE SCREWS G.39

d2 Ø	L1 mm	d1 M	d3 Head	L2 mm	K Head	SW Alien
12	16	M10	18	16	8	6 Alien
	20					
	25					
	30					
	35					
	40					
	45					
	50					
	55					
	60					
	65					
	70					
	80					
	90					
	100					
	120					Tightening Torque **Nm** : 65
16	30	M12	24	18	11.0	8 Alien
	35					
	40					
	45					
	50					
	55					
	60					
	65					
	70					
	80					
	90					
	100					
	120					Tightening Torque **Nm** : 120
20	40	M16	30	22	14.0	10 Alien
	45					
	50					
	55					
	60					
	65					
	70					
	80					
	90					
	100					
	120					Tightening Torque **Nm** : 290
24	50	M20	36	27	16.0	12 Alien
	55					
	60					
	65					
	70					
	80					
	90					
	100					
	120					Tightening Torque **Nm** : 500

PRODUCTION AS PER REQUEST

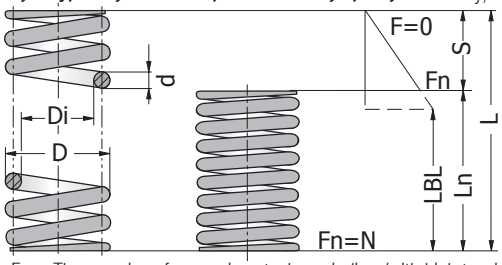


PRODUCTION AS PER REQUEST

YYH
ROUND WIRE STEEL SPRINGS

Light Type High Course Special Winding Springs

Preloading force and deflection should be determined by designers. Initially, 5 mm preloading should be applied.

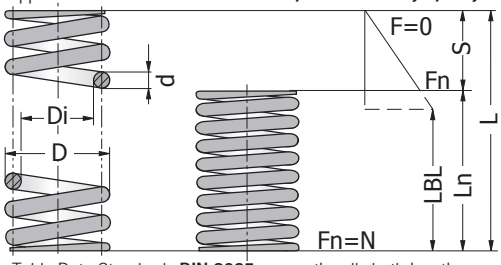


1 Newton = 0.102 Kg

D : Mean External Dia.
Di : Slot Dia.
d : Spring Wire Dia.
S : Total Compression
L : Free Length
Ln : Length at Load
LBL : Closed Spring
F : Force / Newton
Fn : Thrust Force

YYS
ROUND WIRE STEEL SPRINGS

Standard Performance Special Winding Springs



ForceThese springs from spring steel as winding /with high tension heat treated are used in Table Data Standards **DIN 2095m** or optionally both inactive and oscillatory loads. Optionally; they can be used in cases that are posed due to severe, hard impacts and vibrant load or when there are high expectations from spring life. Both types have flattened, forged coils and their surface are homogenized with shot blasting process.All springs are supplied as lubricated. Max. WorkingTemperature:200ºC. **All these springs can be produced in the desired lengths and diameters.**

Light Type High Course Special Winding Springs — YYH..

D	L	Di	d	S	Fn	Ln	LBL
10	**40**	7.0	1.5	18.9	148	21.1	18.0
12	**55**	9.0	1.5	30.0	103	25.0	22.0
14	**40**	10.0	2.0	19.1	243	20.9	18.0
14	**50**	10.0	2.0	24.0	228	26.0	23.0
15	**40**	11.0	2.0	19.5	221	20.5	16.0
15	**100**	11.0	2.0	58.5	245	41.5	39.0
17	**858**	12.5	2.25	41.0	265	44.0	32.0
17.5	**45**	11.5	3.0	13.0	422	32.0	30.0
17.5	**50**	11.5	3.0	15.0	434	35.0	33.0
18	**83**	10.0	4.0	18.0	1198	65.0	62.0
19	**35**	11.0	4.0	5.0	697	30.0	28.0
19	**90**	10.0	4.5	17.0	1669	73.0	70.0
19.5	**35**	14.5	2.5	14.0	186	21.0	19.0
19.5	**40**	13.5	3.0	14.0	398	36.0	24.0
20.5	**95**	15.5	2.5	54.0	262	41.0	39.0
21	**40**	13.0	4.0	11.0	1148	29.0	27.0
21.5	**45**	15.5	3.0	20.0	436	25.0	23.0
21.5	**50**	13.5	4.0	15.0	1099	35.0	32.0
22	**45**	16.0	3.0	21.7	387	23.3	19.5
22	**70**	16.0	3.0	29.4	387	40.6	28.5
22	**100**	16.0	3.0	38.7	387	61.3	40.5
23	**130**	16.0	3.5	43.4	579	86.6	59.5
23	**160**	16.0	3.5	54.6	579	105.4	73.3
23	**190**	16.0	3.5	64.8	579	125.2	86.0
24	**220**	16.0	4.0	62.4	765	157.6	112.0
24	**250**	16.0	4.0	71.6	765	178.4	128.0
25	**24**	17.0	4.0	7.0	790	17.0	16.0
27.8	**70**	13.8	7.0	8.0	3014	62.0	62.0
30	**70**	22.0	4.0	32.5	739	37.5	32.0
30	**150**	17.0	6.5	34.0	3142	116.0	107.0

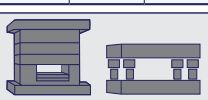
Production As Per Unit
Order : **YYH** .D x L
Delivery As per Order

Material: Spring Steel Hardened

Standard Performance Special Winding Springs — YYS..

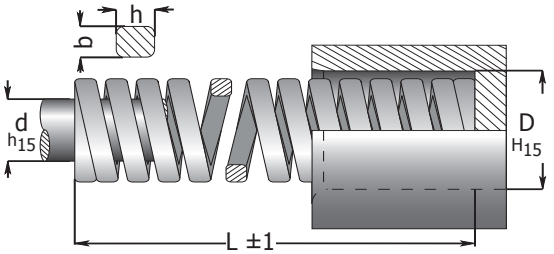
D	L	Di	d	S	Fn	Ln	LBL
13	**55**	8.5	1.5	25.2	112	25.3	12
15	**50**	9.5	2.0	21.2	250	25	9.5
16	**40**	10.5	2.0	17	220	20	7.0
18	**85**	12	2.3	37.4	260	41	14
19	**50**	11	3.0	13.6	480	34	8.5
20.5	**90**	9	4.5	15	1714	72.4	4.0
21	**40**	12	3.0	11.9	450	26	5.5
22	**95**	14.5	2.5	41.5	200	46.2	17
23	**50**	12.5	4.0	13.3	1160	34.4	6.5
26.5	**24**	16	4.0	6.1	960	16.8	2.0
30	**70**	13	7.0	9.3	3750	59	8.0
32	**70**	21	4.0	28.9	822	36	6.0
34	**125**	19	6.0	27.2	2150	93	11.5
44	**130**	25	8.0	30.6	3895	94	10
48	**67**	25	10	7.6	5760	58	3.5
49	**50**	29	8.5	9.3	3707	39	2.5
58	**50**	39	8.0	11.9	2117	36	2.5
63	**180**	38	11	36.6	5203	137	10

Production As Per Unit
Order : **YYS** .D x L
Delivery As per Order



HIGH PERFORMANCE STEEL SPRINGS

Rectangular, ISO 10243 Mechanical Import Mould Springs



TECHNICAL SPECIFICATIONS AND PRODUCTION CHARACTERISTICS

Research and development ongoing in parallel of Quality Assurance Procedures in compliance with ISO 9001, ensure high sensitivity, durability and reliability Criterias.

Continous improvement in special spring performance is monitored directly in the factory through comparative and destructive tests. The excellence of these products are verified with the increasing number of the customers selecting special springs in their moulds.

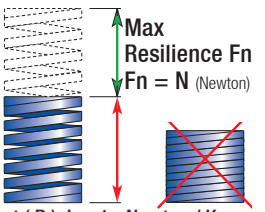
The following main characteristics show the superiority of special springs.

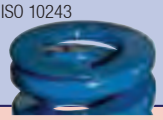
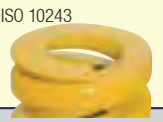
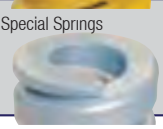
* Spring steel produced only in accordance with the special spring decriptions,
* Special profile /section usage to increase steel characteristics,
* Usage of special spring winding machine,
* Usage of special heat treatment developed by the special springs,
* Maximum care showing grinding and closing of spring ends in order to guaranty optimum vertical and parallel acceleration,
* All springs are coil shaped in order to guaranty significiant decrease of load losses in working conditions,
* Special remoulding stroke methods in order to increase resistance against metal abrasion.
* Special pretreatment and powder coating applications of special springs in order to ensure the best protection, preservation and completion,
* Intensive control performed during production and final stage in order to quaranty dimensional compliance and sensitivity,

Spring Load Coefficient Tolerances - Nominal Rate at All Springs + 10%.

Table Values/Explanations of the Spring Pages

Spring Dimensions		Length	Load	Spring Capacity / Recommended Resilience - Criteria			
D	d	L	LOAD COEFFICIENT R (±10 %) Required load for 1.0 mm resilience	%..A Long Spring Life 3.000.000	%..B Maximum Resilience 1.500.000	%..C Minimum Resilience	%..D Full Resilience
b x h							
mm	mm	mm	N / mm	mm x N	mm x N	mm x N	mm x N



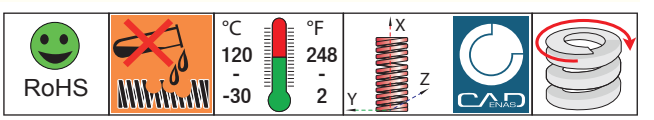
Code	Colour Series	Wire Section	Colour	Load	Max. Resilience	No
AY	Special Springs 		Light Green	Extra Light	50 % Length	Page: 139
Y	ISO 10243 		Green	Light	40 % Length	Page: 140
M	ISO 10243 		Blue	Me-dium	37.5 % Length	Page: 141
K	ISO 10243 		Red	Heavy	30 % Length	Page: 142
S	ISO 10243 		Yellow	Extra Heavy	25 % Length	Page: 143
G	Special Springs 		Silver	Ultra Heavy	15 % Length	Page: 144

Force = Resilience (A.B.C.D) x Load Coefficient (R): Load x Newton / Kg.
1 Newton = 0.102 Kg.

Minimum Working Life Showed with Spring Usage:

* Select springs carefully during the design stage,
* Guide springs having free length and exceeding 3,5 diameter rate with guide pin,
* Ensure support and perpendicularity of springs to the printing area,
* If possible, use long springs at lower loadings (Preloading should be increased properly),
* Apply minimum preloading of 5% of the free length.
* Never apply thrust to the springs over maximum course,
* In case that mould components are reprocessed, check the installed length and working length of springs. Normally, after resprocessing, spring thrust rate will be increased after reprocessing.
* Protects springs from abrasive activities.
* Don't exceed 250º C working temperature, while increasing to 120º C, significiant loading decrease is not seen, at each 40º C over this temperature, 1% loss should be considered.
* Don't change a spring at a time, instead of this, use programmed maintenance procedure that all springs can be changed at the same time.
* Don't change physical characteristics of springs. (Cutting- Internal or external bending) If the above conditions are not followed , minimum life time will be decreased in the shortest time. When used properly, as stated by all the users of special springs, performance levels over minimum lifetime value specified in graphics are reached.

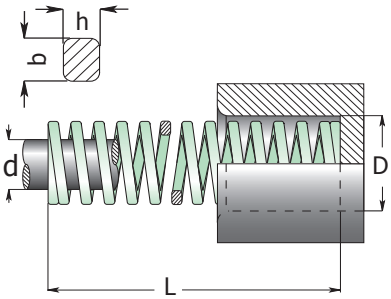
External diameter of spring, is smalller than slot diameter. Slot diameter should be greater. Internal diameter of spring is greater than pin diamater, pin diameter should be smaller. **In usage of precision mechanical spring; GUIDE SCREWS should be used.**



SPECIAL SPRINGS

PERFORMANCE STEEL SPRING

Rectangular, Import Mould Springs



LIGHT GREEN SPRING - AY

Extra Light Load

Especially suitable to Injection Mould Systems Extra Light Load Serial Rectangular Mechanic Springs 10243

Long Life usage of Steel Springs: It depends on the quality of spring material, working conditions and design conditions that are used.
Don't forget! The cheapest spring is the one selected properly.
In all applications using springs, preloading and compression rates specified for long life usage should be adhered. Appropriate tension values can be found at the loading value table and tension/ spring life table.

By multiplying spring coefficient (R) with compression amount (mm) simply, spring force value is reached. (N) Example: R x (A.B.C.D) x

1 Newton = 0.102 Kg.

For long life usage, shear stress on the basis of oscillation should be maximum 800 N /mm^2. 400 N /mm^2 of this value will be used by the stress variation on the basis of spring oscillation.

Order :
AYY (Light Green Spring) **.D x L**

Usage: It is compatible with extra light load spring and especially injection mould systems and equipment designs.

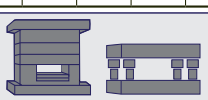
Rectangular Springs Extra Light Load

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 30	B Min. Clamping % 40	C Max. Clamping % 50	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
20	10	25	29.4	7.5	10	12.5	13.9
		32	22.6	9.6	12.8	16	18.2
		38	18.6	11.4	15.2	19	22
		44	15.7	13.2	17.6	22	25.8
		51	13.7	15.3	20.4	25.5	30.3
		64	11.3	19.2	25.6	32	38.9
		76	9.8	22.8	30.4	38	47
		89	8.3	26.7	35.6	44.5	55.7
		102	7.4	30.6	40.8	51	64.2
		115	6.4	34.5	46	57.5	72.9
		127	5.9	38.1	50.8	63.5	80.7
		139	5.4	41.7	55.6	69.5	88.4
		152	4.9	45.6	60.8	76	96.7
4.3x1.7		305	2.5	91.5	122	153	196.3
25	12.5	25	53.9	7.5	10	12.5	12.9
		32	42.2	9.6	12.8	16	17.2
		38	35.8	11.4	15.2	19	20.7
		44	31.4	13.2	17.6	22	24.4
		51	27.0	15.3	20.4	25.5	28.5
		64	21.6	19.2	25.6	32	36.5
		76	18.1	22.8	30.4	38	43.9
		89	15.2	26.7	35.6	44.5	51.4
		102	13.2	30.6	40.8	51	59.3
		115	11.8	34.5	46	57.5	67.2
		127	10.6	38.1	50.8	63.5	74.4
		139	9.6	41.7	55.6	69.5	81.6
		152	8.8	45.6	60.8	76	89.5
		178	7.6	53.4	71.2	89	105.4
		203	6.7	60.9	81.2	101.5	120.7
5.4x2.2		305	4.4	91.5	122.0	152.5	182.4

LIGHT GREEN SPRING - AY

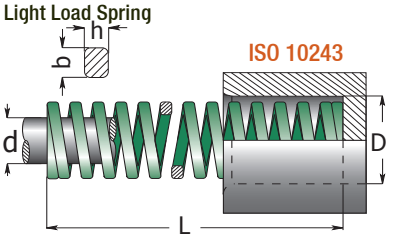
D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 30	B Min. Clamping % 40	C Max. Clamping % 50	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
32	16	38	43.1	11.4	15.2	19	19.9
		44	37.3	13.2	17.6	22	23.5
		51	32.4	15.3	20.4	25.5	27.6
		64	25.5	19.2	25.6	32	35.2
		76	21.6	22.8	30.4	38	42.4
		89	18.1	26.7	35.6	44.5	50.0
		102	15.7	30.6	40.8	51.0	57.6
		115	14.2	34.5	46.0	57.5	65.5
		127	12.7	38.1	50.8	63.5	72.5
		139	11.6	41.7	55.6	69.5	79.4
		152	10.6	45.6	60.8	76	87.3
		178	9.0	53.4	71.2	89	102.9
		203	7.8	60.9	81.2	101.5	117.7
		254	6.4	76.2	101.6	127.0	148.1
6.5x2.6		305	5.3	91.5	122.0	152.5	178.3
40	20	51	48.1	15.3	20.4	25.5	28.0
		64	39.2	19.2	25.6	32	36.2
		76	33.3	22.8	30.4	38	43.7
		89	28.4	26.7	35.6	44.5	51.7
		102	24.5	30.6	40.8	51.0	59.8
		115	22.1	34.5	46.0	57.5	67.9
		127	19.6	38.1	50.8	63.5	75.2
		139	17.7	41.7	55.6	69.5	82.4
		152	16.2	45.6	60.8	76	90.6
		178	13.7	53.4	71.2	89	106.5
		203	12.3	60.9	81.2	101.5	122.2
		254	9.8	76.2	101.6	127	153.6
8.0x3.4		305	8.3	91.5	122.0	152.5	185.4
50	25	64	86.3	19.2	25.6	32	35.1
		76	70.6	22.8	30.4	38	42.2
		89	59.8	26.7	35.6	44.5	50.3
		102	52	30.6	40.8	51	58.4
		115	46.1	34.5	46	57.5	66.1
		127	42.2	38.1	50.8	63.5	73.8
		139	38.2	41.7	55.6	69.5	80.9
		152	34.3	45.6	60.8	76	89
		178	29.4	53.4	71.2	89	105
		203	25.5	60.9	81.2	101.5	121
		254	20.6	76.2	101.6	127	152
10.5x4.1		305	17.2	91.5	122.0	152.5	184

Technical Information! Page 138



PERFORMANCE STEEL SPRING
GREEN SPRING-Y

Light Load Spring



ISO 10243

By multiplying spring coefficient (R) with compression amount (mm) simply the spring force value is reached. (N) Example: R x (A.B.C.D) x

1 Newton = 0.102 Kg.

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 25	B Min. Clamping % 30	C Max. Clamping % 40	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
10	5	25	10	6.3	7.5	10	13.5
		32	8.5	8.0	9.6	12.8	17.5
		38	6.8	9.5	11.4	15.2	20.8
		44	6.0	11	13.2	17.6	23.9
		51	5.0	12.8	15.3	20.4	28.9
		64	4.3	16	19.2	25.6	36.1
		76	3.2	19	22.8	30.4	43.2
1.7x1.1		305	1.1	76.3	91.5	122	178
13	6.3	25	17.9	6.3	7.5	10	13.2
		32	16.4	8.0	9.6	12.8	18
		38	13.6	9.5	11.4	15.2	21
		44	12.1	11	13.2	17.6	24
		51	11.4	12.8	15.3	20.4	28.7
		64	9.3	16	19.2	25.6	35.8
		76	7.1	19	22.8	30.4	42.7
		89	5.4	22	26.7	35.6	50.4
		102	4.1	25	30.6	40.8	58.4
2.4x1.4		305	1.4	76.3	91.5	122	172

Order :
YY(Green Spring) **.D x L**

Usage: It is compatible with light load spring and especially injection mould systems and equipment designs.

Technical Information! Page 138

Rectangular, Import Mould Spring, Light Load Spring GREEN SPRING-Y

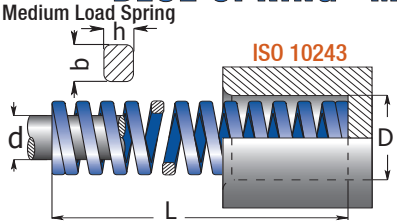
D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 25	B Min. Clamping % 30	C Max. Clamping % 40	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
16	8	25	23.4	6.3	7.5	10	12.6
		32	22.9	8.0	9.6	12.8	16.4
		38	19.3	9.5	11.4	15.2	19.7
		44	17.1	11	13.2	17.6	22.5
		51	15.7	12.8	15.3	20.4	26.3
		64	10.7	16	19.2	25.6	33.3
		76	10	19	22.8	30.4	40.2
		89	8.6	22.3	26.7	35.6	47.6
		102	7.8	25.5	30.6	40.8	55.4
		115	6.6	28.8	34.5	46	60.8
3.2x1.5		305	2.5	76.3	91.5	122	165
20	10	25	55.8	6.3	7.5	10	12.1
		32	45	8.0	9.6	12.8	15.3
		38	33.3	9.5	11.4	15.2	18.9
		44	30	11	13.2	17.6	21.5
		51	24.5	12.8	15.3	20.4	25
		64	20	16	19.2	25.6	31.1
		76	16	19	22.8	30.4	37.3
		89	14	22.3	26.7	35.6	44.5
		102	12	25.5	30.6	40.8	51.1
		115	10.9	28.8	34.5	46	58.2
		127	9.5	31.8	38.1	50.8	64.9
		139	8.4	35	42	56	71.5
		152	7.5	38	45.6	60.8	78.8
4 x 2.1		305	4.0	76.3	91.5	122	157
25	12.5	25	100	6.3	7.5	10	11.9
		32	80.3	8.0	9.6	12.8	16
		38	62	9.5	11.4	15.2	18.3
		44	52.9	11	13.2	17.6	21.4
		51	44	12.8	15.3	20.4	24.9
		64	35.2	16	19.2	25.6	31.4
		76	28	19	22.8	30.4	37.5
		89	24	22.3	26.7	35.6	43.5
		102	21.1	25.5	30.6	40.8	51.1
		115	18.7	28.8	34.5	46	58.1
		127	16.7	31.8	38.1	50.8	64.1
		139	15.3	35	42	56	70.4
		152	14	38	45.6	60.8	77.1
		178	12.5	44.5	53.4	71.2	93.1
		203	10.4	50.8	60.9	81.2	130
5.4x2.7		305	7.0	76.3	91.5	122	156
32	16	38	94	9.5	11.4	15.2	18.3
		44	79.5	11	13.2	17.6	21.5
		51	67	12.8	15.3	20.4	25.5
		64	53	16	19.2	25.6	31.9

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 25	B Min. Clamping % 30	C Max. Clamping % 40	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
32	16	76	44	19	22.8	30.4	38.6
		89	37.2	22.3	26.7	35.6	46.5
		102	32	25.5	30.6	40.8	53.2
		115	29	28.8	34.5	46	60
		127	25	31.8	38.1	50	66.7
		139	23	35	42	56	71.8
		152	21.5	38	45.6	60.8	78.5
		178	18.2	44.5	53.4	71.2	94.4
		203	15.8	50.8	60.9	81.2	107
		254	12.5	63.5	76.2	102	136
6.8x3.3		305	10.3	76.3	91.5	122	162
40	20	51	92	12.8	15.3	20.4	25.5
		64	73	16	19.2	25.6	31.4
		76	63	19	22.8	30.4	37.8
		89	51	22.3	26.7	35.6	44.3
		102	43	25.5	30.6	40.8	50.7
		115	39.6	28.8	34.5	46	58.1
		127	37	31.8	38.1	50.8	64.6
		139	32	35	42	56	70.1
		152	28	38	45.6	60.8	76.6
		178	25.2	44.5	53.4	71.2	90.4
		203	22.7	50.8	60.9	81.2	102
		254	17	63.5	76.2	102	128
8.1x4		305	14.8	76.3	91.5	122	156
50	25	64	156	16	19.2	25.6	31
		76	125	19	22.8	30.4	37.2
		89	109	22.3	26.7	35.6	43.6
		102	94	25.5	30.6	40.8	50.3
		115	81	28.8	34.5	46	58.1
		127	71	31.8	38.1	50.8	63.7
		139	66.5	35	42	56	69.5
		152	60	38	45.6	60.8	76.5
		178	52	44.5	53.4	71.2	91.9
		203	44	50.8	60.9	81.2	104
		254	35	63.5	76.2	102	130
11x5.3		305	28.5	76.3	91.5	122	155
63	38	76	189	19	22.8	30.4	35.6
		89	158	22.3	26.7	35.6	43.4
		102	131	25.5	30.6	40.8	49.7
		115	116	28.8	34.5	46	55.6
		127	103	31.8	38.1	50.8	62.7
		152	84.3	38	45.6	60	77.1
		178	71.5	44.5	53.4	71.2	92.2
		203	61.7	50.8	60.9	81.2	103
		254	47	63.5	76.2	102	130
11x7.8		305	38.2	76.3	91.5	122	157

SPECIAL SPRINGS

PERFORMANCE STEEL SPRINGS
BLUE SPRING--M

Medium Load Spring



By multiplying spring coefficient (R) with compression amount (mm) simply the spring force value is reached. **(N)** Example: R x (A.B.C.D) x

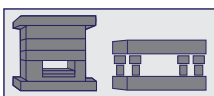
1 Newton = 0.102 Kg.

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 25	B Min. Clamping % 30	C Max. Clamping % 38	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
10	5	25	16	6.3	7.5	9.4	10.2
		32	13	8.0	9.6	12	14.2
		38	11.9	9.5	11.4	14.3	16.8
		44	10.3	11	13.2	16.5	19.4
		51	8.9	12.8	15.3	19.1	23.4
		64	7.5	16	19.2	24	28.2
		76	5.3	19	22.8	28.5	34.2
1.9X1.3		305	1.6	76.3	91.5	114.4	134
13	6.3	25	30	6.3	7.5	9.4	11.9
		32	24.8	8.0	9.6	12	16.2
		38	21.4	9.5	11.4	14.3	18.7
		44	18.5	11	13.2	16.5	21.3
		51	15.5	12.8	15.3	19.1	25.6
		64	12.1	16	19.2	24	32.4
		76	10.2	19	22.8	28.5	39
		89	8.4	22.3	26.7	33.4	45.9
		102	6.3	25.5	30.6	38.3	52.3
2.5X1.5		305	2.1	76.3	91.5	114.4	152.5
16	8	25	49.4	6.3	7.5	9.4	10.5
		32	37.1	8.0	9.6	12	13.2
		38	33.9	9.5	11.4	14.3	17.2
		44	30	11	13.2	16.5	19.4
		51	26.4	12.8	15.3	19.1	24.2
		64	20.5	16	19.2	24	29.2
3.2x2.0		76	17.8	19	22.8	28.5	36.3
16	8	89	15.2	22.3	26.7	33.4	41.7
		102	13.5	25.5	30.6	38.3	48.9
		115	11.8	28.8	34.5	43.1	53.1
3.2x2.0		305	4.8	76.3	91.5	114.4	141.6
20	10	25	98	6.3	7.5	9.4	10.5
		32	72.6	8.0	9.6	12	13.9
		38	56	9.5	11.4	14.3	16.6
		44	47.5	11	13.2	16.5	18.8
		51	41.7	12.8	15.3	19.1	23.1
		64	32.3	16	19.2	24	27.5
		76	25.1	19	22.8	28.5	33.8
		89	22	22.3	26.7	33.4	39.7
		102	19.8	25.5	30.6	38.3	47.3
		115	18.1	28.8	34.5	43.1	52.5
		127	16.6	31.8	38.1	47.6	56.9
		139	15.1	35	42	52.5	62.1
		152	13.2	38	45.6	57	67.6
4.1X2.4		305	6.1	76.3	91.5	114.4	143.4
25	12.5	25	147	6.3	7.5	9.4	10.2
		32	118	8.0	9.6	12	13.7
		38	93	9.5	11.4	14.3	15.7
		44	80.8	11	13.2	16.5	18.2
		51	68.6	12.8	15.3	19.1	21.7
		64	53	16	19.2	24	26
		76	43.2	19	22.8	28.5	32.3
		89	38.2	22.3	26.7	33.4	38
		102	33	25.5	30.6	38.3	43
		115	28	28.8	34.5	43.1	48.6
		127	25.9	31.8	38.1	47.6	53.7
		139	23.2	35	42	52.5	59.4
		152	20.8	38	45.6	57	63.8
		178	17.8	44.5	53.4	66.8	76.6
		203	15.8	50.8	60.9	76.1	88.4
5.4x3.3		305	10.2	76.3	91.5	114.4	135.1
32	16	38	185	9.5	11.4	14.3	16.3
		44	158	11	13.2	16.5	18.9
		51	134	12.8	15.3	19.1	23.1
		64	99	16	19.2	24	28.5
		76	80.5	19	22.8	28.5	34.2
		89	69.1	22.3	26.7	33.4	40.4
		102	58.8	25.5	30.6	38.3	48
		115	51.5	28.8	34.5	43.1	54.3
6.8x4.0		127	44.8	31.8	38.1	47.6	59.2
32	16	139	42.3	35	42	52.5	65.3
		152	37.8	38	45.6	57	73
		178	32.5	44.5	53.4	66.8	84.5
		203	28.9	50.8	60.9	76.1	96.9
		254	21.4	63.5	76.2	95.3	120.9
6.8x4.0		305	18.3	76.3	91.5	114.4	146.9
40	20	51	181.6	12.8	15.3	19.1	21.4
		64	140	16	19.2	24	26.8
		76	108	19	22.8	28.5	32.7
		89	90.7	22.3	26.7	33.4	39
		102	81	25.5	30.6	38.3	44.1
		115	71.8	28.8	34.5	43.1	50.6
		127	62.7	31.8	38.1	47.6	55.9
		139	57.5	35	42	52.5	61.8
		152	51.6	38	45.6	57	67.5
		178	44.1	44.5	53.4	66.8	77.2
		203	36.7	50.8	60.9	76.1	91.8
		254	30.1	63.5	76.2	95.3	112.7
8.2X4.7		305	24.6	76.3	91.5	114.4	138.1
50	25	64	209	16	19.2	24	28.2
		76	168	19	22.8	28.5	34.9
		89	140	22.3	26.7	33.4	39.2
		102	119	25.5	30.6	38.3	47.3
		115	106	28.8	34.5	43.1	52.6
		127	97	31.8	38.1	47.6	59.8
		139	87	35.0	42	52.5	65.1
		152	80	38.0	45.6	57	70.8
		178	69.5	44.5	53.4	66.8	84.2
		203	59.8	50.8	60.9	76.1	96.5
		229	50.9	57.3	68.7	85.9	108
		254	43.9	63.5	76.2	95.3	121
11x5.8		305	38.6	76.3	91.5	114.4	146
63	38	76	312	19	22.8	28.5	30.7
		89	260	22.3	26.7	33.4	36.5
		102	221	25.5	30.6	38.3	43.6
		115	187	28.8	34.5	43.1	48.9
		127	168	31.8	38.1	47.6	54.2
		152	136	38	45.6	57	65.7
		178	114	44.5	53.4	66.8	76.5
		203	100	50.8	60.9	76.1	88
		229	89.2	57.3	68.7	85.9	104
		254	78.4	63.5	76.2	95.3	112
11.5x9.1		305	64.7	76.3	91.5	114	134

Order :
MY (Blue Spring) **.D x L**

Usage: It is compatible with medium heavy load spring and especially injection mould systems and equipment designs.

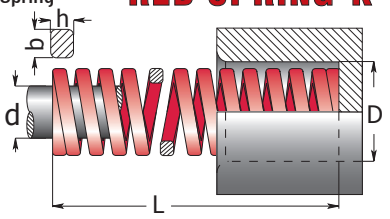
Technical Information! Page 138



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 x (A.B.C.D) x

1 Newton = 0.102 Kg.

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 20	B Min. Clamping % 25	C Max. Clamping % 30	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
10	5	25	22.1	5.0	6.3	7.5	9.2
		32	17.5	6.4	8.0	9.6	12.1
		38	17.1	7.6	9.5	11.4	13.2
		44	15	8.8	11	13.2	15.1
		51	12.8	10.2	12.8	15.3	19.5
		64	10.7	12.8	16	19.2	21.8
		76	7.5	15.2	19	22.8	27.9
1.9x1.5		305	2.1	61	76.3	91.5	127
13	6.3	25	42.1	5.0	6.3	7.5	9.8
		32	33.2	6.4	8.0	9.6	13.6
		38	29.3	7.6	9.5	11.4	14.6
		44	24.6	8.8	11	13.2	18.1
		51	19.6	10.2	12.8	15.3	22.3
		64	15	12.8	16	19.2	27.3
		76	13.2	15.2	19	22.8	33.1
		89	11.4	17.8	22.3	26.7	38.9
		102	8.4	20.4	25.5	30.6	43.8
2.4x1.9		305	2.8	61	76.3	91.5	139

Order :

KY (Red Spring) .D x L

Usage: It is compatible with heavy load spring and especially with injection mould systems and equipment designs of machine production

Technical Information! Page 138

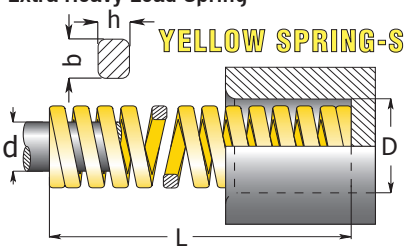
Rectangular, Import Mould Spring Heavy Load Spring RED SPRING-K

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 20	B Min. Clamping % 25	C Max. Clamping % 30	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
16	8	25	75.7	5.0	6.3	7.5	8.4
		32	52.8	6.4	8.0	9.6	10.5
		38	48.5	7.6	9.5	11.4	13.6
		44	42.8	8.8	11	13.2	15.9
		51	37.1	10.2	12.8	15.3	18.9
		64	30.3	12.8	16	19.2	24.9
		76	25.7	15.2	19	22.8	29.2
		89	21.7	17.8	22.3	26.7	34.5
		102	19.3	20.4	25.5	30.6	39.1
		115	15.7	23	28.8	34.5	44
3.1x2.5		305	7.1	61	76.3	91.5	103
20	10	25	216	5.0	6.3	7.5	8.3
		32	168	6.4	8.0	9.6	10.9
		38	129	7.6	9.5	11.4	12.5
		44	112	8.8	11	13.2	15
		51	94	10.2	12.8	15.3	17.6
		64	72.1	12.8	16	19.2	22.6
		76	59.7	15.2	19	22.8	27.6
		89	50.5	17.8	22.3	26.7	31.7
		102	44.2	20.4	25.5	30.6	37.5
		115	38.4	23	28.8	34.5	42.6
		127	34.1	25.4	31.8	38.1	45.5
		139	31	28	35	42	50.1
4 x 3.3		152	28.2	30.4	38	45.6	55.8
		305	15	61	76.3	91.5	114
25	12.5	25	375	5.0	6.3	7.5	8.5
		32	297	6.4	8.0	9.6	11
		38	291	7.6	9.5	11.4	12.6
		44	187	8.8	11	13.2	14.8
		51	156	10.2	12.8	15.3	17.9
		64	123	12.8	16	19.2	23.1
		76	99	15.2	19	22.8	26.3
		89	84	17.8	22.3	26.7	30.5
		102	73	20.4	25.5	30.6	37.3
		115	65	23	28.8	34.5	41.9
		127	57.7	25.4	31.8	38.1	46.2
		139	52.7	28	35	42	49.3
		152	47.8	30.4	38	45.6	55.7
		178	41	35.6	44.5	53.4	65.1
		203	35.8	40.6	50.8	60.9	74.5
5.5x4.2		305	22.9	61	76.3	91.5	110
32	16	38	388	7.6	9.5	11.4	12.5
		44	324	8.8	11	13.2	14.9
		51	272	10.2	12.8	15.3	17.8
7.1x5.4		64	212	12.8	16	19.2	22.4
32	16	76	172	15.2	19	22.8	26.1
		89	141	17.8	22.3	26.7	30.8
		102	122	20.4	25.5	30.6	36.8
		115	107	23	28.8	34.5	41.4
		127	93	25.4	31.8	38.1	44.4
		139	86	28	35	42	48.5
		152	78	30.4	38	45.6	54.8
		178	67.2	35.6	44.5	53.4	63.6
		203	59.1	40.6	50.8	60.9	72.5
		254	46.4	50.8	63.5	76.2	92.8
7.1x5.4		305	38	61	76.3	91.5	112
40	20	51	350	10.2	12.8	15.3	17
		64	269	12.8	16	19.2	21.9
		76	291	15.2	19	22.8	26.7
		89	190	17.8	22.3	26.7	31.3
		102	163	20.4	25.5	30.6	37.1
		115	142	23	28.8	34.5	41
		127	128	25.4	31.8	38.1	46.5
		139	115	28	35	42	53.1
		152	105	30.4	38	45.6	56.1
		178	89	35.6	44.5	53.4	67.4
		203	77	40.6	50.8	60.9	76.2
		254	61	50.8	63.5	76.2	96.2
8.4x6.2		305	51	61	76.3	91.5	115
50	25	64	413	12.8	16	19.2	22.4
		76	339	15.2	19	22.8	26.5
		89	288	17.8	22.3	26.7	31.5
		102	245	20.4	25.5	30.6	37.6
		115	215	23	28.8	34.5	42.7
		127	192	25.4	31.8	38.1	47.5
		139	168	28	35	42	51.8
		152	154	30.4	38	45.6	57.8
		178	134	35.6	44.5	53.4	68.5
		203	117	40.6	50.8	60.9	77.6
		254	89	50.8	63.5	76.2	97.9
11x7.6		305	73	61	76.3	91.5	121
63	38	76	618	15.2	19	22.8	24.7
		89	515	17.8	22.3	26.7	30
		102	438	20.4	25.5	30.6	35.1
		115	370	23	28.8	34.5	37.5
		127	333	25.4	31.8	38.1	45.9
		152	269	30.4	38	45.6	56.5
		178	226	35.6	44.5	53.4	66.8
		203	198	40.6	50.8	60.9	78.8
		254	155	50.8	63.5	76.2	102
11.6x12.3		305	128	61	76.3	91.5	122

SPECIAL SPRINGS

PERFORMANCE STEEL SPRINGS

Extra Heavy Load Spring



By multiplying spring coefficient (R) with compression amount simply (mm) spring force value is reached.(N) Example: R x (A.B.C.D) x 1 Newton = 0.102 Kg.

Rectangular, Import Mould Spring Extra Heavy Load Spring YELLOW SPRING-S

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 17	B Min. Clamping % 20	C Max. Clamping % 25	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
10	5	25	36.8	4.3	5.0	6.3	7.7
		32	27.9	5.4	6.4	8.0	10.6
		38	23.7	6.5	7.6	9.5	12.6
		44	19.2	7.5	8.8	11	13.8
		51	16.5	8.7	10.2	12.8	16.2
		64	13.2	10.9	12.8	16	20.4
		76	10.9	12.9	15.2	19	25.2
1.9X1.6		305	2.6	51.9	61	76.3	110.8
13	6.3	25	58.5	4.3	5.0	6.3	8.1
		32	43.9	5.4	6.4	8.0	9.9
		38	36	6.5	7.6	9.5	12.9
		44	30.3	7.5	8.8	11	14.1
		51	26.2	8.7	10.2	12.8	17.4
		64	21.2	10.9	12.8	16	21
		76	17.1	12.9	15.2	19	26.4
		89	14.5	15.1	17.8	22.3	31.5
		102	12.7	17.3	20.4	25.5	36
2.6X2.0		305	4.3	51.9	61.0	76.3	111.3
16	8	25	1148	4.3	5.0	6.3	8.5
		32	89	5.4	5.4	8.0	11
		38	72.1	6.5	7.6	9.5	13.2
		44	60.9	7.5	8.8	11	14.7
		51	52.3	8.7	10.2	12.8	17.7
		64	41.2	10.9	12.8	16	21.9
3.2X2.9		76	34.1	12.9	15.2	19	27.8
16	8	89	29.5	15.1	17.8	22.3	31.2
		102	25.6	17.3	20.4	25.5	37.9
		115	22.4	19.6	23	28.8	44.5
3.2X2.9		305	8.4	51.9	61	76.3	113.5
20	10	25	293	4.3	5.0	6.3	6.9
		32	224	5.4	6.4	8.0	9.4
		38	177	6.5	7.6	9.5	12
		44	149	7.5	8.8	11	13.5
		51	128	8.7	10.2	12.8	16.2
		64	99	10.9	12.8	16	21.2
		76	81.7	12.9	15.2	19	24.7
		89	69.5	15.1	17.8	22.3	28.8
		102	60.6	17.3	20.4	25.5	34.8
		115	53.0	19.6	23	28.8	39
		127	47.5	21.6	25.4	31.8	43
		139	43.0	23.8	28	35	45.3
4.1X3.8		152	39.0	25.8	30.4	38	50.4
		305	21.2	51.9	61	76.3	103.5
25	12.5	25	459	4.3	5.0	6.3	6.3
		32	374.4	5.4	6.4	8.0	8.0
		38	346	6.5	7.6	9.5	9.5
		44	244	7.5	8.8	11	11
		51	207.5	8.7	10.2	12.8	12.8
		64	161	10.9	12.8	16	16
		76	130.8	12.9	15.2	19	19
		89	110.5	15.1	17.8	22.3	22.3
		102	96.3	17.3	20.4	25.5	25.5
		115	85.7	19.6	23	28.8	28.8
		127	76.3	21.6	25.4	31.8	31.8
		139	68.9	23.8	28	35	35
		152	63.5	25.8	30.4	38	368
		178	53.9	30.3	35.6	44.5	44.5
		203	47	34.5	40.6	50.8	50.8
5.4X4.6		305	30.9	51.9	61	76.3	76.3
32	16	38	528.2	6.5	7.6	9.5	9.5
		44	424.4	7.5	8.8	11	11
		51	353	8.7	10.2	12.8	12.8
		64	269.2	10.9	12.8	16	16
		76	218.5	12.9	15.2	19	19
		89	180.3	15.1	17.8	22.3	22.3
		102	155	17.3	20.4	25.5	25.5
		115	140	19.6	23	28.8	28.8
7.3X5.9		127	124	21.6	25.4	31.8	31.8
32	16	139	112.3	23.8	28	35	35
		152	102	25.8	30.4	38	38
		178	88.2	30.3	35.6	44.5	44.5
		203	76	34.5	40.6	50.8	50.8
		254	60.8	43.2	50.8	63.5	63.5
7.3X5.9		305	49	51.9	61	76.3	76.3
40	20	51	628	8.7	10.2	12.8	12.8
		64	487	10.9	12.8	16	16
		76	379	12.9	15.2	19	19
		89	321	15.1	17.8	22.3	22.3
		102	281	17.3	20.4	25.5	25.5
		115	245	19.6	23	28.8	28.8
		127	221	21.6	25.4	31.8	31.8
		139	190	23.8	28	35	35
		152	168	25.8	30.4	38	38
		178	146	30.3	35.6	44.5	44.5
		203	132	34.5	40.6	50.8	50.8
		254	107	43.2	50.8	63.5	63.5
8.4X7.5		305	87.8	51.9	61	76.3	76.3
50	25	64	709	10.9	12.8	16	16
		76	572	12.9	15.2	19	19
		86	475	15.1	17.8	22.3	22.3
		102	405	17.3	20.4	25.5	25.5
		115	352	19.6	23	28.8	28.8
		127	316	21.6	25.4	31.8	31.8
		139	274	23.8	28	35	35
		152	239	25.8	30.4	38	38
		178	215	30.3	35.6	44.5	44.5
		203	187	34.5	40.6	50.8	50.8
		254	153	43.2	50.8	63.5	63.5
11X9.0		305	127	51.9	61.0	76.3	76.3
63	38	76	952	12.9	15.2	-	-
		89	819	15.1	17.8	-	-
		102	700	17.3	20.4	25.5	25.5
		115	620	19.6	23	28.8	28.8
		127	565	21.6	25.4	31.8	31.8
		152	458	25.8	30.4	38.0	38
		178	384	30.3	35.6	44.5	44.5
		203	337	34.5	40.6	50.8	50.8
		254	263	43.2	50.8	63.5	63.5
11.6x14.9		305	218	51.9	61.0	76.3	76.3

Order : SY (Yellow Spring) .D x L

Usage: It is compatible with extra heavy load spring and especially injection mould systems and equipment designs of machine production.

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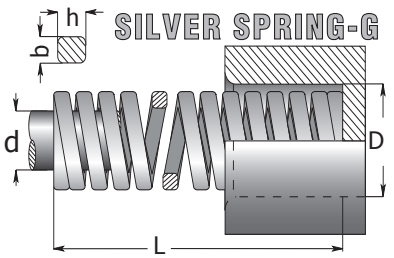
PERFORMANCE STEEL SPRINGS

Ultra Heavy Load Spring



Short Stroke, High Power, Heavy Loadings

By multiplying spring coefficient (R) with compression amount simply (mm) spring force value is reached. (N) Example: R x (A.B.C.D) x

1 Newton = 0.102 Kg.

Application Information For Long Lived Usage of Springs;

High tension levels only should be used when limited life is expected or in case of static loading. Under dynamic loading conditions, at the same time, exposing column spring to extraordinary temperatures, tensile loadings, lateral loadings, sudden loadings and high frequency usage limits the life time of springs. In all these cases, decreasing of tension values assists in terms of better spring life.

Limited Stocks; Delivery Period As Per Order

Order :
GY (Silver Spring) **.D x L**

Usage: It is compatible with ultra heavy load spring and especially injection mould systems and equipment designs of machine production.

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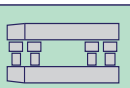


Section Press Mould

Technical Information! Page 138

Square, Import Mould Spring Ultra Heavy Load Spring **SILVER SPRING-G**

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 17	B Min. Clamping % 20	C Max. Clamping % 25	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	m64
25	12.5	64	644	6.4	7.7	9.6	13
		76	556	7.6	9.1	11.4	16
		89	462	8.9	10.7	13.4	20
		102	390	10.2	12.2	15.3	23
		115	360	11.5	13.8	17.3	26
		127	326	12.7	15.2	19.1	28
		152	255	15.2	18.2	22.8	34
		178	230	17.8	21.4	26.7	39
		203	202	20.3	24.4	30.5	45
5.6x7.5		305	136	30.5	36.6	45.8	63

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 17	B Min. Clamping % 20	C Max. Clamping % 25	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
40	20	89	880	8.9	10.7	13.4	20
		102	762	10.2	12.2	15.3	23
		115	679	11.5	13.8	17.3	26
		127	622	12.7	15.2	19.1	28
		152	509	22.8	18.2	22.8	36
		178	429	17.8	21.4	26.7	43
		203	374	20.3	24.4	30.5	49
		254	296	25.4	30.5	38.1	62
8.5x11		305	246	30.5	36.6	45.8	75

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 17	B Min. Clamping % 20	C Max. Clamping % 25	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
32	16	64	1077	6.4	7.7	9.6	13
		76	874	7.6	9.1	11.4	16
		89	721	8.9	11	13.35	20
		102	620	10	12	15.3	23
		115	560	12	14	17.25	26
		127	496	13	15	19.05	28
		152	408	15	18	22.8	34
		178	353	18	21	26.7	39
		203	304	20	24	30.45	45
		254	243	25	30	38.1	62
7.5X9.2		305	196	31	37	45.75	75

D Outer Dia.	d Inner Dia.	L Spring Length	R Load Rate	A Long Life % 17	B Min. Clamping % 20	C Max. Clamping % 25	D Full Clamping Attention
b x h		mm	Nw.	mm	mm	mm	mm
50	25	89	1410	8.9	10.7	13.4	19
		102	1215	10.2	12.2	15.3	22
		115	1076	11.5	13.8	17.3	25
		127	968	12.7	15.2	19.1	28
		152	806	15.2	18.2	22.8	34
		178	698	17.8	21.4	26.7	40
		203	612	20.3	24.4	30.5	45
		254	472	25.4	30.5	38.1	58
11.8x13.5		305	388	30.5	36.6	45.8	70

Threading (Punch/Bushing) Kit For Perforated / Punched Holes

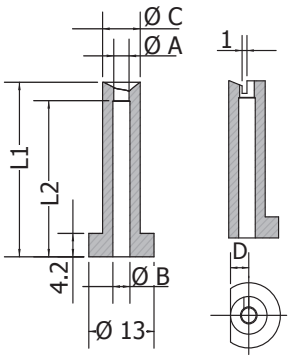
Order Code :
VYZ..

SCREW SLOT FORMING UNIT

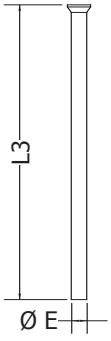
Screw Slot Forming Kit; It consists of three main parts. **1-** HSS Drilling Pin **2-** Pin / Emboss Punch - Bearing Bush **3-** Pin / Punch Emboss Bushing / Bush. **In terms of Working Systematics;** in all sheet cutting and forming moulds and press machines, it creates screw slots with the purpose of connecting two sheet plates with perforated front holes.

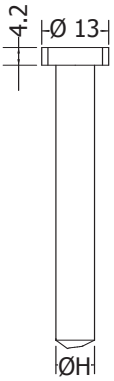
Usage: By placing HSS Drilling Pin into bearing bush, it is brought to stamp operation, while emboss conical angle in edge form of bush bends the sheet plate outwards direction, HSS Pin in it is shaped in hole form. Thus, the sheets to be connected with screw become ready for screwing. **Unit,** while screw forms hole in thread dimension tolerance, it prepares helix thread channels with emboss for screwing and clamping (Connecting).

Emboss Burnisher

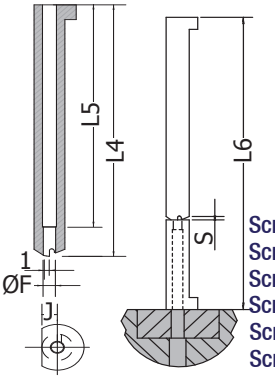


HSS Punch





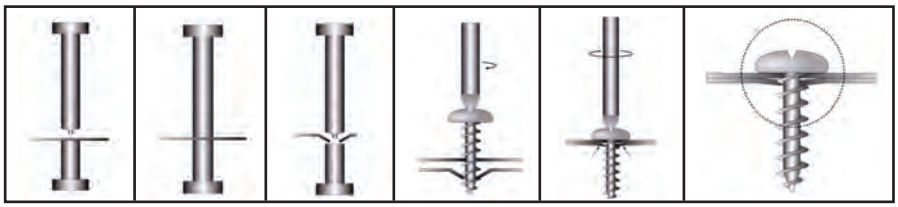
Emboss Punch



Screw Diameter
Thread Dimensions :
B 3.5
B 3.9
B 4.2
B 4.8
B 5.5
B 6.3

Sheet Thickness (S)
It is compatible with
Screw 3.5 mm : Max. 0.50 mm. Thickness
Screw 3.9 mm : Max. 0.63 mm. Thickness
Screw 4.2 mm : Max. 0.75 mm. Thickness
Screw 4.8 mm : Max. 0.88 mm. Thickness
Screw 5.5 mm : Max. 1.00 mm. Thickness
Screw 6.3 mm : Max. 1.20 mm. Thickness

Ø Screw	A H7	B Ø -mm	C h6	D K6	E Ø -h6	F Ø -h7	H Ø -h6	J K6	L1 mm	L2 mm	L3 mm	L4 mm	L5 mm	S Sheet	L6 Length
B3.5	2.75	3.2	7.5	3.75	2.7	2.7	7.5	3.75	31.3	28	74.5	71.5	60	0.5	101.72
B3.9	3.05	3.4	7.5	3.75	3.0	3.0	7.5	3.75	31.3	28	74.5	71.5	60	0.63	101.85
B4.2	3.15	3.5	8.5	4.25	3.1	3.1	8.0	4.0	31.3	28	74.5	71.5	60	0.75	101.97
B4.8	3.85	4.2	9.0	4.50	3.8	3.8	8.0	4.0	31.3	28	74.5	71.5	60	0.88	102.10
B5.5	4.35	4.8	9.0	4.50	4.3	4.3	8.0	4.0	31.3	28	74.5	71.5	60	1.00	102.22
B6.3	4.85	5.3	10.5	5.25	4.8	4.8	10.0	5.0	31.3	28	74.5	71.5	60	1.20	102.42



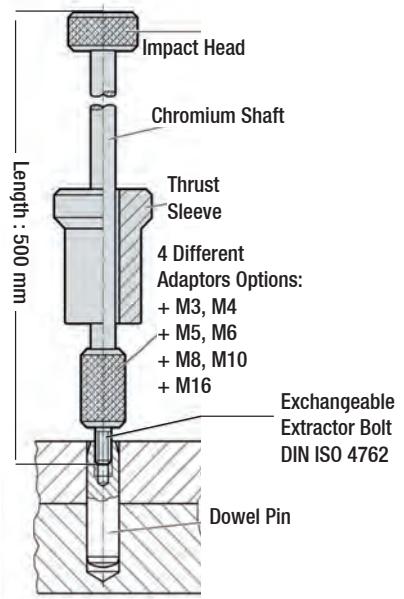
Order :
VYZ. Screw

Section Press Mould
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.

Order :
CTPC
(PIN PULLER)

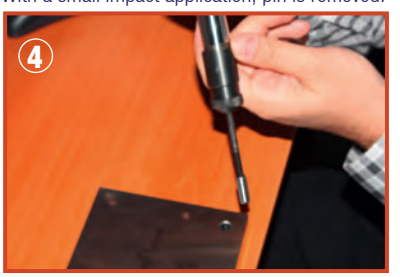
PIN PULLER

Mounting Example

Adaptor is inserted with installation.

Screwing is done on retaining pin.

With a small impact application, pin is removed.

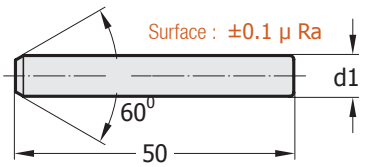


Extracted pin is removed from adaptor.

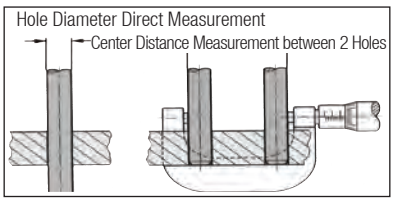
PRECISE MEASUREMENT PIN KIT

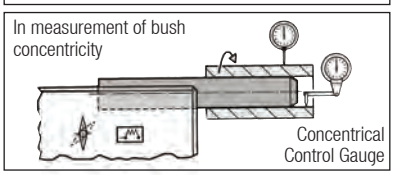
Pin Control Gauge Kit **PKMS**

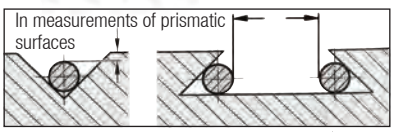
DIN 2269 - Dia. Tolerance : ± 0.001 / 2

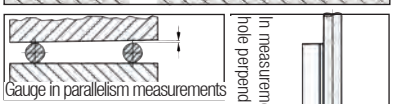


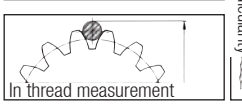
Small Set: 91 Pieces Measurement / Control Pin Between **Ø 1 -10 mm. In 0.1 mm** stepped complete wooden box.
Large Set: 273 Pieces Measurement / Control Pin. Between **Ø 1 -10 mm. In 0.1 mm** stepped complete wooden box. For each pin, over **0.01 mm** and under **0.01 mm** pins are available. In addition, pins are protected with plastic tube. The measures of all measurement pins over 3 mm are stamped on them.

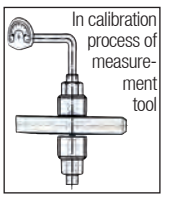












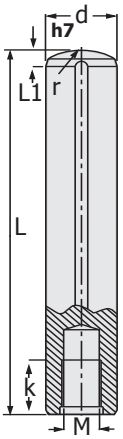
Material : HSS 1.3343
Hardness : 62 - 44 HRC

Order :
PKMS .1 Small Set
PKMS .2 Large Set

Mould Components
GTH

NOTE !

Threaded Dowel Pins
When used as thrust, their place should be determined in a way that their thread is as far as the waste distance from female cutting edge. In some cases, pin slot is opened away from cutting edge and pin is selected according to this.



(Dia.) Ø
Hollow Tolerance
h7

Continous Stocks

THREADED DOWEL PINS
Air Channel DIN 7979 / ISO 8735

CTP.h7
Hollow Ejector

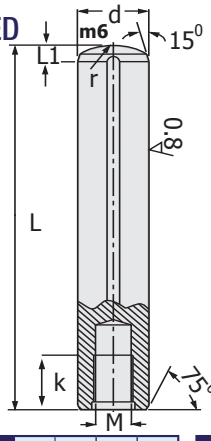
d	L	L1	k	M	r
Ø 6 mm	20	2.1 mm	6 mm	M4	6
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
h7 0 -12	80				
	90				
	100				
Ø 8 mm	20	2.6 mm	8 mm	M5	8
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
	80				
	90				
h7 0 -12	100				
	120				
Ø10 mm	20	3 mm	10 mm	M6	10
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
	80				
	90				
h7 0 -15	100				
	120				
Ø12 mm	20	3.8 mm	10 mm	M6	12
	25				
	30				
	35				
	40				
h7	45				

d	L	L1	k	M	r
Ø12 mm	50	3.8 mm	10 mm	M6	12
	55				
	60				
	70				
	80				
	90				
h7 0 -18	100				
	120				
Ø14 mm	30	4 mm	12 mm	M8	14
	35				
	40				
	45				
	50				
	60				
	70				
	80				
	90				
h7 0 -18	100				
	120				
	140				
Ø16 mm	30	4.7 mm	12 mm	M8	16
	35				
	40				
	45				
	50				
	60				
	70				
	80				
	90				
h7 0 -18	100				
	120				
	140				
Ø20 mm	30	6 mm	16 mm	M10	20
	35				
	40				
	50				
	60				
	70				
	80				
	90				
h7 0 -21	100				
	120				
	150				

Order : **CTP.h7** .d x L

Material : 1.7131 (16MnCr 5)
Hardness : 60 -62 HRC **Depth:** 0.8

THREADED DOWEL PINS
CTP. m6
Shrink Fit
Air Channel
DIN 7979
ISO 8735

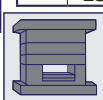


(Dia.) Ø
Shrink Fit Tolerance
m6

d	L	L1	k	M	r
Ø 5 mm	20	1.7 mm	6 mm	M3	5
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
m6 +12 +4	80				
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				
Ø 8 mm	20	2.6 mm	8 mm	M5	8
	25				
	30				
	35				
	40				
	45				
	50				
	55				
m6	60				
	70				
	80				
m6 +15 +6	90				
	100				
	120				
Ø10 mm	20	3 mm	10 mm	M6	10
	25				
	30				
	35				
	40				
	45				
	50				
	55				
	60				
	70				
	80				
m6 +15 +6	90				
	100				
	120				

Order : **CTP.m6**.d x L

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				
	80				
m6 +18 +7	90				
	100				
	120				
Ø14 mm	30	4 mm	12 mm	M8	14
	35				
	40				
	45				
	50				
	60				
	70				
	80				
	90				
m6 +18 +7	100				
	120				
	140				
Ø16 mm	30	4.7 mm	12 mm	M8	16
	35				
	40				
	45				
	50				
	60				
	70				
	80				
	90				
m6 +18 +7	100				
	120				
	140				
Ø20 mm	30	6 mm	16 mm	M10	20
	35				
	40				
	50				
	60				
	70				
	80				
	90				
m6 +21 +8	100				
	120				
	150				



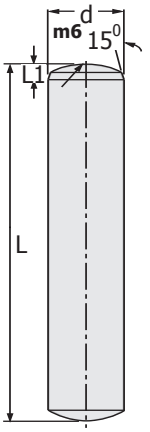
6325 DOWEL PINS

DTP.m6

Shrink Fit

DIN 6325

ISO 9734



(Dia.) Ø **Shrink Fit Tolerance**

m6

Continous Stocks

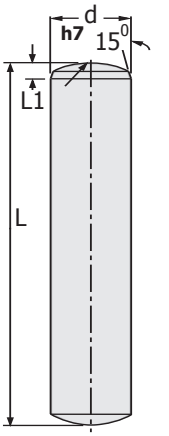
d	L	L1	r
Ø 3 mm m6 +8 +2	10, 16, 20, 25, 30, 35	0.8 mm	3
Ø 4 mm m6 +8 +2	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60	1.0 mm	4
Ø 5 mm m6 +8 +2	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80	1.2 mm	5
Ø 6 mm m6 +12 +4	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100	1.5 mm	6
Ø 8 mm m6 +15 +6	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120	2.0 mm	8
Ø10 mm m6 +15 +6	20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140	2.5 mm	10
Ø12 mm m6 +18 +7	20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140	3.0 mm	12
Ø14 mm m6 +18 +7	30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 120, 140	3.5 mm	14
Ø16 mm m6 +18 +7	30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 120, 140	4.0 mm	16
Ø20 mm m6 +21 +8	30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140, 160	5.0 mm	20

Order : **DTP.m6** .d x L

NOTE !

Dowel Pins 6325

When used as thrust, their place should be determined in a way that their thread is as far as waste distance from female cutting edge. In some cases, pin slot is opened away from cutting edge and pin is selected according to this.



(Dia.) Ø **Hollow Tolerance**

h7

Continous Stocks

6325 DOWEL PINS

DIN 6325 ISO 9734

DTP.h7

Hollow Ejector

d	L	L1	r
Ø 5 mm h7 0 -12	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80	1.2 mm	5
Ø 6 mm h7 0 -12	10, 16, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100	1.5 mm	6
Ø 8 mm h7 0 -15	10, 16, 20, 25, 30, 35	2.0 mm	8
Ø 8 mm h7 0 -15	40, 45, 50, 55, 60, 70, 80, 90, 100, 120	2.0 mm	8
Ø10 mm h7 0 -15	20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140	2.5 mm	10
Ø12 mm h7 0 -18	20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140	3.0 mm	12
Ø14 mm h7 0 -18	30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 120, 140	3.5 mm	14
Ø16 mm h7 0 -18	30, 35, 40, 45, 50, 60, 70, 80, 90, 100, 120, 140	4.0 mm	16
Ø20 mm h7 0 -21	30, 35, 40, 45, 50, 55, 60, 70, 80, 90, 100, 120, 140, 160	5.0 mm	20

Material : 1.7131 (16MnCr 5)
Hardness : 60 -62 HRC **Depth:** 0.8

Order : **DTP.h7** .d x L

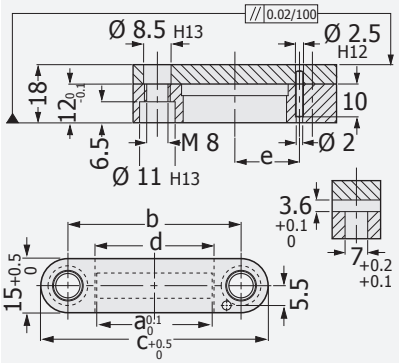
MOULD SPARE PARTS

Precision Processing - Special Works

Press Mould Systems, Sheet Cutting / Spinning - Bending Form Moulds, Complicate Moulds and Progressive Unit Moulds. In addition, we produce your special parts belonging to other mould systems within technical drawing details, as precision heat treated and in desired materials with complete grinded operations. Centering Pins, Compression and Clutch Plates, Balancing Blocks, Base and Thrust Plates, Special Wedges, Matrix Holders, Special Guide Shaft Coupling Nut, Separator - Holder and Adjustor Parts, Conical Centering Components, Centering Components and Your Special Washers and Inserts etc.

PUNCH HOLDERS ZTP

Reference : PSA E24.64.100.G

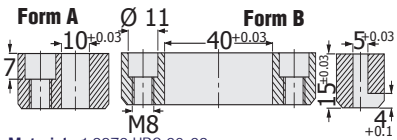


Piece	a	b	c	d	e
4	16	32	**47**	17	12
6	24	40	**55**	25	-
8	32	48	**63**	33	20
10	40	56	**71**	41	24

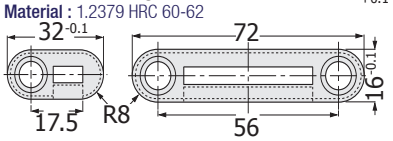
Order : **ZTP.** C. Pieces

PUNCH HOLDERS ZTF

Reference : FORD WDX20 - 70

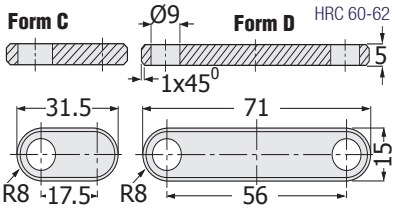


Material : 1.2379 HRC 60-62



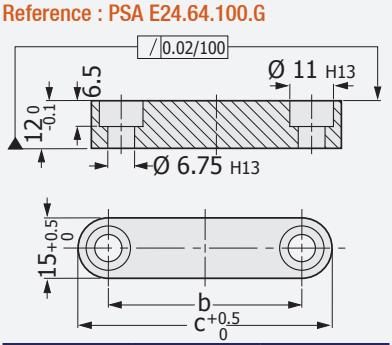
PUNCH SUPPORT PLATE ZDF

Reference: FORD WDX20 - 70 Material : 1.0503 HRC 60-62



PUNCH SUPPORT PLATE ZDP

Reference : PSA E24.64.100.G

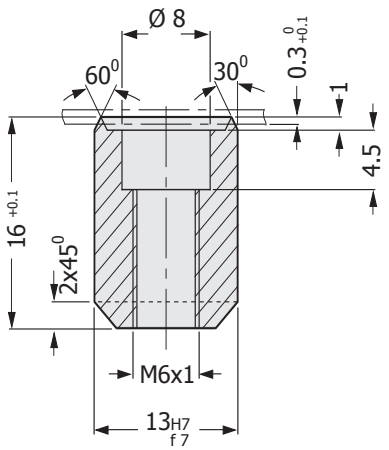


Piece	b	c
4	32	**47**
6	40	**56**
8	48	**63**
10	56	**70**

Order : **ZDP.** C. Piece

POSITION TRACE PUNCH KZF

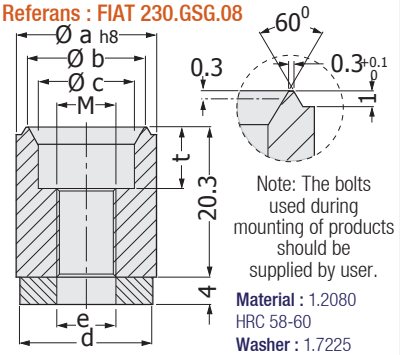
Reference : FORD WDX20 - 70



Material : 1.2080 HRC 60-64

POSITION TRACE PUNCH KZG

Referans : FIAT 230.GSG.08

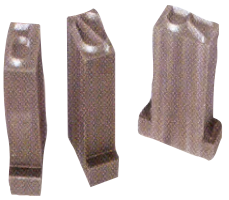


Note: The bolts used during mounting of products should be supplied by user.

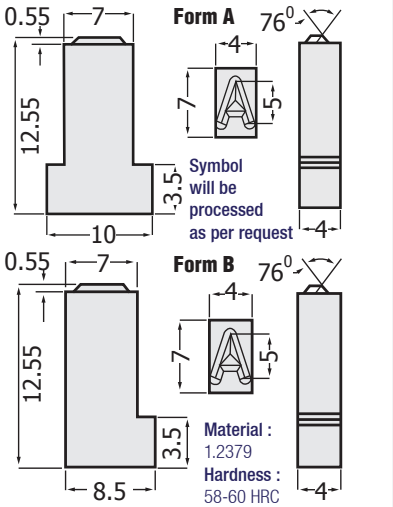
Material : 1.2080
HRC 58-60
Washer : 1.7225

a	b	c	M	t	d	e
25	18	16	M10	12	24	9
19	16	13	M8	8	18	8

Order : **KZG.** a

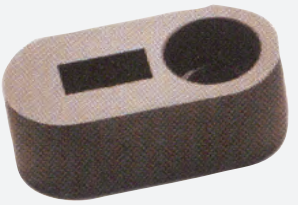


MARKING PUNCH MZG

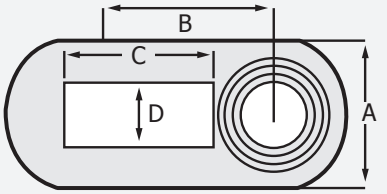


Material : 1.2379
Hardness : 58-60 HRC

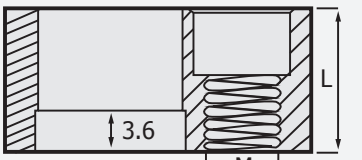
Order : **MZG.** Form.Symbol
When ordering; symbol should be determined.



MARKING HOLDER MTG



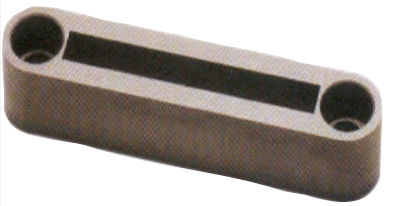
Material : Ck 45 **Hardness :** Without heat treatment



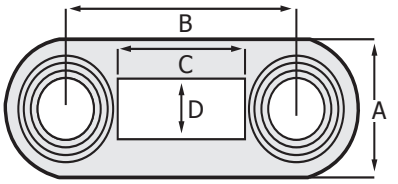
Polyamide material as per request

A	B	L	C	D	Ad.	M
14.90	**6.0**	12.0	4.10	7.10	1	M6
	10.0		8.10		2	
	14.0		12.10		3	
	18.0		16.10		4	
	22.0		20.10		5	

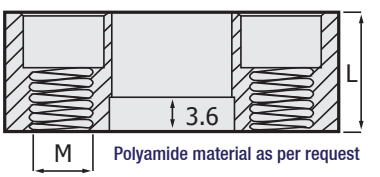
Order : **MTG.** AxB



MARKING HOLDER MTU



Material : Ck 45 **Hardness :** Without heat treatment

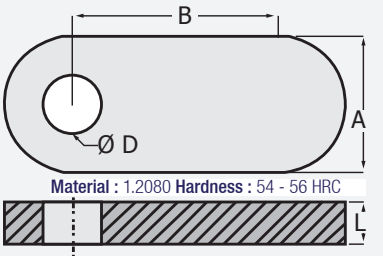


Polyamide material as per request

A	B	L	C	D	Ad.	M
14.90	**28**	12.0	16.10	7.10	4	M6
	32		20.10		5	
	34		24.10		6	
	44		32.10		8	
	52		40.10		10	

Order : **MTU.** AxB

CRUSH PLATE MEG

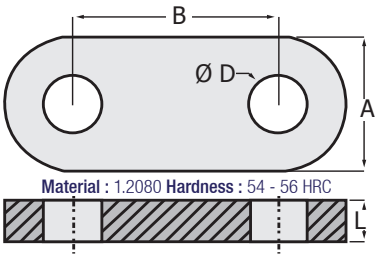


Material : 1.2080 **Hardness :** 54 - 56 HRC

A	B	L	D
15	**6.0**	5	6.7
	10.0		
	14.0		
	18.0		
	22.0		

Order : **MEG.** AxB

CRUSH PLATE MEU



Material : 1.2080 **Hardness :** 54 - 56 HRC

A	B	L	D
15	**28**	5	6.7
	32		
	36		
	44		
	52		

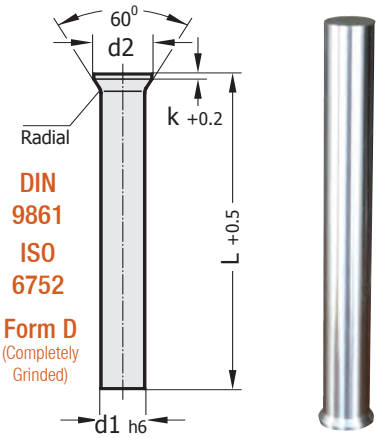
Order : **MEU.** AxB

HSS COUNTERSUNK PUNCH HBZ..

d1	L	d2	k
10	71	12	1.0
	80		
	100		
	125		
	160		
10.5	71	13.5	1.0
	80		
	100		
	125		
	160		
11	71	13.5	1.0
	80		
	100		
	125		
	160		
11.5	71	14	1.0
	80		
	100		
12	71	14	1.0
	80		
	100		
	125		
	160		
12.5	71	15	1.0
	80		
	100		
13	71	15	1.5
	80		
	100		
	125		
	160		
13.5	71	16	1.5
	80		
	100		
14	71	16	1.5
	80		
	100		
	125		
	160		
14.5	71	17	1.5
	80		
	100		
15	80	17	1.5
	100		
	125		
	160		
16	71	18	1.5
	80		
	100		
	125		
	160		
17	80	19	1.5
	100		
18	80	21	1.5
	100		
19	80	21	1.5
	100		
20	71	22	1.5
	80		
	100		
	125		
	160		

d1	L	d2	k
6.6	71	9.0	1.0
6.7	80		
	100		
6.8	71	9.0	1.0
6.9	80		
	100		
7.0	71	9.0	1.0
	80		
	100		
	125		
	160		
7.1	71	9.0	1.0
7.2	80		
	100		
7.3	71	9.0	1.0
7.4	80		
	100		
7.5	71	10	1.0
	80		
	100		
	125		
	160		
7.6	71	10	1.0
7.7	80		
	100		
7.8	71	10	1.0
7.9	80		
	100		
8.0	71	10	1.0
	80		
	100		
	125		
	160		
8.1	71	10	1.0
8.2	80		
	100		
8.3	71	10	1.0
8.4	80		
	100		
8.5	71	11	1.0
	80		
	100		
	125		
	160		
8.6	71	11	1.0
8.7	80		
	100		
8.8	71	11	1.0
8.9	80		
	100		
9.0	71	11	1.0
	80		
	100		
9.5	125	12	1.0
	160		

d1	L	d2	k
4.1	71	5.5	0.5
4.2	80		
	100		
4.3	71	5.5	0.5
4.4	80		
	100		
4.5	71	6.0	0.5
	80		
	100		
	125		
	160		
4.6	71	6.0	0.5
4.7	80		
	100		
4.8	71	6.0	0.5
4.9	80		
	100		
5.0	71	6.5	0.5
	80		
	100		
	125		
	160		
5.1	71	6.5	0.5
5.2	80		
	100		
5.3	71	6.5	0.5
5.4	80		
	100		
5.5	71	7.0	0.5
	80		
	100		
	125		
	160		
5.6	71	7.0	0.5
5.7	80		
	100		
5.8	71	7.0	0.5
5.9	80		
	100		
6.0	71	8.0	1.0
	80		
	100		
	125		
	160		
6.1	71	8.0	1.0
6.2	80		
	100		
6.3	71	8.0	1.0
6.4	80		
	100		
6.5	71	9.0	1.0
	80		
	100		
	125		
	160		



DIN 9861
ISO 6752
Form D
(Completely Grinded)

Punch as per request

TIN / TIC Plating

Complete Plating

ASP (Powder Metal)

Sintered Carbide

HSS COUNTERSUNK PUNCH HBZ..

With our wide range and dimensional products of GTH Press Mould Punch and Matrix Sets from our shelf stocks, we are in top location with our sectoral experience in quality / price formation, in addition we meet other special requests with the shortest delivery time. **Continous Stocks**

Countersunk Form D HSS Punch: Material - 1.3343 completely grinded, heat treated (62-64 HRC ± 2) Head Hardness: (52 ±3) Surface ≥ 950 HV 0.3. It is for durable parts in all kinds of drilling / cutting moulds. Also, TIN / TIC Plating completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin). For harder work pieces, **ASP** (Powder Metal) and for very hard and abrasive work pieces, sintered carbide punches are preferred.

d1	L	d2	k
3.0	71	4.5	0.5
	80		
	100		
	125		
	160		
3.1	71	4.5	0.5
3.2	80		
	100		
3.3	71	4.5	0.5
3.4	80		
	100		
3.5	71	5.0	0.5
	80		
	100		
	125		
	160		
3.6	71	5.0	0.5
3.7	80		
	100		
3.8	71	5.0	0.5
3.9	80		
	100		
4.0	71	5.5	0.5
	80		
	100		
	125		
	160		

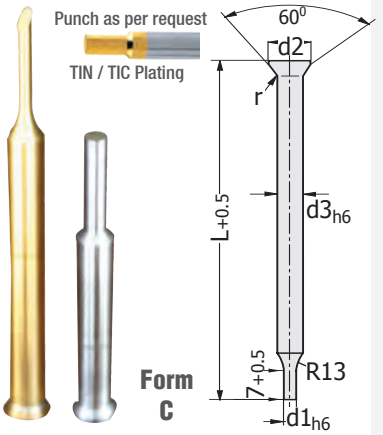
d1	L	d2	k
1.8	71	2.8	0.5
1.9	80		
	100		
2.0	71	3.0	0.5
	80		
	100		
	125		
	160		
2.1	71	3.2	0.5
2.2	80		
	100		
2.3	71	3.5	0.5
2.4	80		
	100		
2.5	71	3.5	0.5
	80		
	100		
	125		
	160		
2.6	71	4.0	0.5
2.7	80		
	100		
2.8	71	4.0	0.5
2.9	80		
	100		

d1	L	d2	k
0.5	71	0.9	0.2
	80		
	100		
0.6	71	1.1	0.2
	80		
	100		
0.7	71	1.3	0.2
	80		
	100		
0.8	71	1.4	0.4
	80		
	100		
0.9	71	1.6	0.4
	80		
	100		
1.0	71	1.8	0.5
1.1	80		
	100		
1.2	71	2.0	0.5
1.3	80		
	100		
1.4	71	2.2	0.5
1.5	80		
	100		
1.6	71	2.5	0.5
1.7	80		
	100		

Order : **HBZ.** d1 x L

Section Press Mould

Page 151



HSS HB. STEPPED-PUNCHES

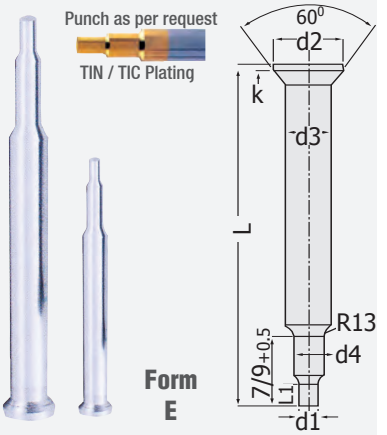
DIN 9861 Form C — HKZ..

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 +0.4
	80			
1.0	71			
	80			
1.2	71			
	80			
1.5	71	2.5 mm		
	80			
1.6	71			
	80			
1.8	71			
	80			
1.0	71	3 mm	4.5 mm	0.6 +0.4
	80			
1.5	71			
	80			
1.8	71			
	80			
2.2	71			
	80			
2.3	71			
	80			
2.6	71			
	80			
2.8	71			
	80			

Order : **HKZ.** d3 x d1 x L
Special Production As Per Request



HSS DOUBLE STEPPED-PUNCH

DIN 9861 Form E — H2K..

As per request, our HSS Punch Production is available in the desired material and dimensions and also in shapes.

It is prefferred for thin work pieces and light works.

Countersunk Double Stepped Punch

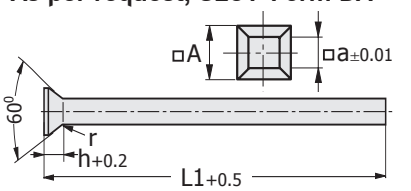
d1	d4	d3	d2	L	L1
1.0	1.4	Ø 3.0	4.5 mm	71	2 mm
1.2	1.6				
1.5	1.8			80	
1.7	2.1				
2.2	2.6			100	
2.5	2.8				
1.6	2.2	Ø 4.0	5.5 mm	71	2.5 mm
1.8	2.3				
2.3	2.8			80	
2.6	3.0				
3.0	3.5			100	
3.2	3.7				
2.4	3.0	Ø 5.0	6.5 mm	71	3 mm
2.8	3.5				
3.2	4.0			80	
3.6	4.2				
4.2	4.6			100	
4.5	4.8				
2.5	3.2	Ø 6.0	8 mm	71	3 mm
3.0	3.8				
3.5	4.2			80	
4.0	4.8				
4.5	5.3			100	
5.0	5.5				
5.5	5.8				

For your special requests, pls. specify technical drawing in table or your technical data details and also characteristics of punch to be used.

Order : **H2K.** Special Production As Per Request
d1 x d4 x d3 x L x L1

HSS FORMED PUNCHES

As per request, SLOT-Form DA



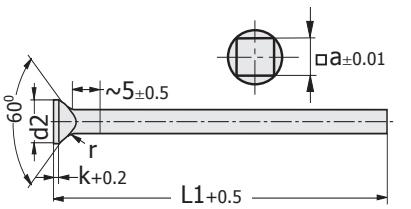
Forged head - Square Form HFK

a	L1	□A	h
1.0	71	1.8	1.2
2.0		3.0	1.4
3.0		4.5	1.8
4.0		5.5	1.8
5.0		6.5	1.8
6.0		8.0	2.2

a	L1	□A	h
7.0	71	9.0	2.8
8.0		10.0	
9.0		11.0	
10.0		12.0	
12.0		14.0	

Order : **HFK** a x L1

HSS FORMED PUNCHES



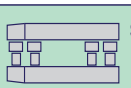
Square Type - Round Form HFY

a	L1	d2	k
1.0	71	1.8	0.5
2.0		3.0	
3.0		4.5	
4.0		6.0	
5.0		7.5	
6.0		9.0	

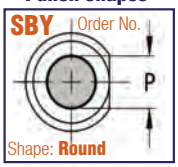
a	L1	d2	k
7.0	71	10.5	1.0
8.0		12.0	
9.0		13.5	
10.0		15.0	
12.0		18.0	

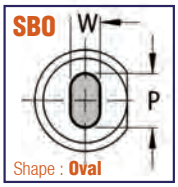
Excluding product types in tables, our production such as headless and different SLOT Types, also press mould punches as per request are available.

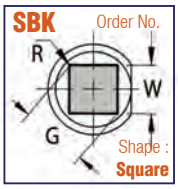
Order : **HFY** a x L1.

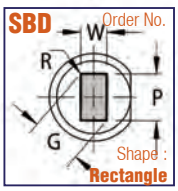


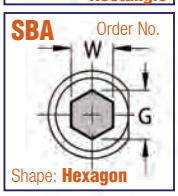
Formed Punch Shapes

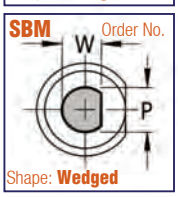


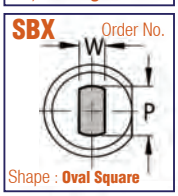


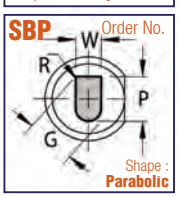


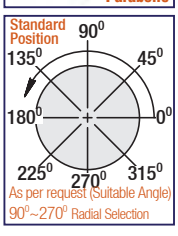


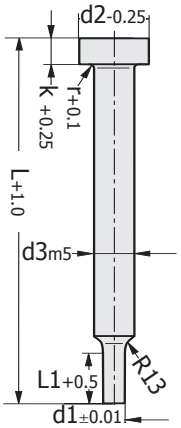


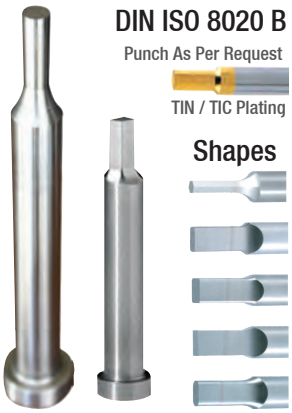










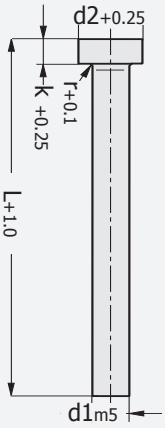


DIN ISO 8020 B

Punch As Per Request

TIN / TIC Plating

Shapes



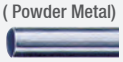
DIN ISO 8020 A

Punch As Per Request

TIN / TIC Plating

Complete Plating

ASP (Powder Metal)



Sintered Carbide

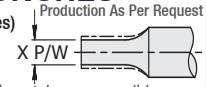
SBZ..

HSS SB. STEPPED-PUNCHES

XP **Punch Measuring Range (Alternatives)**

XW Dimensions belonging to **"P"** or **"W"** should be according to standards specified in catalogue. The values in catalogue are valid for cutting length and total length. They are valid for increased **"L1"** length and decreased total length **"L"**.

Production As Per Request



SBY - SBO - SBK - SBD - SBA - SBM - SBX - SBP

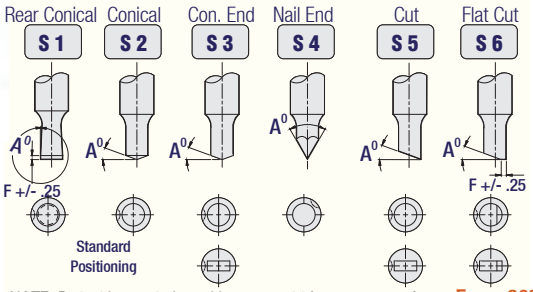
Order Ø d3	Head Ø d2	Ø d1 Shape SBY Round P	Ø d1 Shape Other Shapes W G/P	Standard L1	Alternative L1 Min.	Alternative L1 Max.	L Len. mm
SB.04	6	1.6 ~ 3.99	1.6 - 4.0	**8**	10	-	50 60 71 80 90 100
SB.05	8	1.6 ~ 4.99	1.6 - 5.0	**13**	10	-	
SB.06	9	1.6 ~ 5.99	1.6 - 6.0	**13**	10	-	
SB.08	11	2.5 ~ 7.99	2.5 - 8.0	**19**	13	-	
SB.10	13	3.2 ~ 9.99	3.2 - 10	**19**	13	25	
SB.13	16	5.0 ~ 12.99	4.5 - 13	**19**	13	25	
SB.16	19	8.0 ~ 15.99	6.0 - 16	**19**	13	25	
SB.20	23	10 ~ 19.99	8.0 - 20	**19**	13	25	60 71 80 90 100
SB.25	28	12 ~ 24.99	9.0 - 25	**19**	13	25	
SB.32	35	16 ~ 31.99	10 - 32	**25**	19	30	
SB.40	43	30 ~ 39.99	14 - 40	**25**	19	30	

Standart Tolerances		
Round P+0.1	◎ 0.1	From P to 3
Shape P,W ± 0.1	◎ 0.2	From P to 3

Standard position of flat surface is 0°, as per request, it can be preferred as 270°.

Order: Punch shape selection, technical drawing details and also usage information are required. (Example: SBY x P) **Technical Information!**

CUTTING ANGLES (Special Kits): While ordering, " A " angle and " F " dimension absolutely should be specified by user.



NOTE: By looking at their position at mould from upper surface of mould, parts are displayed. Positions of punches are determined by looking along casing. It is determined by monitoring from the upper surface.

From 90° to 270°

HSS CYLINDER HEAD PUNCHES

Mounting of cylinder capped type punch to the holder plate during usage is planned, guiding process is provided by the scraper plate, by mounting punches in this style, to eliminate axial errors that resulted from incorret mounting or press of Mould Base is more easier. By using this connection type, decomposition between transmission and bedding of drilling power has been provided.

Continous Stocks

DIN ISO 8020 A Cyclinder Head Punch, Material 1.3343

Completely Grinded Heat Treated (62-64 HRC ± 2). Head Hardness (52 ± 3) Surface ≥ 950 HV 0.3 It is for durable parts in all kinds of drilling / cutting moulds.

Also, **TIN / TIC** Plating completely or partially (by providing resistance against heat and friction on external layer, it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin). For harder work pieces, ASP (Powder Metal) and for very hard and abrasive work pieces, sintered carbide punches are preferred.

d1	L	d2	k	r
10	**71**	13	5	0.40
	80			
	100			
	125			
13	**71**	16	5	0.40
	80			
	100			
	125			
16	**71**	19	5	0.40
	80			
	100			
	125			
20	**80**	23	5	0.40
	100			
	125			
	160			
25	**80**	28	5	0.40
	100			
	125			
	160			
32	**80**	35	5	0.40
	100			
	125			
	160			

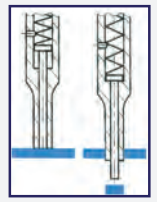
d1	L	d2	k	r
2.0	**71**	5.0	3	0.20
	80			
2.5	**100**			
3.0	**71**	5.0	3	0.20
	80			
3.5	**100**	6.0		
4.0	**71**	6.0	3	0.20
	80			
4.5	**100**	8.0	5	
5	**71**	8.0	5	0.25
	80			
	100			
6.0	**71**	9.0	5	0.25
	80			
	100			
	125			
8.0	**71**	11	5	0.25
	80			
	100			
	125			

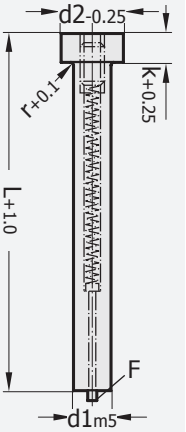
Order : **SBZ.** d1 x L

Section Press Mould

Punch As Per Request

TIN / TIC Plating





HSS EJECTOR PIN-AH TYPE PUNCHES SFZ

ISO 8020 (As Extractor) Springy, Ejector, Air Channel

HSS Cylinder Head Ejector / Pinned Launcher Punch: Material 1.3343

Completely Grinded Heat Threated (62-64 HRC ± 2)'. Head Hardness (52 ± 3) Surface ≥ 950 HV 0.3 It is for durable parts in all kinds of drilling / cutting moulds. Also, TIN / TIC Plating completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin). For harder work pieces, ASP (Powder Metal) and for very hard and abrasive work pieces, sintered arbide punches are preferred.

HSS EJECTOR PIN-AH TYPE (CYLINDRICAL HEAD) PUNCHES SFZ

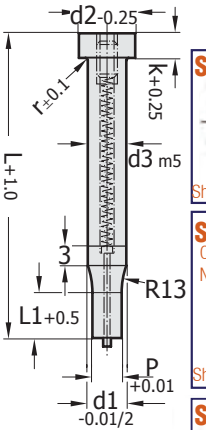
d1	L	d2	F	k	r
5.0		8	2		
6.0	71	9	3		
8.0	80	11	4		0.3
10	100	13	5		
13	120	16	5	5 mm	
16		19	6		
20	Lenght Selection As Per Request	23	6		0.4
25		28	6		
32		35	6		

Order : **SFZ** d1 x L — Production As Per Request

Punch As Per Request

TIN / TIC Plating

Shapes



STEPPED EJECTOR PINS PUNCHES

At your stepped-punch orders, you can order with punch code - dimensions specified in adjacent punch shape tables and tench ical drawing. (**Example**: SFY x P)

SFY - SFO - SFK - SFD - SFA - SFM - SFX - SFP

Stepped-Ejector Pins Punches According to Shapes

Order Ø d3	Head Ø d2	Ø d1 Shape SFY Round P	Ø d1 Shape Other Shapes W G/P	Standartd L1	Alternative L1 Min.	Alternative L1 Max.	L Len. mm
SF.05	8	1.6 ~ 4.99	1.6 - 5.0	13	10	-	71
SF.06	9	2.5 ~ 5.99	2.5 - 6.0	13	10	-	80
SF.08	11	3.2 ~ 7.99	3.2 - 8.0	19	13	19	90
SF.10	13	4.5 ~ 9.99	4.5 - 10	19	13	25	100
SF.13	16	6.0 ~ 12.99	6.0 - 13	19	13	25	120
SF.16	19	8.0 ~ 15.99	7.5 - 16	19	13	25	
SF.20	23	10 ~ 19.99	8.0 - 20	19	13	25	
SF.25	28	12 ~ 24.99	9.0 - 25	19	13	25	
SF.32	35	16 ~ 31.99	10 - 32	25	19	30	

Standard Tolerances		
Round P+0.1	◎ 0.1	From P to d3
Shape P,W ± 0.1	◎ 0.2	From P to d3

Standard position of flat surface is 0°, as per request can be preferred from 90° to 270°.

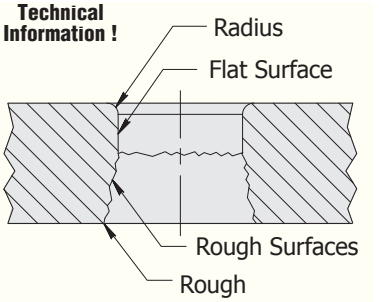
DEFINITION OF CAVITY BETWEEN PUNCH AND MOULD

Cavity between punch and mould depends on material type of stamped work pieces, material thickness, hole diameter and desired tool life.

It is expressed as total percentage of stamped material thickness. It should be remembered that hole diameter of punch specifies the dimension of part to be processed. Generally, ideal cavity provides serial, clear and smooth drilling process with minimum tool force. When left with unsufficient cavity, minimum radius and burrs are obtained. However, depending on high tool forces, it shortens tool life. As a result of excessive cavity, wide radius creates deformation, but tool life is increased. Some general values are presented for different materials in the following table (It is advisory). Expressed values are total mould cavity recommended for unused ejector punch holes. Increasing cavity to 2 times by using ejector punch, will be significiantly increased estimated tool life. Abrasion Occurring in most of the punches occur by scraper forces. Increasing cavity with using ejector punches will hold abrasion on tool surface in minimum.

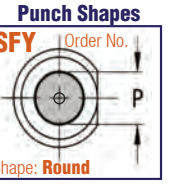
Punches used in press mould should be mounted in perpendicular position as 90° completely. All of guide plates and female mould hole axials should be created completely grinded, with reamer and precision.

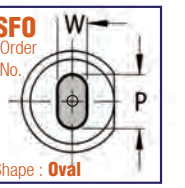
Technical Information !

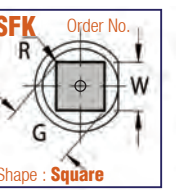


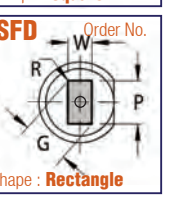
Material	Soft	Hard
Aluminium	% 10	% 12
Bronze /Copper	% 6	% 8
Low Carbon Steel	% 10	% 12
High Carbon Steel	% 18	% 20

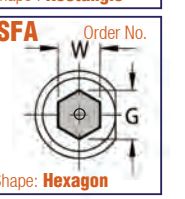
Formed Punch Shapes

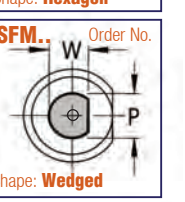


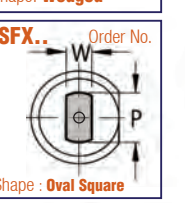


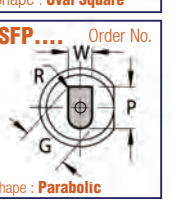


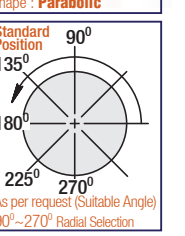


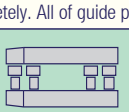






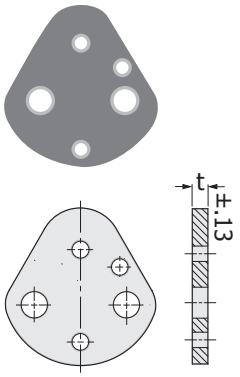






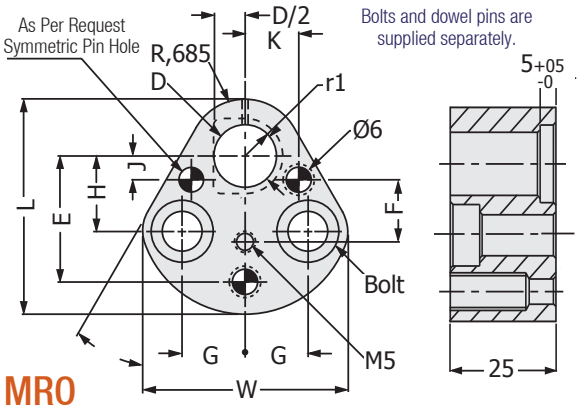
Section Press Mould

MRO-MRN BOLSTER PLATES FOR PUNCH HOLDERS

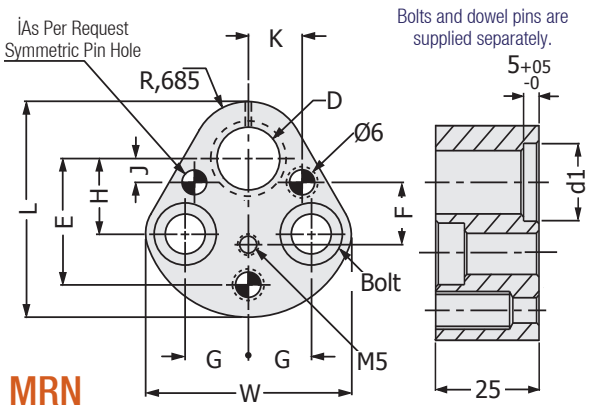


Order	Code	t
MRO/MRN.10	018	1.80
MRO/MRN.13	030	3.00
MRO/MRN.16	031	3.18
MRO/MRN.20	047	4.75
MRO/MRN.25	060	6.00
MRO/MRN.32	063	6.35
Example Order: Retainer Code (MRO - MRN) MAX.018	100	10
	130	13

TRIANGLE HOLDER for CAP SHAPED PUNCHES



TRIANGLE HOLDER for CAP ROUND PUNCHES



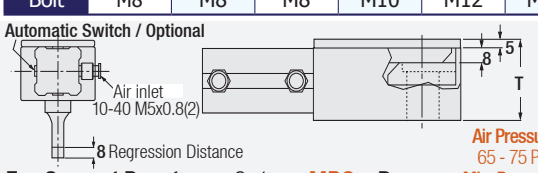
MRO

Holder for Cap Shaped Punches	Order No. MRO					
Dimension	MRO 10	MRO 13	MRO 16	MRO 20	MRO 25	MRO 32
Ø D	10	13	16	20	25	32
r1	7	8.5	10	12	14.5	18
Ø L	44.5	50.8	54	60.3	69.9	69.9
W	39.9	48.3	51.6	58.2	66.5	66.5
R	9.5	12.7	14.3	17.5	22.2	22.2
H	19.05	19.05	19.05	19.05	23.82	23.82
J ±0.1	7.5	6.5	6.0	5.0	7.0	7.0
K ±0.1	9.0	12	13.5	16.5	22	22
G	11.12	14.27	15.87	17.47	19.84	19.84
E ±0.1	26.924	29.972	31.750	33.528	40.640	40.640
F	16	16	16	23	30	30
Bolt	M8	M8	M8	M10	M12	M12

MRN

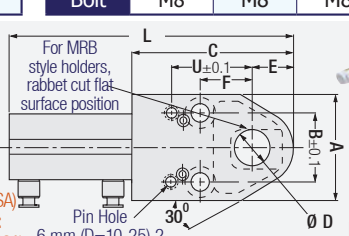
Holder for Cap Round Punches	Order No. MRN					
Dimension	MRN 10	MRN 13	MRN 16	MRN 20	MRN 25	MRN 32
Ø D	10	13	16	20	25	32
d1	14	17	20	24	29	36
Ø L	44.5	50.8	54	60.3	69.9	69.9
W	39.9	48.3	51.6	58.2	66.5	66.5
R	9.5	12.7	14.3	17.5	22.2	22.2
H	19.05	19.05	19.05	19.05	23.82	23.82
J ±0.1	7.5	6.5	6.0	5.0	7.0	7.0
K ±0.1	9.0	12	13.5	16.5	22	22
G	11.12	14.27	15.87	17.42	19.84	19.84
E ±0.1	26.124	29.972	31.750	33.528	40.640	40.640
F	16	16	16	23	30	30
Bolt	M8	M8	M8	M10	M12	M12

Automatic Switch / Optional



For Capped Punches Order : **MRC x D**
For Shaped Punhes Order : **MRB x D**

Ø D	L	A	B	C	E	F	T	U	Bolt
10	128	46	30	73	18	25	45	41	M8
13		49							M10
16									
20	155	58	38	90	23	29		45	
25									
32	208	80	56	125	33	38	55	60	M12



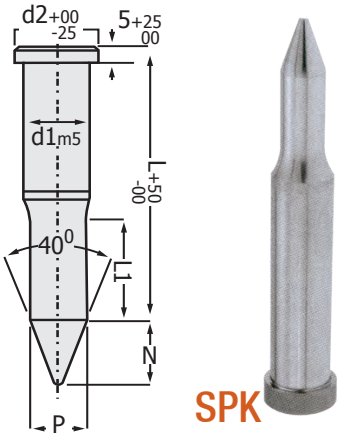
Air Pressure
65 - 75 PSİ
Min. Pressure :
3.2 Kgf cm^2 (45 PSA)
Max. Pressure :
10.2 Kgf cm^2 (145 PSA)

6 mm (D=10-25) 2
8 mm (D=32-40) 2

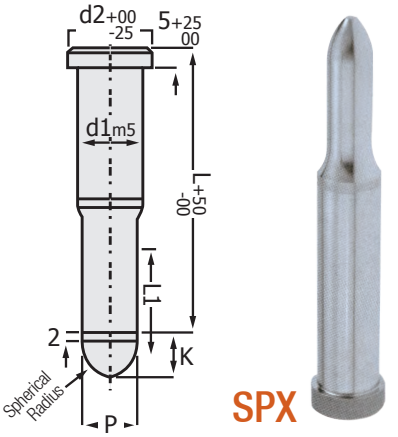
Two position pneumatic holders do not create additional tool cost. It provides adding holes or removing without interrupting the production. It is compatible with NAAMS Standards and other standards. Thanks to its powerful block structure, there is no need for extra security. **MRC** for round end punches - **MRB** for shaped punches (Specify locking place while giving punch order.)

PNEUMATIC PUNCH HOLDER
For Capped Round Punches
For HSS SB. Punches MRC
For Shaped Punches MRB

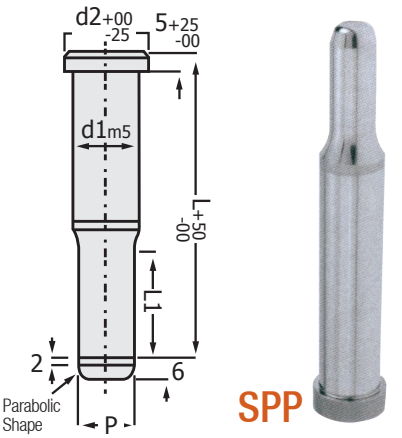
Section Press Mould
Page 155



SPK



SPX



SPP

CONICAL END, PILOT PINS

Conical End, Cyclinder Head Guides

If **P** dimension is lower than reference P dimension specified in Table, **N= 1.2 P** is minimum.
In case that **P** is equal to **d1 , P=d1** casing tolerance is valid.

Standard Tolerances

Round	P^{+01}_{-00}	,01	From P to d1

SPHERICAL END, PILOT PINS

Spherical End, Cyclinder Head Guides

Spherical Radius **P**	Length **K**
Up to 1.50 ~ 9.50	4 mm
After 9.51	10 mm

In case that **P** is equal to **d1, P=d1** casing olerance is valid.

PARABOLIC END, PILOT PINS

Parabolic End, Cyclinder Head Guides

Standard Tolerances

Round	P^{+01}_{-00}	,01	From P to d1

If **P** is lower than Reference **P** specified in Table, **N= 1.2** is minimum.

Conical end, SB Pilot Pins — **SPK**

Ø d1	Ø d2	Conical Ø P	N mm	Ref. P	L1 mm	L
10	13	4.85 ~ 10	8	5.6	Standard 19 / Alternative 25	**71**
13	16	6.30 ~ 13	10	7.1		**80**
16	19	9.95 ~ 16	15	10.8		**100**
20	23	13.6 ~ 20	20	14.4		**125**
25	28	17.3 ~ 25	25	18		**140**
32	35	20.9 ~ 32	30	21.7	25 30	

Order : **SPK** As Per Request

Material : **HSS** 1.3343 **HRC** 60 -63

Parabolic and Spherical Shaped, Cyclinder Head Pilot Pins — **SPX / SPP**

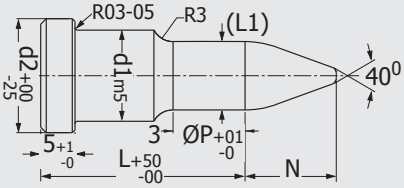
Ø d1	Ø d2	Conical Ø P	Standart L1	Alternative L1 min.	max	L
4	7	1.55 ~ 4	8	10	-	
5	8	1.55 ~ 5	13	10	-	
6	9	1.55 ~ 6	13	10	-	**50**
8	11	2.45 ~ 8	19	13	-	**60**
10	13	3.15 ~ 10	19	13	25	**71**
13	16	4.95 ~ 13	19	13	25	**80**
16	19	7.95 ~ 16	19	13	25	**100**
20	23	9.95 ~ 20	19	13	25	
25	28	11.95 ~ 25	19	13	25	
32	35	15.95 ~ 32	25	19	30	

SMK
Pointed End

SMX
Spherical End

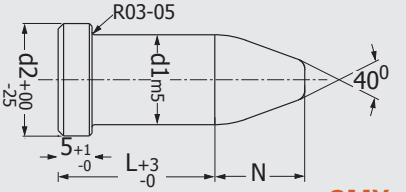
COMPACT PILOT PINS

Pointed End & Spherical End Compat, Capped Pilot Pins



Pointed End Compact Pilot Pin — **SMK**

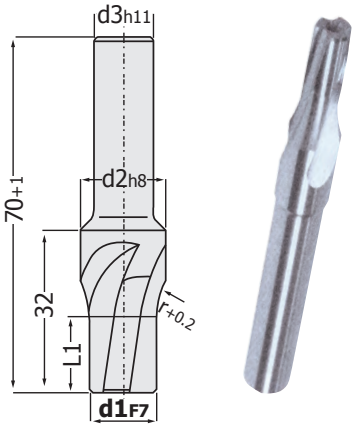
d1	P	N	d2	L
4	1.95 ~ 3.99	4	7.0	20
5	2.65 ~ 4.99	5	8.0	
6	3.30 ~ 5.99	6	9.0	22
8	4.10 ~ 7.99	7	11.0	
10	4.80 ~ 9.99	8	13.0	25
13	6.25 ~ 12.99	10	16.0	
16	9.85 ~ 15.99	15	19.0	28
20	13.50 ~ 19.99	20	23.0	
25	17.20 ~ 24.99	25	28.0	35
32	20.80 ~ 31.99	30	35.0	



Spherical Compact Pilot Pin — **SMX**

d1	N	d2	L
3.01 ~ 4.0	4	7	20
4.01 ~ 5.0	5	8	
5.01 ~ 6.0	6	9	22
6.01 ~ 8.0	7	11	
8.01 ~ 10	8	13	25
10.01 ~ 13	10	16	
13.01 ~ 16	15	19	28
16.01 ~ 20	20	23	35

Section Press Mould



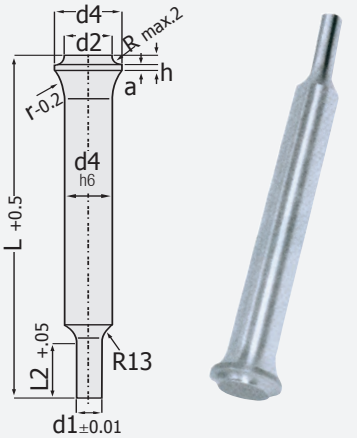
CONICAL HEAD BURR

Conical Head HSS Punch, "U" Shape Countersinking BURR **UFT**

d1	d2	d3	r	L1	x (d1)
2.0	3.3	3.3	3.5	5	01
2.1 ~2.2	3.5	3.5	5.0		
2.3 ~2.5	3.8	3.8			
2.6 ~2.9	4.3	4.3	6.0	7	
3.0 ~3.4	4.9	4.9			
3.5 ~3.9	5.4	5.4	8.0		
4.0 ~4.4	5.9	5.9		8	
4.5 ~4.9	6.4	6.4			
5.0 ~4.4	7.4	7.4	10	10	
5.5 ~5.9	8.5	8.5			
6.0	9.5	10	12	12	05
6.5 ~7.0	10.5				
7.5 ~8.0	11.5				
8.5 ~9.0	13.5		15		
9.5 ~10	14.5				
10.5 ~11	15.5			15	
11.5 ~12	16.5				
12.5 ~13	17.5				
13.5 ~14	18.5				
14.5 ~15	19.5				
15.5 ~16	20.5				
16.5 ~17	21.5	16			
17.5 ~18	22.5				
18.5 ~19	23.5				
19.5 ~20	25.5				

Order : **UFT** d1

Material : HSS 1.3343 DIN 9861 D



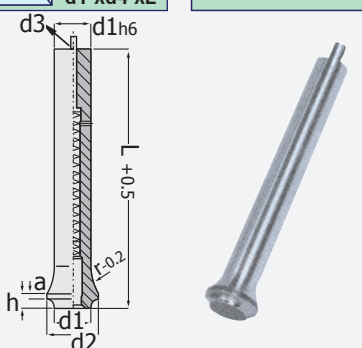
CONICAL HEAD STEPPED

HSS Perforator "U" Shape (Bottle Necked) Shape D **UKZ**

d1	L	d4	L2	d2	h
0.8 ~ 2.9	71	3	10	4.5	3
1.0 ~ 3.9		4		5.5	4
1.2 ~ 4.9	80	5		7.0	
1.6 ~ 5.9		6		9.0	
2.5 ~7.9	71	8	13	11	
4.0 ~9.9	80	10	17	14	
5.0 ~12.9		13		17	
8.0 ~15.9	100	16		20	
12 ~19.9		20		25	

Order : **UKZ** d1 xd4 xL

Material : HSS 1.3343 - HRC 64

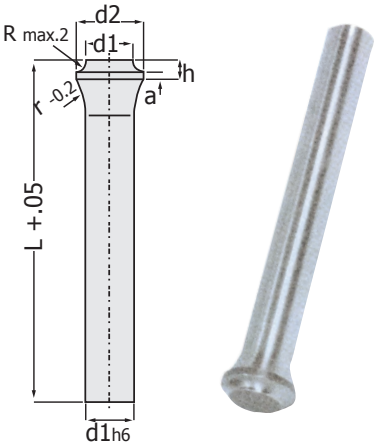


EJECTOR,SPRINGY CONICAL HEAD **UFZ**

d1	L	d2	d3	r	h	a
6.0	71	9.0	4	10	4	1.5
8.0		11	5	12		
10		14	5	15		
13	80	17	6			
16	100	20	6			
20		25	6			

Order : **UFZ** d1 x L

Material : HSS 1.3343 - HRC 64



CONICAL HEAD HSS PUNCH

HSS Perforator "U" Shape (Bottle Necked) Shape D **UBZ**

d1	L	d2	r	h	a
2.0	71 80 100 mm	3.0	3.5	3	1
2.1 ~2.2		3.2	5		
2.3 ~2.5		3.5			
2.6 ~2.9		4.0	6.5		
3.0 ~3.4		4.5			
3.5 ~3.9		5.0	8		
4.0 ~4.4		5.5		4	1.5
4.5 ~4.9		6.0			
5.0 ~5.4		7.0	10		
5.5 ~5.9		8.0			
6.0 ~6.4		9.0			
6.5 ~7.0		10	12		
7.5 ~8.0		11			
8.5 ~9.0		13	15		
9.5 ~10		14			
10.5 ~11		15			
11.5 ~12		16			
12.5 ~13		17			
13.5 ~14		18			
14.5 ~15		19			
15.5 ~16		20			
16.5 ~17		21			
17.5 ~18		22			
18.5 ~19		23			
19.5 ~20		25			

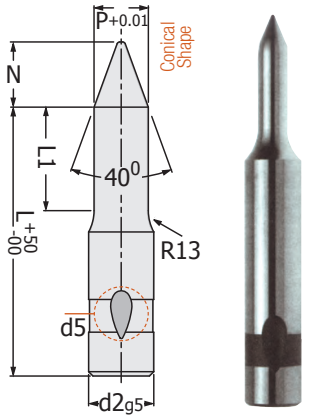
Order : **UBZ** d1 x L

Material : HSS 1.3343 - HRC 64

Production As Per Request

Section Press Mould

Page 157



Ball Lock - CONICAL, PILOT PIN

Light Duty, Ball-Lock, Conical End Guide Pins — BPK

If **P** dimension is lower than reference P dimension specified in Table, **N= 1.2 P** is minimum. In case that **P** is equal to **d1, P=d1** casing tolerance is valid.

Standard Tolerances

Round	P^{+01}_{-00}	,01	From P to d2

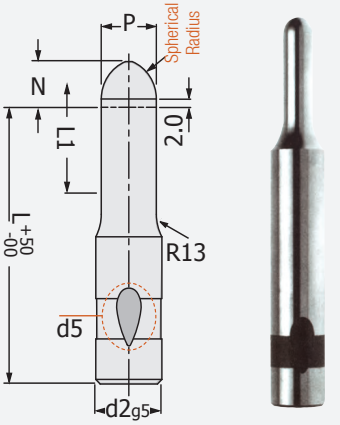
Ball Lock CONICAL, PILOT PINS — BPK

d2	d5	P	L1	N	L
10	8 mm	5.9 ~ 9.9	19	8	71
13		9.9 ~ 12.9	19	10	80
16		12.9 ~ 15.9	25	15	100
20		15.9 ~ 19.9	25	20	71
25		19.9 ~ 24.9	25	25	80
32		24.9 ~ 31.9	25	30	100
38		31.9 ~ 37.9	30	35	125
					140

Note : P / L As Per Request

Order : **BPK** d2 x P x L

Material : HSS 1.3343 HRC 60 -62 ±2



Ball Lock - SPHERICAL, PILOT PIN

Light Duty, Ball-Lock, Spherical End Guide Pins — BPX

It is length of L pilot pim except end.
2 mm 's length is guided to punch before punch contacting sheet.

	P	N
10.1 mm	≤ 10 mm	8 mm
	- 15 mm	12 mm
	> 15 mm	15 mm

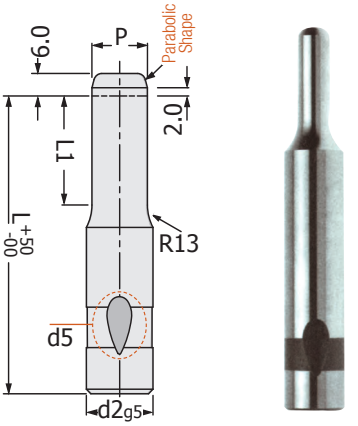
Ball Lock SPHERICAL, PILOT PINS — BPX

d2	d5	P	L1	N	L
6	6	2.9 ~ 5.9	13	-	63
10	8 mm	5.9 ~ 9.9	19	8	71
13		9.9 ~ 12.9	19	10	80
16		12.9 ~ 15.9	25	15	90
20		15.9 ~ 19.9	25	15	100
25		19.9 ~ 24.9	25	20	
32		24.9 ~ 31.9	25	25	

Note : Other lengths are produced as per order.

Order : **BPX** d2 x P x L

Material : HSS 1.3343 HRC 60 -62 ±2



Ball Lock - PARABOLIC, PILOT PIN

Light Duty, Ball-Lock, Parabolic End Guide Pins — BPP

If **P** dimension is lower than reference P dimension specified in Table, **N= 1.2 P** is minimum. In case that **P** is equal to **d1, P=d1** casing tolerance is valid.

Standard Tolerances

Round	P^{+01}_{-00}	,01	From P to d2

Ball Lock PARABOLIC, PILOT PINS — BPP

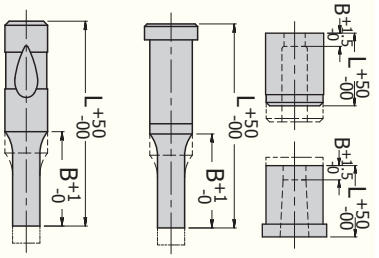
d2	d5	P	L1	N	L
6	6	2.2 ~ 6.0	13	-	63
10	8 mm	2.5 ~ 10	19	8	71
13		5.0 ~ 13	19	10	80
16		8.0 ~ 16	19	15	90
20		12~ 20	19	20	100
25		16~ 15	19	25	

Note : Other lengths are produced as per order.

Order : **BPP** d2 x P x L

Material : HSS 1.3343 HRC 60 -62 ±2

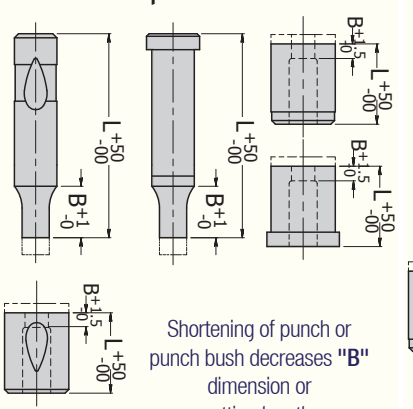
ALTERNATIVE OPTION INFORMATION : Intervals out of punch center.



Even that total length of punch and punch bush are shortened, Shortening total length is fixed **"B"** L1 dimension. This situation is not valid for rabbet, overall flat, perforated or ball lock punch bushes.

B : Main Dimension

X1

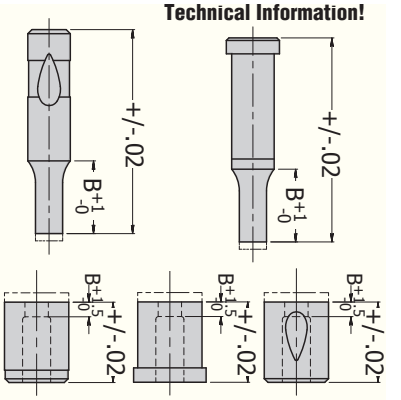


Shortening of punch or punch bush decreases **"B"** dimension or cutting length.

B : Shortened Dimension

X2

Technical Information!

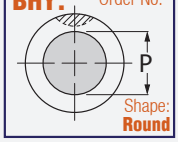


It provides ±02 sensitivity at normal length.
Note: It is removed Max 5 Chips.

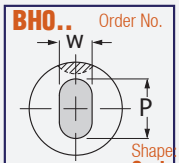
X3

Section Press Mould

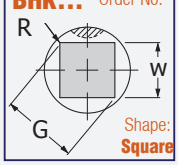
Formed Punch Shapes

BHY. Order No.


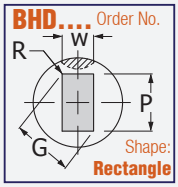
Shape: **Round**

BHO.. Order No.


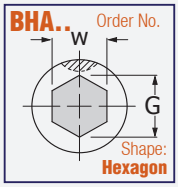
Shape: **Oval**

BHK... Order No.


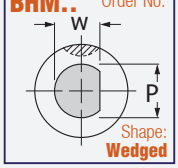
Shape: **Square**

BHD.... Order No.


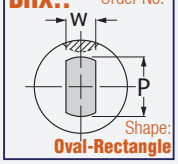
Shape: **Rectangle**

BHA.. Order No.


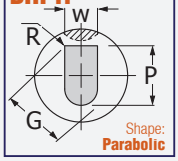
Shape: **Hexagon**

BHM.. Order No.


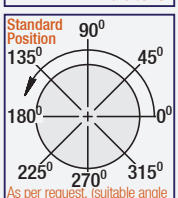
Shape: **Wedged**

BHX.. Order No.


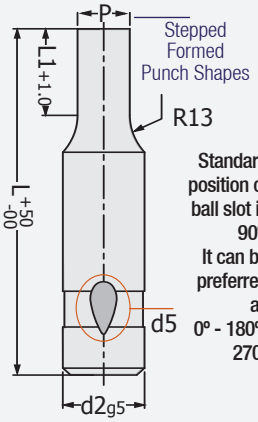
Shape: **Oval-Rectangle**

BHP.. Order No.


Shape: **Parabolic**

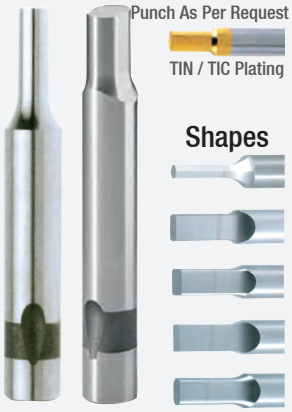


As per request, (suitable angle 90º ~ 270º Radial Selection



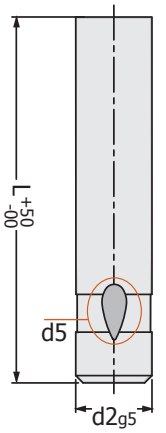
Stepped Formed Punch Shapes

Standard position of ball slot is 90º. It can be preferred as 0º - 180º- 270º

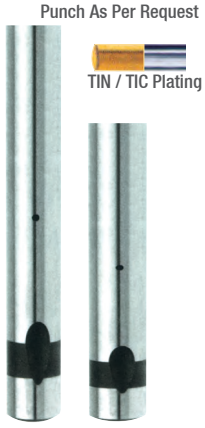

Punch As Per Request

TIN / TIC Plating

Shapes



Punch As Per Request

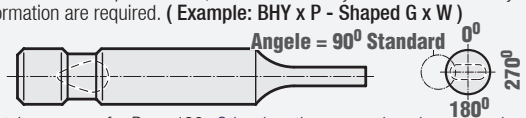


TIN / TIC Plating

BALL LOCK, STEPPED-PUNCHES

For Light Loads,LIGHT DUTY Ball - Lock Punches Order:

Order : Punch shape selection, technical drawing details and also usage information are required. **(Example: BHY x P - Shaped G x W)**



For tolerances, refer Page 160. Other lengths are produced as per order.

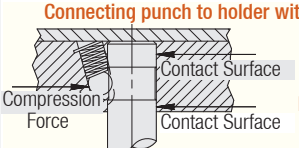
BHY - BHO - BHK - BHD - BHA - BHM - BHX - BHP

Stepped Ball Lock Punches According to Their Shapes

Order Ø d2	Ball Slot d5	Ø d1 Şekil BHY Round P	Ø d1 Şekil Other Shapes W G/P	Standard L1	Alternative L1 Min.	Alternative L1 Max.	L Length mm
BH.06	6	2.5 ~ 5.9	2.2 - 5.9	13	10	-	
BH.10	8 mm	2.5 ~ 9.9	2.5 - 9.9	19	10	19	63
BH.13		5.0 ~ 12.9	4.5 - 12.9	19	13	25	71
BH.16		8.0 ~ 15.9	6.0 - 15.9	19	13	25	80
BH.20		12 ~ 19.9	8.0 - 19.9	19	13	25	90
BH.25		16 ~ 24.9	10 - 24.9	19	13	25	100
BH.32		24 ~ 31.9	12.5 - 31.9	25	25	30	80
BH.38		30 ~ 37.9	14 - 37.9	25	25	30	90
							100

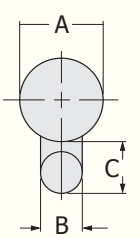
In case that **P** is equal **d2 , P= d2** casing tolerance is valid. It can be used in places where **L1 = 10 P or W < 2. 20 mm.**

Connecting punch to holder with ball slot.



Requirements of ball lock place

Technical Information!



For precision holders, pls. add 1.7 to"C" dimension.

Light Load Punch/Bush

Punch Dia A	Ball Dia B	Cavity C
6.0	6.0	10
10	8	11
13		
16		
20		
25		
32		
38		

Heavy Load Punches

A Ø	B Ø	C mm
10	10	13
13	12	15
16		
20		
25		
32		
40		

BALL LOCK PUNCHES

For Light Loads, LIGHT DUTY Ball - Lock Punches

BHZ

Casing and cutting edge are precision grinded. It is for durable parts in all kinds of drilling / cutting moulds. Also, **TIN / TIC Plating** completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin).

Light Duty, Ball Lock Punches BHZ

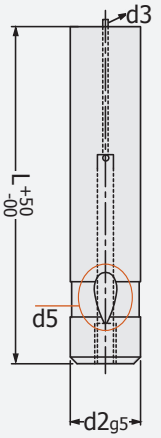
d2	d5	L
Ø 20 mm	8 mm	63
		71
		80
		100
		125
		150
		175
Ø 25 mm	8 mm	63
		71
		80
		100
		125
		150
		175
		200
Ø 32 mm	8 mm	71
		80
		100
		125
		150
		175
		200
Ø 38 mm	8 mm	80
		100
		125
		150
		175
		200

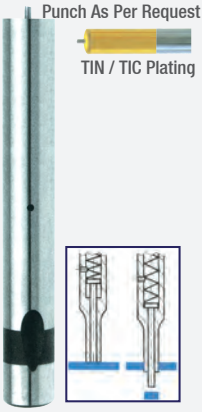
d2	d5	L
Ø 6 mm	6 mm	63
		71
		80
		100
		125
Ø 10 mm	8 mm	63
		71
		80
		100
		110
		120
Ø 13 mm	8 mm	63
		71
		80
		100
		125
		150
		175
Ø 16 mm	8 mm	63
		71
		80
		100
		125
		150
		175

Note: Other lenghts are produced as per order.

Order : **BHZ** d2 x L

Material : **HSS** 1.3343 **HRC** 60 -62





BALL - LOCK EJECTOR PUNCH

For light loads, Ball - Lock Ejector / Springy Launcher Punches — BFZ

Casing and cutting edge are precision grinded.
It is for durable parts in all kinds of drilling / cutting moulds. Also, **TIN / TIC Plating** completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin).

Light Duty - Ball Lock Ejector Punch BFZ

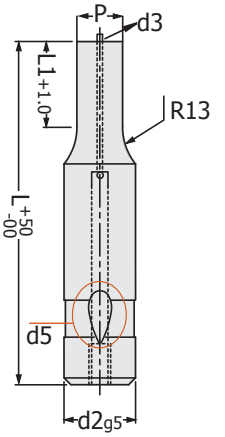
d2	d5	d3	L
Ø 6 mm	6 mm	Ø 3	63
			71
			80
			90
			100
Ø 10 mm	8 mm	Ø 3	63
			71
			80
			90
			100
Ø 13 mm	8 mm	Ø 5	63
			71
			80
			90
			100
Ø 16 mm	8 mm	Ø 5	63
			71
			80
			90
			100

d2	d5	d3	L
Ø 20 mm	8 mm	Ø 6	63
			71
			80
			90
			100
Ø 25 mm	8 mm	Ø 6	63
			71
			80
			90
			100
Ø 32 mm	8 mm	Ø 6	71
			80
			90
			100
Ø 38 mm	8 mm	Ø 6	80
			90
			100

Note: Other lengths are produced as per order.

Order : **BFZ** d2 x L

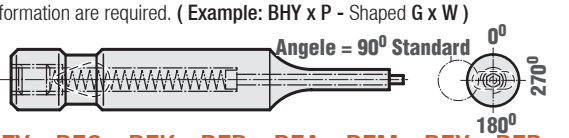
Material : HSS 1.3343 HRC 60 -62



BALL - LOCK EJECTOR, STEPPED-PUNCH

LIGHT DUTY Ball - Lock, Ejector /Springy - Stepped-Punches

Order : Punch shape selection, technical drawing detail and also usage information are required. **(Example: BHY x P -** Shaped **G x W)**



BFY - BFO - BFK - BFD - BFA - BFM - BFX - BFP

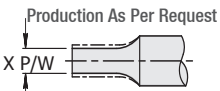
Stepped-Ejector Pins/ Springy Punches As Per Request

Order Ø d2	Ball Slot d5	Ø Pin d3	Ø d1 Shape BFY Round P	Ø d1 Shape Other Shapes W G/P	Standard L1	Alternative L1 Min.	Alternative L1 Max.	L Len. mm
BF.06	6	3	2.5 ~5.9	2.2 -5.9	13	10	-	
BF.10	8 mm	4	2.5 ~9.9	2.5 -9.9	19	10	19	63
BF.13		5	5.0 ~12.9	4.5 -12.9	19	13	25	71
BF.16		5	8.0 ~15.9	6.0 -15.9	19	13	25	80
BF.20		6	12 ~19.9	8.0 -19.9	19	13	25	90
BF.25		6	16 ~24.9	10 -24.9	19	13	25	100
BF.32		6	24 ~31.9	12.5 -31.9	25	25	30	80
BF.38		6	30 ~37.9	14 -37.9	25	25	30	90
								100

In case that **P** is equal **d2, P= d2** casing tolerance is valid.
It can be used in places where **L1 = 10 P or W < 2. 20 mm.**

XP **Punch Dimension Intervals (Alternatives)**

XW Dimensions belonging to. **"P"** or **"W"** should be according to specified in catalogue. The values in catalogue are valid for cutting length and total length. They are valid for increased **"L1"** length and decreased total length **"L"**.



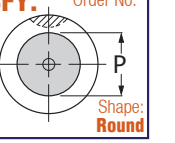
Standard Tolerances			
Round P +0.1, -.00	◎ 0.1	From Pto d2	
Shape P,W,G ± 0.1	◎ 0.2	From Pto d2	

Standard position of ball slot is 90º. It can be preferred as 0º- 180º - 270º.

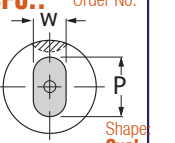
NOTE: By looking their position at mould from upper surface of mould, parts are displayed. Positions of punches are determined by looking along casing. It is determined by monitoring from the upper surface.

Formed Punch Shapes

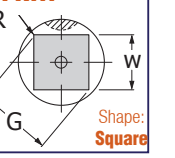
BFY. Order No. — Shape: **Round**



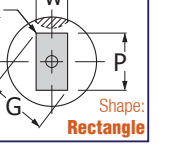
BFO.. Order No. — Shape: **Oval**



BFK... Order No. — Shape: **Square**

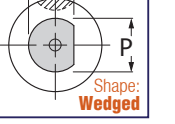


BFD.... Order No. — Shape: **Rectangle**

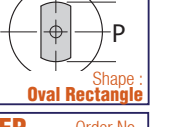


BFA.. Order No. — Shape: **Hexagon**

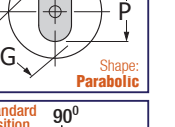
BFM.. Order No. — Shape: **Wedged**

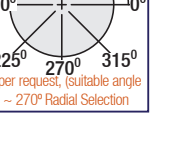


BFX.. Order No. — Shape : **Oval Rectangle**



BFP.. Order No. — Shape: **Parabolic**

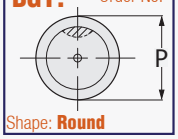




Section Press Mould

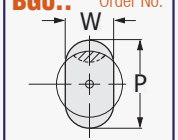
Formed Punch Shapes

BGY. Order No.



Shape: **Round**

BGO.. Order No.



Shape : **Oval**

BGK... Order No.

Shape : **Square**

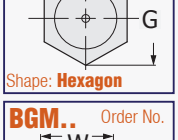
BGD.... Order No.

Shape : **Rectangle**

BGA.. Order No.

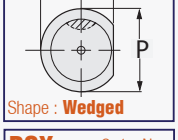
Shape: **Hexagon**

BGM.. Order No.



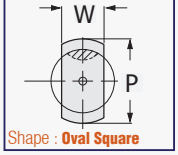
Shape : **Wedged**

BGX.. Order No.

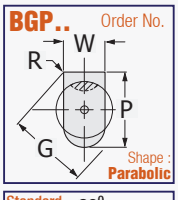


Shape : **Oval Square**

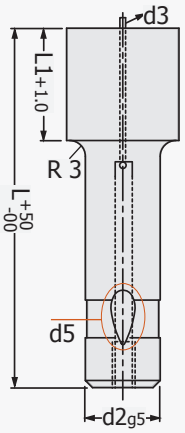
BGP.. Order No.



Shape : **Parabolic**



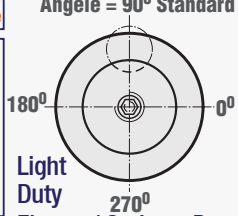
As per request (Suitable Angle)
90⁰~270⁰ Radial Selection



WIDE END, EJECTOR / SPRINGY PUNCHES

Light Duty, Cutting Edge, Wider Than Casing, Ball - Lock, Ejector / Springy Punch

Angele = 90⁰ Standard



Light Duty

Casing and External Dia. are precision grinded

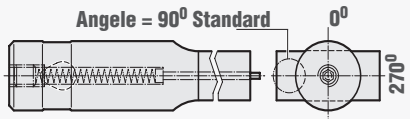
Order : BGY d2 x P x L1 x L

Material : HSS 1.3343 HRC 60 -62

Ejector / Springy, Punches, Round End, Wider Than Casing **BGY**

Order Ø d2	Ball d5	Pin d3	Round P Min. Max.	L1 Min. Max.	L
BGY 10	8 mm	4	10.1 ~ 25	16	80 90 100
BGY 13		5	13.1 ~ 32	20	
BGY 16		5	16.1 ~ 38	25	
BGY 20		6	20.1 ~ 40	25	
BGY 25		6	25.1 ~ 44	25	
BGY 32		6	32.1 ~ 50	32	
BGY 40		6	40.1 ~ 63	32	

Angele = 90⁰ Standard



Light Duty Ejector / Springy, Punches

Ball-Lock, Wider Than Casing, Shaped

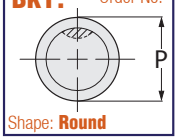
BGO - BGK - BGD - BGA - BGM - BGX - BGP

Order Ø d2	Ball d5	Pin d3	Shaped W-GP Min. Max.	L1 Min. Max.	L
BG. 10	8 mm	4	3.0 ~ 25	16	80 90 100
BG. 13		5	5.0 ~ 32	20	
BG. 16		5	6.5 ~ 38	25	
BG. 20		6	8.0 ~ 40	25	
BG. 25		6	10 ~ 44	25	
BG. 32		6	11.5 ~ 50	32	
BG. 40		6	14 ~ 63	32	

Other lengts are produced as per order.

Formed Punch Shapes

BKY. Order No.

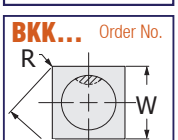


Shape: **Round**

BKO.. Order No.

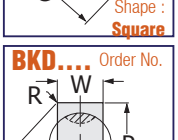
Shape : **Oval**

BKK... Order No.



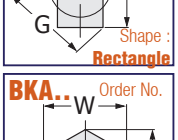
Shape : **Square**

BKD.... Order No.



Shape : **Rectangle**

BKA.. Order No.

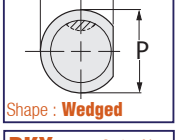


Shape : **Hexagon**

BKM.. Order No.

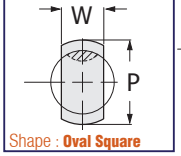
Shape : **Wedged**

BKX.. Order No.

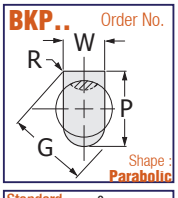


Shape : **Oval Square**

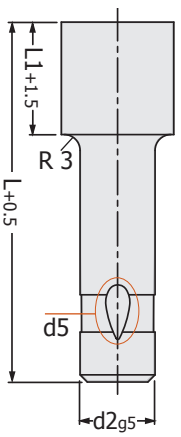
BKP.. Order No.



Shape : **Parabolic**



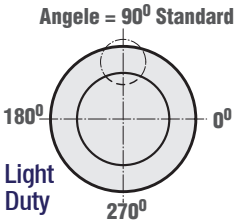
As per request (Suitable Angle)
90⁰~270⁰ Radial Selection



Ball Lock, WIDE END PUNCHES

Light Duty, Cutting Edge, Wider Than Casin, Ball - Lock Punches

Angele = 90⁰ Standard



Light Duty

Casing and External Dia. are precision grinded

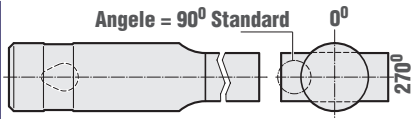
Order : BKY d2 x P x L1 x L

Material : HSS 1.3343 HRC 60 -62

Light Duty Ball - Lock Round End, Wider Than Casing **BKY**

Order Ø d2	Ball d5	Round P Min. Max.	L1 Min. Max.	L
BKY 10	8 mm	10.1 ~ 25	16	80 90 100
BKY 13		13.1 ~ 32	20	
BKY 16		16.1 ~ 38	25	
BKY 20		20.1 ~ 40	25	
BKY 25		25.1 ~ 44	25	
BKY 32		32.1 ~ 50	32	
BKY 40		40.1 ~ 63	32	

Angele = 90⁰ Standard

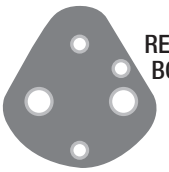


Light Duty Ball - Lock Wider Form Than Casing, Shaped Punches

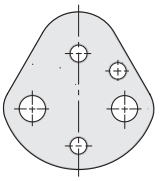
BKO - BKK - BKD - BKA - BKM - BKX - BKP

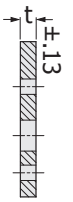
Order Ø d2	Ball d5	Shaped W-GP Min. Max.	L1 Min. Max.	L
BK.10	8 mm	3.0 ~ 25	16	80 90 100
BK.13		5.0 ~ 32	20	
BK.16		6.5 ~ 38	25	
BK.20		8.0 ~ 40	25	
BK.25		10 ~ 44	25	
BK.32		11.5 ~ 50	32	
BK.40		14 ~ 63	32	

BOLSTER PLATE FOR BALL LOCK RETAINERS

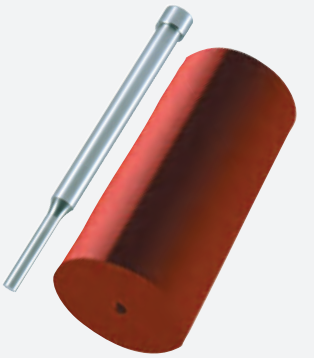


MRL RETAINER BOLSTER PLATE

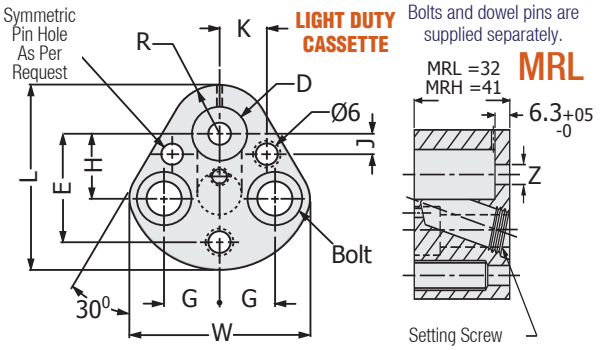




Order	Code	t
MRL.10.MAX	018	1.80
MRL.13.MAX	030	3.00
MRL.16.MAX	031	3.18
MRL.20.MAX	047	4.75
MRL.25.MAX	060	6.00
MRL.32.MAX	063	6.35
MRL.40.MAX	100	10
Order Example: Retainer Code (MRL) MAX.018	130	13



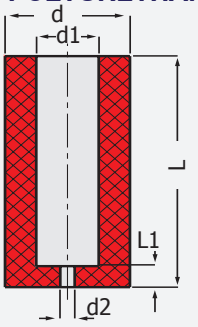
FOR LIGHT DUTY, BALL-LOCK TRIANGLE RETAINER

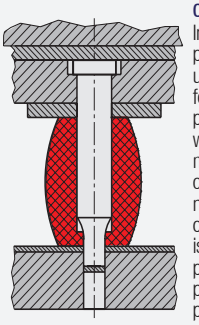


For Light Duty, Ball Lock Triangle Retainers — Order No. MRL

Dimensions	MRL 06	MRL 10	MRL 13	MRL 16	MRL 20	MRL 25
Ø D	06	10	13	16	20	25
E ±0.1	23.000	26.924	29.972	31.750	33.528	40.640
G	11.10	11.12	14.27	15.87	17.47	19.84
Ø L	41.3	44.5	50.8	54.0	60.3	69.9
W	37.8	39.9	48.3	51.6	58.2	66.5
R	8.0	9.5	12.7	14.3	17.5	22.2
H	19.00	19.05	19.05	19.05	19.05	23.82
J ±0.1	8.00	9.00	12.00	13.50	16.50	22.00
K ±0.1	8.00	9.00	12.00	13.50	16.50	22.00
Z	3	6	6	6	6	6
Bold	M6	M8	M8	M8	M10	M12

POLYURETHANE PUNCH SCRAPERS PYB





Continous Stock Product

In mould that polyurethane scraper is used, there is no need for dismantling scraper plate to make repair, whetting and modification on mould components, there is not any slightest effect on precision parts, it is excellent for all painted / anodized, plastic plated and polished parts. It is compatible to use with oil and grease. It is covered on poliurethane scraper punch. Positioning is made according to the scraper hardness. There is no need for extra holder. Stepped punch hole will be opened at scraper edge with first stroke of press. Especially, this product is compatible at great moulds requiring great scraper plate.

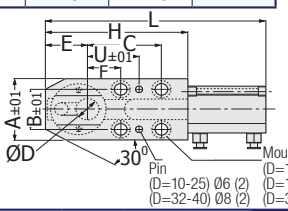
Polyurethane Springy, Scraper /Ejector Bushes

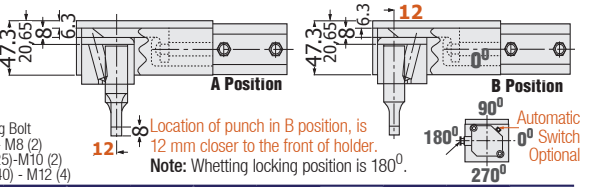
Order	d1 Ø	d Ø	d2 Ø	L mm	L1 mm	Punch Length
PYB.445	4.0	17	1.6	5.0	45	56 / 63
PYB.655	6.0	19			55	63 71 80 90
PYB.855	8.0	21	3.0 Punch Hole			
PYB.1055	10	23				
PYB.1355	13	26				
PYB.1655	16	30				
PYB.2071	20	38				100
PYB.2550	25	50				

d2: (1.6 - 3.0 mm) (d1) It should be applied /drilled while opening hole diameter / drilling, in polyurethane (Punch) Stamped Bush (**S** max.) position. Spring load is obtained in expansion outwards.

BALL LOCK TWO POSITION PNEUMATIC PUNCH RETAINERS

Order **MRA**



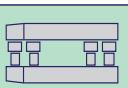


BALL LOCK
TWO POSITION PNEUMATIC PUNCH RETAINERS

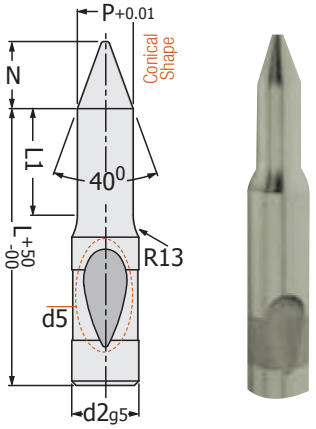
Thanks to its powerful block structure, there is no need for extra security.

D	L	A	B	C		E		F		H	U		Bolt
				Poz.A	Poz.B	Poz.A	PozB	Poz.A	PozB		Poz.A	Poz.B	
MRA10	161	46	30	-	-	28	16	21	33	93.5	37	49	M8
MRA13	172.5	50	30	-	-	28	16	25	37	100	41	53	M10
MRA16	177	50	30	-	-	31	19	25	37	104.5	41	53	M10
MRA20	191.5	58	38	-	-	32.5	20.5	29	41	113.5	45	57	M10
MRA25	206.5	58	38	-	-	35	23	29	41	123.5	45	57	M10
MRA32	260	80	56	100	112	38	26	38	50	152	60	72	M12
MRA40	264	80	56	100	112	42	30	38	50	156	60	72	M12

MRA Two Position Pneumatic Retainers do not create additional tool cost and it provide to add or remove hole without interrupting production. It is compatible with NAAMS Standards and Automative Standards. B Position is provided that punch is 12 mm closer to cutting edge.



Section Press Mould



Ball Lock - CONICAL, PILOT PIN

HEAVY DUTY, Ball - Lock, Conical Guide Pins

BAPK

If **P** dimension is lower than reference **P** dimension specified in Table, **N= 1.2 P** is minimum. In case that **P** is equal to **d1, P=d1** casing tolerance is valid.

Standard Tolerances

Round P^{+01}_{-00} | ,01 | From P to d2

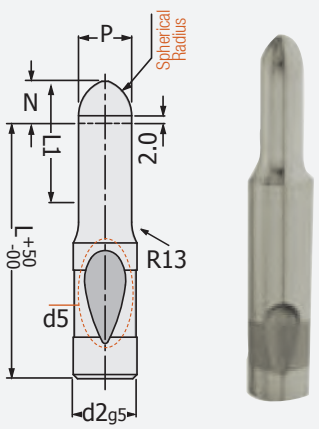
Ball - Lock CONICAL, PILOT PINS BAPK

d2	d5	P	L1	N	L
10	10	5.9 ~ 9.9	19	8	80 100
13	12 mm	9.9 ~ 12.9	19	10	125
16		12.9 ~ 15.9	25	15	80
20		15.9 ~ 19.9	25	20	100
25		19.9 ~ 24.9	25	25	125
32		24.9 ~ 31.9	25	30	140
40		31.9 ~ 39.9	30	40	150

Note : P / L Selection as per request

Order : BAPK d2 x P x L

Material : HSS 1.3343 HRC 60 -62 ±2



Ball Lock - SPHERICAL, PILOT PIN

HEAVY DUTY, Ball - Spherical, Conical Guide Pins

BAPX

It is length of **L** pilot pim except the end. **2 mm** length is guided to punch before punch contacting sheet.

	P	N
10.1 mm	≤ 10 mm	8 mm
	- 15 mm	12 mm
	> 15 mm	15 mm

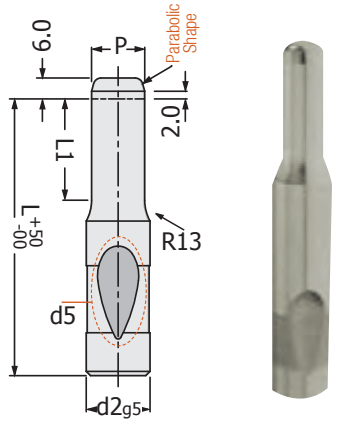
Ball - Lock SPHERICAL, PILOT PINS BAPX

d2	d5	P	L1	N	L
10	10	2.5 ~ 10	19	10	71 80
13	12 mm	5 ~ 13	19	10	100
16		8 ~ 16	19	10	
20		12 ~ 20	19	10	71 80
25		16 ~ 25	19	10	100
32		24 ~ 32	19	10	125
40		30 ~ 40	25	10	

Note: Other lengths are produced as per order.

Order : BAPX d2 x P x L

Material : HSS 1.3343 HRC 60 -62 ±2



Ball Lock - PARABOLIC, PILOT PIN

HEAVY DUTY, Ball - Lock, Parabolic End Guide Pins

BAPP

If **P** dimension is lower than **Reference P** dimension specified in Table, **N= 1.2 P** is minimum. In case that **P** is equal to **d1, P=d1** casing tolerance is valid.

Standard Tolerances

Round P^{+01}_{-00} | ,01 | From P to d2

Ball - Lock PARABOLIC, PILOT PINS BAPP

d2	d5	P	L1	L
10	10	2.5 ~ 10	19	71 80
13	12 mm	5 ~ 13	19	100
16		8 ~ 16	19	
20		12 ~ 20	19	71 80
25		16 ~ 25	19	100
32		24 ~ 32	19	125
40		30 ~ 40	25	

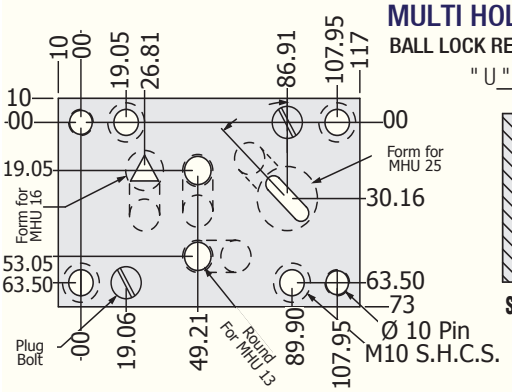
Note: Other lengths are produced as per order.

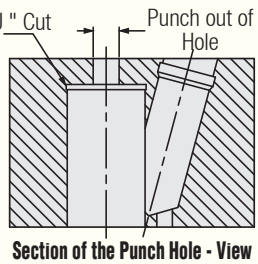
Order : BAPP d2 x P x L

Material : HSS 1.3343 HRC 60 -62 ±2

MULTI HOLE, BALL LOCK SPECIAL RETAINERS

BALL LOCK RETAINERS





Section of the Punch Hole - View

Unless otherwise specified, "R" ball slot quality will be provided.

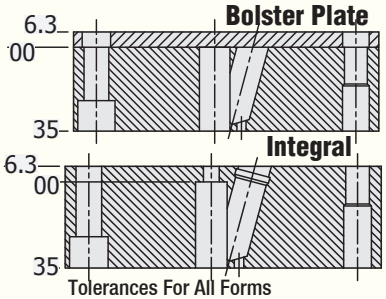
Hardened bolster plates of multi hole ball lock holders are shown in two different examples as traditional and integral holder in technical drawings, the point that should be considered is measuring of retainer starting from the left upper corner and that zero starting point is positioned correctly on mould by taken punch or pin holes. Thus, display helps positioning of punch holder conveniently and provides to match with its position on mould or punch bush in CNC programming.

Ball Hole Quality — Radial Tol.

R..... $+5^{0}$

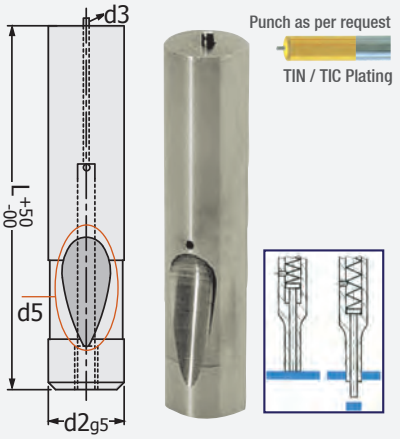
F..... $+0^{0}5'$

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



BALL LOCK EJECTOR PUNCH

HEAVY DUTY, Ball - Lock Ejector / Springy, Launcher Punches — BAFZ

Casing and cutting edge are precision grinded.
It is for durable parts in all kinds of drilling / cutting moulds. Also, **TIN / TIC** Plating completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin).

HEAVY DUTY, Ball - Lock Ejector Punch **BAFZ**

d2	d5	d3	L
Ø 10 mm	10 mm	Ø 4	71
			80
			90
			100
Ø 13 mm	12 mm	Ø 5	71
			80
			90
			100
			125
Ø 16 mm	12 mm	Ø 5	71
			80
			90
			100
			125
Ø 20 mm	12 mm	Ø 6	71
			80
			90
			100
			125

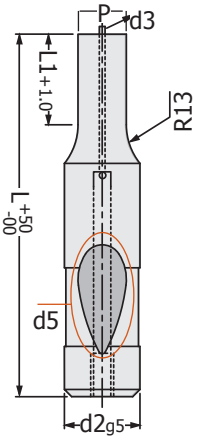
d2	d5	d3	L
Ø 25 mm	12 mm	Ø 6	80
			90
			100
			110
			125
Ø 32 mm	12 mm	Ø 6	80
			90
			100
			110
			125
Ø 40 mm	12 mm	Ø 6	80
			90
			100
			110
			125

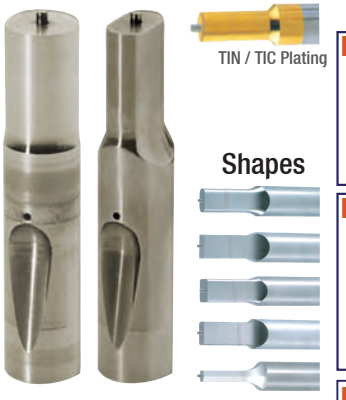
Casing and external diameters are precision grinded and hardened.

Note: Other lengths are produced as per order.

Order : **BAFZ** d2 x L

Material : HSS 1.3343 HRC 60 -62



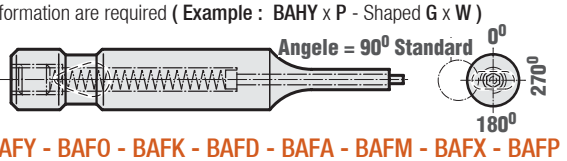


Shapes

BALL LOCK EJECTOR, STEPPED-PUNCH

HEAVY DUTY Ball - Lock, Ejector / Springy - Stepped-Punches

Order: Punch shape selection, technical drawing detail and also usage information are required **(Example : BAHY x P - Shaped G x W)**



BAFY - BAFO - BAFK - BAFD - BAFA - BAFM - BAFX - BAFP
Stepped-Ejector Pins/ Springy Punches According to Their Shapes

Order Ø d2	Ball Slot d5	Ø Pin d3	Ø d1 Shape BAFY Round P	Ø d1 Shape Other Shapes W G/P	Standard L1	Alternative L1 Min.	Alternative L1 Max.	L Len. mm
BAF.10	10	4	2.5 ~ 9.98	2.5 - 10	19	10	19	71
BAF.13	12 mm	5	5.0 ~ 12.98	4.5 - 13	19	13	25	80
BAF.16		5	8.0 ~ 15.98	6.0 - 16	19	13	25	90
BAF.20		6	12 ~ 19.98	8.0 - 20	19	13	25	100
BAF.25		6	16 ~ 24.98	10 - 25	19	13	25	110
BAF.32		6	24 ~ 31.98	12 - 32	19	13	25	125
BAF.38		6	30 ~ 39.98	14 - 40	25	19	30	

In case that P'is equal d2', P= d2 casing tolerance is valid. It can be used in places where **L1 = 10 P'** or **W < 2. 20** mm

XP **Punch Measurement Intervals (Alternatives)**
XW **"P" or "W" should** be according to standards specified in catalogue. The values in catalogue are valid for cutting length and total length. They are valid for increased "L1" length and decreased total length "L".

Production as per request
X P/W

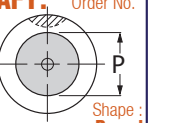
Standard Tolerances		
Round P +0.1, -.00	0.1	From P to d2
Shape P,W,G ± 0.1	0.2	From P to d2

Standard position of ball slot is 90º. It can be preffered as 0º -180º - 270º.

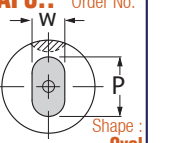
NOTE: By looking their position at mould from upper surface of mould, parts are displayed. Positions of punches are determined by looking along casing. It is determined by monitoring from the upper surface.

Formed Punch Shapes

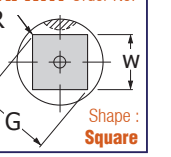
BAFY.. Order No. — Shape : **Round**



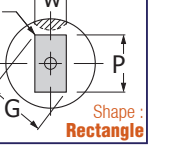
BAFO.. Order No. — Shape : **Oval**



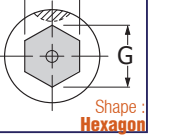
BAFK... Order No. — Shape : **Square**



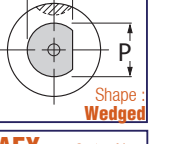
BAFD... Order No. — Shape : **Rectangle**



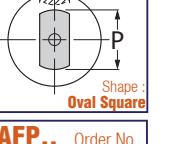
BAFA.. Order No. — Shape : **Hexagon**



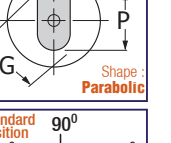
BAFM.. Order No. — Shape : **Wedged**

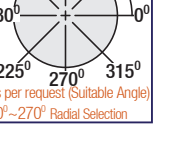


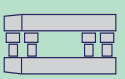
BAFX.. Order No. — Shape : **Oval Square**



BAFP.. Order No. — Shape : **Parabolic**

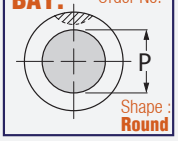




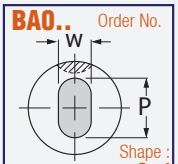


Formed Punch Shapes

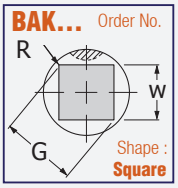
BAY. Order No. — Shape : **Round**



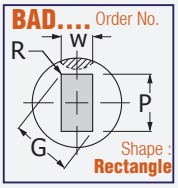
BAO.. Order No. — Shape : **Oval**



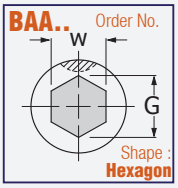
BAK... Order No. — Shape : **Square**



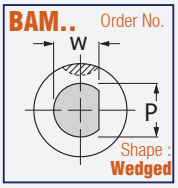
BAD.... Order No. — Shape : **Rectangle**



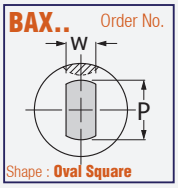
BAA.. Order No. — Shape : **Hexagon**



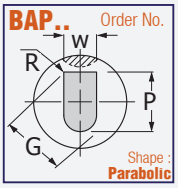
BAM.. Order No. — Shape : **Wedged**

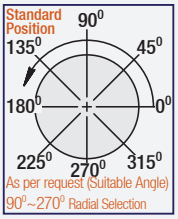


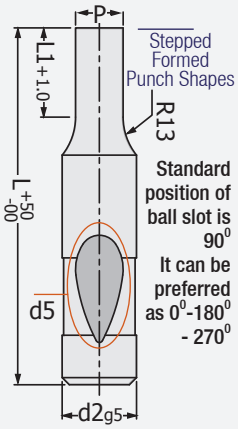
BAX.. Order No. — Shape : **Oval Square**



BAP.. Order No. — Shape : **Parabolic**







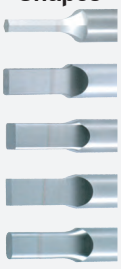
Stepped Formed Punch Shapes

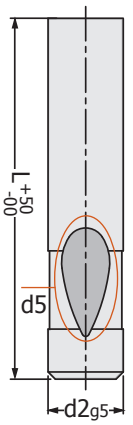
Standard position of ball slot is 90⁰ It can be preferred as 0⁰-180⁰ - 270⁰

Punch As Per Request

TIN / TIC Plating

Shapes

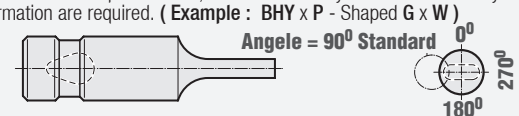




BALL LOCK, STEPPED-PUNCHES

For heavy loads, HEAVY DUTY Ball-Lock Punches

Order : Punch shape selection, technical drawing detail and also usage information are required. **(Example : BHY x P** - Shaped **G x W)**



For tolerance, refer Page 164. Other lenghts are produced as per order.

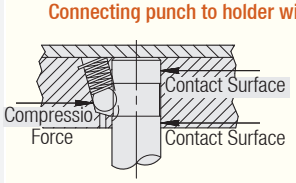
BAY - BAO - BAK - BAD - BAA - BAM - BAX - BAP

Stepped Ball - Lock Punches According To Their Shapes

Order Ø d2	Ball Slot d5	Ø d1 Şekil BAY Round P	Other Shapes W G/P	Standard L1	Alternative L1 Min.	Alternative L1 Max.	L Len. mm
BA.10	10	2.5 ~ 9.98	2.5 - 10	19	10	19	
BA.13	12 mm	5 ~ 12.98	4.5 - 13	19	13	25	71
BA.16		8 ~ 15.98	6 - 16	19	13	25	80
BA.20		12 ~ 19.98	8 - 20	19	13	25	90
BA.25		16 ~ 24.98	10 - 25	19	13	25	100
BA.32		24 ~ 31.98	12 - 32	19	13	25	110
BA.40		30 ~ 39.98	14 - 40	25	19	30	125

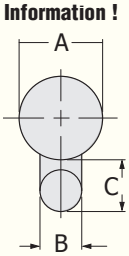
In case that **P** is equal **d2**, **P= d2** casing tolerance is valid. It can be used in places where **L1 = 10 P'** or **W < 2. 20** mm

Connecting punch to holder with ball slot.



Requirements Of Ball Locking Place

Technical Information !



For precision Retainers, pls. add. 1.7 to "C " dimension.

Light Load Punch / Bush

Punch Dia. A	Ball Dia. B	Cavity C
6.0	6.0	10
10	8	11
13		
16		
20		
25		
32		
38		

Heavy Load Punches

A Ø	B Ø	C mm
10	10	13
13	12	15
16		
20		
25		
32		
40		

BALL LOCK PUNCHES

For Heavy Loads, HEAY DUTY, Ball-Lock Punches

BAZ

Casing and cutting edge are precision grinded. It is for durable parts in all kinds of drilling / cutting moulds. Also, **TIN / TIC** Plating completely or partially (by providing resistance against heat and friction on external layer), it remediates problems such as winding and cold welding, plating thickness is 2-4 Micron. It is preferred when sheet thickness is thin).

HEAVY DUTY, Ball-Lock Punches BAZ

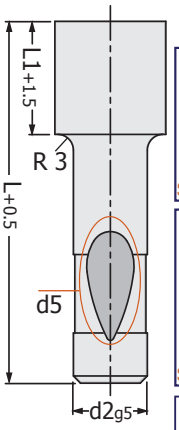
d2	d5	L
Ø 10 mm	10 mm	71
		80
		100
		125
		150
Ø 13 mm	12 mm	71
		80
		90
		100
		125
		150
Ø 16 mm	12 mm	71
		80
		90
		100
		125
		150
		165
Ø 20 mm	12 mm	71
		80
		90
		100
		110
		125
		150
		170

d2	d5	L
Ø 25 mm	12 mm	80
		90
		100
		110
		125
		150
		175
Ø 32 mm	12 mm	80
		90
		100
		110
		125
		150
		180
Ø 40 mm	12 mm	80
		90
		100
		110
		125
		150
		190

Note: Other lengths are produced as per order.

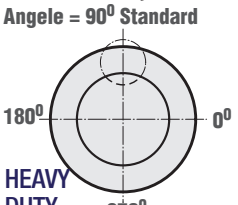
Material : HSS 1.3343 HRC 60 -62

Order : BAZ d2 x L



Ball Lock, WIDE END PUNCH
HEAVY DUTY, Cutting Edge Wider Than Casing Ball - Lock Punches

Angele = 90⁰ Standard



HEAVY DUTY

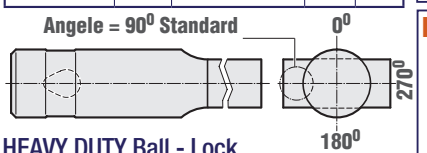
Casing and External Dia. are precision grinded

Order : **BAKY** d2 x P x L1 x L

Material : HSS 1.3343 HRC 60 -62

HEAVY DUTY Ball - Lock Round End, Wider Than Casing BAKY

Order Ø d2	Ball d5	Round P Min. Max.	L1 Min. Max.	L
BAKY 10	10	10.1 ~ 25	16	80 90 100
BAKY 13	12 mm	13.1 ~ 32	20	
BAKY 16		16.1 ~ 38	25	
BAKY 20		20.1 ~ 40	25	
BAKY 25		25.1 ~ 48	25	
BAKY 32		32.1 ~ 63	32	
BAKY 40		40.1 ~ 63	32	



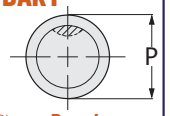
HEAVY DUTY Ball - Lock Wider Formed Than Casing Shaped Punches

BAKO - BAKK - BAKD - BAKA - BAKM - BAKX - BAKP

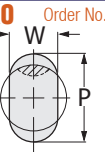
Order Ø d2	Ball d5	Shaped W-GP Min. Max.	L1 Min. Max.	L
BAK.10	10	3.0 ~ 25	16	80 90 100
BAK.13	12 mm	5.0 ~ 32	20	
BAK.16		6.0 ~ 38	25	
BAK.20		8.0 ~ 40	25	
BAK.25		10 ~ 48	25	
BAK.32		11.5 ~ 63	32	
BAK.40		14 ~ 63	32	

Formed Punch Shapes

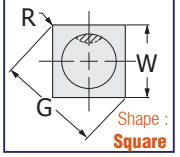
BAKY Order No. — Shape : **Round**



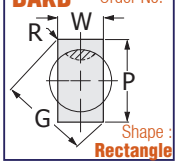
BAKO Order No. — Shape : **Oval**



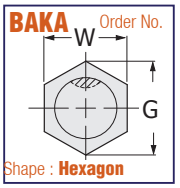
BAKK Order No. — Shape : **Square**



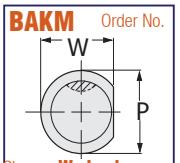
BAKD Order No. — Shape : **Rectangle**



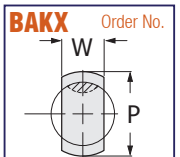
BAKA Order No. — Shape : **Hexagon**



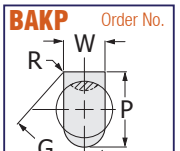
BAKM Order No. — Shape : **Wedged**

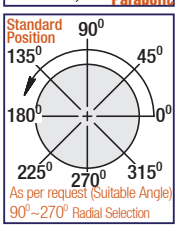


BAKX Order No. — Shape : **Oval Square**



BAKP Order No. — Shape : **Parabolic**

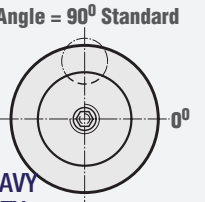




As per request (Suitable Angle)
90⁰~270⁰ Radial Selection

WIDE END, EJECTOR / SPRINGY PUNCH
HEAVY DUTY Cutting Edge Wider Than Casing Ball - Lock, Ejector / Springy Punch

Angle = 90⁰ Standard



HEAVY DUTY

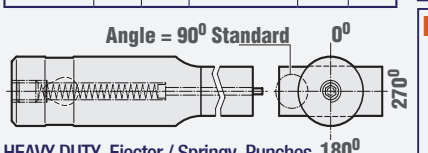
Casing and External Dia. are precision grinded

Order : **BAGY** d2 x P x L1 x L

Material : HSS 1.3343 HRC 60 -62

Ejector / Springy, Punches Round End, Wider Than Casing BAGY

Order Ø d2	Ball d5	Pin d3	Round P Min. Max.	L1 Min. Max.	L
BAGY 10	10	4	10.1 ~ 25	16	80 90 100
BAGY 13	12 mm	5	13.1 ~ 32	20	
BAGY 16		5	16.1 ~ 38	25	
BAGY 20		6	20.1 ~ 40	25	
BAGY 25		6	25.1 ~ 44	25	
BAGY 32		6	32.1 ~ 63	32	
BAGY 40		6	40.1 ~ 63	32	



HEAVY DUTY, Ejector / Springy, Punches Ball Lock wider Than Casing, Shaped

BAGO - BAGK - BAGD - BAGA - BAGM - BAGX - BAGP

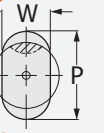
Order Ø d2	Ball d5	Pin d3	Shaped W-GP Min. Max.	L1 Min. Max.	L
BAG. 10	10	4	3.0 ~ 25	16	80 90 100
BAG. 13	12 mm	5	5.0 ~ 32	20	
BAG. 16		5	6.0 ~ 38	25	
BAG. 20		6	8.0 ~ 40	25	
BAG. 25		6	10 ~ 48	25	
BAG. 32		6	11.5 ~ 63	32	
BAG. 40		6	14 ~ 63	32	

Other Lengtsh are produced as per order.

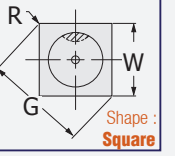
Formed Punch Shapes

BAGY Order No. — Shape : **Round**

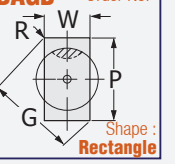
BAGO Order No. — Shape : **Oval**



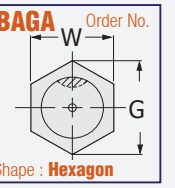
BAGK Order No. — Shape : **Square**



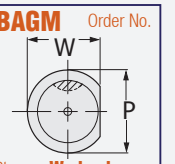
BAGD Order No. — Shape : **Rectangle**



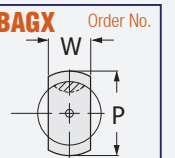
BAGA Order No. — Shape : **Hexagon**



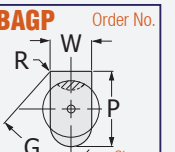
BAGM Order No. — Shape : **Wedged**

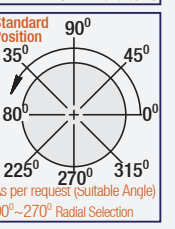


BAGX Order No. — Shape : **Oval Square**



BAGP Order No. — Shape : **Parabolic**



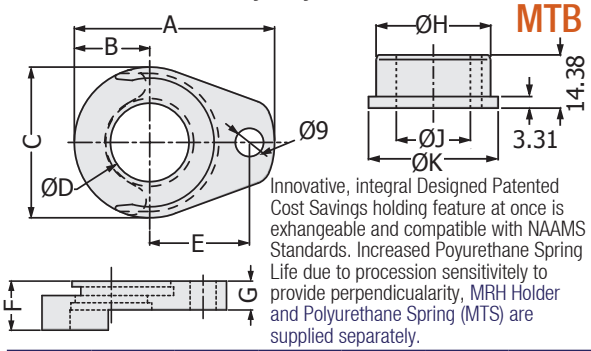


As per request (Suitable Angle)
90⁰~270⁰ Radial Selection

Section Press Mould

SCRAPER RETAINERS FOR PUNCHES WIDER THAN CASING

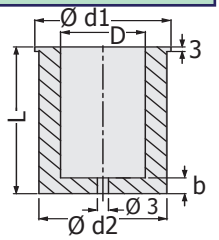
It is used with MRH Heavy Duty Ball Lock Retainers.



Innovative, integral Designed Patented Cost Savings holding feature at once is exhangeable and compatible with NAAMS Standards. Increased Poyurethane Spring Life due to procession sensitivitely to provide perpendicualarity, MRH Holder and Polyurethane Spring (MTS) are supplied separately.

Retainer For Wide End Punch Scrapers — Order No. **MTB**

Punch Ø / Casing P/G	MTB Ø 10	MTB Ø 13	MTB Ø 16	MTB Ø 20	MTB Ø 25	MTB Ø 32
P/G	15.75	19.75	24.75	31.75	39.75	39.75
A	53.18	58.60	63.75	73.86	83.63	83.63
B	18	20.5	24	31	36	36
C	36	41	48	62	72	72
D	16	20	25	32	40	40
E	26.93	29.97	31.75	33.53	40.64	40.64
F	17	17	17	17	17	18
G	10	10	10	10	10	10
H	15.75	19.75	24.75	31.70	39.70	39.70
J	10	13	16	20	25	32
K	19	23	28	34	44	44
Polyurethane Spring	MTS **16** Pl. Len.	MTS **20** Pl. Len.	MTS **25** Pl. Len.	MTS **32** Pl. Len.	MTS **40** Pl. Len.	MTS **40** Pl. Len.



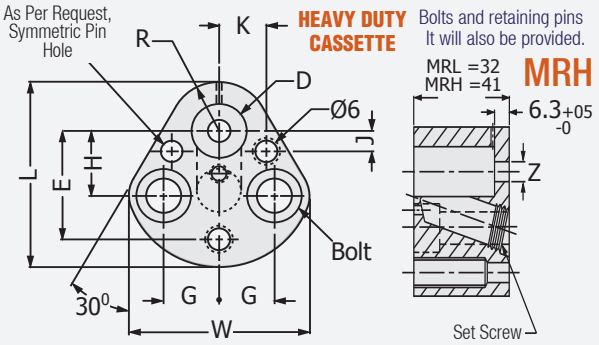
POLYURETHANE PUNCH MTS SCRAPERS FOR MTB RETAINERS

Holder Order	Punch Length	Punch	L	D	d1	d2	b
MTB 10	80	10	43	15.75	31	28	6
	100		63				
MTB 13	80	13	43	19.75	36	33	7
	100		63				
MTB 16	80	16	43	24.75	43	40	7
	100		63				
MTB 20	80	20	43	31.75	55	50	7
	100		63				
MTB 25	80	25	43	39.75	65	60	8
	100		63				
MTB 32	80	32	43	39.75	65	60	8
	100		63				

Exchangeable and Compatible with NAAMS Standards

Material: Polyurethane 95 Shore-A

FOR HEAVY LOAD, BALL-LOCK TRIANGLE RETAINERS



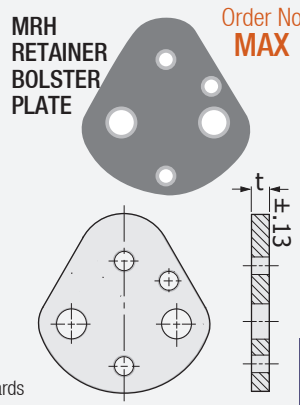
Heavy Load, Triangle Retainers for Ball Lock — Order No. **MRH**

Dimension	MRH 10	MRH 13	MRH 16	MRH 20	MRH 25	MRH 32	MRH 40
Ø D	10	13	16	20	25	32	40
E ±0.1	26.924	29.972	31.750	33.528	40.640	40.640	43.993
G	11.12	14.27	15.87	17.47	19.84	19.84	24
Ø L	44.5	50.8	54	60.3	69.9	69.9	77.4
W	39.9	48.3	51.6	58.2	66.5	66.5	77.8
R	9.5	12.7	14.3	17.5	22.2	22.2	26
H	19.05	19.05	19.05	19.05	23.82	23.82	27
J ±0.1	7.5	6.5	6.0	5.0	7.0	7.0	10
K ±0.1	9.0	12	13.5	16.5	22	22	26
Z	6	6	6	6	6	6	6
Bolt	M8	M8	M8	M10	M12	M12	M12

BOLSTER PLATES FOR BALL LOCK RETAINERS

MRH RETAINER BOLSTER PLATE

Order No **MAX**



Order	Code	t
MRH.10.MAX	018	1.80
MRH.13.MAX	030	3.00
MRH.16.MAX	031	3.18
MRH.20.MAX	047	4.75
MRH.25.MAX	060	6.00
MRH.32.MAX	063	6.35
MRH.40.MAX	100	10
Order Example: Retainer Code (MRH) MAX.018	130	13

Section Press Mould

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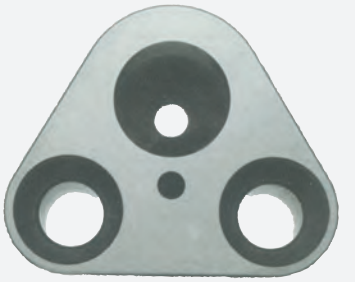
Economic Heavy Duty Round Type

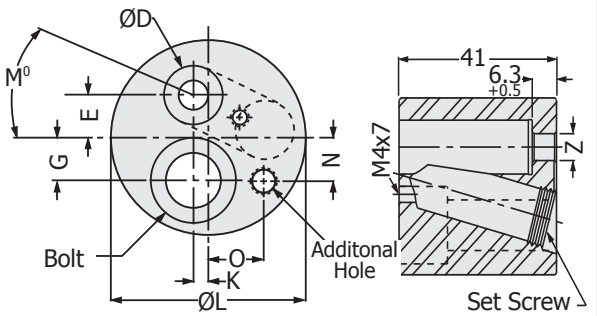
Heavy Duty Small Dimensions



ROUND RETAINERS FOR HEAVY LOADS

Bolster Plate.MAX (**t**) : 1.8 mm - 3.0 mm - 3.18 mm
4.75 mm - 6.0 mm - 6.35 mm - 10 mm - 13 mm

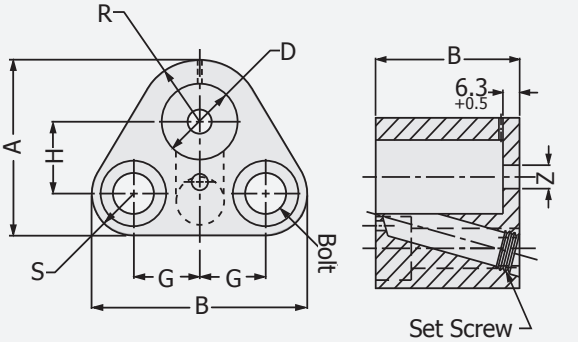
MRR



SMALL SIZE RETAINERS FOR HEAVY LOADS

Bolster Plate.MAM (**t**) : 3.0 mm - 6.0 mm -10 mm - 13 mm

MRM



HEAVY LOAD, Ball Lock Round Retainer / Economical Serial **MRR**

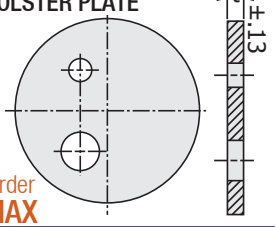
Dimensions	MRR 10	MRR 13	MRR 16	MRR 20	MRR 25	MRR 32	MRR 40
Ø D	10	13	16	20	25	32	40
Ø L	38.1	41.3	44.5	57.2	63.5	76.2	82.6
E	9.86	9.25	9.10	12.20	12.51	15.67	15.39
G	7.10	9.17	11.07	14.30	17.50	20.83	23.55
K	2.65	3.18	1.93	-	-	-	-
M	20.5^0	26^0	33.5^0	30^0	30^0	30^0	30^0
N	4.47	9.35	10.21	9.35	14.27	15.46	15.46
O	12.72	11.88	13.16	19.40	20.17	26.12	26.12
Z	6	6	6	6	6	6	6
Ad. Hole	M6X 1.0	M6X 1.0	M6X 1.0	M8X 1.25	M8X 1.25	M8X 1.25	M8X 1.25
Bolt	M12	M12	M12	M16	M16	M20	M20

HEAVY LOAD, Ball Lock Small Size Retainers **MRM**

Dimensions	MRM 10	MRM 13	MRM 16	MRM 20	MRM 25	MRM 32	MRM 40
Ø D	10	13	16	20	25	32	40
A	37.8	40.3	42.1	46.5	56.5	58.2	67.3
B	40.6	47.6	50.8	57.1	65.1	64.0	76.2
G	11.1	14.3	15.9	17.5	19.8	19.8	24.0
H	19.0	19.0	19.0	19.0	23.8	23.8	27.0
R	9.5	11.7	13.5	16.4	20.0	22.2	26.0
S	9.2	9.5	9.5	11.1	12.7	12.2	14.3
Z	6	6	6	6	6	6	6
Bolt	M8	M8	M8	M10	M12	M12	M12

BOLSTER PLATES FOR BALL LOCK RETAINER

MRR RETAINER BOLSTER PLATE

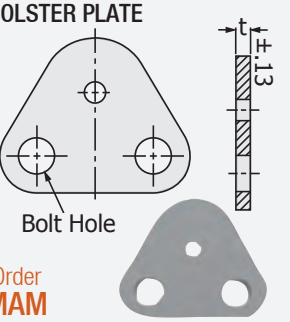


Order **MAX**

Order	Code	t
MRR.10.MAX	018	1.80
MRR.13.MAX	030	3.00
MRR.16.MAX	031	3.18
MRR.20.MAX	047	4.75
MRR.25.MAX	060	6.00
MRR.32.MAX	063	6.35
MRR.40.MAX	100	10
Order Example Retainer Code (MRR) MAX.018	130	13

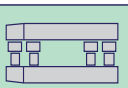
BOLSTER PLATES FOR BALL LOCK RETAINERS

MRM RETAINER BOLSTER PLATE

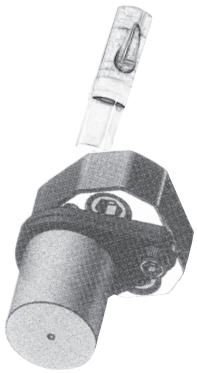


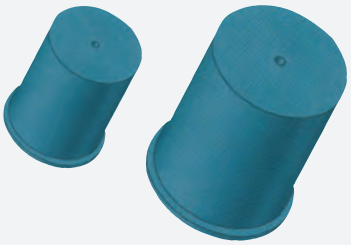
Order **MAM**

Order	Code	t
MRM.10.MAM	030	3.00
MRM.13.MAM		
MRM.16.MAM	060	6.00
MRM.20.MAM		
MRM.25.MAM	100	10
MRM32.MAM		
MRM.40.MAM	130	13
Order Example Retainer Code (MRM) MAM.030		



Section Press Mould

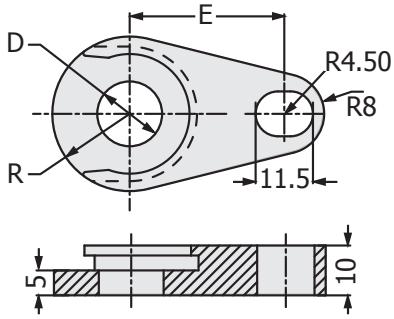




FOR PUNCH SCRAPERS MTR / MTM / MTP RETAINERS

It can be used with multi hole retainers. Due to processing sensitively to provide perpendicularity life is increased. It is exchangeable and compatible with NAAMS Standards. Patented Cost Saving, Retaing Feature At Once, Innovative Integral Design.

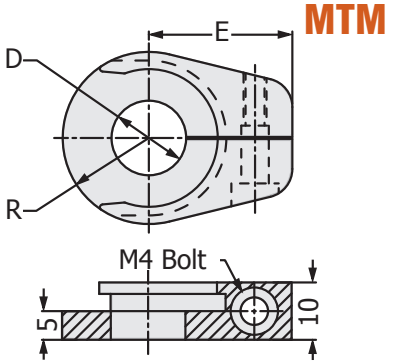
PUNCH SCRAPER RETAINERS MTR



*** IT IS USED WITH MRH RETAINERS.**

Order	D	R	E
MTR 10	**10**	13	28
MTR 13	**13**	15.5	31
MTR 16	**16**	18	32.9
MTR 20	**20**	20.5	34.8
MTR 25	**25**	24	39.8
MTR 32	**32**	31	41.3
MTR 40	**40**	36	45

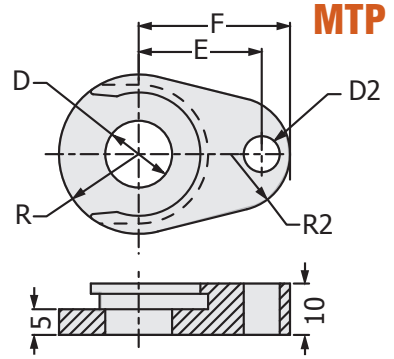
PUNCH SCRAPER RETAINERS MTM



*** IT IS USED WITH MRM RETAINERS.**

Order	D	R	E
MTM 10	**10**	13	22.5
MTM 13	**13**	15.5	25
MTM 16	**16**	18	27.5
MTM 20	**20**	20.5	30
MTM 25	**25**	24	35.5
MTM 32	**32**	31	37.5
MTM 40	**40**	36	42.3

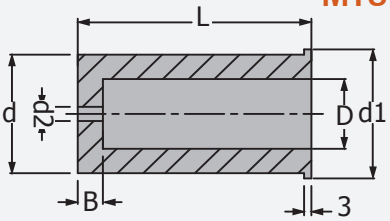
PUNCH SCRAPER RETAINERS MTP



*** IT IS USED WITH MRM RETAINERS.**

Order	D	R	E	F	D2	R2
MTP 10	**10**	13	21	26.5	7	10
MTP 13	**13**	15.5	23.9	29.4	7	11
MTP 16	**16**	18	24.5	30	7	12.8
MTP 20	**20**	20.5	29	36	9	11.8
MTP 25	**25**	24	33.5	40.5	9	12.9
MTP 32	**32**	31	40.6	49.3	9	8
MTP 40	**40**	36	44	53	9	8

POLYURETHANE PUNCH SCRAPER MTS

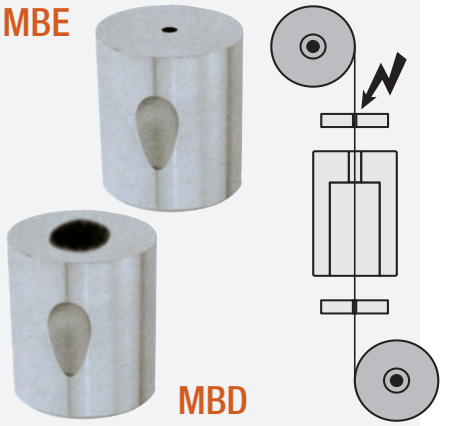


Heavy Load Ball Lock Punch Length	Light Load Ball Lock Punch Length	Recommended Scraper Length " L"
80	**71**	**43**
90	**80**	**52**
100	**90**	**63**
110	**100**	**72**

While ordering, pls. specify punch scraper length, product code. Example: 43 x MTS.L

Punch Casing	D	d	L	d1	d2	B
10	Ø 9.75	Ø 18	44 54 64 74	Ø 21	1.6	6 mm
13	Ø 12.75	Ø 23	44 54 64 74	Ø 26	3	6 mm
16	Ø 15.75	Ø 28	44 54 64 74	Ø 31	3	6 mm
20	Ø 19.75	Ø 33	44 54 64 74	Ø 36	3	7 mm
25	Ø 24.75	Ø 40	44 54 64 74	Ø 43	3	7 mm
32	Ø 31.70	Ø 50	44 54 64 74	Ø 55	3	7 mm
40	39.70	60	44 64	65	3	8 mm

MBE

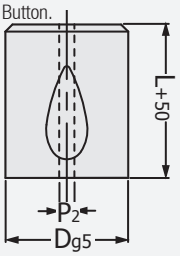


MBD

BALL LOCK FLAT MATRIX

Automative Standard Capless Bushes MBE MBD

External Diameter and Bottom Surface Grinded Die Button.

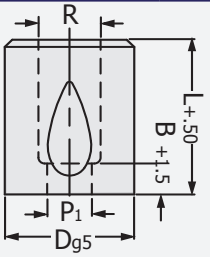


Starting Hole for wire erosion has been opened.

Important: If bush/ Die Buttons are ordered with punch during offering, precision and efficiency are high.

Capless Bushes, Wire Erosion, Front Hole MBE

Order	Ø D	P2	L
MBE.13.L	13	1.2	32 mm *Lengths are produced as per order.
MBE.16.L	16	1.6	
MBE.20.L	20	2.0	
MBE.25.L	25	2.4	
MBE.32.L	32	2.4	
MBE.38.L	38	2.4	



Flat Hole Punch Bushes

Flat Internal Dia. Along Punch Bush

Material : HSS (1.3343) HRC 60 - 63

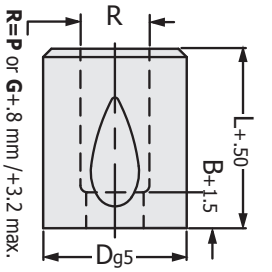
CAPLESS BUSH FLAT HOLE MATRIX MBD

Order	Ø D	B	R	P1	L
MBD.13.L	13	4.0	5.8	1.2	32 mm *Lenghts are produced as per order.
MBD.16.L	16	5.0	8.0	1.6	
MBD.20.L	20	5.0	11.9	2.0	
MBD.25.L	25	6.0	16	3.6	
MBD.32.L	32	6.0	20	4.4	
MBD.38.L	38	8.0	27	5.6	

Shapes :
MBY- MBO- MBK
MBD- MBA- MBM
MBX- MBP

BALL LOCK FORMED MATRIX

Automotive Standard Capless Bushes MB.



Standard Tolerances		
Round P +0.1, -.00	◎ 0.1	From P to d2
Shape P,W,G ± 0.1	◎ 0.2	From P to d2

Standard position of ball lock is 90^0. It can be preferred as 0^0- 180^0- 270^0

MBY - MBO - MBK - MBD - MBA - MBM - MBX - MBP

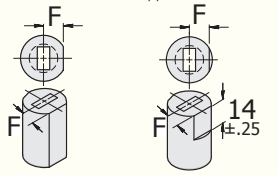
Ball Lock Punch Matrixes According To Their Shapes

Order No	Casing D	B mm	Shape R Max.	Ø R Shape MBY Round P	Ø R Shape Other Shapes W Min.	Ø R Shape G / P Max.	L Len. mm
MB...13	13	4	6.0	1.6 - 5.0	1.6	5.0	32 mm *Lengths are produced as per order.
MB...16	16	5	8.0	3.2 - 7.2	2.0	7.2	
MB...20	20	5	12	4.0 - 11	2.5	11	
MB...25	25	6	16	8.0 - 15	4.0	15	
MB...32	32	6	20	11 - 19	5.0	19	
MB...38	38	8	27	16.5 - 26	6.5	26	

POSITIONING Ball Lock Punch Bushes

F 1 One Sided Discrete

F 2 Upper Surface Discrete



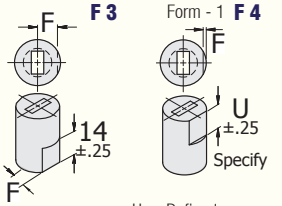
Bottom Surface Discrete

F 3

User Defined

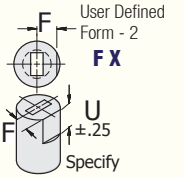
Form - 1

F 4



User Defined Form - 2

F X



Technical Information!

Locking Punch Bushes: F1 - F2 - F3 using for " F" Dimension are given at next table. F x Dimension are defined by user. While ordering, cut surface dimension "F" and "U" should be specified.

Casing Dia.	" F " +0.2
10	4.0
13	5.5
16	7.0
20	8.5
22	9.5
25	11
32	14
38	17
40	18
45	20.5
50	23
56	26
63	29.5
71	33.5
76	35.5
85	40
90	42.5
100	47.5

Formed / Bush MATRIX Shapes

MBY Order No. P — Shape: Round

MBO Order No. W P — Shape : Oval

MBK Order No. R W G — Shape : Square

MBD Order No. W R P G — Shape: Rectangle

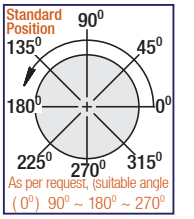
MBA Order No. W G — Shape : Hexagon

MBM Order No. W P — Order : Wedged

MBX Order No. W P — Shape : Oval Square

MBP Order No. W R P G — Shape : Parabolic

Standard Position



As per request, (suitable angle (0^0) 90^0 ~ 180^0 ~ 270^0

Section Press Mould

Formed / Bush MATRIX Shapes

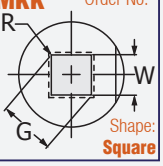
MKY Order No.

Shape: **Round**

MKO Order No.

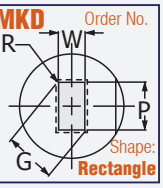
Shape: **Oval**

MKK Order No.



Shape: **Square**

MKD Order No.



Shape: **Rectangle**

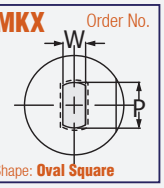
MKA Order No.

Shape: **Hexagon**

MKM Order No.

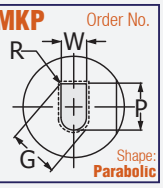
Shape: **Wedged**

MKX Order No.

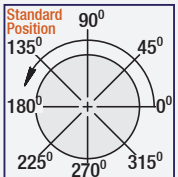


Shape: **Oval Square**

MKP Order No.



Shape: **Parabolic**



As Per Request (Suitable Angle)

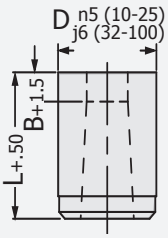
(0⁰) 90⁰ ~ 180⁰ ~ 270⁰

EXTRA LIFE BUSH CONICAL - FLAT

Conical Inner Flat Bush

Conical Standard: Per edge at round is 1^0. At shaped is $1\text{-}1/2^0$

Shapes : MKY- MKO- MKK MKD- MKA- MKM MKX- MKP



Important: If bush/ Die Buttons are ordered with punch during offering, precision and efficiency are high.

Standard position of ball slot is 90^0. It can be preferred as 0^0- 180^0- 270^0.

For positioning system, refer **Page 170** .

Order Ø **d2**	Casing **D**	Overhanging Len." **B** "			
		Stan dard	Alternative Length		
			A	**B**	**C**
MK..10	10	4	8	-	3
MK..13	13	5	8	-	3
MK..16	16	5	8	-	3
MK..20	20	5	12	20	3
MK..22	22	6	12	20	3
MK..25	25	6	12	20	3
MK..32	32	6	12	20	3
MK..38	38	8	12	20	3
MK..40	40	8	12	20	3
MK..45	45	8	12	20	3
MK..50	50	8	12	20	3
MK..56	56	8	12	20	3
MK..63	63	8	12	20	3
MK..71	71	8	12	20	3

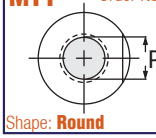
Extra Life, Conical, Flat Bushes

MKY - MKO - MKK - MKD MKA - MKM - MKX - MKP

Order Ø **d2**	Full Length **L**	Round Type **P**	Shaped	
			W Min.	**GP** Max.
MK..10	22 25 28 30 mm	1.6 - 5.0	1.6	5.0
MK..13		3.0 - 7.2	1.8	7.2
MK..16		5.0 - 8.8	2.5	8.8
MK..20		5.0 - 11	3.2	11
MK..22		7.5 - 14	4.0	14
MK..25		9.5 - 16.5	4.8	16.5
MK..32		13 - 20	5.5	20
MK..38		16 - 26	6.4	26
MK..40		16.6 - 26	6.4	26
MK..45	25 28 30 32 35 38 mm	22 - 31	7.5	31
MK..50		24 - 34	8.0	34
MK..56		26 - 38	8.5	38
MK..63		30 - 43	9.0	43
MK..71		34 - 48	9.5	48

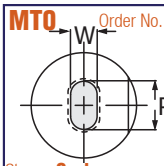
Formed / Bush MATRIX Shapes

MTY Order No.



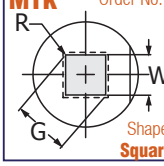
Shape: **Round**

MTO Order No.



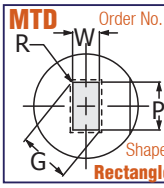
Shape: **Oval**

MTK Order No.



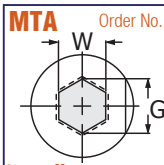
Shape: **Square**

MTD Order No.



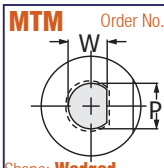
Shape: **Rectangle**

MTA Order No.



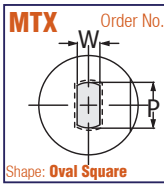
Shape: **Hexagon**

MTM Order No.



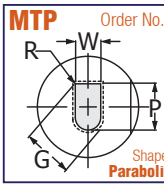
Shape: **Wedged**

MTX Order No.

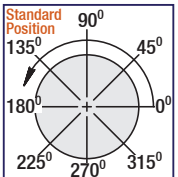


Shape: **Oval Square**

MTP Order No.



Shape: **Parabolic**



As Per Request (Suitable Angle)

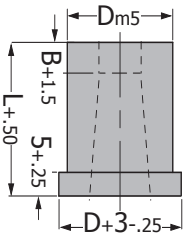
(0⁰) 90⁰ ~ 180⁰ ~ 270⁰

EXTRA LIFE GUIDE BUSH-CONICAL

Conical Inner Guide Bush

Conical Standard: Per edge at round is 1^0. At shaped is $1\text{-}1/2^0$

Shapes : MTY- MTO- MTK MTD- MTA- MTM MTX- MTP



StandartdTolerances		
Round P +0.1, -.00	◎ 0.1	From P to d2
Shape P,W,G ± 0.1	◎ 0.2	From P to d2

Standard position of ball slot is 90^0.
It can be preferred as 0^0- 180^0- 270^0

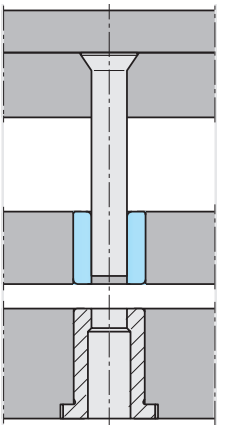
For positioning system, refer **Page 170**.

Order Ø **d2**	Casing **D**	Overhanging Len." **B** "			
		Stan dard	Alternative Length		
			A	**B**	**C**
MT..10	10	4	8	-	3
MT..13	13	5	8	-	3
MT..16	16	5	8	-	3
MT..20	20	5	12	20	3
MT..22	22	6	12	20	3
MT..25	25	6	12	20	3
MT..32	32	6	12	20	3
MT..38	38	8	12	20	3
MT..40	40	8	12	20	3
MT..45	45	8	12	20	3

Extra Life Conical, Guide Bush

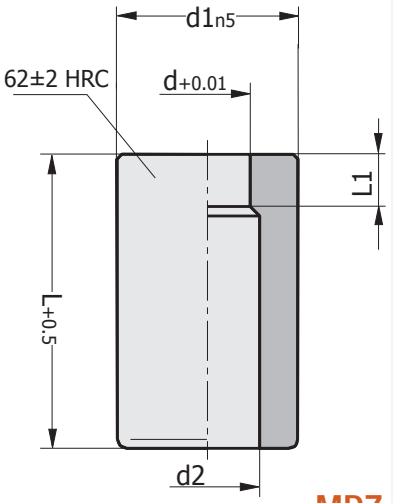
MTY - MTO - MTK - MTD MTA - MTM - MTX - MTP

Order Ø **d2**	Full Length **L**	Round Type **P**	Shaped	
			W Min.	**GP** Max.
MT..10	22 25 28 30 32 35 mm	1.6 - 5.0	1.6	5.0
MT..13		1.8 - 7.2	1.8	7.2
MT..16		5.0 - 8.8	2.5	8.8
MT..20		5.5 - 11	3.2	11
MT..22		7.5 - 14	4.0	14
MT..25		9.5 - 16.5	4.8	16.5
MT..32		13 - 20	5.5	20
MT..38		16 - 26	6.4	26
MT..40		16.5 - 26	6.5	26
MT..45		22 - 31	7.5	31



PUNCH BUSHES / DIE BUTTONS

ISO 8977 Shape A Flat Bush **MDZ**



Shape A Flat Bush / Die Buttons MDZ

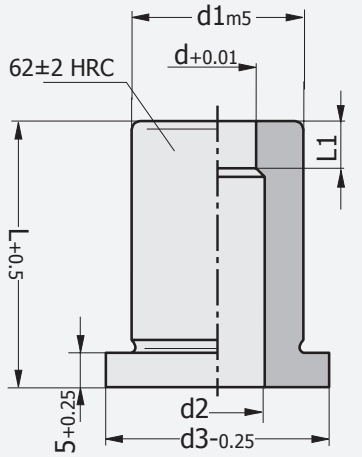
d	d1	d2	L1	L
2.0 - 3.5	**8**	4.0	4	20 / 25
2.5 - 5.0	**10**	5.8	4	20/25/32
4.0 - 7.0	**13**	8.0	5	20/25/32
6.0 - 9.0	**16**	9.5	5	20/25/32
8.0 - 11.0	**20**	12.0	8	20/25/32
10.7 - 16.0	**25**	17.3	8	20/25/32
15.0 - 20.0	**32**	20.7	8	20/25/32
19.0 - 27.0	**40**	27.7	8	25/32
26.0 - 36.0	**50**	37.0	8	32

Order: **MDZ** d1 x d x L

Material : HSS 1.3343 External Diameter and
Hardness: 62 HRC bottom surfaces are grinded

PUNCH BUSHES / DIE BUTTONS

ISO 8977 Shape B Guide Bush **MSZ**



Shape B Guide Bush / Die Buttons MSZ

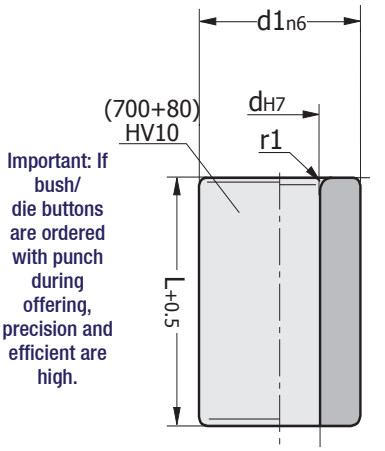
d	d1	d3	d2	L1	L
2.0 - 3.5	**8**	11	4.0	4	20/25
2.5 - 5.0	**10**	13	5.8	4	20/25/32
4.0 - 7.0	**13**	16	8.0	5	20/25/32
6.0 - 9.0	**16**	19	9.5	5	20/25/32
8.0 - 11.0	**20**	23	12.0	8	20/25/32
10.7 - 16.0	**25**	28	17.3	8	20/25/32
15.0 - 20.0	**32**	35	20.7	8	20/25/32
19.0 - 27.0	**40**	43	27.7	8	25/32
26.0 - 36.0	**50**	53	37.0	8	32

Order: **MSZ** d1 x d x L

Material : HSS 1.3343 External Diameter and
Hardness : 62 HRC bottom surfaces are grinded

PUNCH BUSHES / DIE BUTTONS

Bushes for Punch Kits **MZD**



Important: If bush/ die buttons are ordered with punch during offering, precision and efficient are high.

Bushes For Punch Kits MZD

d	d1	r1	L
1.0 - 2.4	**5**	1.0	8.0
1.6 - 3.0	**6**	1.0	12.5
2.0 - 3.5	**8**	1.5	12.5
3.0 - 5.0	**10**	2.0	16.0
4.0 - 7.2	**13**	2.0	16.0
6.0 - 8.8	**16**	2.0	20.0
7.5 - 11.3	**20**	2.5	20.0
11 - 16.6	**25**	2.5	25.0
15 - 20	**32**	4.0	25.0
18 - 27	**40**	4.0	32.0

Order: **MZD** d x d1 x L

Material : HSS 1.3343 External Diameter and
Hardness : 62 HRC bottom surfaces are grinded

Order
VCF 600

HAND TYPE MOBILE CHAMFERING MACHINE

Hand Type, Light, Useable, Japanese Equipped Motor Mould Plates and at Machine Production and Chamfering Processes

Adjustable Radius Selection

Slide Bearing Length 100 mm

Mobile / Diamond Plaque ... Optional Spare End : SPMW 0308

Order	Machine Dimensions	Motor Voltage	Cycle R.P.M	Corner Radius	Chamfer Capacity	Weight
VCF 600	380 x 130 mm	220 V 0.7 KW	12000	45^0	0 - 3 mm	3.7 Kg

Order
PIN CUTTING AND GRINDING MACHINE 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 Kv.
Cutting Stone (Order PKM 2 **)** ... 125 / 1 / 1.5 mm
Grinding Wheel (Order PKM 3 **)** ..... Ekr - D100
Stone Correction Diamond (Order PKM 4 **)**..0.50 Carat
Machine Dimension .. 430 x 360 x 500 mm
Weight ..... 109 Kg.

Our Ejector Pins/ Punches are precision cut and face grinded in desired length.

Easy Fast

It provides fast cutting repeatedly with length

Grinding Dresser Diamond Setting Scale

Work Piece Support Thrust

Cover Safety Switch

Work Piece Positioning Seating Area

Cutting Stone

Motion Scale for precision grinding of dish stone.

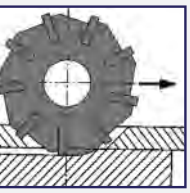
Cutting Stone Mounting Kits

Grinding Wheel After Cutting

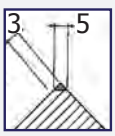
Length Setting Unit

System Lubricant Grease Nipple

It provides recycling of rejected material.



Slide Bearing Length 200 mm



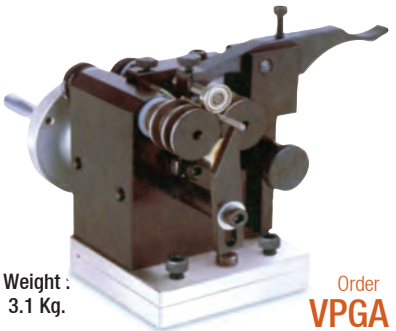
Mobile / Diamond Plaque ... Optional Spare End: SPUN 1203

Order	Machine Dimensions	Motor Voltage	Cycle R.P.M	Corner Radius	Chamfer Capacity	Weight
VCF 700	360 x 200 mm	220 V 0.7 KW	3500	15^0-45^0	0 - 7 mm	13 Kg

Order
VCF 700

HAND TYPE, TRAVELER / MOBILE, UNIVERSAL CHAMFERING

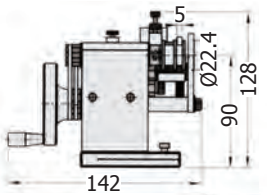
It is for universal / heavier / wider work pieces. It is used at mould plates and machine production.



Weight : 3.1 Kg.

Order **VPGA**

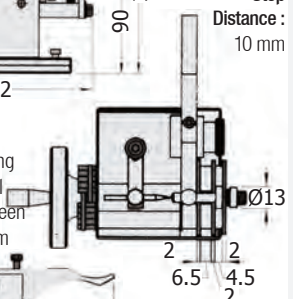
Small Type: Punch & Pin FORM PROCESSING EQUIPMENT

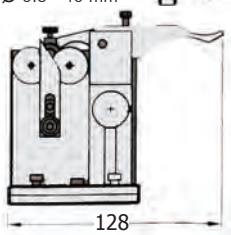


Pin Dia. Capacity : From 0.5 ' to 6 mm

Step Distance : 10 mm

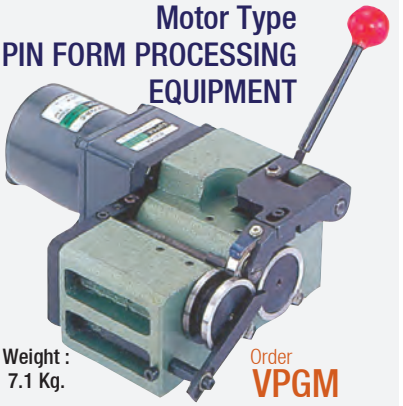
Processing Equipment in surface grinding bench of small punches between Ø 0.5 - 10 mm





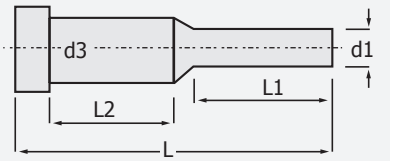
It is suitable to be used at processing and grinding of small diameters and short pins serially.

Motor Type PIN FORM PROCESSING EQUIPMENT



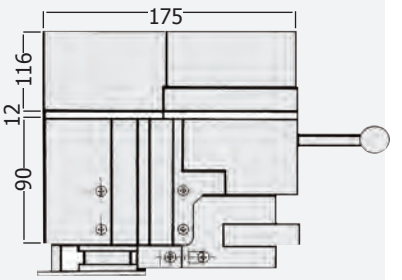
Weight : 7.1 Kg.

Order **VPGM**

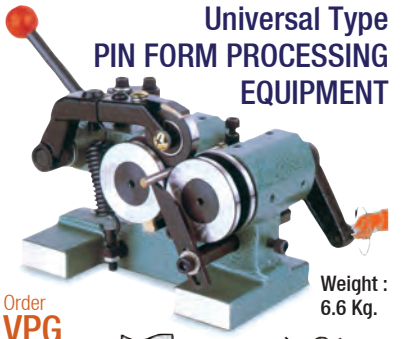


Pin Processing Information :

Pin Full Length (L) ..... 20 - 120 mm
Minimum Pin Connecting Length (L2) .. min.22 mm
Pin Grinding Length (L1)..... 5 - 35 mm
Pin Connecting Diameter (d3) ..... Ø 2 ~ 25 mm
Pin Grinding Diameter (d1) ..... Ø 0.5 ~ 25 mm
Grinding Sensitivity ..... 0.01 mm
Motor Cycle ..... 130 RPM
Motor (Monophase) ..... 120 V / 50 Hz / 25 W
Pin Bearing Roller Speed ..... 60 Hz
Step Ovality Sensitivity..... 25.4 mm
Equipment Surface Connecting Dimensions:
175 x 218 x 90 mm

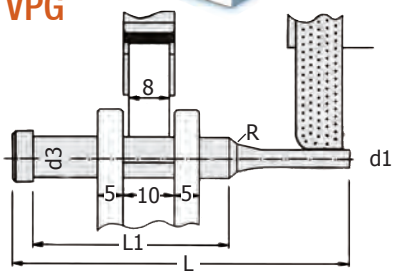


Universal Type PIN FORM PROCESSING EQUIPMENT



Weight : 6.6 Kg.

Order **VPG**



Working System:
Bench Grinding **Manual** System Equipment

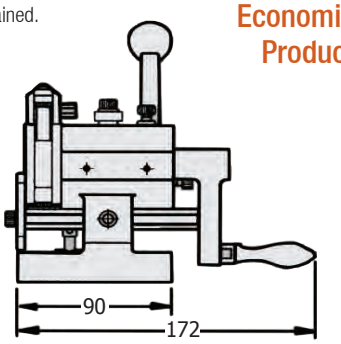
* It is used in cylindrical or stepped form grinding operations of ejector pins - punch and EDM Work Pieces surface on grinding machine.

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.

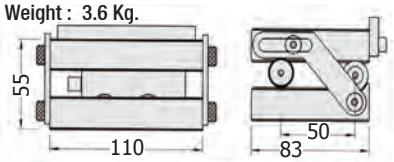
Economic Product



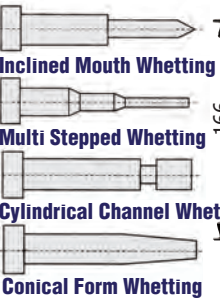
SINE - ANGULAR TABLE
For Pin Forming Equipments

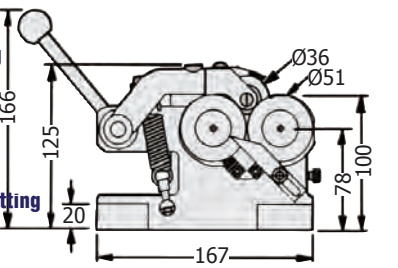
Order **VSP-S**

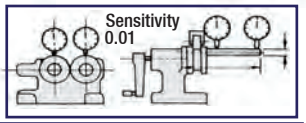
Weight : 3.6 Kg.

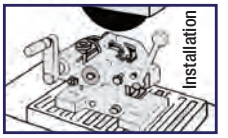


Some Sample Whetting Studies

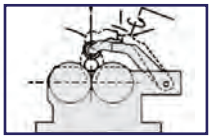




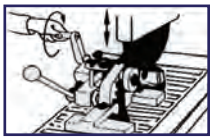




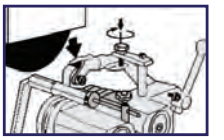
Lift depressor arm. Insert pin into its slot. Tight depressor arm screw.



When pin is placed between precision wheels, center is found automatically.



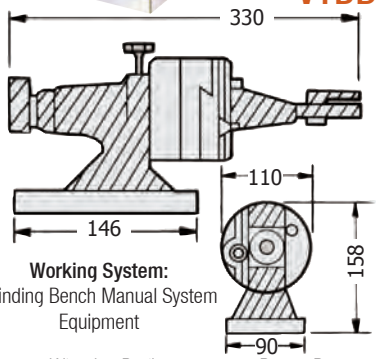
After connection equipment grinding machine, start whetting by turning arm.



Before starting grinding, ensure that all support and Guide Screws are tightened.

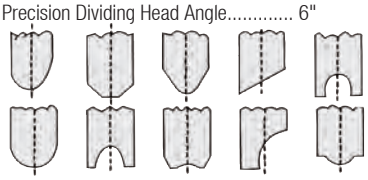
STONE FORMING EQUIPMENT

Order **VTDB**



Working System:
Grinding Bench Manual System Equipment

Convex Whetting Radius..... 0.8 R - 40 R
Concave Whetting Radius..... 0 - 40 R
Max. Grinding Machine Stone Dia. ..... Ø 250 mm
Turning Angle..... 4 x 90^0 = 360^0
Precision Dividing Head Angle..... 6"



* Precision Centers height is obtained with positive cutting angle, diamond dressers.
*Thanks to precision grinded dove tail slides, absolute distance shifts are prevented in the desired distance.
* By providing control from one point, convex and concave whetting forms are provided precisely and quickly.
* All working surfaces and measuring scale is 60 HRC'.

DIAMOND DRESSER

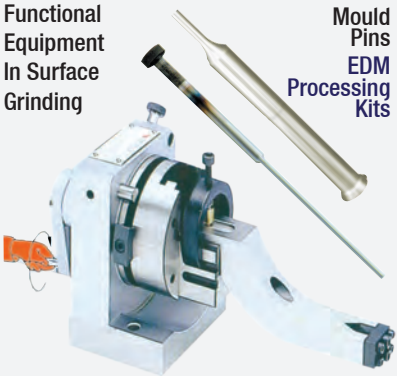
TDE

It is for whetting stones in grinding machines.

Order	Type
TDE.030	0.30 Carat
TDE.050	0.50 Carat
TDE.075	0.75 Carat
TDE.100	1.0 Carat
TDE.150	1.5 Carat
TDE.200	2.0 Carat
TDE.300	3.0 Carat

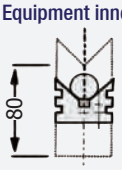
Functional Equipment In Surface Grinding

Mould Pins EDM Processing Kits



PIN FORMING EQUIPMENT

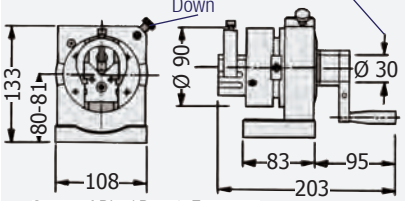
Connecting Bearing Open **V-PS**
Step Creation at Long Ejector Pins
Equipment inner " V " is open in bearing parallel.



" V " Bearing Length: 30 mm
Axial Height of Center of Rotation: 15 mm

Rotation Setting Axial and Up / Down

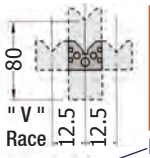
Inner of equipment overall open



Some of Pin / Punch Forms

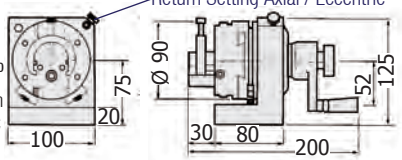
Technical Data: It is similar for both product.
d1 : Pin Connecting Dia. ..... **Ø 4 - Ø 30** mm
Model V-PB 01 (Connecting Bearing is close)
L : Pin Connecting Length ..... **22** mm
Model V-PS 02 (Connecting Bearing is open)
L : Long Pin Connecting Len. As Per Request
Motion of "V" Bearing to Up / Down..... **25** mm
Motion of "V" Bearing to Single Direction..... **12.5** mm
Total Motion of "V" Bearing..... **25** mm
Number of Mirror Dividing Head Angle **24 Psc. $15^0 \pm 5^0$**
Max. Stone Grinding Machine Stone Dia..... **Ø 200** mm
Equipment Surface and Angle / Scale Hardness **63** HRC
Total Weight of Equipment **10 -** VPS 02 **9** Kg.

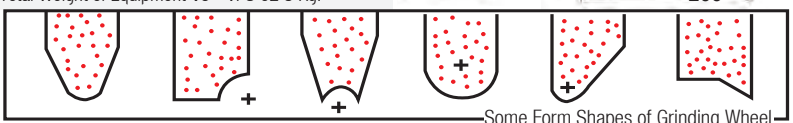
Order No
V-PB
V-PS



Standard Tolerances
Round P — ◎ 0.01 — Dia.
Shape P,W,G — ◎ 0.02 — Form

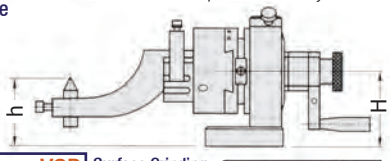
Return Setting Axial / Eccentric





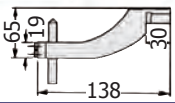
Some Form Shapes of Grinding Wheel

Forming Process of Surface Grinding Machine Stone
R: Radius of Grinding Wheel **R.100**
h: Diamond Dresser Kit (Height can be adjusted.)
H: Height between base and center 80 mm
Convex Angle: h = H - R Convex R = 48
Concave Angle: h = H + R Concave R = 100



VSP
Sine Angle Table

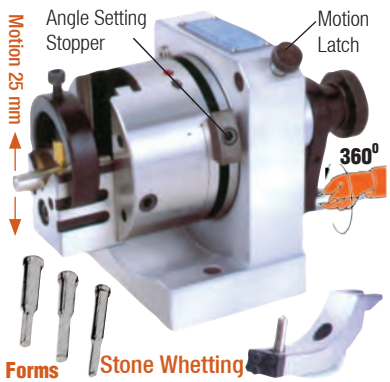
Surface Grinding Machine Stone Forming Equipment



PIN FORMING EQUIPMENT

Connecting Bearing Closed **V-PB**
Pin Bearing Length 22 mm

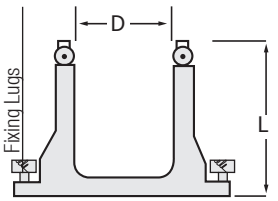
Specifications : It creates the end stage of press drilling punches or injection mould ejector pins or it enables to create the desired formed shapes as equipment manually in shaped forming processing grinding machine manually. To create form for grinding machine stone, in addition precision and quick round/ radius and multi edge complex processes are created with stone whetting bus bar practically to ejector pins of mould punches and EDM sinking Process Kits. Motion is provided in two ways with equipment, it is provided 360º Angular Return Motion and Eccentric (Up/ Down) Motions processing practicality.

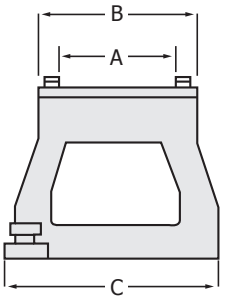


BALANCE STAND
LBS 100
LBS 350

Horizontal Flatness of Desktop Footed Round Work Pieces is Balance Control Purpose / Fast Use / High Precision.

Balance and flatness of part can be monitored by sliding suitable size round work pieces that are between slides on unit slides.
LBS 100 Maximum Diameter 200 mm.
LBS 350 Maximum Diameter 350 mm.





BALANCE STAND LBS 100 - LBS 350

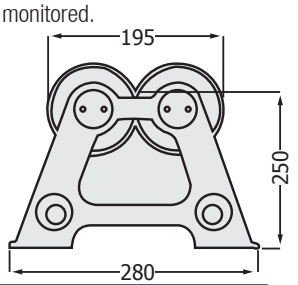
Order	A	B	C	D	L	Kg.
LBS -100 Ø 200	137	152	225	110	175	8.8
LBS - 350 Ø 350	160	180	260	125	235	15.1

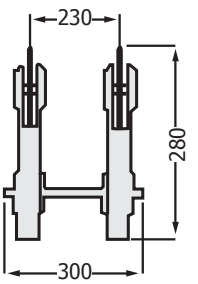
PRECISION BALANCE MEASURING STAND

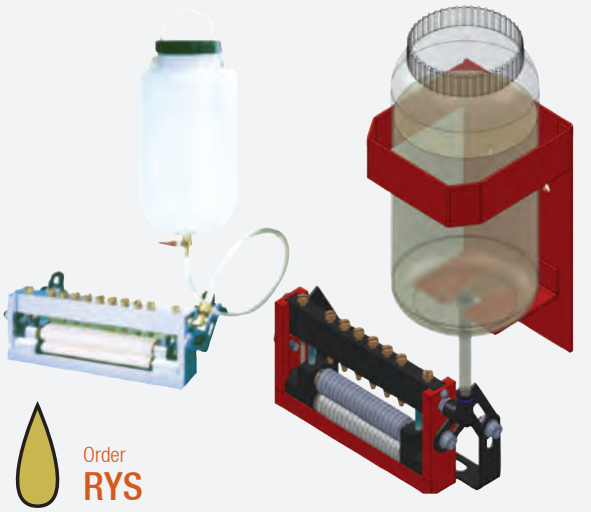
Order **WBS 300**

It helps to measure and develop grinding sensitivity correctly. All surfaces of high precision measuring stand are 55 HRC Steel Cast Casing.

Precision measuring stand / disc - rotary model are placed on round work pieces. By turning work pieces, its balance and flatness are monitored.



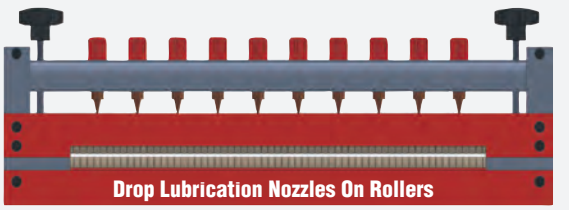




Order **RYS**

ROLLER, SHEET BAND LUBRICANTS

Sheet width capacity from 50 mm to 1600 mm



Standard Features :
* Thanks to local valves, partial lubrication on mobile sheet band.
* Industrial felt plates are available in lubricating roller.
* 3 lt. Capacity, Plastic Oil Chamber

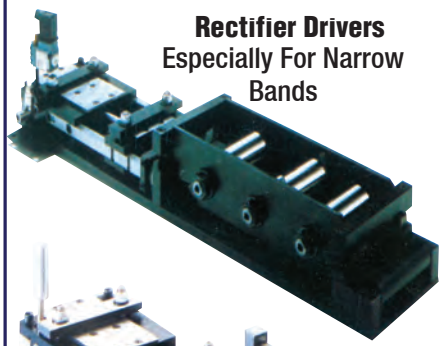
Optional (As per request) Features :
* Time Cycled Lubricating Relay
* Hydraulic Pump Tank
* Desired Oil Capacity

SHEET BAND CAN BE MOUNTED TO DRIVE SYSTEM EASILY

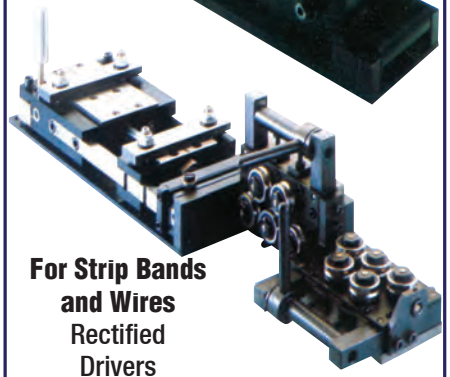
Order	Max. Band Width	Min. Band Thickness	Max. Band Thickness	Type
RYS 50	0.50 mm	1.0	2.0	Drop Roller Lubrication
RYS 100	0.100 mm			
RYS 150	0.150 mm			
RYS 300	0.300 mm	3.0	6.0	
RYS 500	0.500 mm			

Easier and faster production is obtained by lubricating band with drops while work piece / sheet product is switched between rollers in roller lubricating system press cutting and form mould processing operation. This system provides quality product without waste by increasing life time of mould. Band thickness can be adjusted from 0.1 mm to 6 mm sheet thickness.

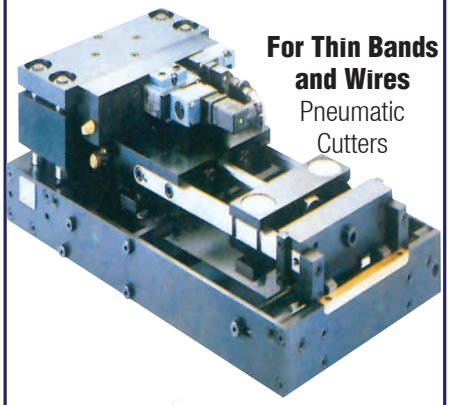
THE MOST SUITABLE AND HIGH PRECISION IMPORT DRIVER TYPES



Rectifier Drivers
Especially For Narrow Bands

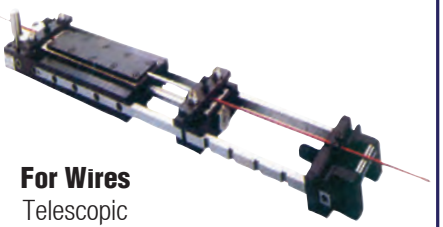


For Strip Bands and Wires
Rectified Drivers

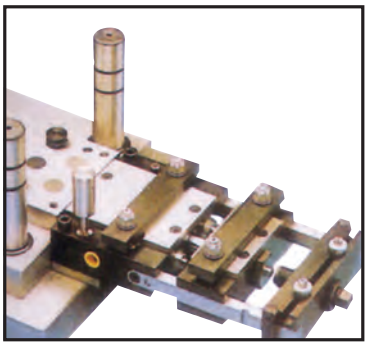


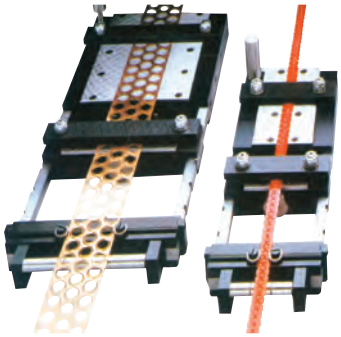
For Thin Bands and Wires
Pneumatic Cutters

For Very Thin Bands
Guide Channel Drivers



For Wires
Telescopic Drivers





High Precision PNEUMATIC DRIVERS

Import Herrblitz ITALY Rapid Type Drivers (Guaranteed Product)

Herrblitz Pneumatic Drivers
It is at your disposal with 120 Pieces Standard and Special Model as per request. They have been made in modular system, it is quite easy to obtain different dimensions, **normal drivers** are convenient especially for small bands, **they can be mounted directly on the mould.** Vertical motion of upper mould gives command to the driver, hence their mounting is so easy. **Heavy Duty Type Drivers** are very strong, they have three pulling cylinders.

Major Structural Features : Quality of Used Material; all surfaces exposed to impacts or friction are hardened and solid chrome plated, not to affect airborne water, valves and pistons are stainless steel, cylinder jacket are made from solid bronze.

Driving Sensitivity : Powerful front and rear Airbag ensure to work in 0.02mm sensitivity. At very powerful drivers there are 5 airbags at rear and 4 airbags at the front, hardness of airbags can be adjusted.

Wide Field Sliding - Bearing Plates : For feeding of special profiles, making bearing privately is possible. For magnetic bands or very precision bands, polyamide or especially hardened plates are applied.

Input Roller : By inserting roller driver input, friction on band can be decreased.
Slide Bearings: Hardened and Grinded bearings are used at our drivers. Pitch setting is so easy, you can use slots at slide edges in different stages. Accessories also superimposable to Herrblitz Drivers;
Guiding bars for very thin and precision materials enable to feed even 0.05 mm thick band by pushing.

Six roller motorless rectifier : Thanks to this application, you can obtain very practical and economic solution in rectifying bands and wires.

Pneumatic Length Cutting Machine For Bands and Wires : (Coupled to the driver). It provides to cut many different materials such as plastic, steel, paper etc. in the desired lengths.

Speed Setting and Control are electronic and its application is very easy. Special **Pliers :** For driving circular and special section profiles.

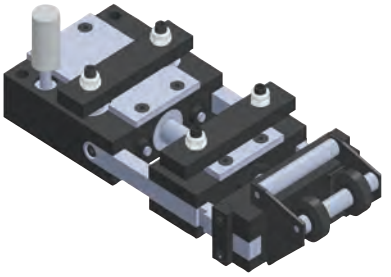
Pneumatic Valved Normal Type

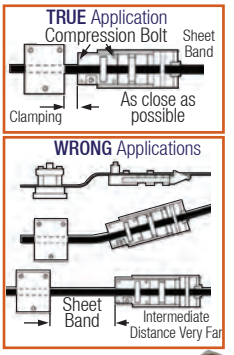
Serial	Order	Max. Band Width	Pitch Step mm	Max. Band Thickness
A Serial	A 50	0 50 mm	0 ~ 50	0 ~1.90
	A 100		0 ~100	0 ~1.80
	A 150		0 ~150	0 ~1.50
	A 200		0 ~200	0 ~1.30
	A 250		0 ~250	0 ~1.10
B Serial	B 50	0 75 mm	0 ~ 50	0 ~1.80
	B 100		0 ~100	0 ~1.70
	B 150		0 ~150	0 ~1.60
	B 200		0 ~200	0 ~1.20
	B 250		0 ~250	0 ~1.10
C Serial	C 50	0 75 mm	0 ~ 50	0 ~1.70
	C 100		0 ~100	0 ~1.50
	C 150		0 ~150	0 ~1.40
	C 200		0 ~200	0 ~1.30
	C 250		0 ~250	0 ~1.20

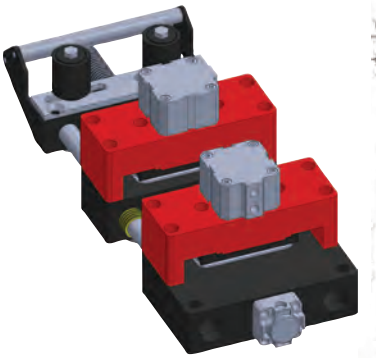
Pneumatic Valved Heavy Duty

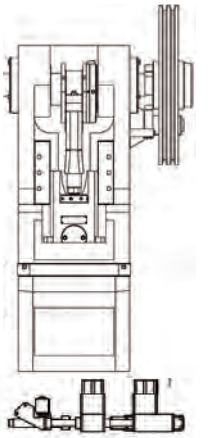
Order	Max. Band Width	Pitch Step	Max. Band Thickness
P1	0 ~155	1.00	0 ~ 3.8
P2	0 ~155	2.00	0 ~ 3.5
P3	0 ~155	3.00	0 ~3.0
S1	0 ~205	1.00	0 ~3.0
S2	0 ~205	2.00	0 ~3.0
S3	0 ~205	3.00	0 ~3.0
Z1	0 ~305	1.00	0 ~3.0
Z2	0 ~305	2.00	0 ~3.0
Z3	0 ~305	3.00	0 ~2.5

Standard Accessories ; O-Ring Kit
Optional Accessories ;
* Remote Control With Electro Valve (Instead of standard mechanic valve)
* Springy Plier (When pilot pins are used)
* Transparent Top Housing (To avoid accidents)
* Programmed counter to repeat pitch.
* Conditioner Unit and Hose Systems to filter pressured air and to lubricate.





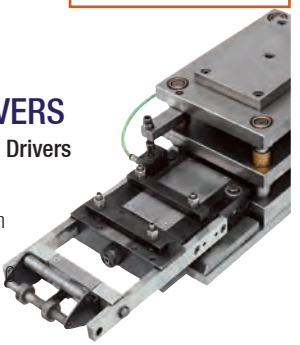




PNEUMATIC SHEET DRIVERS

Rapid Type (Domestic Production) Drivers

Economic Model



Sheet Band Width Capacity from 50 mm up to 150 mm.
Sheet sliding capacity at thickness from 2 up to 20 mm.

In Standard Features

* Manual Pitch and Speed Settings
* Mechanic Valve on Casing

In Optional

* Electronic Controlled Valve
* Stroke Repeater Unit

Standard Accessories

* O - Ring Kit of Driver
* 1/4 Conditioner (Air and Oil) Percolator
* Slide Air Valve 1/4 - Coupling
* 1.5 Meter 8's Air Hose

Pneumatic Sheet Drivers (Domestic Production) Economic Type

Order No / Type	Max. Sheet Width mm	Pitch Step mm	Sheet/Band Thickness mm	Number of Stroke Minute	Clamping Power Kg.	Clamping Power Kg.	Power Kg.	Air Consumption Liter / Minute	Unit Weight Kg.
AY 050	From 0 **50**	From 0 **50**	From 0 **1.90**	Stroke 280	Fixed Lug	Movable Lugs	Pulling Force	50	3.9
AY 100	From 0 **50**	From 0 **100**	From 0 **1.80**	Stroke 200				71	4.8
AY 150	From 0 **50**	From 0 **150**	From 0 **1.50**	Stroke 160				80	5.7
CY 050	From 0 **100**	From 0 **50**	From 0 **1.70**	Stroke 210				37	5.6
CY 100	From 0 **100**	From 0 **100**	From 0 **1.50**	Stroke 160	64	120	24	56	6.6
CY 150	From 0 **100**	From 0 **150**	From 0 **1.40**	Stroke 120				68	7.8
DY 050	From 0 **150**	From 0 **50**	From 0 **1.60**	Stroke 230				59	9.6
DY 100	From 0 **150**	From 0 **100**	From 0 **1.40**	Stroke 160	70	158	41	82	11.2
DY 150	From 0 **150**	From 0 **150**	From 0 **1.20**	Stroke 130				100	12.7

Domestic Type Pneumatic Drivers : The flatness of band to be driven in mechanic valve that can be mounted to press easily and **controlled drive from direct** press dect, should absolutely by watched, if required, rectifier should be used. Air inlet to the pneumatic driver should be dry and oily, conditioner system should absolutely be used. Lubricating for 30 minutes at conditioner is required. Spare part / repair / maintenance service are available at domestic drivers.

For precision and wasteless production roller sheet lubricant can be used.

HEAVY TYPE PNEUMATIC SHEET DRIVERS

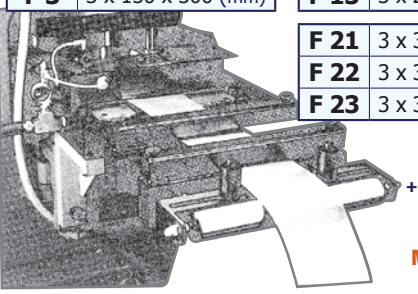
Heavy Type (Domestic Production) ECONOMIC Drivers

Sheet Band Width Capacity from 100 mm up to 150 mm.
Sheet sliding capacity at thickness from 0.2'up to 1.0 /2.0 /3.0 mm, Pitch /Stepped Driver Casing from 100 mm up to 300 mm, Bearing Column from Special Aluminium Alloy Material, Movable Parts from solid chrome plated (1080) material, Bedding with bronze material, pitch set screw are produced from 4140 material.

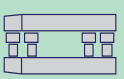
Heavy Type Drivers (Domestic Production) Economic Type

Order	Max. Band Thickness Max. Band Width Pitch / Step
A 1	1 x 100 x 100 (mm)
A 2	1 x 100 x 200 (mm)
A 3	1 x 100 x 300 (mm)
A 11	1 x 150 x 100 (mm)
A 12	1 x 150 x 200 (mm)
A 13	1 x 150 x 300 (mm)
A 21	1 x 200 x 100 (mm)
A 22	1 x 200 x 200 (mm)
A 23	1 x 200 x 300 (mm)
A 31	1 x 300 x 100 (mm)
A 32	1 x 300 x 200 (mm)
A 33	1 x 300 x 300 (mm)
A 41	1 x 400 x 100 (mm)
A 42	1 x 400 x 200 (mm)
A 43	1 x 400 x 300 (mm)
F 1	3 x 150 x 100 (mm)
F 2	3 x 150 x 200 (mm)
F 3	3 x 150 x 300 (mm)

Order	Max. Band Thickness Max. Band Width Pitch / Step
E 1	2 x 150 x 100 (mm)
E 2	2 x 150 x 200 (mm)
E 3	2 x 150 x 300 (mm)
E 11	2 x 200 x 100 (mm)
E 12	2 x 200 x 200 (mm)
E 13	2 x 200 x 300 (mm)
E 21	2 x 300 x 100 (mm)
E 22	2 x 300 x 200 (mm)
E 23	2 x 300 x 300 (mm)
E 31	2 x 400 x 100 (mm)
E 32	2 x 400 x 200 (mm)
E 33	2 x 400 x 300 (mm)
E 41	2 x 500 x 100 (mm)
E 42	2 x 500 x 200 (mm)
E 43	2 x 500 x 300 (mm)
F 11	3 x 200 x 100 (mm)
F 12	3 x 200 x 200 (mm)
F 13	3 x 200 x 300 (mm)
F 21	3 x 300 x 100 (mm)
F 22	3 x 300 x 200 (mm)
F 23	3 x 300 x 300 (mm)



DOMESTIC PRODUCTION
+ SPARE PARTS
+ SERVICE
+ PERIODIC MAINTENANCE
GUARANTY



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

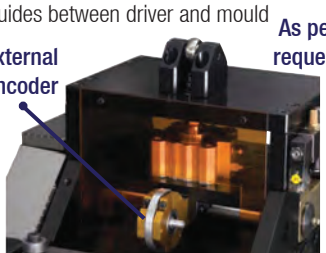
They are servo drivers that can be mounted almost to every press, Space-saving, easily mounted, provide working opportunities at high stroke press and increase high efficiency thanks to price / performance.

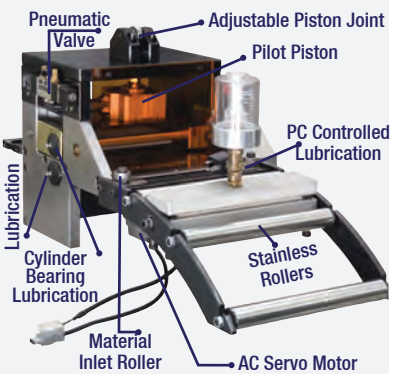
Standard Features;

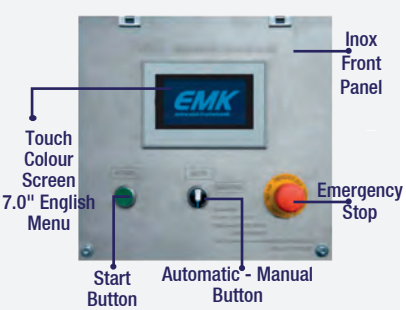
* Steel and 7075 Aluminium Casing Design
* 64 HRC Cylinder produced from 2379 Sverker Material and inertia taken (Relieved)
* Roller Structure bedding with high speed bearings
* Antiskid dual drive roller
* Band setting rollers on the inlet and outlet
* Unique measurement scale
* Piston leaving band to pilot during piloting
* PLC controlled lubricating system for 7075 custom made Trigel threadeds
* Mould protection system from 4 or 6 points
* Easy Connecting Plates to Press (Without drilling extra hole to press)
* Precision setting system taken press cran with encoder
* Mechanic roller lifting system
* 7.0 inch LCD Touch Colour Screen
* English menu programme
* Automatic Manual Button / Emergency Button

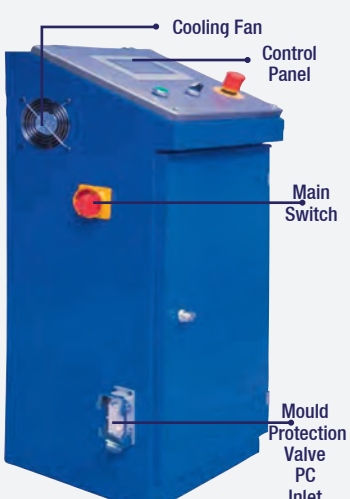
Optional (As per request) Features

* Roll unloader / Rectifier and Driver Press Synchron Movement External Encoder
* Foldable front rollers are preferred after 300 Cycles.
* Guides between driver and mould

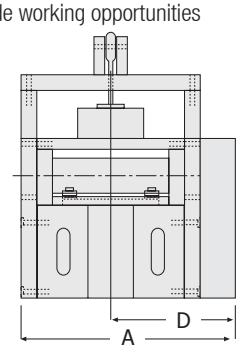




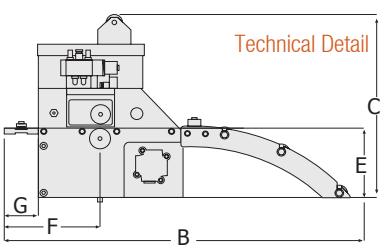




Unit View



Technical Detail



Servo Drivers Economic Type

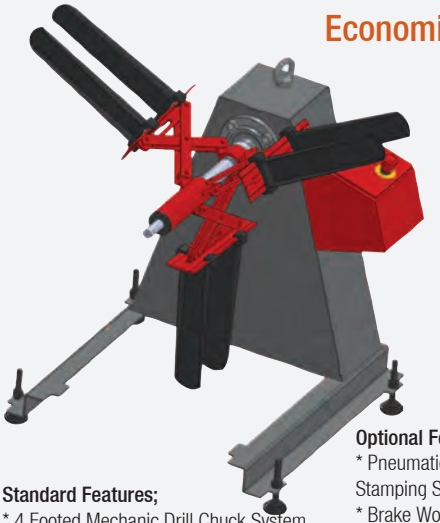
Order No / Tip	Max.Band Width mm	Sheet/Band Thickness mm	Roller Dia. Ø	Max.Band Speed m/min.
TM EEM100	104	1.5	42	140
TM EEM200	204		42	
TM EEM400	404		63	

Model	A	B	C	D	E	F	G
TM EEM100	210	555	320	135	130	158	58
TM EEM200	300	555	320	180	130	158	58
TM EEM400	515	780	480	410	230	158	58

Automation Systems directing and fasting sheet

MECHANIC DRILL CHUCK ROLL OPENERS

Economic Product



Carrying capacity from 250 Kg. up to 3000 Kg.

Width capacity from 300 mm up to 1500 mm

Standard Features;
* 4 Footed Mechanic Drill Chuck System
* Independent Adjustable Side Thrus Legs
* Sensor LOOP Control System
* Bidirectional Operation

Optional Features;
* Pneumatic top and bottom Stamping System
* Brake Work System
* Speed Control System
* Conical Extrusion hub can be added as per request.

ROLL SHEET SLIDING SYSTEMS

Mechanic System Sheet Roll Openers

Model : Motor Type **AGM500M**

Model : Brake Type **AGM750M**

1500 Kg Capacity **AGM1500M**

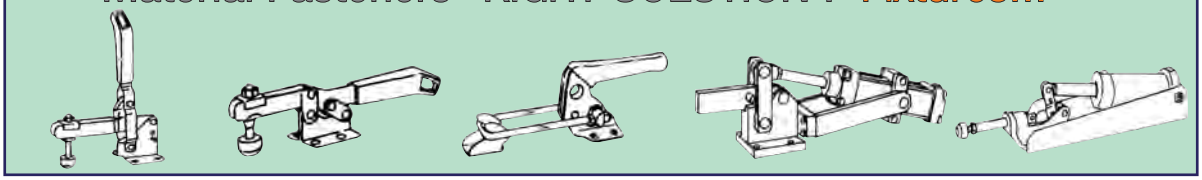
2500 Kg Capacity **AGM2500M**

Order No.	Material Width (mm)	Roll Internal Diameter(mm)		Roll External Dia. (mm)	Roll Weight Kg.	Motor Type Selection	Brake Type Selection	Upper Depressor Arm
		Minimum	Maximum					
AGM500M	20 - 300	300	550	1300	**500**	★		Optional, As Per Request
AGM500LM				1600	**500**	★		
AGM500F				1300	**500**		★	
AGM750M				1300	**750**	★		
AGM750LM				1600	**750**	★		
AGM750F				1300	**750**		★	
AGM1500M	20 - 400	350		1300	**1500**	★		
AGM1500LM				1600	**1500**	★		
AGM1500F				1300	**1500**		★	
AGM2500M	30 - 500	400		1300	**2500**	★		
AGM2500LM				1600	**2500**	★		
AGM2500F				1300	**2500**		★	
AGM3000M	30 - 600	450	600	1300	**3000**	★		
AGM3000LM				1600	**3000**	★		
AGM3000F				1300	**3000**		★	

Section Press Mould

Mechanic Opener Group, Hub Screw Shaft make clamping and unloading. System works properly between 500 Kg. and 4000 Kg. Motor Pneumatic Overpring brake models are available. Mechanic openers take small space and they are the lowest cost machines for enterprise.

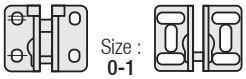
"Material Fasteners" RIGHT SOLUTION ! Fixtures...



Fast - Quality Assurance (Certificated) Flexible - Pratic Fasteners

DOMESTIC MANUFACTURE

BASED TYPE PERPENDICULAR FASTENERS



Horizantal Footed Drilling - Welding - Bending - Grinding for fixing mounting plates etc. in serial parts production, connecting and disconnecting - In measurement control - mounting - wood and plastic engraving processes.

STANDART Perpendicular Type Galvanic Plated

Order Model **800..** (0-1-2-3 4-5-6)

Order 800 800/B	(kN) Force F1	F2	B	A		gr
0	0.5	0.7	90	50	M4 x25	50
1	0.8	1.1	105	60	M5 x30	114
2	1.0	1.2	140	76	M6 x35	178
3	1.8	2.5	200	105	M8 x45	400
4	2.0	3.0	230	140	M8 x65	630
5	3.0	5.0	265	190	M12 x80	1.500
6	3.5	5.5	300	230	M12 x110	2.160

Technical details are similar in both models (800/800-B)

STANDARD Perpendicular Type Black Plated

Order Model **800/B..** (0-1-2-3 4-5-6)

BASED TYPE PERPENDICULAR FASTENERS

LOCKING Perpendicular Type Galvanic Plated

Order Model **800/S..** (3 - 4)

INOX / STAINLESS Perpendicular Coupling **Model 800/P**

Order 800 /P	(kN) Force F1	F2	B	A		gr
1	0.8	1.1	105	60	M5x30	114
2	1.0	1.2	140	76	M6x35	178
3	1.8	2.5	200	105	M8x45	400

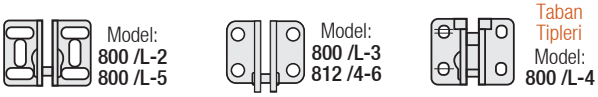
LOCKING TYPE Perpendicular Coupling **Model 800/S**

3	1.8	2.5	200	105	M8x45	400
4	2.0	3.0	230	140	m8x65	630

INOX Complete Stainless Perpendicular Type

Order Model **800/P..** (1-2-3)

BASED TYPE PERPENDICULAR FASTENER



METAL SHEET Perpendicular Type Galvanic Plated

Order Model **800/L..** (2-3-4-5)

METAL SHEET Type Perpendicular Coupling **Model 800/L**

Order 800 /L	(kN) Force F1	F2	B	A		gr
2	1.0	1.2	140	76	M6X35	178
3	1.8	2.5	200	105	M8X45	400
4	2.0	3.0	230	140	M8X65	630
5	3.0	5.0	265	190	M12X80	1500

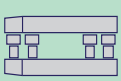
CAST STEEL Heavy Duty Perpendicular Coupling **Model 812**

4	5.0	-	215	148	M12X80	1250
6	6.0	-	265	182	M12X110	2130

HEAVY DUTY Cast Steel Perpendicular Type Coupling

Order Model **812..** (4-6)

Section Press Mould

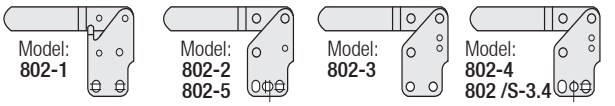


VERTICAL FOOT Perpendicular Type Galvanic Plated

Order Model **802..** (1-2-3-4-5)

VERTICAL FOOT PERPENDICULAR FASTENERS

Base Types



Transverse Arm As Per Request

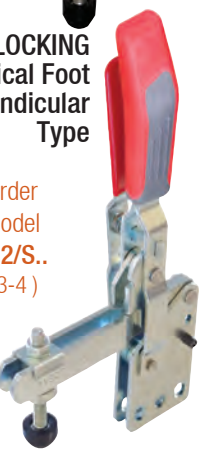
VERTICAL FOOT Perpendicular Coupling — Model 802

Order 802	(kN) Force F1	F2	B	A		gr
1	0.8	1.1	117	60	M5x30	114
2	0.8	1.2	153	76	M6x35	178
3	1.8	2.5	210	105	M8x45	400
4	2.0	3.0	255	140	M8x65	630
5	3.0	5.0	323	190	M12x80	1.500

LOCKED Vertical Foot Perpendicular Coupling — Model 802/S

3	1.8	2.5	210	105	M8x45	400
4	2.0	3.0	255	140	M8x65	630

LOCKING Vertical Foot Perpendicular Type



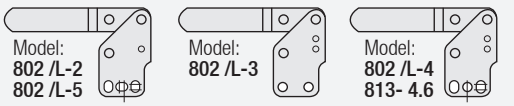
Order Model **802/S..** (3-4)

METAL SHEET Vertical Foot Perpendicular Type Galvanic Plated

Order Model **802/L..** (2-3-4-5)

VERTICAL FOOT PERPENDICULAR FASTENERS

Base Types



SHEET Vertical Foot Perpendicular Coupling — Model 802/L

Order 802/L	(kN) Force F1	F2	B	A		gr
2	0.8	1.2	153	76	M6x35	178
3	1.8	2.5	210	105	M8x45	400
4	2.0	3.0	255	140	M8x65	630
5	3.0	5.0	323	190	M12x80	1500

LOCKED Vertical Foot Perpendicular Coupling — Model 813

4	10.0	-	234	150	M12x80	1.320
6	12.0	-	288	182	M12x110	2.120

HEAVY DUTY Cast Steel Vertical Footed Perpendicular Type

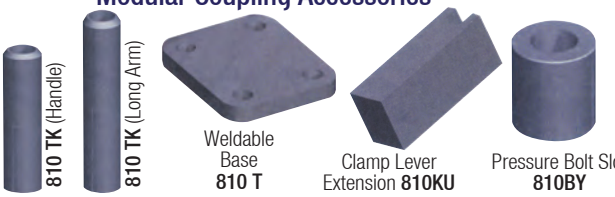
Order Model **813..** (4-6)

MODÜLER BAĞLAMA HAREKETLİ / DİK AYAKLI

Modular Welded Movable Perpendicular Foot

Order Model **811..** (4-6)

Modular Coupling Accessories



MODULAR Coupling Movable Footed — Model 810

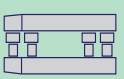
Order 810	Force F1 (kN)	B	A	Connecting Angle q - ß - y	gr
4	7.0	112	82	200^0 40^0 70^0	855
6	11.0	145	105		1.600

MODULAR Coupling Vertical Footed — Model 811

4	7.0	142	82	q:190^0	970
6	11.0	182	106		1.750

Modular Welded Vertical Foot

Order Model **810..** (4-6)



Side Mounted Perpendicular Type Galvanic Plated

Order Model **803..** (1-2-3-4-5)

SIDE MOUNTED PERPENDICULAR FASTENERS

For Open Arm

Spare Parts (Optional): Hinged Pressure Bolts

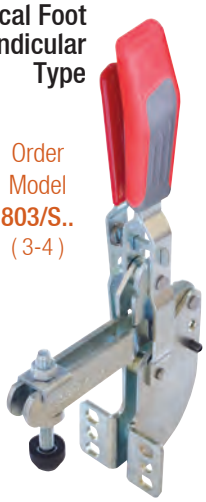
SIDE MOUNTED Perpendicular Coupling — Model 803

Order 803	(kN) Force F1	F2	B	A		gr
1	0.8	1.1	132	60	M5x30	125
2	1.0	1.2	135	76	M6x35	220
3	1.8	2.5	235	105	M8x45	470
4	2.0	3.0	270	141	M8x65	650

LOCKED - VERTICAL Footed Perpendicular Coupling — Model 803/S

3	1.8	2.5	235	105	M8x45	470
4	2.0	3.0	270	141	M8x65	650

LOCKING Side Mounted Vertical Foot Perpendicular Type



Order Model **803/S..** (3-4)

Metal Sheet Type Side Mounted Perpendicular Model Galvanic Plated

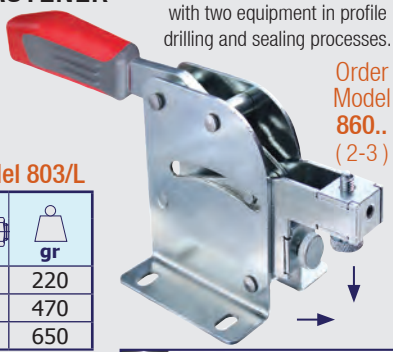
Order Model **803/L..** (2-3-4)

SIDE MOUNTED PERPENDICULAR FASTENER

Transverse Arm As Per Request

Push - Press Perpendicular Coupling Base Model

Specifications: It is replaced with two equipment in profile drilling and sealing processes.



Order Model **860..** (2-3)

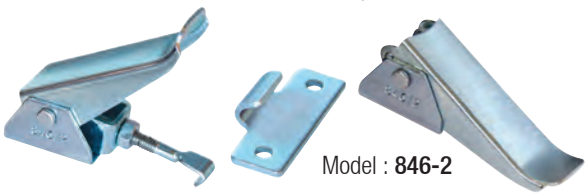
METAL SHEET Type Side Mounted — Model 803/L

Order 803/L	(kN) Force F1	F2	B	A		gr
2	1.0	1.2	135	76	M6x35	220
3	1.8	2.5	235	105	M8x45	470
4	2.0	3.0	270	141	M8x65	650

Push - Press Based Model — Model 860

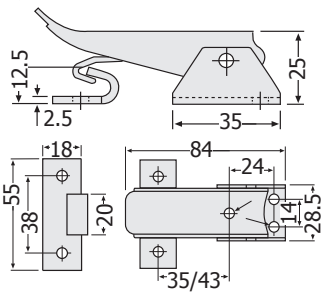
Order 860	(kN) Force F1	F2	Control Movement min.	max.	min.	max.	Arm Stop Ver. max.	Hor. min.	Kg
2	2.0	2.0	30	40	10	20	94	87	1.5
3	3.0	3.0	40	50	20	30	110	106	2.3

LIGHT CHUCKS (Catch hook can be adjusted.)

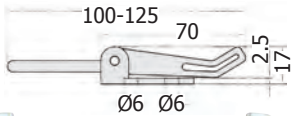


Model : **846-2**

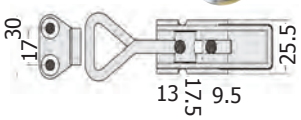
It provides to close mini mould - cabinet - tank covers and similar parts.



Hook Coupling
Model : **846-3**

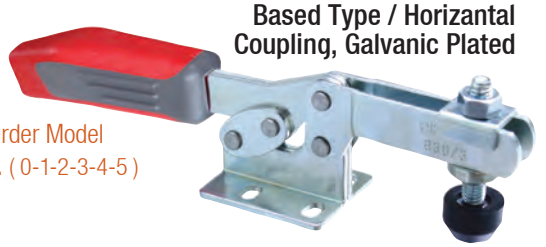


PVC Hook Coupling
Model : **846-4**



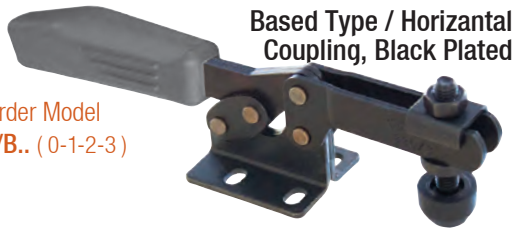
HORIZANTAL FASTENERS Vertical Arm 90^0

Based Type / Horizantal Coupling, Galvanic Plated



Order Model
830.. (0-1-2-3-4-5)

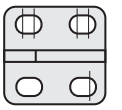
Based Type / Horizantal Coupling, Black Plated



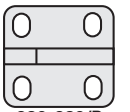
Order Model
830/B.. (0-1-2-3)

Base Types

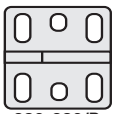
In connected Status, Arm in horizantal position Operating Handle works in opposite direction as per clamping arm.



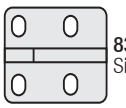
830-830/B Size : **0**



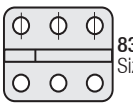
830-830/B Size : **1**



830-830/B Size : **2/4**



830-830/B Size : **3**



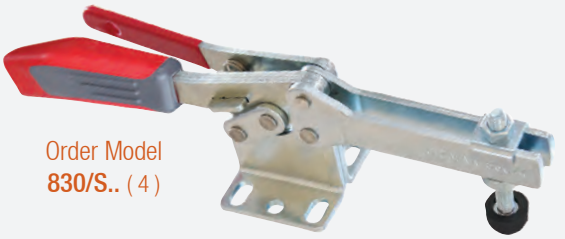
830-830/B Size : **5**

HORIZANTAL Fasteners Model 830-830/B

Order 830	(kN) Force F1	F2	A	B		gr
0	0.25	0.40	23	85	M4x25	37
1	0.80	1.10	30	128	M5x30	112
2	1.00	1.20	44	158	M6X35	182
3	1.80	2.50	48	221	M8X45	340
4	2.00	3.00	74	293	M8X65	700
5	3.00	5.00	81	330	M12X80	1170

Technical details are similar at both Model (830/830-B)

LOCKING Type - Based Model Horizantal Coupling - Galvanise Plated



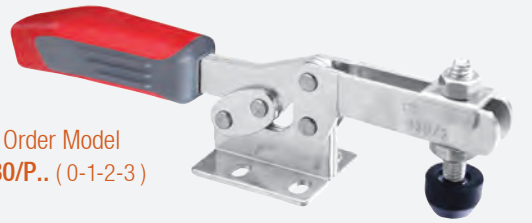
Order Model
830/S.. (4)

Safety Locked, horizantal fasteners for open and close positions are absolutely rigid thanks to safety locking in both open and closed position. Especially, against vibration and for bottom to up mounting.

LOCKING Horizantal Fasteners 830/S

Order 830/S	(kN) Force F1	F2	A	B		gr
4	2.0	3.0	74	293	M8x65	700

INOX / Complete Stainless - Based Model Horizantal Fastener



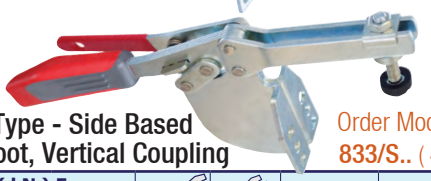
Order Model
830/P.. (0-1-2-3)

In chemistry / food sector and hygenic places, at outdoors, machines under heavy climatic conditions, anti magnetic resistant to corrosion and acide (None Magnetic Susceptibility) **830/P**

Order 830/P	(kN) Force F1	F2	A	B		gr
0	0.25	0.40	23	85	M4x25	37
1	0.80	1.10	30	128	M5x30	112
2	1.00	1.20	44	158	M6x35	182
3	1.80	2.50	48	221	M8x45	340

Side Based Angular Foot Horizantal Coupling

Order Model
833.. (2-3-4)



LOCKING Type - Side Based Angular Foot, Vertical Coupling

Order Model
833/S.. (4)

Order 833 833/S	(kN) Force F1	F2	A	B		gr
2	1.00	1.20	94	155	M6x35	250
3	1.80	2.50	96	221	M8x45	400
4	2.00	3.00	97	261	M8x65	750

Technical details in Model 832-833 are same.

Order Model
832..
(0-1-2-3-4-5)

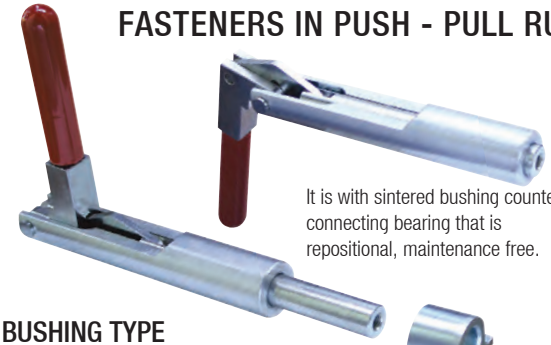
PERPEN. FOOTED Horizantal Coupling

Order Model
832/S .. (4)

LOCKING Type Perpendicular Footed Horizantal Coupling

Order 832 832/S	(kN) Force F1	F2	A	B		gr
0	0.25	0.40	32	85	M4X25	37
1	0.80	1.10	42	128	M5X30	112
2	1.00	1.20	59	158	M6X35	182
3	1.80	2.50	63	221	M8X45	340
4	2.00	3.00	96	293	M8X65	700
5	3.00	5.00	103	330	M12X80	1170

FASTENERS IN PUSH - PULL RUNNING POSITION



It is with sintered bushing counter connecting bearing that is repositional, maintenance free.

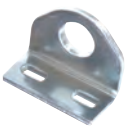
BUSHING TYPE Push- Pull Fasteners

Order Model **840..** (4-5)

Order 840	(kN) Force		A	B		Kg
	F1	F2				
4	15.0	15.0	166	190	M10x40	2.0
5	15.0	15.0	172	269		2.50

Anchorage pillar as per request

Order Model **841/A**



SHORT TYPE Pull - Push Fasteners

Direct Fixing to Sheet Walls, Threaded face

Order Model **844..** (2-3-5)

Order 844	(kN) Force		A	B		gr
	F1	F2				
2	1.0	1.0	85	70	M6X35	130
3	2.5	2.5	135	110	M8X35	320
5	4.0	4.0	155	175	M12X50	1200

Removable, Angular Footed Sheet, Direct mounting to walls

Handle can be turned to connecting surface in every angle position.

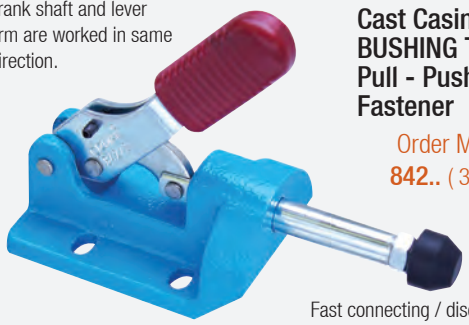
LONG Model, BUSHING TYPE Pull-Push Fasteners

Order Model **841..** (0-1-2-3-5)

Elbowed lever arm transfer rate prevents opening which makes automatic locking.

Order 841	(kN) Force		A	B		gr
	F1	F2				
0	0.80	0.80	40	110	M4X20	80
1	1.00	1.00	58	120	M4X20	120
2	2.00	2.00	80	175	M6X25	270
3	2.50	2.50	102	190	M8X35	450
5	4.50	4.50	123	230	M12X50	880

Robust Construction, crank shaft and lever arm are worked in same direction.

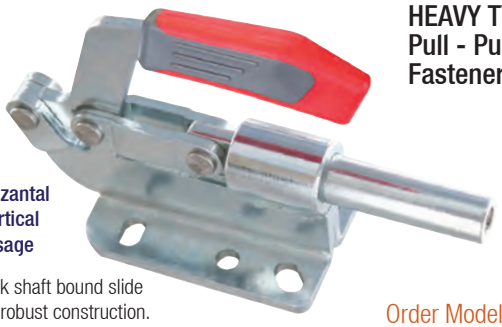


STRONG MODE Cast Casing BUSHING TYPE Pull - Push Fastener

Order Model **842..** (3-5-7)

Fast connecting / disconnecting in serial production, threaded piston shaft.

Order 842	(kN) Force		A	B		gr
	F1	F2				
3	4.00	4.00	115	191	M8x35	630
5	10.0	10.0	133	245	M12x50	1620
7	25.0	25.0	170	333	M12x50	3610



Horizantal Vertical Usage

HEAVY TYPE Pull - Push Fasteners

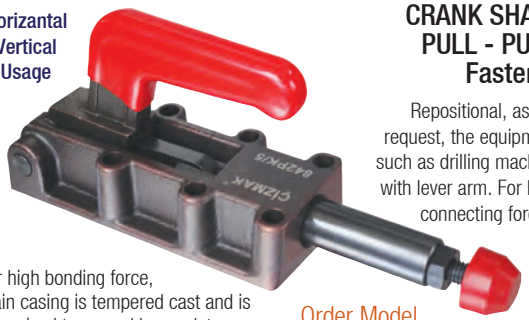
Crank shaft bound slide very robust construction.
Main casing from tempered casting.
As fast connecting /fast disconnecting and press - push coupling to serial production, it is excellent and very durable in drilling - reaming -grinding - bending - welding - mounting etc.

Order Model **842/SC** (5)

Crank Shaft and lever arm work in same direction.

Order 842/SC	(kN) Force		A	B		gr
	F1	F2				
5	3.0	3.0	166	190	M10X40	950

Horizantal Vertical Usage



CRANK SHAFT PULL - PUSH Fastener

Repositional, as per request, the equipment such as drilling machine with lever arm. For high connecting forces.

For high bonding force, main casing is tempered cast and is comprised tempered heavy duty type long shaft.

Order Model **842/PK** (5)

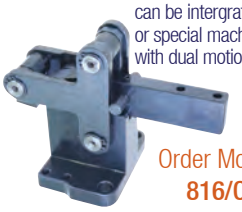
Order 842/PK	(kN) Force		A	B		gr
	F1	F2				
5	12.0	12.0	95	185	M10X50	1.800

Pls. request catalogue for technical details.

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 intergrated 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

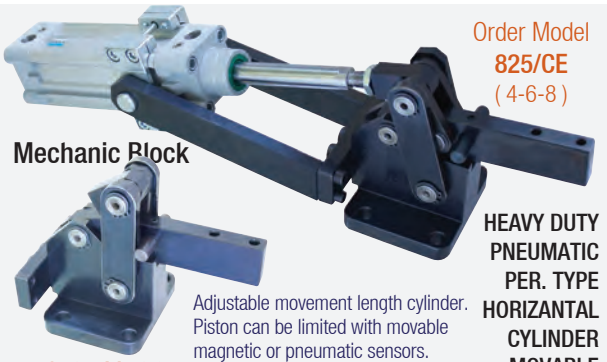
Order 826/CE	kN Force F1	F2	F5	AxB	Air Inlet	Cylinder Strok	Piston	Kg
4	6 - 9		0.75	172 x340	G 1/4"	74 mm	Ø 40	5.1
6	12 - 18		1.00	195 x286		87 mm	Ø 50	7.3
8	20 - 30		1.80	272 x470		120	Ø 63	16.8

DOUBLE ACTION PNEUMATIC PER. TYPE HORIZANTAL/ VERTICAL COUPLING

Order Model
600.. (2-3-4)

In double action pneumatic system, cylinder is mounted as ready to connect main plate, thanks to its angular structure it provides space saving in horizantal and vertical connection. It has double action pneumatic cylinder and equipped, with adjustable speed. Motion of cylinder piston is limited with magnetic sensors. Double action has mounted in exchangeable structure.

Order 600	kN Force F1	F2	F5	AxB	Air Inlet	Cylinder Strok	Piston	gr.
2	1 - 1.2		0.3	170 x130	M 5	42 mm	Ø 25	800
3	1.4 -2.5		0.5	205 x160	G1/8	52 mm	Ø 32	1100
4	2 - 3		0.75	260 x220	G1/8	62 mm	Ø 40	1600



Mechanic Block

Order Model
825/CE
(4-6-8)

HEAVY DUTY PNEUMATIC PER. TYPE HORIZANTAL 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)

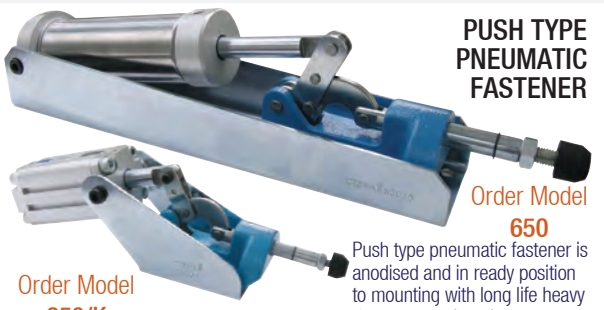
Order 825/CE	kN Force F1	F2	F5	Cylinder Strok	Piston	Kg
4	6 - 9		0.75	80 mm	Ø 40	5.5
6	12 - 18		1.00	100 mm	Ø 50	7.8
8	20 - 30		1.80	125 mm	Ø 63	17.80

Order Model
620/K (1-2-3-4)

Horizantal pneumatic fasteners is in bench quality, it can be intergrated to transfer lines or special machines. Its opening and closing can be controlled electronically. Double action, pneumatic cyclinder can be mounted replaceably.

DOUBLE ACTION PNEUMATIC HORIZANTAL TYPE MOTION CONTROLLED

Order 620/K	kN Force F1	F2	F5	Cylinder Strok	Piston	gr
1	0.8 - 1.1		0.10	52 x175	M5X30	34mm	Ø 16	610
2	1.0 - 1.2		0.30	64 x200	M6X35	41mm	Ø 25	870
3	1.4 - 2.5		0.50	85 x250	M8 45-65	52mm	Ø 32	1160
4	2.0 - 3.0		0.75	100 x290		62mm	Ø 40	1900



PUSH TYPE PNEUMATIC FASTENER

Order Model
650

Push type pneumatic fastener is anodised and in ready position to mounting with long life heavy duty pneumatic cylinders.

Order Model
650/K

Order 650	kN Force F1	F2	F3	Cylinder Stroke	Piston	Kg
3	4 - 2.5		0.75	85 x320	100 mm	Ø 40	2.0
5	10 - 5		1.00	115 x340	100 mm	Ø 50	3.5
7	25		1.00	150 x533	125 mm	Ø 63	7.7

Thanks to magnetic piston, motion control is ensured. Varnished heat threaded cast metal casing is galvanised and passivated. Steel arm and rod.

Order Model
620/Y (1-2-3-4)

IN DOUBLE ACTION PNEUMATIC HORIZANTAL CYLINDER STRUCTURE

Double action pneumatic cylinder is mounted replaceably, thanks to magnetic piston, motion control is provided. It is together with pressure bolt. Fasteners can be worked on control panel individually or together. In case of pressure loss, fastener remains the same. More than one coupling can be used simultaneously.

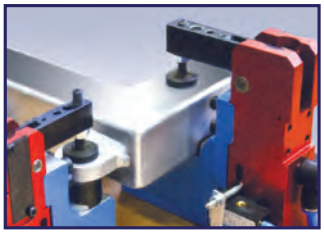
Order 620/Y	kN Force F1	F2	F5	Cylinder Stroke	Piston	gr
1	0.8 - 1.1		0.19	55 x195	M5X30	34mm	Ø 20	630
2	1.0 - 1.2		0.30	65 x220	M6X35	41mm	Ø 25	800
3	1.4 - 2.5		0.50	90 x250	M8 45-65	52mm	Ø 32	1200
4	2.0 - 3.0		0.75	105 x320		62mm	Ø 40	2000

Section Press Mould

PNEUMATIC DOUBLE ACTION PERPENDICULAR FASTENERS

Order Model
628 M/20

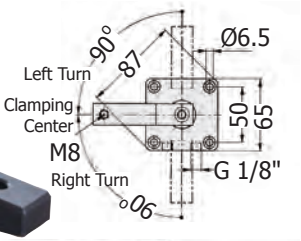
Mini designed casing structure, solid aluminium and red colour anodix oxidation plated casing, double position magnetic piston motion, retainer claw is solid steel and is heat threated.

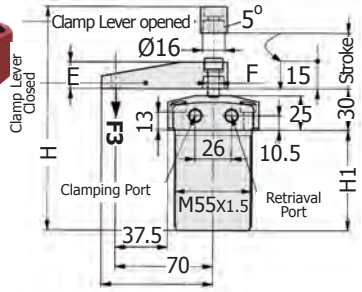


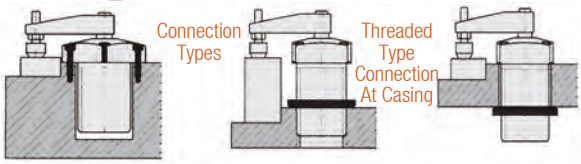
Order 628	Force (Nm)		A B	Piston Dia.	Air Inlet	gr
	F1 ↓	F3 ↑				
M20	Clamping 15	Holding 54	146 x158	Ø 20	G 1.8"	550

CYCLINDER CASING THREADED, PNEUMATIC DOUBLE ACTION ROTARY FASTENER

Order Model
629/40 R / L
LEFT/RIGHT



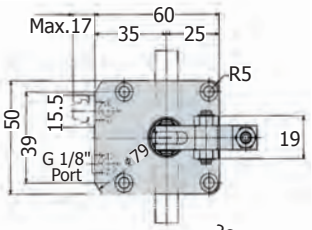


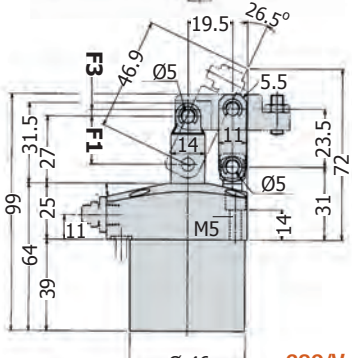


Order 629 R/L	Return Direction	F3 (kN)	H mm	H1 mm	E mm	F Ø	Piston Ø	Stroke mm	gr
40	Right	0.45	152	73	19	M8	40	30	800
40	Left		164	80	25.5	M10			

CYCLINDER / HINGED PNEMUMATIC DOUBLE ACTION PERPENDICULAR FASTENER

Order Model
629/V





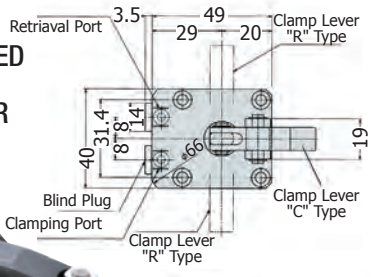
Hinged Pneumatic Connection Double Action:
Solid aluminium, red colour anodix oxidation plated, piston shaft resistant to corrosion, solid chrome plated clamping lug resistant to abrasion with solid steel complete clamping bolts.

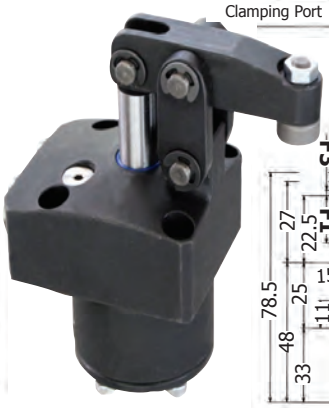
629/V

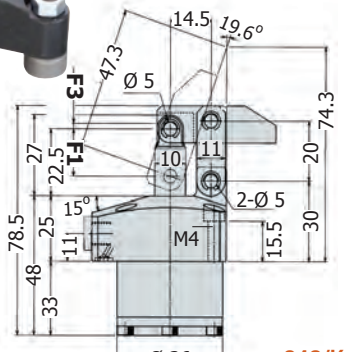
Order 629/V	Full Stroke	Clamping F1	Locking F3	Max. Pressure	Max. Heat	Cylinder Cap. Clamp	Cylinder Cap. Back	Dia. Ø	gr
25	23	20	3	1.0 Bar	0-70 Degree	18.5 cm³	40	46	400

CYLINDER / HINGED HYDRAULIC PERPENDICULAR FASTENER

Order Model
942 K / 25







DOUBLE ACTION - AESTHETIC DRAWN **942/K**

Order 942/K	Full Stroke	Clamping F1	Locking F3	Max. Pressure	Max. Heat	Used Fluid	Dia Ø	gr
25	18.5	16	2.5	7.0 Bar	0-70 Degree	Hydraulic Oil	36	600

Black Colour, anodix oxidation plated casing resistant to corrosion, solid chrome plated piston shaft with clamping bolt.

Section Press Mould

HOOK FASTENER

Order Model **850..** (3-4)

Robust hook fastener for higher holding forces. Hook length is adjustable. It is with thrust sleeve.

Order 850..	(kN) Force		B		gr
	← F1	Setting Range	A		
3	3.2	26	64	170	230
4	10	32	77	255	800

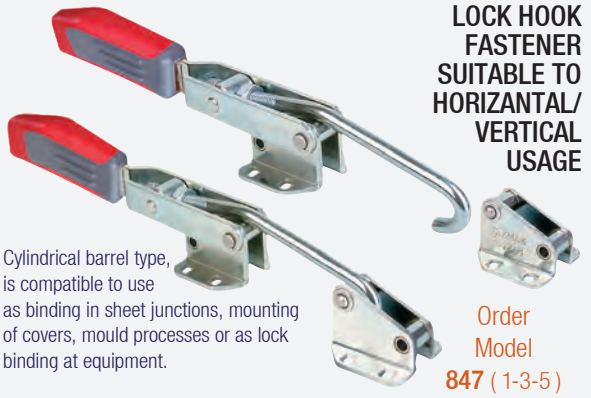
LOCK - HOOK NARROW FOOTED MODEL FASTENER

Order Model **847/K** (3)

Galvanised and Passivated Casing, Stainless Steel Riveted Hardened Hook and Thrust Bush for hardened and oiled bushes, conventionaloil resistant, plastic handle, hook arm can be shortened as partial motion.

Order 847/K	(kN) Force		A	B	gr
	F1	Setting Range			
3	2.0	-	38	242	295

LOCK HOOK FASTENER SUITABLE TO HORIZANTAL/ VERTICAL USAGE



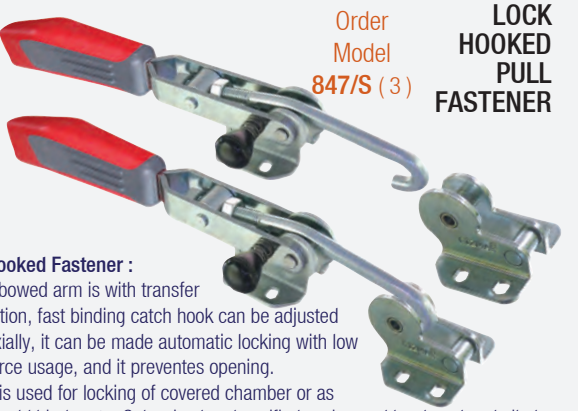
Cylindrical barrel type, is compatible to use as binding in sheet junctions, mounting of covers, mould processes or as lock binding at equipment.

Order Model **847** (1-3-5)

Order 847	(kN) Force		A	B	gr
	F1	Setting Range			
1	2.0	5	33	130	100
3	3.0	12	36	230	300
5	5.0	12	70	310	850

LOCK HOOKED PULL FASTENER

Order Model **847/S** (3)

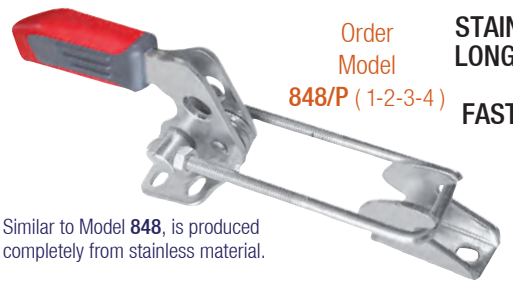


Hooked Fastener :
Elbowed arm is with transfer ration, fast binding catch hook can be adjusted axially, it can be made automatic locking with low force usage, and it preventes opening.
It is used for locking of covered chamber or as mould binder etc. Galvanised and pasified casing and hardened and oiled contra holder bushes are equipped with stainless steel rivets.

Order 847/S	(kN) Force		A	B	gr
	F1	Setting Range			
5	3.0	12	36	230	300

STAINLESS LONG TYPE HOOK FASTENER

Order Model **848/P** (1-2-3-4)

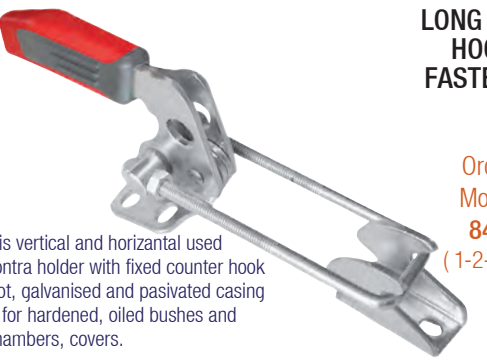


Similar to Model **848**, is produced completely from stainless material.

Order 848/P	(kN) Force		A	B	gr
	F1	Setting Range			
1	1.0	26	28	60	90
2	1.4	32	43	70	110
3	2.5	42	64	102	300
4	4.5	55	84	140	710

It can be used in chemistry / food sector and hygenic places, outdoors and at machines under heavy climatic conditions, it is anti magnetic resistant to corrosion and acide.

LONG TYPE HOOK FASTENER



Order Model **848** (1-2-3-4)

It is vertical and horizantal used contra holder with fixed counter hook slot, galvanised and pasivated casing is for hardened, oiled bushes and chambers, covers.

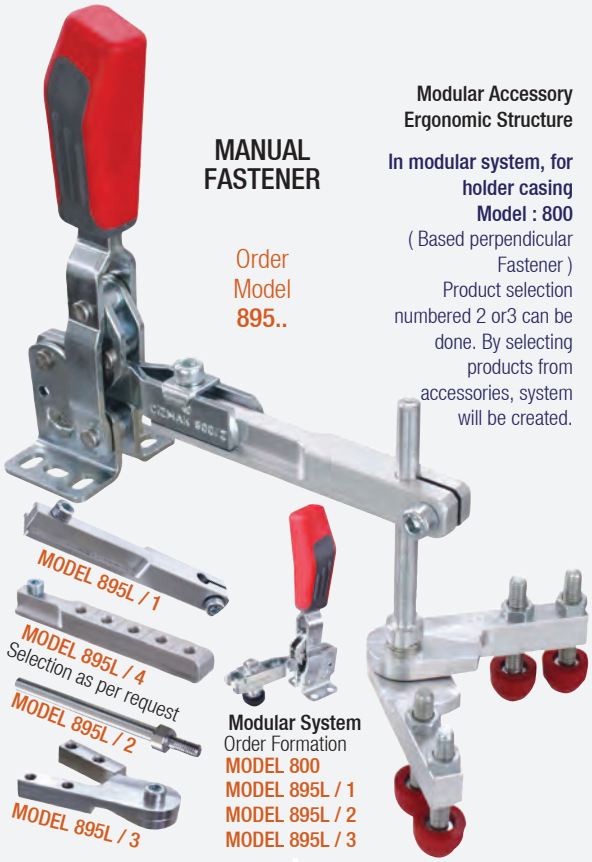
Order 848	(kN) Force		A	B	gr
	F1	Setting Range			
1	1.0	26	28	60	90
2	1.4	32	43	70	110
3	2.5	42	64	102	300
4	4.5	55	84	140	710

MANUAL FASTENER

Order Model **895..**

Modular Accessory Ergonomic Structure

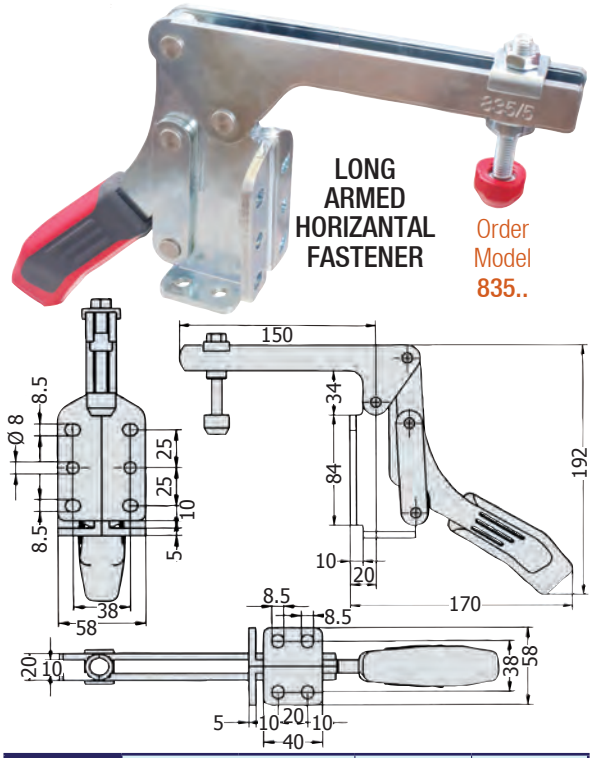
In modular system, for holder casing Model : 800
(Based perpendicular Fastener)
Product selection numbered 2 or3 can be done. By selecting products from accessories, system will be created.



Modular System
Order Formation
MODEL 800
MODEL 895L / 1
MODEL 895L / 2
MODEL 895L / 3

LONG ARMED HORIZANTAL FASTENER

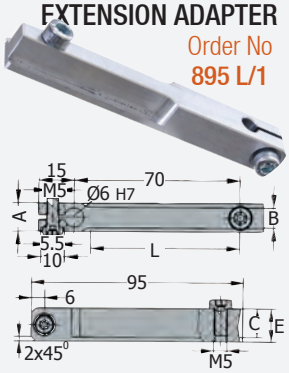
Order Model **835..**



Order **835**	(kN) Force F1	F2		gr
Lenght : 5	2.50	5.00	M8 x 65	1.560

EXTENSION ADAPTER

Order No **895 L/1**



Length	A	B	C	E	L
2	12	6.5	9	12	48
3	15	9.5	12	15	78

EXTENSION ADAPTER Multi Hole

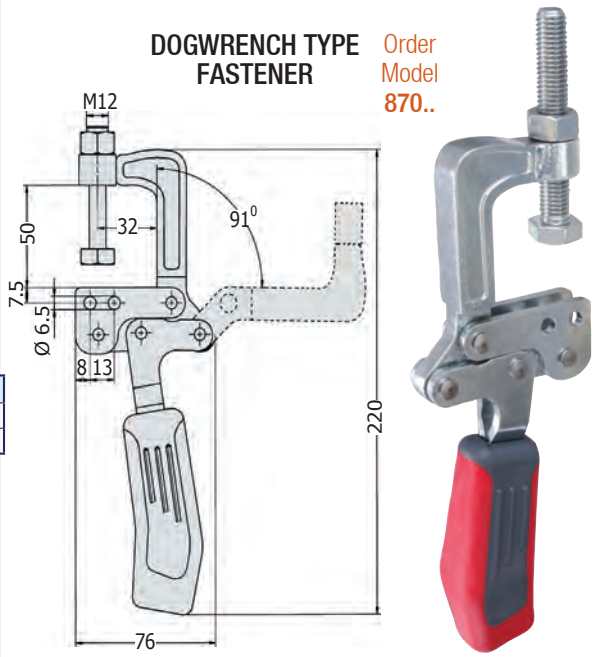
Order No **895 L/4**

Length	A	B	C	E
2	12	6.5	9	12
3	15	8.5	12	15

Length	L	L1	L2	L3	L4
2	127	110	35	48	75
3	167	150	45	73	105

DOGWRENCH TYPE FASTENER

Order Model **870..**

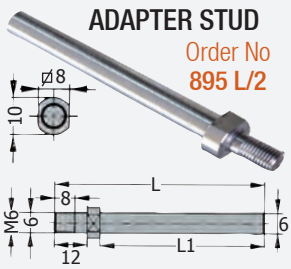


Order **870**	(kN) Force F3		gr
Lenght : 4	4.00	M12 x 80	600

Complete presentation with pressure bolt, protective rubber, double color handle and dogwrench unit.

ADAPTER STUD

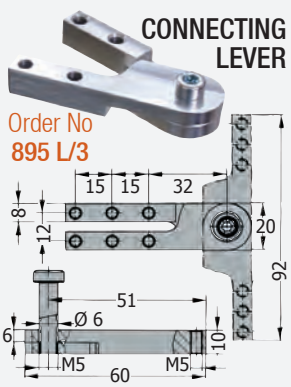
Order No **895 L/2**



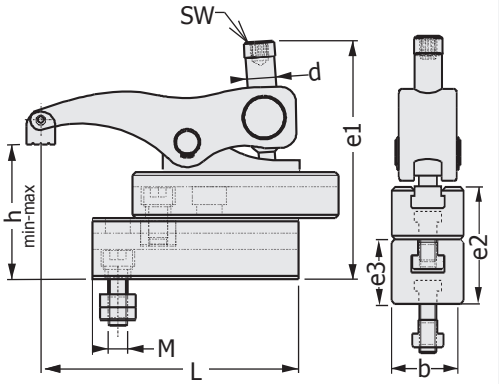
Lenght	L	L1
2	52	35
3	82	65

CONNECTING LEVER

Order No **895 L/3**



Section Press Mould
Page 189



SLIDING COMBINE LUG

For "T" Channel Machine Plates

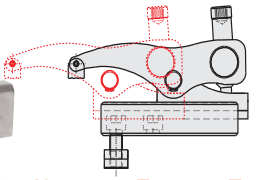
As well as, can be used in single system (1130 T / 1150 T / 1160 T), also it can be used for overlapped high parts with additional sliding slide kits.

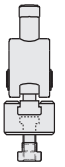
Clamping Forces: Product 1130 (Bottom Supported) 2000 Kgf
Clamping force for 1 Unit Product 1150 (Bottom Supported) 2500 Kgf
Product 1160 (Bottom Supported) 5500 Kgf

Usage information / advantages are similar with **Page 191**

Order No		m	Height h	h	e1	e2	d	Wrench SW	L	b	e3	kg
1130-014 DT	14	M 12	Min. 45 Max. 105	Min. 0 Max. 60	158 mm	83 mm	M 18	10 mm	130 mm	48 mm	45 mm	4.0 kg
1130-016 DT	16											
1130-018 DT	18											
1130-020 DT	20											
1130-022 DT	22											
1150-118 DT	18	M 16	Min. 48 Max. 110	Min. 0 Max. 62	173 mm	90 mm	M 20	12 mm	140 mm	55 mm	48 mm	5.4 kg
1150-120 DT	20											
1150-122 DT	22											
1150-124 DT	24											
1150-128 DT	28											
1160-222 DT	22	M 20	Min. 79 Max. 139	Min. 20 Max. 80	235 mm	114 mm	M 24	12 mm	178 mm	74 mm	59 mm	12.8 kg
1160-224 DT	24											
1160-228 DT	28	M 24						24 mm				
1160-232 DT	32											
1160-236 DT	36	M30										

"T" CHANNEL SLIDE COMBINED LUG

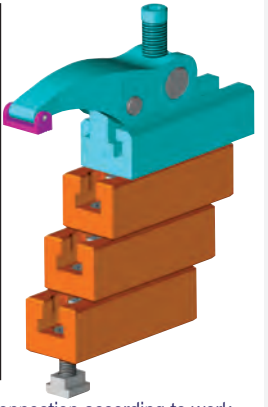




Order No : **1130 T - 1150 T - 1160 T**

"T" Channel Sliding Slide Combined Clamping Lug / Single Use Group

According to height status of work piece (mould), single connecting group can be selected. Its technical details is similar with Slide Combine Lug in Page 191.
For technical dimension, pls. refer to Page 191.
In our page, dual (bottom supported) connecting group data are available.



"T" Channel Sliding Combined Clamping Lug can make high dimensional connection according to work piece status by increasing slides at more higher work pieces in single unit (0 - 60 /62/80).

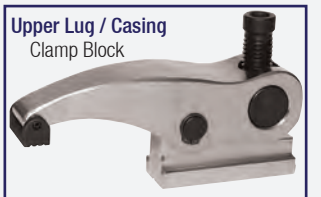
Slide is fixed, than upper casing is placed on slide and fixed.

Accoring to work piece dimension, distance is completed by increasing support slides.

Bottom slide is fixed to T Channel by making suitable to work piece.

Sliding Combine Slide Lug SPARE EQUIPMENT

Upper Lug / Casing
Clamp Block



Clamping Block:Forged Steel 42 CrMo
Hardened : 38 - 42 HRC

It is compatible with all systems in sliding combined connecting system.

Order No		Lug Height Motion h
1130-060	14-22	0 ~ 60
1150-062	18-28	0 ~ 62
1160-2080	22-36	20 ~ 80

Sliding slide kit for clamping block / casing

Order No		T Channel	L	A	B
1130 047	M12 M16	14-22	130	48	39
1150 053	M16 M18 M20	18-28	140	55	42
1160 074	M20 M22 M24 M30	22-36	178	74	55

Bottom Support Team (In lifting),
according to work piece dimension

Order No		T Channel	L	A	B
1130 045	M12 M16	14-22	130	48	45
1150 048	M16 M18 M20	18-28	140	55	48
1160 059	M20 M22 M24	22-36	178	74	59

Slide Combine Sliding Lug SPARE EQUIPMENT

Lug lifting Kit

Casing Lug Kit

It is compatible with all slide combined lug models.

Order	Thread	Length
1130 - 818	M 18	83
1150 - 920	M 20	96
1160 - 1024	M 24	134

Slide, Fixing Bolt

It is suitable for all of slide combined lug models.

Order	ThreadxLenth
1130 -412	M12 x30
1130 -416	M16 x34
1150 -516	M16 x34
1150 -518	M18 x38
1150 -520	M20 x38
1160 -724	M24 x55
1160-730	M30 x66

Pre Press Lug

DP Flat Part Clamping
1130 - 1150 - 1160

BSP Longitudinal Cylinder Clamping Lug
1130 - 1150 - 1160

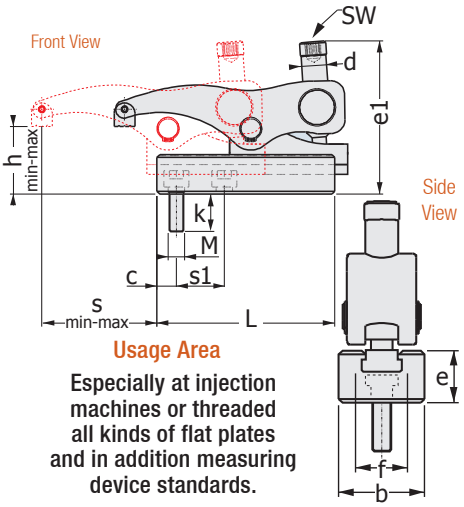
ESP Transverse Cylinder Clamping Lug
1130 - 1150 - 1160

Slide Fixing Bolt for " T " Channel Plates

Code : 1130
"T" Lug
14 - 16 -18
20 - 22

Code : 1150
"T" Lug
18 - 20 - 22
24 - 28

Code: 1160
"T" Lug
22 - 24 - 28 - 32 -36



Usage Area

Especially at injection machines or threaded all kinds of flat plates and in addition measuring device standards.

SLIDING COMBINE LUG

For threaded machine plates

Material: CK 45 DIN **Slide Group:** 35-38 HRC Hardened **Lug Forged Steel**

For threaded hole plates, slide system, combined clamping lug **Code: 1130 - 1150 - 1160**

Order No	M	Height h	Lug s	s1	e1	d	Wrench SW	L	e	b	c	f	k	Clamping Force	kg
1130-012 M	**M12**	Up to 60mm	From 15 up to 83 mm	30 mm	113 mm	M 18	10 mm	130 mm	38 mm	48 mm	16 mm	28 mm	22	2000 kgf	2.6 kg
1130-016 M	**M16**												26		
1150-116 M	**M16**	Up to 62mm	Between From 18 and 96 mm	35 mm	125 mm	M 20	12 mm	140 mm	42 mm	55 mm	18 mm	32 mm	26	2500 kgf	3.8 kg
1150-118 M	**M18**												30 mm		
1150-120 M	**M20**														
1160-220 M	**M20**	From 20 Up to 80mm	Between From 22 and 95 mm	41.5 mm	175 mm	M 24	12 / 24	178 mm	55 mm	74 mm	24 mm	45 mm	34	5500 kgf	8.9 kg
1160-222 M	**M22**												38		
1160-224 M	**M24**												44		
1160-230 M	**M30**												55		

SLIDING SLIDE THREADED SCREW CLAMPING LUG : The difference of this system from other kits, is that is prepared to mount to connecting system threaded screw machine table, other connecting forces and working system are similar. Its mounting and connecting system is as follows.

Model 1130 M; M12 - M16 Thread hole mounting is completed with Cylinder Head Cap Screw. Part Height Clamping Range: 0 - 60 mm. **1 Set Lug Clamping Force: 2000 kgf.**

Model 1150 M; M16 - M18 Thread hole mounting is completed with Cylinder Head Cap Screw. Part Height Clamping Range: 0 - 62 mm'. **1 Set Lug Clamping Force: 2500 kgf.**

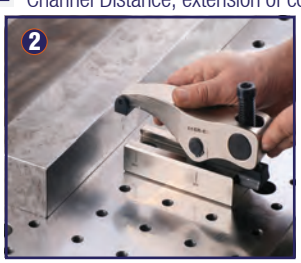
Model 1160 M; M20 - M22 - M24 Thread hole mounting is completed with Cylinder Head Cap Screw. Part Height Clamping Range: 20 - 28 mm. **1 Set Lug Clamping Force: 5500 kgf.**

According to work piece dimension and thread similarity in machine table, it is presented as optional model. Especially, it is preferred at mounting of injection moulds and press sheet moulds to machine. In addition it is quite useful and compact product in processing parts of machine tools.

Advantages : 2000 kgf - 5500 kgf Clamping force - Use in perforated plates - fixing in different position by sliding on slide - Clamping unsupported high and low distance by Cylinder Head Cap Screw - due to its practical structure, (Compact tool that has not protrusion part), it presents fast and easy connection .

Connection system having vertical effect bonding force- Stepless and Resistless Connection - Quick pull back of fastener - ensures fast and best access facility in work piece changement - By bridging hole or "T" Channel Distance, extension of connecting area (Strengthening) is provided.

Bottom slide is made suitable to work piece and fixed.



Upper casing is slided to slide, it is brought to position on work pieces.

Fix upper bolt of lug to work piece.

TAKILON Acrylic

POWDER / Granulated

LIQUID / Water

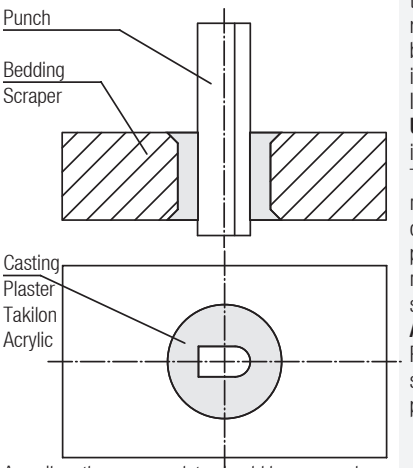
TAKILON - COLD ACRYLIC

Mould Repair, In Feeding / Filling

Mould : It is self hardening repair acrylic that is used in scraper and bedding plates, plastering gaps, cancelling of undesired holes as well as used for punch bearing in simple cutting and drilling moulds providing suitability at drilling and levelling processes done on filled surfaces.

Technical Data :

Mixing Ratio : 5 Unit Dosage - 3.5 Unit Liquid
Dosage : Dosing without measuring tank (As per requests)
Mixing : 30 - 35 Second (yoghurt consistency)
Working Time : At the end of 2 - 2.5 minutes
Hardening Time : In 15 minutes
Application : It should be castable consistency. Specified data are in 23^0C room temperature and from the beginning of
Order : TAKILON Acrylic Repair Filler
Large Model : 500 gr. Powder & 250 ml. Water
Small Model : 100 gr. Powder & 50 ml. Water



Any oil on the scraper plate should be removed. Use solvent (Release agentsilicon) to avoid sticking. Place the Scraper and the matrix correctly and connect to each other. the correct alignment is important for the operation. Using Magnetic 'V' Block for this operation guarantees vertikality. Or Setting Shims can be used to ensure the alignment for Punch Bush/Matrix. Later the surface finish works are done. The mixture solidifies and spoils if it is kept for too long.

POLINAT Component

Order :
Polinat 21

Electrical Insulation Casting and Model Filler

POLINAT - CASTING RESIN

It can be processed easily with turning leveling at mould and casting works.

Definition : Polinat 8021 is two component not-solvent, poliurethane base, electrical insulation and casting resine.
Specifications : Electrical imperviousness and dielectric constant number is high in different terms and various temperatures. It is resistant to abrasion, acid alkaline and other chemical or corrosive materials. It is hardened in low temperatures without changing any significiant volume. Thanks to catalyzers, drying time can be shortened.
Usage Areas : It is used in electric cable industry, casting of head and additional joints, insulating of end fasteners, plunger pump, insulator, transformers and various electrical component productions. In addition, it is used in all kinds of high voltage devices, transformers, television broadcast lines, telephone cord fasteners and rollers, to prevent flowing and leading in all kinds of condesators as well as to prevent noice that can be occurred Through resonance and vibration in devices such as ballast , regulator. It is suitable to complete filling in casting works at mould and machine sectors. It can be processed with turning levelling easily.
Usage: 2. component in upper section of box is emptied into main material in large box. Then, it is mixed until obtaning homogenous mixture. The surface to be applied is decontaminated from oil, dirt, rust and burrs, prepared mixture should be used in 30 40 minutes. If all of material is not used, sufficient mixture should be done.
Attention !!! : If breathed, R20 is harmful. R36 / 37 / 38 is irritant for eyes, respiratory system and skin. While working, use suitable protective clothing, gloves.

100 ml.
Luminescent
Paint

AZUL - MOULD EXERCISE PAINT

Blue Colour Limiting Paint as remarkable density , fast drying.

Blue oily mix liquid leaves a clear sign on any kind of metal, AZUL is indicated blue, bright sign on all metal parts that can be seen easily, This is coupled to show transfers and defects from another surface, it is ideal for marking surface. Due to its high cohesion feature, it can be easily transferred from one surface to another one. It can be used by mixing water. It can be cleaned from surfaces easily, before using, should be shake well and protected from cold.
Note: There is no need for extra precaution for respiration. For sporadic and typical use, vinyl gloves is sufficient. In long period use, rubber gloves should be used. It should be stored under room temperature.
Order : AZUL Exercise Paint

MOULD MARKING PAINT
MOULD EXERCISE PAINT

Mould marking and exercise paint is presented in 95 cc. and 115 cc. packing. It is quick dried in applied surfaces - after dried, it is not effected from oil, Drawing or exercise processes are continued on applied surfaces. Also, it has feature that is protected metal against rust (It drifts applied surface away).
Attention !!! : Burnable with fire
Order : 95 cc Marking Paint (Red) 95 cc Exercise Paint (Blue)
In addition, 115 cc packing is available.

ALCON (Thick / Thin) Exercise Paste
Double component (Thick - Thin) Exercise Paste

DRY PIGMENT PAINT
It is 400 gr, thinned with oil and is provided coloured view in exercise processes.