



CLINGANG

Die & Mould Components



**Since
2014**

**Standard/Custom-Made
Die & Mould Components**

**2020-21
Volume-1**

Standard / Custom-Made Die & Mould Components and Bases



Die & Mould Components, Bases and Systems Your Global Partner

From 2014 to present, Cungang, a member of "Cungang Corporate Group", has continued globally customer-oriented service presentations with numerous advantages and 10-year sector experience. Our company is an ideal partner about Standard / Custom-Made Die & Mould Components and Bases that are combined with high quality / economic price.

With strict quality control, good availability and short delivery periods, Cungang products are used actively in 33 countries. We are supporting you with customizable offers about technical and costing issues of your projects and we are producing the best solutions. Cungang, the perfect choice for professional and productive cooperation.

About the Catalogue

Successful usage secrets of Cungang Die & Mould Components:

Cungang book is more than a catalogue. Not only it exhibits our products, but also it includes recommendations related to efficient usage of components with basic and special technical / short information.

Our catalogue has been prepared with the principle of "quick way to perfect Dies & Moulds."

Cungang has a global logistic network with its own warehouses and production facilities having a high experience level. Stable and reliable Die & Mould production is obtained with components having a reliable quality.

Cungang tends towards the highest quality standards with all development and test efforts.

We classified our products as quality and economically. We have specified possible adverse effects of products on human health and we have taken care to select accurate ineffective products.

Our Customer Services

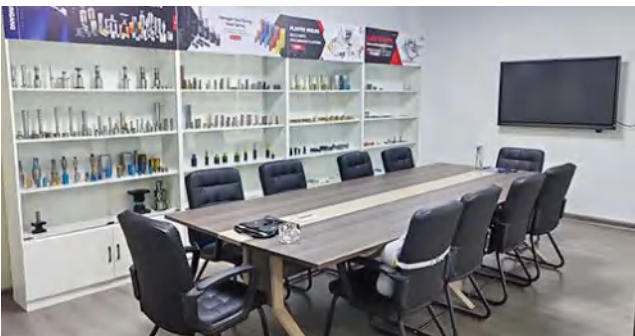
The most important advantage of competition is quality human resources.

We consider learning for success as a cultural phenomenon. We have adopted a service culture focusing on customer satisfaction. We are at your service together with our whole team, we provide solution rapidly but still expect some tolerance. What you call service is nature of the work we perform.

Some Images from Cungang



Wenzhou Cungang Precision Technology Co., Ltd. is located in Zhejiang, China. Founded in 2014, it covers an area of 3000 square meters and has 86 employees. It has been focusing on the production and customization of standard/non-standard mold accessories for 10 years! The company currently has 4 workshops and 67 professional equipment, exporting over 40 countries.



Product Code	Page No	Mould Components Product Description
G01	39	Guide Pillar with Centre Collar / NAAMS
G02	39	Guide Pillar / NAAMS
G03	41	Guide Pillar / CNOMO
G04	40	Guide Pillar / PSA
G05	40	Guide Pillar / PSA
G06	38	Guide Pillar / FCA
G07	38	Guide Pillar / FCA
G08	45	Guide Pillar with Centre Fixing
G09	33	Guide Pillar for Large Dies / DIN 9833
G10	35	Guide Pillar with Centre Collar
G11	49	Guide Pillar with Oil Groove
G12	54	Guide Pillar / Shouldered
G13	51	Guide Pillar with Centring Collar
G14	277	Core Guide Pillar (Inclined & Threaded)
G15	34	Guide Pillar / Thickbacked
G16	62	Ejector Rod
G17	48	Guide Pillar without Oil Groove
G18	47	Guide Pillar for Ball Cage
G19	36	Guide Pillar
G20	42	Guide Pillar for Cast Block Bush
G21	47	Support Pillar for Injection Mould
G22	45	Perforated Flange
G23	46	Sheet Lifting Pin
G24	36	Guide Pillar / Plain & Threaded
G25	67	Guide Bush - Headed
G26	66	Guide Bush with Centre Collar
G27	67	Guide Bush with Collar
G28	60	Centring Bush
G29	71	Steel Bush + Ball Cage Bush Set
G30	61	Guide Bush - Headed
G31	60	Guide Bush with Centring Collar
G32	61	Guide Bush with Centre Collar
G33	73	Guide Bush / Thin & Long Type
G34	72	Guide Bush / Thin & Short Type
G35	75	Guide Bush - Bronze Plated / Long Type
G36	75	Guide Bush - Bronze Plated / Short Type
G37	69	Guide Bush for Ball Cage / Long Type
G38	69	Guide Bush for Ball Cage / Short Type
G39	167	Shoulder Screw
G40	77	Guide Bush with Collar - NAAMS
G41	77	Guide Bush, Headed - NAAMS
G42	78	Guide Bush, Headed / Self-Lub. Bronze
G43	79	Guide Bush, Headed, CNOMO - PSA
G44	76	Guide Bush, DIN 9834 - ISO 9448
G45	76	Guide Bush with Centre Collar
G46	107	Locating Cone
G47	119	Die Lifting Bolt - Heavy Duty
G48	66	Guide Bush, Plain / Self-Lub. Bronze
G49	56	Guide Bush with Circlip Slotted / Headed
G50	57	Guide Pillar / Shouldered
G51	120	Die Lifting Pin - WDX22-60
G52	121	Die Lifting Pin - VDI 3366
G53	123	Die Lifting Bracket - FCA
G54	119	Die Lifting Bolt - DIN ISO 10242-1

G55	121	Die Lifting Pin - FCA
G56	124	Safety Pin - FCA
G57	124	Safety Pin - VDI
G58	122	Die Lifting Lug with Rope Stop Safety
G59	105	Support Washer
G60	105	Tapered Locating Unit
G61	50	Angled Guide Bush - Core Pillar Holder
G62	104	Centring Pin / Mercedes - Benz Std.
G63	107	Locating Cone / NAAMS
G64	106	Locating Cone
G65	104	Centring Pin
G66	104	Centring Pin
G67	103	Guide
G68	103	Guide with Part Position Control
G69	101	Air Pin
G70	68	Ball Cage Bush
G71	166	Spring and Spacer Unit
G72	74	Guide Bush with Flange
G73	279	Dial Caliper for Load Control Monitoring
G74	71	Linear Ball Bearing Bush / Headed Type
G75	71	Linear Ball Bearing Bush
G76	92	Return Cam Plate / Self-Lub. Bronze
G77	63	Guide Bush with Circlip Slotted
G78	92	Positive Return Plate
G79	42	Flange Cast Bush / Rectangular
G80	43	Flange Cast Bush / Rectangular
G81	40	Compensation Block / PSA
G82	105	Tapered Locating Unit / Headed
G83	83	Wear Plate / Self-Lub. Bronze
G84	86	Wear Plate / Self-Lub. Bronze
G85	83	Wear Plate / Self-Lub. Bronze
G86	79	Guide Bush / CNOMO - PSA
G87	86	Wear Plate, VDI 3357
G88	87	Wear Plate / Self-Lub. Bronze
G89	87	Wear Plate, ISO 9183-1
G90	85	Wear Plate / Self-Lub. Bronze
G91	85	Wear Plate, VDI 3357
G92	88	Wear Plate, AFNOR - ISO 9183-2
G93	88	Wear Plate, CNOMO
G94	84	Wear Plate, NAAMS
G95	84	Wear Plate, VDI 3357
G96	88	Wear Plate, VDI 3357
G97	102	Slide Stop Block
G98	102	Cylinder Stopping Block
G99	103	Cylinder Locating Block / FCA
G100	80	Guide Pillar & Bush Clamp
G101	81	Guide Pillar & Bush Clamp
G102	80	Guide Pillar & Bush Clamp
G103	125	Mould Safety Latch
G104	89	"L" Shaped Wear Plate
G105	89	"L" Shaped Wear Plate
G106	91	Guide Bar / Self-Lub. Bronze
G107	78	Thrust Washer - Perforated
G108	91	Cam Driver Plate / Self-Lub. Bronze
G109	90	Cam Driver Plate, VDI 3357
G110	34	Mounting Flange
G111	93	Cam Plate - "V" Guide
G112	41	Circlip
G113	158	Shock Absorbing for Gas Spring
G114	62	Thick Mounting Washer

G115	274	Automatic Ejector Coupling - L. Duty
G116	274	Automatic Ejector Coupling - H. Duty
G117	62	Mounting Washer for Ejector Rod
G118	79	Bush Holder Flange
G119	41	Square Flange for Guide Pillar/ CNOMO
G120	47	Thrust Pin
G121	82	"T" Shaped Wear Plate
G122	82	Wear Plate, Plain Type
G123	82	Wear Plate, Two-Way Sliding Type
G124E	113	Cycle Counter & Socket for Installation
G125	116	Id Card for Mould Base
G126	116	Id Card for Die Set
G127	109	Group Locating / Centring Unit
G128	109	Square Locating / Centring Unit
G129	111	Locating / Centring Unit
G130	110	Square Locating / Centring Unit
G131	110	Centring Unit - DLC Coated
G132	111	Locating / Centring Unit
G133	275	Inclined Ejector Pin Unit
G134	122	Die Lifting Lug / VDI 3366
G135	44	Guide Pillar with Centre Flange
G136	282	External Side Core Unit with Hydraulic Piston
G137	92	Cam Plate / Self-Lub. Bronze
G138	92	Wear Plate, Replaceable
G139	93	Cam Plate - "V" Guide
G140	127	Rotary Safety Eyebolt
G141	127	Eyebolt
G142E	113	Cycle Counter / Round Type
G143	80	Guide Pillar & Bush Clamp
G144	270	Ejector Plate Thrust - Support
G145	168	Compression Spring Set Screw
G146	168	Spring and Spacer Unit
G147	276	Support Slide for Core Position
G148	276	Support Slide for Core Position - Side Guide
G149	277	Angular Core Slide
G150	277	Stopping Pin for Core Slide
G151	45	Ball Cage Holder Flange
G152	108	Bar Lock System
G153	120	Die Lifting Pin / CNOMO
G154	65	Wear - Shim Plate
G155	64	Wear - Shim Plate
G156	64	Wear - Shim Plate / Round
G157	65	Urethane Spring for Mould Closing
G158	279	Adjustable Ejector Plate Cover
G159	125	Support Bolt
G160	123	Die Lifting Lug
G161	50	Angled Guide Pillar
G162	198	Mounting Ring for Bottle-neck Punch
G163	183	Drill Bush - Headed DIN 172
G164	184	Drill Bush - Plain DIN 179
G165	46	Pilot Unit
G166	37	Guide Pillar - Bolted Type
G167	70	Plain Guide Bush for Ball Cage
G168	70	Limiting Bush
G169	101	Retainer Bolt



Please refer to back inner cover of catalogue for compatibility list of Guide Pillars & Bushes

"A" Code	Page	Product Description
A Series	222	Pneumatic Feeders (Eco)
Series: A..	223	Pneumatic Feeders
AA...	132	Allen Wrench
AAS..	132	Allen Wrench Sets
AB	238	Strap Extender
AC..	377	Wooden Lapping Sticks
ACE016	182	Dowel Pin Extractor / Puller Kit
ACS..	377	Wooden Felt - Round
AE	259	Accelerated Ejector
AG-45	371	Rotary Air Grinder Tool
AG-90	371	Rotary Air Grinder Tool
AG-260	370	Rotary Air Grinder Tool
AG-360	370	Rotary Air Grinder Tool
AG-460	370	Rotary Air Grinder Tool
AG-672	370	Grinder Tool Collet
AG-673	370	Grinder Tool Collet
AG-676	370	Grinder Tool Collet
AGC01	370	Wheel for Grinder Tool
AGS01	370	Rubber Band for Grinder Tool
Code: AD	153	Gas Spring - Low Profile
AGM	224	Decoilers for Steel Roll
AHV	264	Gas Venting Filter for Diecasting
AK400	126	Double Swivel Ring - Eyebolt
AK450	126	Heavy T. Swivel Ring - Eyebolt
AK580C	127	Eyebolt
AK582S	127	Eyebolt
AK1017	354	Manifold Block for Cooling
AKH..	132	"T" Allen Wrench
AKUC	99	Aerial Cam Unit
AL	258	Threaded Limiter Adapter
ALE	381	Engineers File - Aluminium
AP	240	Retractable Core Extension
AR..	220	In-Die Tapping Unit / Automatic
AR-030	371	Air File Tool
AR-070	371	Air File Tool
AR-991	371	Air File Tool
AR-661	371	Air File Tool Holder
AR-662	371	Air File Tool Holder
AR-664	371	Air File Tool Holder
AR-665	371	Air File Tool Holder
AR-666	371	Air File Tool Holder
AR-667	371	Air File Tool Holder
ARU	349	Extension Fitting with Thread
ASPEST	131	Thermal Protection Glove

"A" Code	Page	Product Description
ASK	377	Mounted Wooden Points
ASM	340	Hot Runner Main Nozzle
AWF1400	294	High Temp. Ejector Pin Grease
AU..	132	Allen Wrench - Long Type
AYY	171	Extra Light Load Springs

"B" Code	Page	Product Description
Series: B..	223	Pneumatic Feeders
BA..	132	Round Head Allen Wrench
BA	259	Ejector Pin Base
BA...	217	Ball Lock Punch - Heavy Duty
BAF..	216	Ball Lock Ejector Punch - H.Duty
BAFZ..	216	Ball Lock Ejector Punch - H.Duty
BAG..	218	Larger Ball Lock Ejector Punch
BAGY	218	Larger Ball Lock Ejector Punch
BAK..	218	Larger Ball Lock Punch
BAKY	218	Larger Ball Lock Punch
BAPK	215	Ball Lock Pilot - Conical
BAPP	215	Ball Lock Pilot - Parabolic
BAPX	215	Ball Lock Pilot - Spherical
BAZ	217	Ball Lock Punch - Heavy Duty
BC	235	Slide Base
Code: BD.	138	Gas Spring Fixing Element
BD..	319	Deburring Blades
BD	245	Adaptable Base
BD	245	Horizontal Base
BE	259	Ejector Pin Base
BF..	210	Ball Lock Punch - Light Duty
BF800	383	Diamond Riffler File Set
BFZ	210	Ball Lock Punch - Light Duty
BG	236	Square Angle Pin Housing
BG..	211	Larger Ball Lock Ejector Punch
BG...	373	Polishing Block Stone
BH..	209	Ball Lock Punch - Light Duty
BHZ	209	Ball Lock Punch - Light Duty
BK..	211	Larger Ball Lock Ejector Punch
Code: BK	138	Gas Spring Fixing Element
BLEL	131	Rubber Glove
BM..A	372	Electrical Spiral Motor
BM	260	Block Base Insert
BMS-20	380	Diamond CBN Set
BMS-30	380	Diamond CBN Set
BM...W	372	Foot Switch for Spiral Motor
BN..	318	Deburring Blades

"B" Code	Page	Product Description
BOX	271	Latch Lock
BPK	208	Pilot - Conical
BPP	208	Pilot - Parabolic
BPX	208	Pilot - Spherical
BS..	319	Deburring Blades
BS	238	Safety Strap
BS100	365	Adhesive
BSE06	380	Needle File Set (6 pcs.)
BSE12	380	Needle File Set (12 pcs.)
BSL	360	Sintered Muffler
BSM	164	Spring Plunger
BT..	132	Round Head Wrench
BT	259	Ejector Pin Base
Code: BT	138	Gas Spring Fixing Element
Code: BTA	138	Gas Spring Fixing Element
Code: BTB	138	Gas Spring Fixing Element
Code: BY	138	Gas Spring Fixing Element
Code: BY-B	138	Gas Spring Fixing Element
Code: BY-A	138	Gas Spring Flange-Quick Fitting
BZ #	378	Abrasive Cloth Rolls

"C" Code	Page	Product Description
Series: C..	223	Pneumatic Feeders
C280300	380	Diamond CBN Set - Eco
CA	235	Adjusted Slide
CB	375	Rubber Mounted Polishing Point
CC..	27	Cold Work Tool Steel
CC.HS5328	253	High Speed Cycle Counter
CEMBS150	321	Mould Endoscope Camera
CETA17	317	Multi-Purpose Scissors
CF...	382	Diamond Tapered Files - Hand
CF500	383	Diamond Tapered File Set
CF400	383	Diamond Tapered File Set
CG	234	Adjustable Wedge Assembly
CG.60	235	Heel Unit with Angle Pin
CHV	268	Air Venting Valve
CI	242	Angled Guide Bush
CK	375	Rubber Mounted Polishing Point
CKT	355	Detent Plug - Conical (Steel)
CR	234	Adjustable Wedge
CR..	324	Flexible Rod Heater (Hot Runner)
CR....	320	Cera-Cut Deburring Tool
CRP	267	Mini Screwdriver Set
CTB	181	Bush for Dowel Pin
CTP	178	Dowel Pin with Internal Thread

"C" Code	Page	Product Description
CTPC	182	Dowel Pin Extractor / Puller Kit
CVPL	112	Cycle Counter
CVR	112	Cycle Counter - Round Type
CX	241	PX Cutting Jig

"D" Code	Page	Product Description
D29..	114	Counter - Eco Type
DA	244	Adjustable Lifter Base
DAK02	97	Angular Cam Unit
DB	249	Dog Lifter Limiter
DB....	410	Die Lifters
DB..	155	Gas Spring Distribution Blocks
DBC	155	Gas Spring Quick Dist. Blocks
DCY	159	Disc Springs
DD..	156	Gas Spring Fitting
DDB..	156	Gas Spring Fitting
DE	255	Two-Stage Ejector System
DEE	382	Diamond File - Square (Eco)
DEN	356	Reduction Fitting
DF	244	Fixed Lifter Base
DFSC	360	Hose Fitting with Valve
DFZ	194	Center Dowel Headed Punch
DG-M	370	Rotary Air Grinder Tool
DG-M5	370	Rotary Air Grinder Tool
DG-M8	370	Rotary Air Grinder Tool
DHV	268	Double Air Venting Valve
DIN471	63	External Circlip
DK	250	Cooling Hose
DK02	96	Die Mounted Cam Unit
DK06	375	Rubber Polishing Disc
DKM	134	Low Head Socket Cap Screw
DKT	267	Multi-Date / Double Date Stamp
DL....	410	Die Lifters
DM03	375	Mandrel for Rubber Point
DMZARB6	131	Machine Carrier Trolley
DP	252	Ejector Foot
DP25	374	Grinder Disc (Polishing)
DPCF	360	Fitting - Internal Thread
DPCG	360	Fitting - External Thread
DPKD	360	Manifold Fittings
DPLG	360	Elbow Fitting - 90°
DPT	360	"T" Fitting
DPUC	360	Straight Fitting
DPUL	360	Elbow Hose Fitting

"D" Code	Page	Product Description
DPUT	360	"T" Hose Fitting
DPW	360	"Y" Hose Reduction Fitting
DPWT	360	"Y" Fitting
DPY	360	"Y" Hose Fitting
DPZA	360	Pipe Cross Hose Fitting
DR	251	Double Rack Lifter
DS06	375	Rubber Polishing Disc
DSN	356	Cooling Adapter
DSZ	194	Center Dowel Headed Punch
DT..	156	Gas Spring Fitting
DTP	179	Dowel Pin - Straight
DYF	301	Locating Ring
DX	254	Superior Double Ejector
DZL..	375	Holder (polishing)
DZ..	375	Self-adhesive Abrasive Disc

"E" Code	Page	Product Description
E Series	222	Pneumatic Feeders (Eco)
E08	317	Diagonal Side Cutter for Wire
E09	317	Diagonal Side Cutter for Plastic
EA	131	Safety Footwear
EB..	284	Hydraulic Cylinder Flange
EBM...	326	Socket & Plug Inserts
EBBR	131	Safety Helmet
EBBH	131	Safety Helmet
ECB	412	Magnetic Clamping Block
ECO-316	415	Drill & End Mill Cutter
EDG	414	Drill Sharpening Machine
ED	243	Double Ejector
EE	243	Tulip Ejector
EEM...	225	Servo Roll Feeders
EEPM	413	Magnetic Chuck
EF	261	Removal Jig Set (Date Stamp)
EG..	373	EDM Polishing Stones
EGM	315	Magnetic Separator (Inj.Machine)
EHDB210	117	Demagnetizer Rod
E..K	376	Felt Polishing Sticks
EKS	28	Mould Bases
EKP	27	Ground Plates for Mould Base
ELE	382	Diamond File - Hand (Eco)
ELM	117	Permanent Lifting Magnet
EMG	415	End Mill Sharpening Machine
EP..	154	Thrust Plate for Gas Springs

"E" Code	Page	Product Description
EP	254	Ejector Plate Accelerator
ESR	362	Water Flow Regulator
ES..	381	Plastic Handle for Files
ET-1	370	Rotary Air Grinder Tool
EV	247	Vertical Lifter Block
EYE	382	Diamond File - Round (Eco)
EYM	301	Sprue Bushes
EYY	382	Diamond File - Half Round (Eco)
EZ	378	Foam - Abrasive Pads

"F" Code	Page	Product Description
FAS100T	383	Diamond Tip File Set
FB..	284	Hydraulic Cylinder Flange
FHR	357	Hose Fitting
FLEX	357	Rubber Hose (Cooling)
FLV1-20	369	Air File Tool
FLV4-9	369	Air File Tool
FP	261	Date Stamp Plus
FR	323	Cartridge Heater (Hot Runner)
FX	261	Xtra Date Stamp
FT	260	High Temp. Date Stamp

"G" Code	Page	Product Description
GADS	395	Revolving Handle
GAK	389	Woodruff Key DIN 6888
Code: GC	150	Gas Spring / Super Pressure
GBRT	213	Punch Retainer - Heavy Duty
GCM09	187	Embossing Date Stamp
GCP	355	Detent Plug with O-Ring
GCRT	205	Punch Retainer - Light Duty
GDKA	388	Parallel Key DIN 6885 - A
GDM	266	Recycling Date Stamp
GEAV	391	Spoked Handwheels - Alu.
GEBT	395	Lobe Knobs
GEDM	395	Revolving Handle
GEDV	391	Spoked Handwheels - Cast.
GEKO	397	Steel Hinges
GEPM	397	Hinges
GEPT	397	Handles
GEPV	391	Spoked Handwheels
GET	395	Three-arm Knobs
GEVS	395	Fold-away Handle
GGA	265	Gas Venting Filter / Yellow Wired
GH	359	Heat Transfer Pipes (Cooling)
GHS	156	Hose for Gas Spring Dist. Blocks

"G" Code	Page	Product Description
GI	236	Angle Pin
GK.	395	Latches
GKE..	396	Lobe Knobs
GKOL..	396	Tapered Handles
GKP..	396	Lobe Knobs
GKT	354	Detent Plug
GL.64832	365	Loctite 648 - Adhesive
GMK	306	Midiflow - Gate Insert
GPDS	395	Revolving Handle
GPLA	270	Friction Puller
GPR	197	Punch Retainer - ISO 8020
GPRS	197	Punch Retainer - ISO 8020
GPS	131	Lifting Sling
GR	236	Angle Pin Housing
GRF	305	Ringelflow - Gate Insert
GS	257	Latch Lock
GSK	299	Cooling Junction
GSM	134	Straight Stud
GSM...	392	Adjustable Clamping Levers
GSP...	394	Adjustable Clamping Levers
GTE	302	Standardflow - Gate Insert
GTH	322	Cable Retainer Cap - Magnetic
GTH-00.	128	Mould Testing & Assembly Unit
GTH1000	315	Teknoclean Cleaning Agent
GTH.ALO	222	Part & Scrap Carrier
GTK	304	Konturflow - Gate Insert
GT-133	373	EDM Stone Holder (Polishing)
GT-468	373	EDM Stone Holder (Polishing)
GT-613	373	EDM Stone Holder (Polishing)
GTM	303	Miniflow - Blank Gate Insert
GTP..	396	Ball Knobs
GTR	302	Standardflow - Gate Insert
GV	391	Spoked Handwheels
GVSY	265	Sintered Gas Venting Filter
GXK	307	Maxiflow - Gate Insert
GY	176	Ultra Heavy Load Spring - Silver

"H" Code	Page	Product Description
H8B	386	Cold-drawn H8 Honed Tube
H9B	386	Ready to use Tube-H9
HBE	356	Hose Fitting
HBI	289	Ejector Pin / DIN 1530 - D
HBZ	191	Conical Head Punch DIN 9861
HCC	327	Hot Runner Temp. Controller
HFK	190	Square Head Punch, Shaped

"H" Code	Page	Product Description
HIC	134	Countersunk Head Screw
HK	156	Hose Clamp for Gas Spring
HKI	356	Hose Clamp
HKZ	190	Conical Head Punches - Stepped
H2K	190	Conical Head Punches - Stepped
HL-09	385	Headband Magnifier
HLB	116	Precision Feeler Gauge Tape
HFY	190	Conical Head Punch - Shaped
HRD-..	363	WD-40 Multi-use Spray
HRE	357	Hose Fitting
HRU	357	Hose Fitting (Long Type)
HRM	154	Thrust Pad for Gas Springs
HOBI...	385	Tool Cabinet with Drawers
HSG	356	Rubber Hose (Gas & Air)
HSEP	358	Threaded Spiral Baffle
HT..	317	Nipper with Heat Control (for Plastic)
(G136) HP	283	Special Piston for Hydraulic Core
(G136) HPM	283	External Side Core with Hydraulic
HVFSG	360	Fitting with Valve
HVFF	360	Valve for Hose (Spherical)
HX..	382	Diamond Files with Handle

"I" Code	Page	Product Description
IBBG	361	Metal Nipple
IBDG	361	Metal, Reduction Fitting
IBP	361	Detent Plug
IBPG	361	Detent Plug with O - Ring
ICF	134	Socket Cap Screw Counterbore
IF	244	Lifter Head
IF...	382	Diamond Files
IF500	383	Diamond File Set
IGZ	131	Safety Goggles
IHS	274	Acceleration Rocker for Ejector
IKM	387	Hardened Chrome Plated Bar
IMB	135	Hex-Socket Head Cap Screw
IMBF	133	Button Head Screw
IMBP	133	Inox Head Cap Screw
IX	261	Xtra Insert for Date Stamp
IPBT	361	Metal, "T" Fitting
IPCT	361	Metal, Fitting - External Thread
IPCV	361	Metal, Hose Fitting with Valve
IPET	361	Metal, "T" Hose Fitting
IPLT	361	Metal, Elbow Fitting - 90°
IPU	360	Hose Reduction Fitting
IPUT	361	Metal, Hose Reduction Fitting
IPUT	361	Metal, Hose Nipple

"I" Code	Page	Product Description
IPVT	361	Metal, Elbow Hose Fitting
IPZT	361	Metal, Pipe Cross Hose Fitting
IR550	299	Digital Laser Thermometer
ISCG	360	Elbow Fitting with Valve
ISPU	360	Hose Stop Nipple
ISPLG	360	Hose Stop Nipple with Valve
IT	260	High Temp. Insert for Date Stamp
IW3C14	132	Die & Mould Mounting Kit
IYPA	314	Heat Insulation Plates
IYPE	314	Heat Insulation Plates - Eco

"K" Code	Page	Product Description
KAU	271	Latch Lock Unit
KA2000	363	Mould Release Agent Spray
KBK	131	Ear Protection
KBEL	131	Cloth Glove
KBS	164	Spring Plunger with Bushing
KDEL	131	Welder Glove
KDR	356	Cooling Fitting - Elbow
KG01	384	Safety Goggles
KHV	269	Air Venting Valve
KKV	356	Mini Ball Valve
KLK	131	Earplug
KLT..	378	Mandrel for Abrasive Disc
KMB	366	Mould Marking Paint - Red
Code: KN	139	Gas Spring - Mini & Low Force
KPA	157	Control Panel for Gas Spring
KPR	300	Taper Pin Reamer
KR	323	Band Heater (Hot Runner)
KT..	267	Date Stamps
KTE	381	Engineers File - Square
KS..	384	Polishing & Cleaner Block
KS	373	Mini Cutting Disc
KS06	375	Rubber Polishing Roll
KY	174	Heavy Load Springs - Red
KYF	301	Locating Ring
KYR	300	Taper Sprue Bush Reamer
KZ2	185	Locating Punch
KZ310	384	Mini Abrasive Pen
KZG	185	Locating Punch
KZD..	378	Abrasive Disc
KZF	186	Locating Punch Ford / WDX

"L" Code	Page	Product Description
LA..	132	Hexagon Socket Wrench
LB..	318	Deburring Tool

"L" Code	Page	Product Description
LBS...	227	Level Balancing Stand
LHE	381	Engineers File - Hand
LD	249	Dog Lifter Limiter
LR	258	Threaded Limiter
LV.483610	264	Laminar Gas Vent

"M" Code	Page	Product Description
M18A	372	Motor Hanger
M19KK	372	Spiral Rod
M19FTK	372	Spiral Rod with Latch
MARPOL	377	Metal Polisher Paste
MB	232	Mini Base
MB	284	Hydraulic Cylinder Connector
MB..	219	Ball Lock Matrix - Straight
MBC	219	Ball Lock Matrix
MBE	219	Ball Lock Matrix
MBL	385	Table Lamp with Magnifier
MC..	202	Matrix - Headed & Tapered
MC	232	Mini Slide
MCA	342	Extractor Tool for Hot Runner Nozzle
MD2	186	Backing Plate for Stamp Retainer
MEG	185	Backing Plate for Stamp Retainer
MEU	185	Backing Plate for Stamp Retainer
MEY	300	Sprue Bush for Metal Injection
MF..	204	Matrix with Locking Device
MG	232	Mini Guide
Code: MG	148	Gas Spring - High Stroke Rates
MG..	355	Extra Long Drill
MH...	339	"MH" Type Manifold for Hot Runner
MHH...	338	"MHH" Type Manifold for Hot Runner
MI...	339	"MI" Type Manifold for Hot Runner
MK..	201	Matrix - Straight
MKB	200	Matrix with Counter-bore Relief
MK1	281	Micro Limit Switch
ML	375	Mini Abrasive Roll Set
ML..	201	Matrix - Headed
MLB	200	Matrix with Counter-bore Relief
MMB	366	Mould Marking Paint - Blue
MM101	162	Indexing Plunger
MM102	162	Indexing Plunger with Lock Nut
MN2	280	Micro Limit Switch
MLEL	131	Latex Glove
MP..	202	Matrix - Straight & Tapered

"M" Code	Page	Product Description
MPY	361	Metal, "Y" Hose Fitting
MRA	205	Ball Lock Retainer with Air Cylinder
MRM	212	Ball Lock Punch Retainer
MRR	212	Ball Lock Punch Retainer
MT...	338	"MT" Type Manifold for Hot Runner
MT-015	342	Thermocouple for Valve Gate
MTK	207	Ball Lock Stripper Retainer
MTB	213	Ball Lock Stripper Retainer
MTB..	273	Slide Retainer - Pinned & Lock
MTC	278	Slide Retainer - Round Type
MTE	381	Engineers File - Mill Saw
MTJ	207	Ball Lock Stripper Retainer
MTF100	383	Diamond File Set for Air File
MTG	185	Stamp Retainer (Ford-WDX)
MTK.1/2	272	Slide Retainer
MTL	207	Ball Lock Stripper Retainer
MTM	214	Stripper Retainer for "MRM"
MTM..	273	Slide Retainer with Latch
MTMF	322	Nozzle Filter
MTP	214	Stripper Retainer for "MRR"
MTR	214	Stripper Retainer for "GBRT"
MTS	214	Urethane Stripper
MTS..M	272	Slide Retainer - Pinned & Lock
MTU	185	Stamp Retainer
MTV	206	Ball Lock Stripper Retainer
MTY	278	Slide Retainer - Pinned & Round
MTX	206	Ball Lock Stripper Retainer
MTW	206	Ball Lock Stripper Retainer
MX	257	Internal Latch Lock
MX...	339	"MX" Type Manifold for Hot Runner
MXX..	338	"MX" Type Manifold for Hot Runner
MVG	344	Valve Gate for Hot Runner System
MY...	339	"MY" Type Manifold for Hot Runner
MY	173	Medium Load Springs - Blue
MY...	338	"MY" Type Manifold for Hot Runner
MZ	378	Abrasive Mop Wheels
MZG	185	Marking Stamp

"N" Code	Page	Product Description
NAK-A	370	Rotary Air Grinder Tool
NG..	318	Deburring Tool Kit
NL35	131	Ratchet Strap - 8 Mt.
NL50	131	Ratchet Strap - 10 Mt.
NTEL	131	Industrial Glove - Basic
NTKL	131	Nitrile Glove - Basic

"O" Code	Page	Product Description
OKS	354	Detent Plug, Headed
OKS..	358	Water Flow Cooling Pipe
ONE	356	Cooling Adapter
ORING.	356	O-Ring Set

"P" Code	Page	Product Description
P350	385	Industrial Cleaning Cloth Roll
P1000	385	Cleaning Cloth Stand
P...	376	Polishing Felt Sheets
Series: P..	223	Pneumatic Feeders - Heavy Duty
PB..	284	Hydraulic Cylinder Hose
PC..	377	Plexiglass Polishing Sticks
PCAM	316	Precision Deburring Blade + Handle
PCBU	316	Precision Deburring Blade
PH	361	Air Hose - Polyurethane
PEF	380	CBN Grinding Points
PTF100	383	Diamond Tapered File Set
PF	242	Flexible Sprung Core
PF-WB	242	Flexible Sprung Core
PFL100	383	Diamond Needle File Set
PHV	269	Air Venting Valve with Pin
PKMS	162	Precision Pin Gauge Kit
PKM1	287	Pin Cutting & Grinding Machine
PKS..	30	Die Sets
PM..	161	Polyurethane Compression Spring
PMT	164	Mounting Kit for Spring Plungers
PMV	160	Locating Pin for Polyurethane Sp.
PO	239	Dowel Pin for Slide Retainer
POLB	361	Air Hose - Polyamide
POLIN	366	Casting Resin
PR	256	Plate Retainer
PRBP	197	Backing Plate (4.8) for Retainer
PRP..	161	Poly. Shock Absorbing Washers
PRSP	197	Shim Plate (1.8) for Retainer
PS	246	Standard Lifter
PS1	165	Spring Plunger
PS2	165	Spring Plunger
PSE	356	Flexible Cooling Hose
PSK	164	Spring Plunger
PSL	360	Plastic Muffler
PSP	160	Locating Bolt for Polyurethane Sp.
PX	241	Xtra Sprung Core
PXG	360	Manifold Fitting (4-Distributor)
PTF10T	383	Diamond Tapered File Set
PV	247	Vertical Lifter Block
PW	240	Sprung Core
PY..	161	Polyurethane Compression Spring
PYB	204	Polyurethane Punch Stripper
PYP	160	Guide Bolt for Poly. Spring

"R" Code	Page	Product Description
R-3030	369	Universal Grinding Spindle
RA	238	Automatic Retainer
RB	375	Rubber Mounted Polishing Point
RC	239	Slide Retainer
RC....	320	Precision Deburring Tool
RCM	239	Slide Retainer
RCP	321	Deburring Tool Kits - Eco
RK	98	Roller Cam Unit
RK..	375	Rubber Mounted Polishing Point
RKE1005	382	Diamond File Set - Eco
RM	256	Modular Retainer
RMM..	332	Multi-Tip Hot Runner Nozzle
RMM0201	385	Mini Vacuum Base Vice
RO-1785	369	High-speed Grinding Spindle
RS207	114	Counter
RSM	333	Runner Series Nozzle
RT	324	Thermocouples (Hot Runner)
RUK	316	Extra Long Needle Nose Pliers
RYS	227	Roller Lubricator for Steel Roll
RZ..	378	Tapered Abrasive Cartridge Rolls

"S" Code	Page	Product Description
Series: S..	223	Pneumatic Feeders - Heavy Duty
SA...	342	Manifold Inlet
SA	263	Sprue Adjuster
SA.Type	379	Carbide Rotary Burrs
SAR-070	371	Air File Tool
SB.Type	379	Carbide Rotary Burrs
SB..	193	Cylinder Head Punch-Stepped
SBD	296	Ejector Pin - Threaded
SC..	319	Deburring Tool Kit
SBI AH	291	Ejector Pin - AH Type
SBKAH	290	Cylinder Head Ejector Pin - Stepped
SBM AV03	295	Cylinder Head Ejector Pin - Oxidation
SBS	164	Spring Plunger with Slotted Head
SBT	156	Gas Spring Fitting
SBW	296	Cylinder Head Ejector Pin - Stepped
SBZ	193	Cylinder Head Punch - ISO 8020
SBZF	194	Heavy Duty Punch
SCB	341	Hot Runner Outer Bushing
SCPM8	270	Friction Puller
S..D	376	Mounted Felt Sticks
SD..	156	Gas Spring Fitting
SD	242	Undercut Base Unit
SD.Type	379	Carbide Rotary Burrs
SD02	342	Hot Runner - Hub Disc
SD03	342	Hot Runner - Stopping Disc
SDI	297	Ejector Pin with Locking Head
SDP	377	Diamond Compounds
SDS200	377	Diamond Compound Moisturiser

"S" Code	Page	Product Description
SDT	355	Detent Plug - Straight
SE10	380	Needle File Set - Eco
SEC	134	Hex-socket Set Screws
SECP	133	Inox Hex-socket Set Screws
SEPM	358	Threaded Flat Baffle
SF..	192	Cylinder Head Punch with Ejector
SFZ	192	Cylinder Head Punch with Ejector
SFZF	194	Heavy Duty Punch with Ejector
SG...	373	Fiber Ceramic Polishing Stones
SG1000	318	Deburring Tool Kit
SG.Type	379	Carbide Rotary Burrs
SGA	265	Sintered Gas Venting Filter
SH.Type	379	Carbide Rotary Burrs
SK.Type	379	Carbide Rotary Burrs
SK404	356	Liquid Gasket Sealant
SKE	381	Steel Needle File - Square
SKF	377	Mounted Hair Brushes
SKM	387	Hard Chrome Plated Bar
SKT	355	Detent Plug - Conical
SL	256	Stroke Limiter
SL.Type	379	Carbide Rotary Burrs
SLE	381	Steel Needle File - Hand
SM	378	Abrasive Paper with Sponge
SM404	356	Liquid Gasket Sealant
SMA...	331	"A" Series Nozzle for Hot Runner
SMB...	331	"B" Series Nozzle for Hot Runner
SMB	292	Ejector Sleeve / Nitrided
SMF	375	Mounted Wire Brushes
SMK	203	Pilot - Compact Type
SMM..	335	Multi-Tip Hot Runner Nozzle
SMX	203	Pilot - Compact & Spherical
Code: SN	140	Gas Spring - ISO 11901
SPI	298	Ejector Pin - Stainless / INOX
SPK	203	Pilot with Taper End
SPK....	376	Mounted Polishing Felt
SPLAH	293	Blade Ejector Pin - Hardened
SPL	375	Holder for Abrasive Roll
SPP	203	Pilot - Parabolic Type
SPPAV07	298	Ejector Pin - Copper Alloy
SPX	203	Pilot - Spherical
SPW	294	Blade Ejector Pin - Oxidation
SPT	374	Pink Mounted Points
SPTA	163	Magnetic Carrying Handle
SPZ	375	Mini Abrasive Rolls
SR	325	Coil Heater (Hot Runner)
SRD3-55	368	Rotary Air Grinder & Deburring Tool
SRD3-85	368	Rotary Air Grinder Tool
SRD6-45	368	Rotary Air Grinder Tool
SS..	340	Bushings for Hot Runner Nozzles
SSY6	362	Manual Pressure Test Pump
ST..	384	Tool Post Grinders

"S" Code	Page	Product Description
ST-	359	Flat Plastic Baffle - Base
STA	359	Spiral Plastic Baffle
STB	359	Spiral Plastic Baffle without Base
STF	375	Mounted Wire Brushes
STM	131	Dust Mask
STRONG	372	Corded Rotary Tool
STV	265	Air Venting Valve for Blow Moulding
SUNFIX	356	Repair Paste
SU	233	Slide Unit
SUE	381	Steel Needle File - Triangular
SVG	347	Hot Runner - Valve Gate Systems
SY	175	Extra Heavy Load Springs - Yellow
SY	255	Compact Double Ejection
SYE	381	Steel Needle File - Round
SYT	322	Hot Tip Mould Sprue Cleaner
SY Y	381	Steel Needle File - Half Round
SZ	378	Waterproof Abrasive Paper

"T" Code	Page	Product Description
T3-65S	368	Rotary Air Grinder Tool / Oil-free
T6-50S	368	Rotary Air Grinder Tool / Oil-free
T20	380	Diamond CBN Set - Eco
T30	380	Diamond CBN Set - Eco
T186	361	Spiral Air Hose
TA	252	Shock Absorber Disc
TA..	132	Hexagon Key Wrench
TB....	318	Deburring Tool Kit
TBM	177	Round Wire Spring, Medium
TBTHS	284	Hydraulic Cylinder - Tube Type
TDEL	131	Leather Safety Glove
TEFLON	356	Teflon Sealing Tape
TGB	131	Face Mask
THS	284	Hydraulic Cylinder - Round Type
THCF	285	Hydraulic Piston - Square Type
THCS	285	Hydraulic Piston - Square Type
THKS	284	Hydraulic Cylinder - Square Type
TKLN	366	Cold - Curing Tool Repair Set
TM..	378	Mandrel for Abrasive Cartridge Roll
TM	252	Magnetic Safety Stopper
TROY	385	Hand Magnifier with Lamp
TRF25	317	Heat Control Unit (HT..)
TR-1785	369	High-speed Oil-free Spindle
TPF10E	382	Diamond File Set - Eco.
TPS	180	Dowel Pin Retaining Sleeve
TRK	177	Round Wire Spring, Heavy
TVD3-100	368	Rotary Air Grinder Tool / Oil-free
TVY	177	Round Wire Spring, Light
TUSCP	366	Engineer's Marking Blue Paste
TX.T	132	Key Wrench for Torx Head

"U" Code	Page	Product Description
U-LAP106	372	Ultrasonic Polishing Machine
UA	237	Compact Coring Unit
UBZ	199	Bottle-neck Punch
UC	237	Core Cam
UCBAS	360	Rotary Joint Fitting
UEE	382	Diamond File - Triangular (Eco)
UFT	198	Piloted Counterbore Punch
UFZ	199	Bottle-neck Punch with Ejector
UKZ	199	Bottle-neck Punch - Stepped
UTE	381	Engineers File - Triangular
UU	233	Undercut Unit

"V" Code	Page	Product Description
V-PB	226	Punch Former Tool
V-PS	286	Pin & Punch Former Tool
VA	262	Air Poppet Valve
VCF...	228	Handheld Chamfering Machine
VD	263	Double Air Valve
VGP	346	Valve Gate Pin (Hot Runner)
VH	262	Air Valve for High Pressure
VHR	269	Special Reamer for VHV Valve
VHV	269	Venting Valve for Metal Inj.
VI	245	Lifter Shaft
VKT	266	Date Stamp - Screwed
VM03	374	Mandrel for Grinder Disc
VML ..	117	Magnetic Lifter
VPG	286	Pin & Punch Former Tool
VPGA	226	Mini Pin & Punch Former Tool
VPGM	286	Pin & Punch Former Tool Motor
VPS - S	226	Sine Plate for Punch Former Tools
VTDB	226	Wheel Dresser Tool
VTM13	117	Magnetic Tapper Stand
VTM	131	Dust Mask with Valve
VYZ	189	Screw Form Punch Unit

"W" Code	Page	Product Description
W140602	365	Hand Cleaner
W150154	363	Silicon-free Mould Release
W150170	363	Mould Protective Spray
W150206	363	Multi-purpose Grease
W160105	363	Food Grade Lubricant
W160106	363	Protective Wax Spray
W160108	364	White Lithium Grease Spray
W160109	364	MOS2 Dry Lubrication Spray
W160110	363	Multi-purpose Signum Spray
W160114	364	Liquid Grease Spray
W160117	363	Corrosion Protection Spray
W160170	363	Rust Remover Spray
W160200	364	Anti-seize Ceramic Grease
W170104	364	General Cleaning Spray
W1701201	364	Universal Bio Cleaning Spray
W200001	365	Two-component Adhesive
W20061	365	Two-component Epoxy
W20050	365	Epoxy Resin (liquid metal)
W223243	364	Threadlocker - Medium
W230270	364	Threadlocker - High

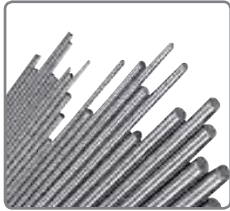
"W" Code	Page	Product Description
W610511	364	Liquid Sealant - PTFE
W670542	364	Pipe Sealant - Medium
W19	317	Spare Heater (HT..)
W29	317	Spare Heater (HT..)
WBS-300	227	Wheel Balancing Stand
WH	373	Holder for Ceramic Stones
WRD3-85	368	Rotary Angled Air Grinder Tool
WRD6-20	368	Rotary Angled Air Grinder Tool

"Y" Code	Page	Product Description
Code: Y	143	Gas Spring (Space Saving)
Y..D	376	Adhesive Felt Disc
YTB	181	Bush for Dowel Pin, with Bonding
YTE	381	Engineers File - Round
Code: YO	145	Gas Spiring - High Force
YY	172	Light Load Spring - Green
YYE	381	Engineers File - Half Round
YYH	169	Round Wire Compression Spring
YYS	169	Round Wire Compression Spring

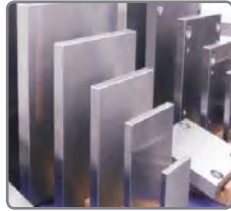
"Z" Code	Page	Product Description
Series: Z..	223	Pneumatic Feeders - Heavy Duty
ZDP	186	Backing Plate (PSA)
ZLA	385	Table Lamp with Magnifier
ZK155	384	Spare Abrasive Band for Pen
ZTF	186	Stamp Retainer (Ford-WDX)
ZTP	186	Stamp Retainer (PSA)

Code	Page	Product Description
11...-M	402	Combined Power Clamp
11...-T	400	Combined Power Clamp
148..	115	Number Stamping Sets
149..	115	Letter Stamping Sets
509HG	353	Quick-release Coupling USA
509FG	353	Quick-release Coupling USA
509LG	353	Quick-release Coupling USA
509EG	353	Quick-release Coupling USA
509DG	353	Quick-release Coupling USA
509ER	353	Male Fitting USA
509BN	353	Extension Fitting USA
509BL	353	Extension Adjustable Fitting USA
509KG	353	Diverting Coupling Bridge USA
571HG	350	Quick-release Coupling
571EG	350	Quick-release Coupling
571DG	350	Quick-release Coupling
571ER	350	Male Fitting
571HR	350	Hose-tail Fitting
571DR	350	Female Fitting
590HG	348	Quick-release Coupling EURO
590FG	348	Quick-release Coupling EURO
590LG	348	Quick-release Coupling EURO

Code	Page	Product Description
590EG	348	Quick-release Coupling EURO
590DG	348	Quick-release Coupling EURO
590KG	348	Diverting Coupling Bridge EURO
590HR	349	Hose-tail Fitting
590FHR	349	Push-lock Hose Fitting
590DR	349	Female Fitting
590AER	349	Male Fitting with Inner Hex.
590ER	349	Fitting 90° - Male Threaded
590-ORE	349	Male Fitting
600HG	351	Quick-release Coupling-Colour
600FG	351	Quick-release Coupling-Colour
600HA	351	Quick-release Coupling-Colour
600ER	351	Fittings with Colour Ring
600BU	351	Extension Fitting-Colour
600UR	351	Extension Fitting-Colour
601HG	352	Quick-release Coupling
601FG	352	Quick-release Coupling
601HL	352	Quick-release Coupling
601DG	352	Quick-release Coupling
601RR	352	Male Fitting with Inner Hex.
601TR	352	Male Fitting
601RRB	352	Male Fitting
601DR	352	Female Fitting
620HG	350	Quick-release Coupling
620DGB	350	Quick-release Coupling
620ER	350	Male Fitting
620HR	350	Hose-tail Fitting
620DR	350	Knurled Female Fitting
1009	354	Multi Coupling Plate
1010-..	405	Hydraulic Clamp
1015-..	406	Hydraulic Clamp
1024-...	130	Die Changing Cart
1025-..	408	Die Rails
1130061	132	Allen End for Mounting Kit
1170	398	Combined Clamp
1200	399	Stepless Adjustable Clamp
1205	399	Stepped Adjustable Clamp
1231	317	Diagonal Side Cutter for Plastic
1233	317	Diagonal Side Cutter for Plastic
1630	398	Combined Bolt for T-Slot
1520	118	Wedge - Support Block
1714	385	Inspection Mirror
1720	380	Needle File Set
1737	381	File Cleaning Brushes
2730	118	Die Lifting Bolt
2750	118	Die Lifting Lug
10531	365	Repair Stick - Aqua
10533	365	Repair Stick - Steel
10534	365	Repair Stick - Aluminium
10538	365	Repair Stick - Stainless Steel
13701	114	Counter - Eco Type
13710	382	Diamond File Set - Eco
13711	382	Diamond Course File Set - Eco
13726	382	Die Sinkers Diamond Riffler Files
183303	385	Clear Loupe Magnifier
800598	362	Descaling Liquid
612800	372	Polishing Kits



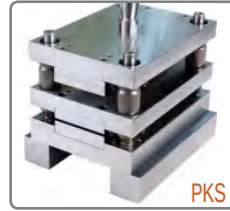
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Tool Steel



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33 Guide Pillar for
Large Dies
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Thickbacked



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35 Guide Pillar with
Center Collar



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36 Guide Pillar
Plain & Threaded
DIN 9825



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36 Guide Pillar
DIN 9825



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37 Guide Pillar
Bolted Type
DIN 9825



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38 Guide Pillar
FCA



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39 Guide Pillar
NAAMS



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40 Guide Pillar
PSA



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41 Guide Pillar
CNOMO



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42 Guide Pillar
for Cast Block
Bush



Page
43 Flange Cast
Bush
Rectangular



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44 Guide Pillar with
Centre Flange



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45 Guide Pillar with
Centre Fixing



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46 Pilot Unit



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46 Sheet Lifting Pin



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47 Support Pillar for
Injection Mould



Page
47 Guide Pillar
for Ball Cage



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48 Guide Pillar
without Oil
Groove



Page
49 Guide Pillar
with Oil
Groove



Page
50 Angled
Guide Pillar



Page
50 Angled Guide
Bush



51
53 Guide Pillar with
Centring Collar



51
53 Guide Pillar with
Centring Collar
without Oil Groove



54
55 Guide Pillar
Shouldered



54
55 Guide Pillar
Shouldered
without Oil Groove



Page
56 Guide Bush
Headed



57
59 Guide Pillar
Shouldered



57
59 Guide Pillar
Shouldered
without Oil Groove



Page
60 Guide Bush with
Centering Collar



Page
60 Centring Bush



Page
61 Guide Bush
Headed



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61 Guide Bush with
Centre Collar



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62 Ejector Rod



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63 Guide Bush
Headed



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64 Wear - Shim Plate



Page
65 Wear - Shim Plate



Page
65 Urethane Spring
for Mould Closing



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66 Guide Bush, Plain
Self-Lub. Bronze



Page
66 Guide Bush with
Centre Collar
Self-Lub. Bronze



Page
67 Guide Bush
with Collar
Self-Lub. Bronze



Page
67 Guide Bush
Headed
Self-Lub. Bronze



Page
68 Ball Cage
Bush



Page
68 Ball Cage Holder
Flange & Spring



Page
69 Guide Bush
for Ball Cage
Short Type



Page
69 Guide Bush
for Ball Cage
Long Type



Page
70 Plain Guide Bush
for Ball Cage



Page
70 Limiting Bush



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71 Steel Bush +
Ball Cage
Bush Set



Page
71 Linear Ball
Bearing Bush



Page
71 Linear Ball
Bearing Bush
Headed Type



Page
72 Guide Bush
Thin & Short
Type



Page
72 Guide Bush
Thick & Short
Type



Page
73 Guide Bush
Thin & Long
Type



Page
73 Guide Bush
Thick & Long
Type



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Page 74 Guide Bush with Flange



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Page 75 Guide Bush Bronze Plated Short Type



G35

Page 75 Guide Bush Bronze Plated Long Type



G45

Page 76 Guide Bush with Centre Collar Self-Lub. Bronze



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Page 76 Guide Bush DIN 9834 ISO 9448 Self-Lub. Bronze



G41

Page 77 Guide Bush Headed - NAAMS Self-Lub. Bronze



G40

Page 77 Guide Bush with Collar - NAAMS Self-Lub. Bronze



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Page 78 Guide Bush Headed Self-Lub. Bronze



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Page 78 Thrust Washer Perforated Self-Lub. Bronze



G48.1

Page 78 Guide Bush Plain & Bronze



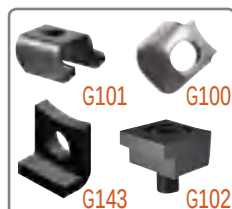
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Page 79 Guide Bush Bronze CNOMO - PSA



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Page 79 Guide Bush Headed CNOMO



Page 81 Clamps for Guide Components



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Page 82 Wear Plate Plain Type Self-Lub. Bronze



G123

Page 82 Wear Plate Two-Way Sliding Self-Lub. Bronze



G121

Page 82 T Shaped Wear Plate Self-Lub. Bronze



G85

Page 83 Wear Plate Self-Lub. Bronze Thickness: 10mm



G83

Page 83 Wear Plate Self-Lub. Bronze Thickness: 5mm



G95

Page 84 Wear Plate VDI 3357 Self-Lub. Bronze



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Page 84 Wear Plate NAAMS Self-Lub. Bronze



G94C

Page 84 Wear Plate NAAMS Steel



G90

Page 85 Wear Plate VDI 3357 Self-Lub. Bronze



G90C

Page 85 Wear Plate VDI 3357 Steel



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Page 85 Wear Plate VDI 3357 Self-Lub. Bronze



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Page 85 Wear Plate VDI 3357 Steel



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Page 86 Wear Plate Self-Lub. Bronze



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Page 86 Wear Plate VDI 3357 Self-Lub. Bronze



G87C

Page 86 Wear Plate VDI 3357 Steel



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Page 87 Wear Plate Self-Lub. Bronze



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Page 87 Wear Plate ISO 9183 - 1 Self-Lub. Bronze



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Page 88 Wear Plate AFNOR / ISO 9183-2 Self-Lub. Bronze



G92C

Page 88 Wear Plate AFNOR ISO 9183-2 / Steel



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Page 88 Wear Plate VDI 3357 Self-Lub. Bronze



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Page 88 Wear Plate CNOMO Self-Lub. Bronze



G104

Page 89 L Shaped Wear Plate Self-Lub. Bronze



G105

Page 89 L Shaped Wear Plate Self-Lub. Bronze



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G109C

Page 90 Cam Driver Plate VDI 3357



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Page 92 Cam Plate Self-Lub. Bronze



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Page 92 Positive Return Clamp



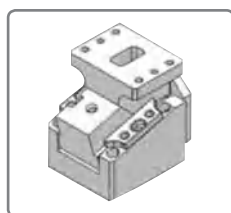
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Page 93 Cam Plate V Guide



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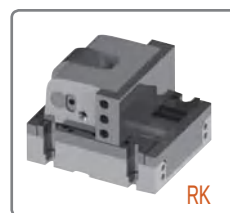
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Page 96 Die Mounted Cam Unit



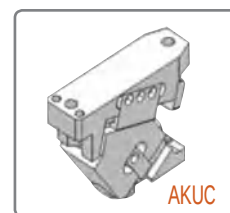
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Page 101 Retainer Bolt FCA - FORD



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Page 104 Centring Pin



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Page 104 Centring Pin



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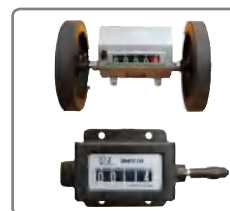
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123 Die Lifting Lug



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Page 126 Heavy Tonnage Swivel Ring Eyebolt



Page 127 Rotary Safety Eyebolt



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Page 154 Gas Spring Accessories



Page 158 Shock Absorbing for Gas Spring



Page 160 Guide Bolt for Polyurethane Spring



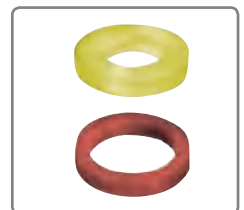
Page 160 Locating Bolt & Pin for Poly. Spring



Page 161 Polyurethane Compression Springs



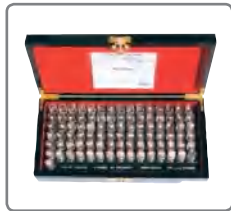
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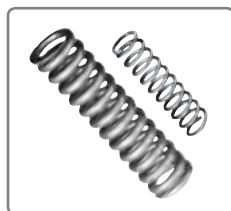
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180 Dowel Pin Retaining Sleeves



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181 Bushes for Dowel Pin



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182 Dowel Pin Extractor - Puller Kit



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182 Dowel Pin Extractor - Puller Kit



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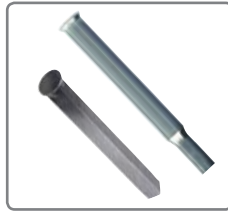
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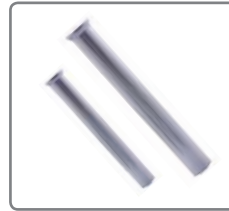
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Page 189 Screw Form Punch & Die Button Unit



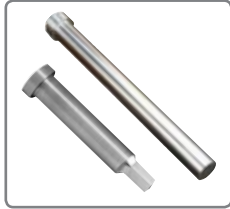
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Page 192 Cylinder Head Punch with Ejector ISO 8020



Page 193 Cylinder Head Punches ISO 8020



Page 194 Heavy Duty Headed Punches



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Page 197 Punch Retainers for ISO 8020



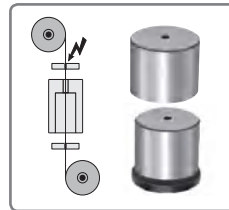
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Page 199 Bottle-neck Punches (trambone)



Page 200 Matrixes with Counter-bore Relief



Page 202 Matrixes - Tapered



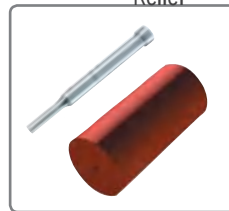
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Page 205 Ball Lock Retainer with Air Cylinder



Page 205 Ball Lock Punch Retainer Light Duty



Page 206 Ball Lock Stripper Retainer Light Duty



Page 207 Ball Lock Stripper Retainer Heavy Duty



Page 208 Ball Lock Pilots Light Duty



Page 209 Ball Lock Punches Light Duty



Page 210 Ball Lock Ejector Punches Light Duty



Page 211 Larger Ball Lock Ejector Punches Light Duty



Page 212 Ball Lock Punch Retainer Round



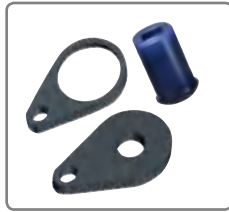
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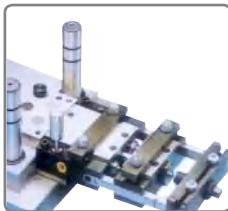
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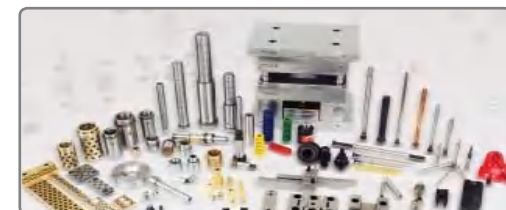
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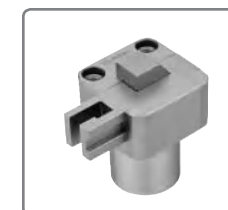
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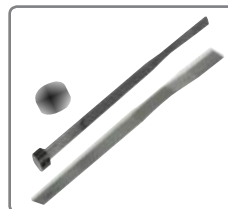
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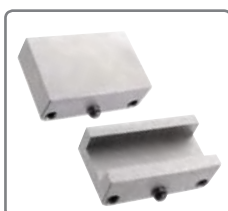
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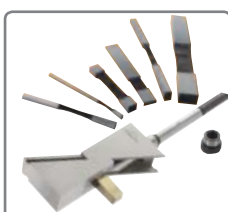
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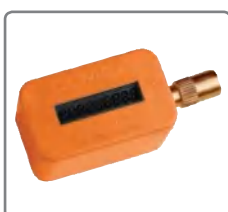
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257 Latch Lock



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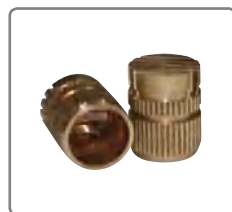
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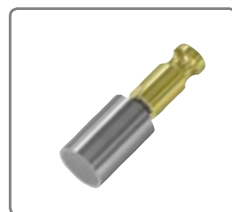
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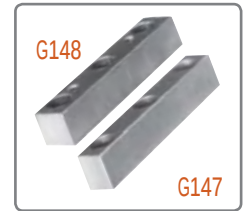
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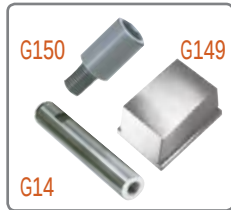
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281 Micro Limit
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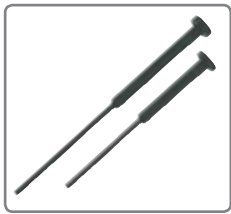
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Pin Hardened



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294 Blade Ejector Pin
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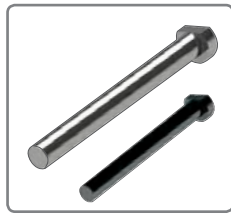
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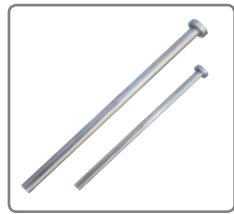
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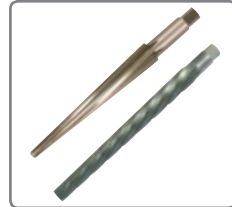
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300 Taper
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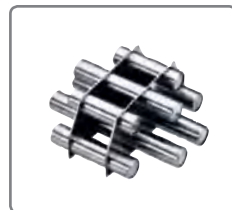
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309 Tunnel
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313 In-mould Edge
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Components



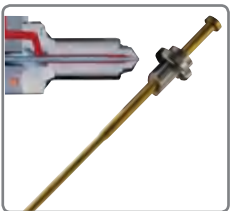
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315 Magnetic
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346 Valve Gate Pin
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349 Quick-release
Couplings & Fittings
(EURO / standard)



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Couplings & Fittings
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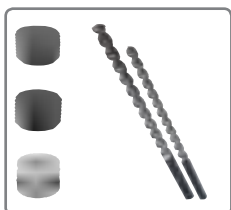
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352 Quick-release
Couplings & Fittings



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353 Quick-release
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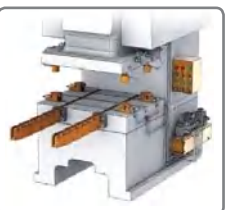
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361 Pneumatic
Fittings



398
399 Clamping Tools



400
403 Combined Power
Sliding Clamps



404
407 Quick Die &
Mould Change
Systems

Some Images from Cungang Production Facilities



Punch Production Facility
- 5 Axis Multi-grinding Machines



Die & Mould Components Production Facility
- High-tech Grinding Machines



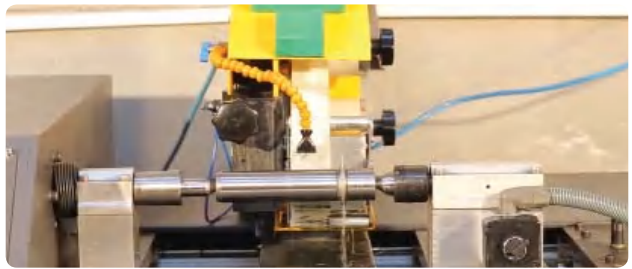
Punch Production Facility
- 6 Axis Wire Edm Machine / 5 Axis Multi-grinding Machines



Punch, Die & Mould Components Production Facility
- Robot Automations



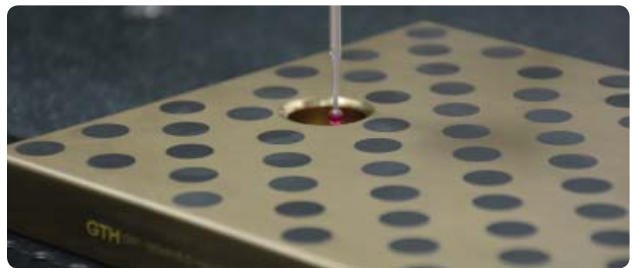
Die & Mould Components Production Facility
- In-house Heat Treatment



- Our Components are Polished with Surface Polishing Machine
at Final Stage of Production (after grinding)



Die & Mould Components Production Facility
- Precise Honing Machines with Pneumatic Measurement Systems



Quality Department



Mould Bases / Die Sets Production Facility



Mould Bases / Die Sets Production Facility
- Deep Hole Drilling



Cold Work Tool Steel

Code: CC

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. Cold work tool steel (Böhler) 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.

Hot Forming and Heat Treatment: DIN 17006

Forging Anneal : 1050 - 800°C
Soft Anneal : 700 - 720°C
Anneal Hardness : Max. 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°C water

Tempering : 180 - 200°C - 1 hour / 25 mm

Presented as: 2 Metre / as per request: 1 Metre

Order	Dia. mm	Kg/mt.
CC20	2.0	0.040
CC25	2.5	0.050
CC30	3.0	0.060
CC35	3.5	0.080
CC40	4.0	0.100
CC45	4.5	0.130
CC50	5.0	0.160
CC55	5.5	0.200
CC60	6.0	0.230
CC65	6.5	0.280
CC70	7.0	0.310
CC75	7.5	0.400
CC80	8.0	0.410
CC85	8.5	0.450

Order	Dia. mm	Kg/mt.
CC90	9.0	0.500
CC95	9.5	0.560
CC100	10	0.620
CC105	10.5	0.700
CC110	11	0.750
CC115	11.5	0.820
CC120	12	0.900
CC125	12.5	0.980
CC130	13	1.050
CC140	14	1.250
CC150	15	1.400
CC160	16	1.600
CC170	17	1.800
CC180	18	2.000
CC190	19	2.300
CC200	20	2.500
CC210	21	2.800
CC220	22	3.000
CC230	23	3.300
CC240	24	3.600
CC250	25	3.900
CC300	30	5.600
CC320	32	6.400
CC350	35	7.600
CC400	40	9.900



Order:
CC. Diameter



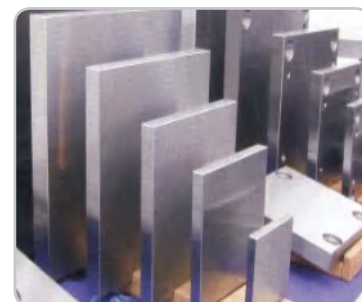
Chemical Analysis:
% C1,15-CR 0.70-V 0.10



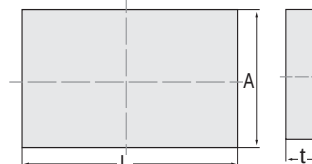
Material: 115 CR V 3
acc. to DIN 17006

Standard Ground Mould Plates

A	L	Thickness (t)									
		26	36	46	56	66	76	86	96	106	
156	156										
	196										
	246										
	296										
	346										
196	196										
	246										
	296										
	346										
	396										
246	246										
	296										
	346										
	396										
	446										
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	646										
	696										
496	496										
	546										
	596										
	646										
	696										
	746										
	796										



Ground Mould Plates Code: EKP Standard & Custom-made



Precision machined and 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 are applied. Surfaces are milled / precision perpendicularity and roughness are provided, precision surfaces ground plates with CK45 / tool steel material are available in our stocks normatively or can be supplied in 2-3 working days. In addition, except our standard materials, the production in desired materials (alloy aluminium 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 Die & Mould Components improved by our side and needed by the whole world market and with unquestionable quality.



Order: EKP. A x L x t

Material: CK45



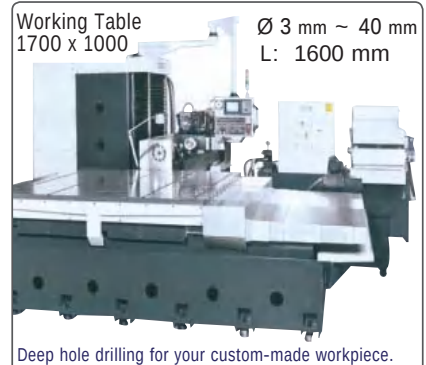


Standard Mould Base

EKS



Custom-made Mould Base



Deep hole drilling for your custom-made workpiece.

Deep Hole Drilling

Standard Mould Bases - Types

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

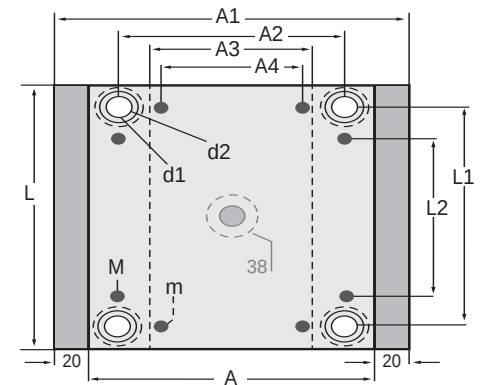


Production as per request.
Dimensions: Up to 1800 mm

"You can always trust our experience, expertise and quality"

- Cnc machining (3D) can be done as per request in plate works of your standard or shaped moulds.
- EKS.01 ~ EKS.07 Standard mould bases (guide pillar & bush equipped with bolt connection)
- EKS.11 ~ EKS.17 Standard mould bases (G13 / G31 / G28 equipped with bolt connection)
- EKS.21 ~ EKS.25 Standard mould bases (hot runner & manifold plate created)
- EKS.30 ~ EKS.32 Standard mould bases (holder plate group H1-H2 can be done channelled as per request)
- EKS.41 ~ EKS.43 Standard mould bases (plain set - located excluding ejector plates and support blocks)
- EKS.51 ~ EKS.52 Standard mould bases (female holder-support plate / H4 plate added)
- EKS.61 ~ EKS.67 Metal Injection Mould Base (connecting system & cover and female holder have been created).

Outer Dimensions		Mould Plate Thickness Dimension Selection mm								Plate Axis mm						Pillar & Bush d1-d2	Bolt	
A	L	H5	H1	H2	H6	H4	H7	H8	H3	A1	A2	A3	A4	L1	L2		M	m
156	156	26 36	26	26	26	26	16	16	46 56 66	196	114	80	56	114	60	16 24	M.8 M.10	
	196		36	36	36	36								154	100			
	246		46	46	46	46								204	150			
	296		56	56	56	56								254	200			
	346		66	66	66	66								304	250			
196	196	26 36	26	26	26	26	16	16	46 56 66	246	154	120	96	154	100	16 24	M.8 M.10	
	246		36	36	36	36								204	150			
	296		46	46	46	46								254	200			
	346		56	56	56	56								304	250			
	396		66	66	66	66								354	300			
246	246	26 36	26	26	26	26	16	16	46 56 66 76	296	194	148	126	194	130	20 25 28 34	M.8 M.12	
	296		36	36	36	36								244	180			
	346		46	46	46	46								294	230			
	396		56	56	56	56								344	280			
	446		66	66	66	66								394	330			
296	296	26 36	26	26	26	26	16	16	56 66 76 86 96	346	244	198	176	244	180	25 34	M.8 M.12	
	346		36	36	36	36								294	230			
	396		46	46	46	46								344	280			
	446		56	56	56	56								394	330			
	496		66	66	66	66								444	380			
346	346	26 36	36	36	36	36	16	22	56 66 76 86 96	396	294	228	202	294	220	25 34	M.10 M.12 M.16	
	396		46	46	46	46								344	270			
	446		56	56	56	56								394	320			
	496		66	66	66	66								444	370			
	546		76	76	76	76								494	420			
396	396	26 36	36	36	36	36	16	22	56 66 76 86 96	446	324	278	252	324	230	30 39	M.10 M.16	
	446		46	46	46	46								374	280			
	496		56	56	56	56								424	330			
	546		66	66	66	66								474	380			
	596		76	76	76	76								524	430			
446	446	26 36 46	36	36	36	36	16	22	56 66 76 86 96	496	374	328	302	374	280	30 39	M.10 M.16	
	496		46	46	46	46								424	330			
	546		56	56	56	56								474	380			
	596		66	66	66	66								524	430			
	646		76	76	76	76								574	480			
496	496	36 46 56	36	36	36	36	16	22	56 66 76 86 96	546	424	378	348	424	330	30 39	M.10 M.16	
	546		46	46	46	46								474	380			
	596		56	56	56	56								524	430			
	646		66	66	66	66								574	480			
	696		76	76	76	76								624	530			
546	546	596	596	646	696	746	796	846	896	946	996	1046	1096	1146	1196	1246	1296	1346
	596																	
	646																	
	696																	



Standard Mould Bases:

Code: EKS

Mould locating and cycle counter place opening processes, o-ring hot / cold runner place and manifold plate processes, drilling of coolant water runners (deep hole drilling), 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 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, expertise and quality.

Order: EKS.. A x L
H1-H2-H4/H6/H3

Material: CK45 Steel
or material as per request



Standard Die Set



Die Set with Ball Cage System



Progressive Die Set

Standard & Custom-made Die Sets

Cungang are honored to contribute to the industry with 170 employees. Cungang that has given itself over to its job will continue "Affordable Die & Mould Prices" policy with 2nd Generation team having the same vision value as a solution partner to global industry with your supports.

Standard & Custom-made Die Sets

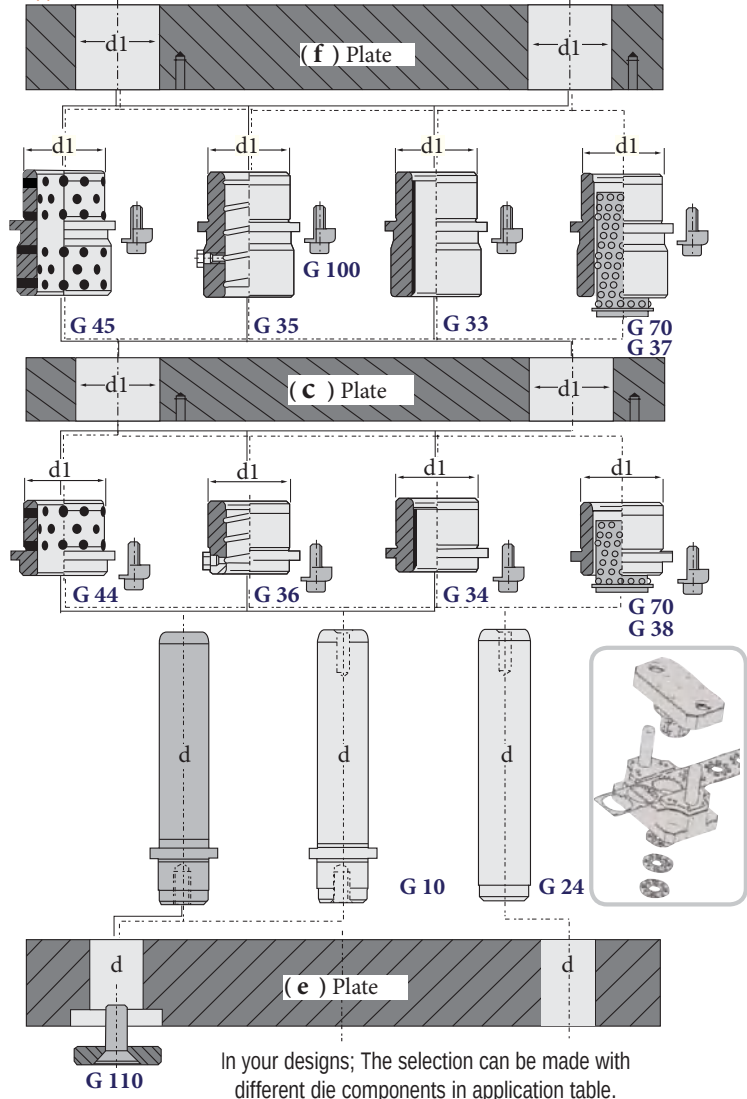
In our production, precision surface grinding of die set plate as well as circumferential perpendicularity precision are made by using machining power and our cnc machinery as well as new requirements of design engineering. The connections are completed with 12.9 cylinder head cap screw by providing reference points, using Cungang Guide Pillar & Bush components that are produced by us with precision at all sets. In addition, 1 or 2 eyebolt holes (according to the load) are opened for die lifting and mounting (die safety latch can be inserted as per request). CK45 (tool steel) is used at our production.

Also as per request, aluminum alloy or quality steel material can be used. Thickness and circumferential tolerance values applied as standard are $\pm 0.1-0.2$ sizes up to 1600 x 800 mm. The sets and plates are produced with fast delivery.

In order to avoid possible errors of dimensional in the customer drawings at special character dies, all operations are controlling by Cungang, 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 working days or partially from our stocks according to the urgency of your work.

Application / Definition



Guide Pillar & Bush Application

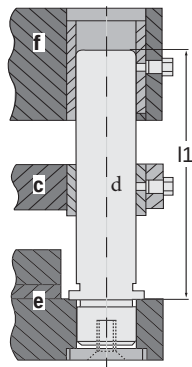


As Per Request : Types & Die Sets



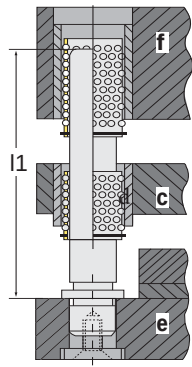
As per request: Aluminum alloy and high quality steel material die sets production can done.
As per request: Precision Cnc machining works, pool draining, die spaces, core slots can done.

Die Set - Guide Pillar & Bush Selection:



Type: Guide pillar with centre collar (G10)

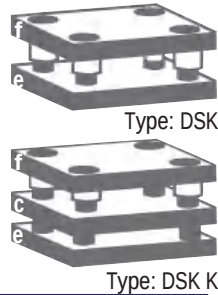
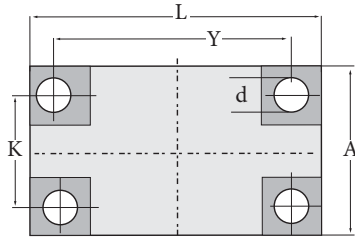
Suggestion: Pls. note that shrink fits are not suitable for 4-guide pillar die sets! Generally, two and three diversification can be chosen in cases that guide pillar space geometry is irregular.



Type: Guide pillar for ball cage, shrink fit model (G10)

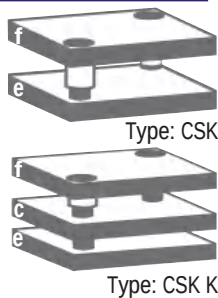
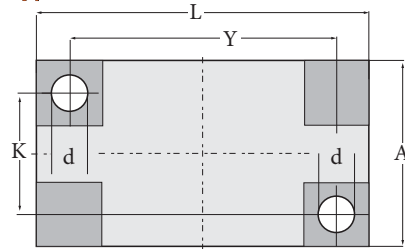
Die Set Types - Selection as per request

Type: DSK - DSK K (Four Columns)



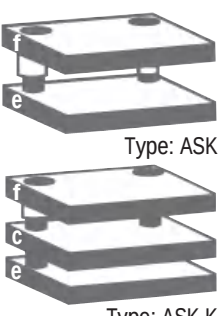
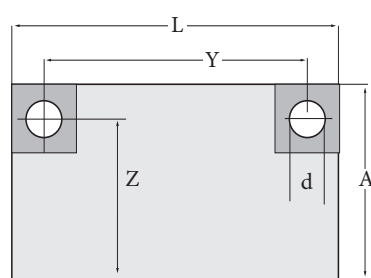
Type: DSK K

Type: CSK - CSK K (Cross Columns)



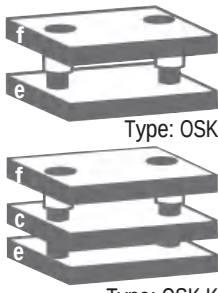
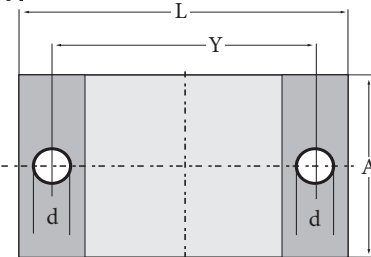
Type: CSK K

Type: ASK - ASK K (Rear Columns)



Type: ASK K

Type: OSK - OSK K (Centre Columns)



Type: OSK K

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

Custom: 3D drawing
Standard: Dimension table

Material: CK45 Steel
Production as per request

Standard Die Set Selection / Dimensions

Die Dimension mm		Plate Thickness mm			Free Area mm			Guide Pillar x Length	
A	L	e	f	c	K	Y	Z	G10	d x l1
156	156	26	26	26	100	100	128	Ø 20	100
	196					140			112
	246					190			125
	296					240			140
196	196	26	26	26	132	132	164	Ø 25	160
	246					182			175
	296					232			190
	346					282			205
246	246	36	36	26	174	174	210	Ø 30	210
	296					224			225
	346					274			240
	396					324			255
296	296	36	36	26	224	224	260	Ø 30	260
	346					274			275
	396					324			290
	446					374			305
346	296	36	36	26	224	224	260	Ø 30	260
	346					274			275
	396					324			290
	446					374			305
396	296	36	36	26	224	224	260	Ø 30	260
	346					274			275
	396					324			290
	446					374			305
446	296	36	36	26	224	224	260	Ø 30	260
	346					274			275
	396					324			290
	446					374			305
496	296	36	36	26	224	224	260	Ø 30	260
	346					274			275
	396					324			290
	446					374			305
546	296	36	36	26	224	224	260	Ø 30	260
	346					274			275
	396					324			290
	446					374			305
596	296	36	36	26	224	224	260	Ø 30	260
	346					274			275
	396					324			290
	446					374			305
646	296	36	36	26	224	224	260	Ø 30	260
	346					274			275
	396					324			290
	446					374			305
696	296	36	36	26	224	224	260	Ø 30	260
	346					274			275
	396					324			290
	446					374			305

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 machining works, pool draining, die spaces, core slots can done.
Production: Die & Mould Base

STANDARD DIE COMPONENTS



CLINGANG Group

CLINGANG
Die & Mould Components

DIN 9833

Ø d	l mm	d2 Hole	d5 mm	l2 mm	l1 mm	l3 mm
80	200	-	M12 x24 Guide pillar lifting hole	10	100	4
	224					
	250					
	280					
	315					
	355					
	400					
100	224	50	72	10	125	4
	250					
	280					
	315					
	355					
	400					
125	315	65	90	12	140	5
	355					
	400					
	450					
	500					
160	400	95	132	12	180	5
	450					
	500					
	560					

Operating Components: Self-lubricating guide bushes are recommended.

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Order:
G09.d x l

The importance of alignment precision of punch and matrix at dies is very obvious. This alignment depends on accuracy and protection of precision, correct placement of guide pillar / bush groups, quality and abrasion resistance. It is especially demountable. We endeavor keeping this range with the additions we made such as new guiding equipment.

Ø d	l mm	d2 Hole	l2 mm	l1 mm	l3 mm
25	125	-	8	40	4
	140				
	160				
	180				
	200				
	224				
32	140	-	8	45	4
	160				
	180				
	200				
40	140	-	8	56	4
	160				
	180				
	200				
	224				
	250				
50	160	-	10	70	4
	180				
	200				
	224				
	250				
	280				
63	180	-	10	80	4
	200				
	224				
	250				
	280				
	315				
	355				
	400				

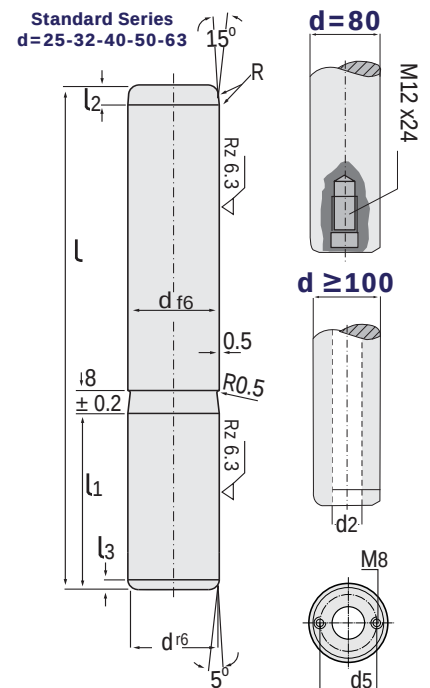
guide pillars are polished with surface polishing machine at final stage of production (after grinding).

Custom-made production can be done as per request.



Guide Pillar for Large Dies

DIN 9833

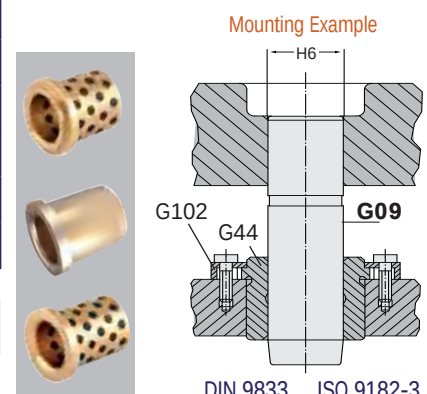


Heavy Duty Type for Dies

Practises: Ground surface is holeless up to Ø d = 80 and Ø 80 = M12 X 24 mm has one lifting hole. From Ø d.100, it has hollow (d2) and have 2 pieces M8 X 24 mm lifting holes.

Note: Hole tolerance should be H7. It is recommended to use guide pillar only with self-lubricating guide bushes.

Compatible Bushes: Self-lubricating bronze guide bushes.

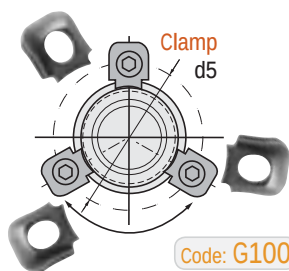
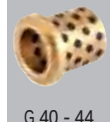
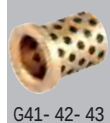


DIN 9833 ISO 9182-3



Flange Fitting:
It is perpendicular angle locating on to die plate surface.

The diagram shows a cross-section of a flange fitting assembly. The main body has a diameter of d with a tolerance of $\pm h_{14}$. A chamfer at the top is specified as $R15^{\circ}$. The central hole has a diameter of d_3 with a tolerance of $0 - 0.2$. The total height of the upper section is $L1$ with a tolerance of -0.2 . Below this is a section labeled G100, which is 6 units thick with a tolerance of -0.1 . The lower section has a diameter of d_2 with a tolerance of f_6 , and its total height is $L2$ with a tolerance of $0 - 0.2$. A base plate of thickness 20 units is shown, with a dimension M indicating the distance from the centerline to the edge. The bottom flange has a diameter of d_2 with a tolerance of i_6 . A detail view shows a 20° angle between the flange face and the vertical axis.



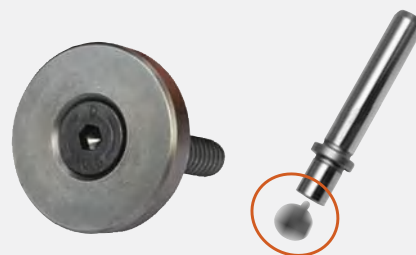
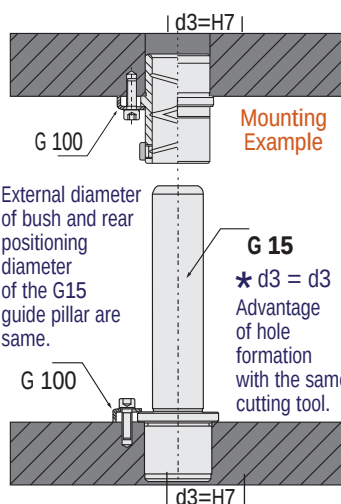
Code: G100

Advantageous Product:

Pillar mounting diameter and bush mounting diameter have the same tolerance value. In machining of guide pillar / bush holes on dies with the advantage of using same cutting tool (drill / reamer) for both guide pillar & bushes hole. Thus, the necessity of using different cutting tools will disappear.

[illegible]

 Order: G15. d x l1



Code: G110

- * It can also be used to support for ejector plates in injection moulds / etc.

Ø d3	Pillar Diameter d	Flange S	Screw 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	

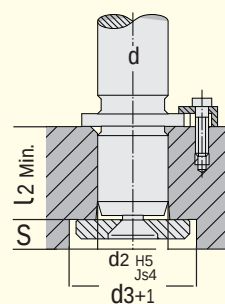
 Order:
G110. d3

Usage: Guide pillar fixation (Die)
Support washer (Mould)

Technical Info

Dimensions Given:
Recommended
(suggestion) for product:
G10 Guide pillar.

Mounting System:
Soft tight fitting system
has been selected
and determined
for G10 Guide pillar.



"d" Guide Pillar Dia.	d2 H5	d3 +1	l2	S
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	80	37.5	9.5
80	+0.013	95	48	12

DIN 9825 / ISO 9182-5

Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Clamp d5	M M1	r r1
38 40	125	37	9	50	62.8	M8	r 3,5 r1 30
	140						
	160						
	180						
	200						
	224						
	250						
	280						
	315						
	355						
48 50	140	47	10	63	76.0	M8	r 3,5 r1 30
	160						
	180						
	200						
	224						
	250						
	280						
	315						
	355						
	400						
60 63	160	47	10	80	93.2	M8	r 4 r1 30
	180						
	200						
	224						
	250						
	280						
	315						
	355						
	400						
80	200	60	15	95	108.4	M12	r 4 r1 30
	224						
	250						
	280						
	315						
	355						
	400						

Order: G10. d x L	Material: 1.1213 (Cf53) Hardness: 58 - 62 HRC
-----------------------------	--

Operating Components: All sliding systems
also can be used with ball cage bush.

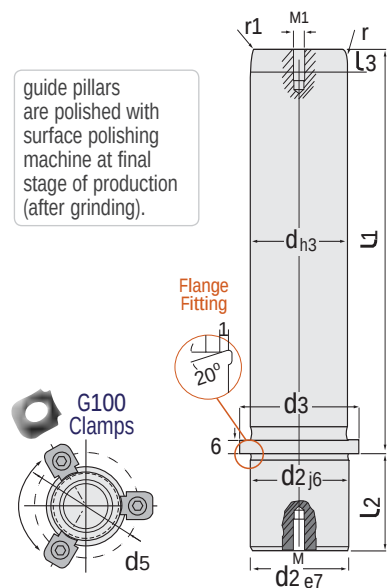
Ø d d2	L1 mm	L2 mm	L3 mm	Ø d3	Clamp d5	M M1	r r1
15 16	100	20	4	22	33	M8	r 2 r1 10
	112						
	125						
	140						
	160						
	180						
	200						
	220						
	250						
	300						
19 20	100	23	4	25	36.4	M8	r 2 r1 10
	112						
	125						
	140						
	160						
	180						
	200						
	220						
	250						
	300						
24 25	100	30	6	32	44.0	M8	r 3 r1 20
	112						
	125						
	140						
	160						
	180						
	200						
	224						
	250						
	320						
32 30	112	37	7	40	52.4	M8	r 3 r1 20
	125						
	140						
	160						
	180						
	200						
	224						
	250						
	280						
	315						
	350						
	400						

All dimensions are promptly delivered from our stocks.



Code: **G10**

Guide Pillar with Centre Collar



It can be inserted directly to the holes which opened on the die plate. During mounting, please avoid tight fitting. It can be positioned via soft-tight fitting to the holes and clamps or mounting flange with suitable tolerances or also with chemicals.

Technical Info: Refer to the mounting measurement tolerance table on the Page-34 for correct fitting of guide pillar to the die plate.

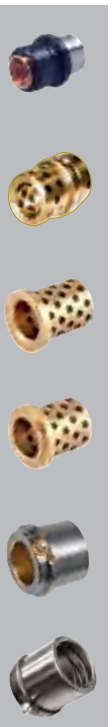
Please do not use two products without oil grooved together. One of the products should be with oil grooved.

Die Producers: Should pay attention to choose products suitable to the tolerances / standards in guide pillar & bush selection.

To prevent incorrect closing of dies, three pieces main dimension and one piece auxiliary dimension can be used:

(15 - 19 - 24 - 32 - 38 - 48 - 60)

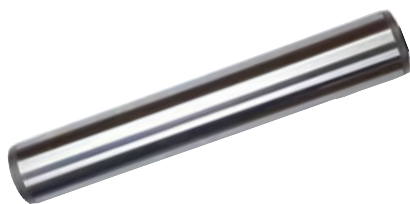
For precision and safe mounting: G110 mounting flange.



Guide Pillar, Plain & Threaded

DIN 9825 / ISO 9182

Code: G24



Note: Section (d), two different products are to avoid incorrect closing of die during mounting, three pieces main dimension and one piece auxiliary should be used ($d = \emptyset 16 - 19 - 24 - 32 - 38 - 48 - 60$ mm).

If extreme lateral forces are occurred at dies, in these cases, self-lubricating wear plates should be used with pillars.

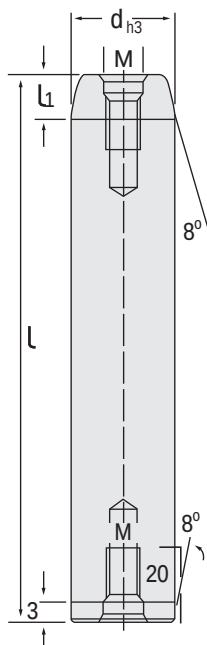
guide pillars are polished with surface polishing machine at final stage of production (after grinding).



Order: G24. d x L

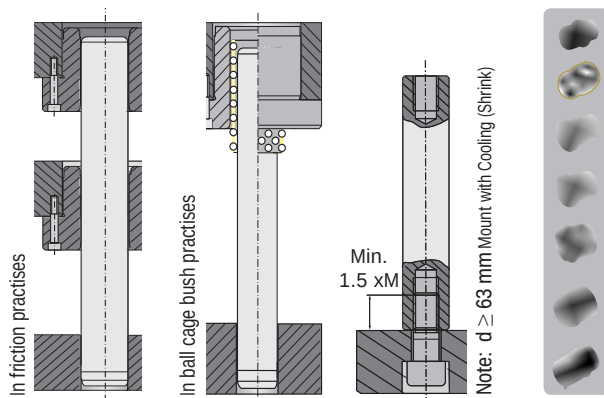
Material: $< \emptyset 20 = 1.7131$
 $> \emptyset 20 = 1.1213$ (Cf53)
 Hardness: 58 - 62 HRC

Operating Components: All sliding systems also can be used with ball cage bush.



Code: G24

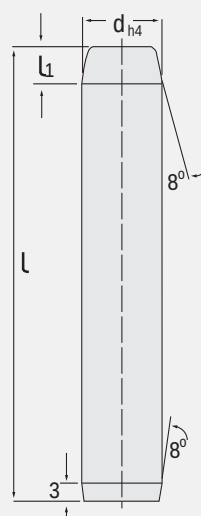
$\emptyset$ d	L mm	L1 mm	M
16 15	90	4	M8
	100		
	112		
	125		
	140		
	160		
	180		
	200		
19 20	100	4	M8
	112		
	125		
	140		
	160		
	180		
	200		
	224		
24 25	100	6	M8
	112		
	125		
	140		
	160		
	180		
	200		
	224		
	250		
	280		
	315		
	315		
$\emptyset$ d	L mm	L1 mm	M
32 30	112	6	M8
	125		
	140		
	160		
	180		
	200		
	224		
	250		
38 40	125	10	M8
	140		
	160		
	180		
	200		
	224		
	250		
	280		
48 50	200	10	M12
	224		
	250		
	280		
	315		
	355		
	400		
	400		
60 63	200	15	M12
	224		
	250		
	280		
	315		
	355		
	400		
	400		
80	250	18	M16
	280		
	315		
	355		
	400		
	450		
	500		
	500		



Guide Pillar

DIN 9825 / ISO 9182

Code: G19

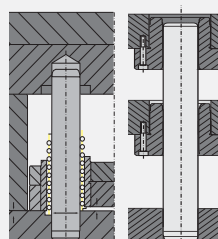


$\emptyset$ d	L mm	L1 mm
12	100	6
	125	
18	125	6
	160	
30	160	7
	240	

* In-die auxiliary guide pillar

* Guide pillars for ejector plate in injection moulds

It is used as auxiliary guiding component in dies or progressive die plates. It can be used with all sliding system or ball cage bush tools. When precision and iterative high speeds are required in injection mould ejector plates, it is suitable to use together with ball cage tools and also with sliding and self-lubricating guide bush components.



Order: G19. d x L

Material: $< \emptyset 20 = 1.7131$
 $> \emptyset 20 = 1.1213$ (Cf53)
 Hardness: 58 - 62 HRC

Operating Components: All sliding systems also can be used with ball cage bush.

NEW

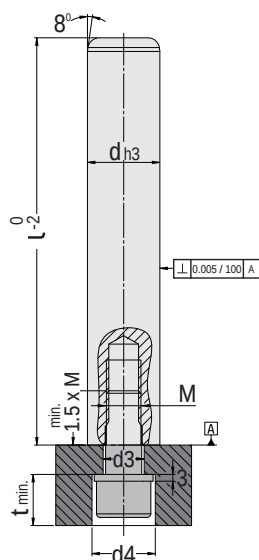


Code: **G166**

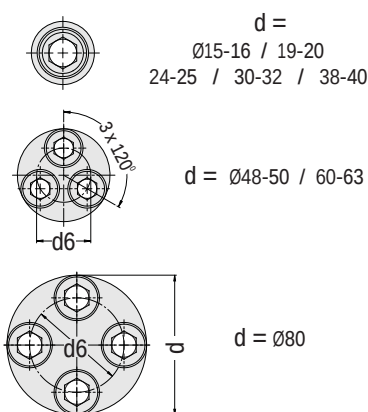
Guide Pillar - Bolted Type

DIN 9825 / ISO 9182

* G166 is supplied with a screw and washer.
guide pillars are polished with surface
polishing machine at final stage of production
(after grinding).



Hole pattern for pillar fastening:



Note: Section (d), two different products are to avoid
incorrect closing of die during mounting, three pieces
main dimension and one piece auxiliary should be
used (d= Ø 16 - 19 - 24 - 32 - 38 - 48 - 60 mm).

If extreme lateral forces are occurred at dies, in these
cases, self-lubricating wear plates should be used
with pillars.

d mm	d3 mm	d4 mm	d6 mm	t mm	M	L mm	Cap Screw	(Nm)
15 16	9	17	-	12	8	90	M8 x 35	Tightening torque: 21
						100		
						112		
						125		
						140		
						160		
						180		
						200		
						224		
						250		
19 20	11	20	-	14	10	100	M10 x 40	Tightening torque: 37
						112		
						125		
						140		
						160		
						180		
						200		
						224		
						250		
						280		
24 25	14	22	-	16	12	100	M12 x 40	Tightening torque: 85
						112		
						125		
						140		
						160		
						180		
						200		
						224		
						250		
						280		
30 32	18	28	-	20.5	16	100	M16 x 40	Tightening torque: 150
						112		
						125		
						140		
						160		
						180		
						200		
						224		
						250		
						280		

d mm	d3 mm	d4 mm	d6 mm	t mm	M	L mm	Cap Screw	(Nm)
38 40	18	28	-	20.5	16	160	M16 x 40	Tightening torque: 150
						180		
						200		
						224		
						250		
						280		
						315		
						355		
						400		
						450		
48 50	14	22	28	16	12	180	M12 x 50	Tightening torque: 85
						200		
						224		
						250		
						280		
						315		
						355		
						400		
						450		
						500		
60 63	18	28	34	20.5	16	250	M16 x 60	Tightening torque: 200
						280		
						315		
						355		
						400		
						450		
						500		
						550		
						600		
						600		
80	18	28	54	20.5	16	280	M16 x 60	Tightening torque: 200
						315		
						355		
						400		
						450		
						500		
						550		
						600		
						600		
						600		



Order: **G166**. d x l

Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Operating Components: All sliding
systems also can be used with ball cage bush.

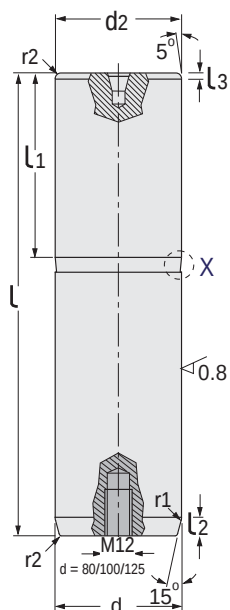


Guide Pillar

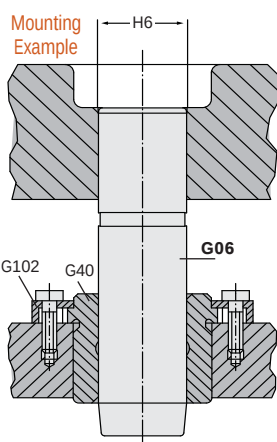
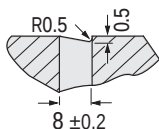
Reference: FCA

Code: **G06**

DIN 9833



X Detail



Code: **G06**

d f6	l mm	d2 r6	l2 +0.8	l3 +0.8	l1 +0.8	r1	r2
ø 32	160						
	180	32	8	4	45	15	2
	200						
ø 40	200						
	224	40	8	4	56	20	2
	240						
ø 50	224						
	250	50	10	4	70	20	2.5
	280						
ø 63	250						
	280	63	10	4	80	25	2.5
	315						

d f6	l mm	d2 r6	l2 +0.8	l3 +0.8	l1 +0.8	r1	r2
ø 80	250						
	280	80	10	4	100	30	2.5
	315						
	355						
ø 100	315						
	355	100	10	4	125	30	3
	400						
	400						
ø 125	355						
	400						
	450	125	12	4	140	40	4
	500						
	550						



Order: **G06**. d x l

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC

FCA FIAT CHRYSLER AUTOMOBILES

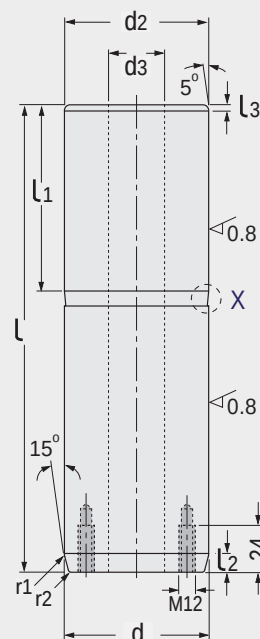


Guide Pillar

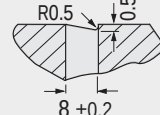
Reference: FCA

Code: **G07**

DIN 9833



X Detail



Code: **G07**

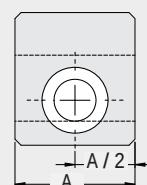


Order: **G07**. d x l

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC

d f6	l mm	d2 r6	d3 ±0.2	l2 +0.8	l3 +0.8	l1 +0.8	r1	r2
80	250							
	280	80	40	10	4	100	30	4
	315							
	355							
100	315							
	355	100	50	10	4	125	30	5
	400							
125	355							
	400							
	450	125	65	12	5	140	30	5
	500							
	550							

Guide Pillar & Bush Clamp



Order: **G102**. Form

Code: **G102**

Ø d1 Bush / Pillar	l mm	A mm	B mm	H mm	H2 mm	H3 mm	D2 Ø	D3 Ø	Form Screw
25 - 32	20	20	12.5	10	6.3	5	7	11	A M.6 x16
40 - 50									
63 - 80	32	32	21	16	10	10	11.5	17.5	D M.10 x25
100 - 125									
160									

Guide Pillar

Code: G02

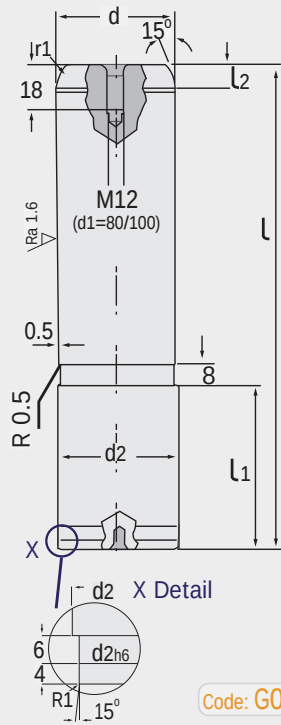
Reference: NAAMS

d f6	L mm	d2 r6	L1 mm	L2 mm	r1
25	140				
	160	25	40	4	2
	180				
32	140				
	160	32	45	6	2
	180				
	200				
40	160				
	180				
	200	40	56	8	2
	224				
	250				
50	160				
	180				
	200				
	224	50	70	12	2.5
	250				
	280				
	315				



Order: G02. d x L

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC



Code: G02

d f6	L mm	d2 r6	L1 mm	L2 mm	r1
63	200				
	224				
	250				
	280	63	80	12	2.5
	315				
80	250				
	280				
	315	80	100	15	3
	355				
	400				
100	315				
	355	100	125	18	3
	400				
	500				

Code: G01

d f6	L mm	d2 r6	d3	L1 mm	L2 mm	r1
25	140					
	160	25	33	40	4	2
	180					
32	140					
	160	32	40	45	6	2
	180					
	200					
40	160					
	180					
	200	40	50	56	10	2
	224					
	250					
50	160					
	180					
	200					
	224	50	60	70	12	2
	250					
63	200					
	224					
	250					
	280	63	80	80	12	2
	315					
80	250					
	280					
	315	80	90	100	15	2
	355					
	400					
100	315					
	355	100	110	125	20	3
	400					
	500					



Order: G01. d x L

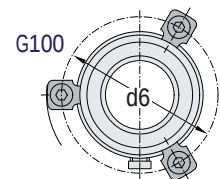
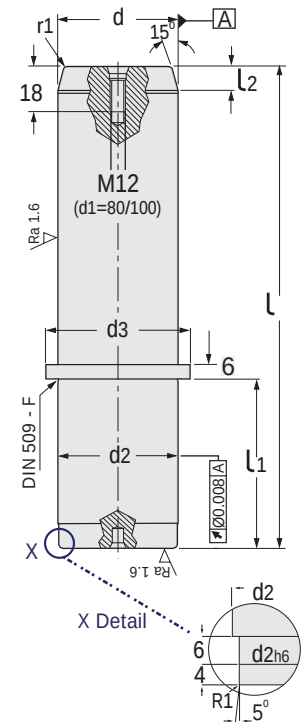
Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC



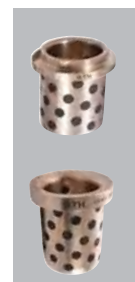
Guide Pillar with Centre Collar

Code: G01

Reference: NAAMS



Clamping Detail



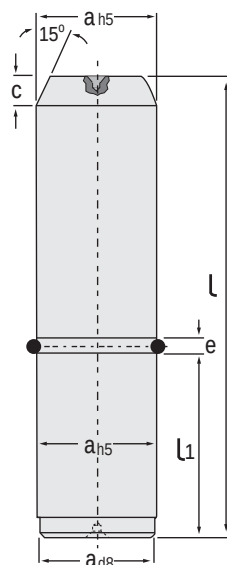
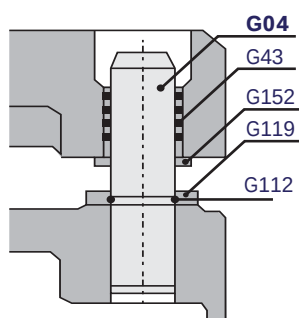
Ø d1	d6
25	45.2
32	52.4
40	62.8
50	73.0
63	93.2
80	103.4
100	123.4



Guide Pillar

Reference: PSA

Code: **G04**



Code: **G04**

a h5	l mm	a d8	l1 mm	c mm	e
25	100	25	40	8	3
	125				
32	125	32	45	8	3
	220				
40	180	40	63	8	3
	200				
	220				



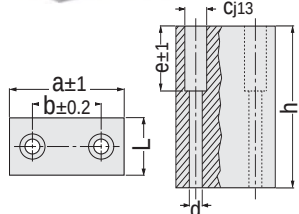
Order: **G04**. a x l

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Compensation Block

Reference: PSA

Code: **G81**



h	a	l	b	c	d	e
55	80	30	55	18	9	20
55	110	40	80	22	14	20
101	80	35	55	18	9	57
137	100	50	60	22	13	55
138	100	45	55	22	14	43
138	120	60	80	22	14	43

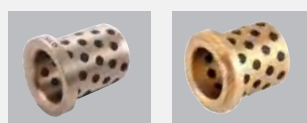
Order Example: **G81**. h x a



Guide Pillar

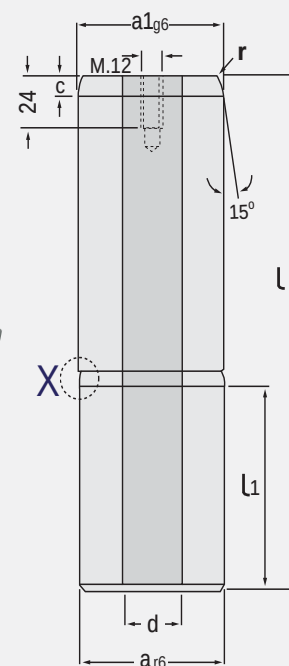
Reference: PSA

Code: **G05**

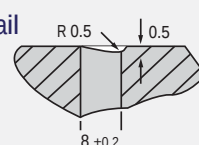


Order: **G05**. a x l

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC



X - Detail

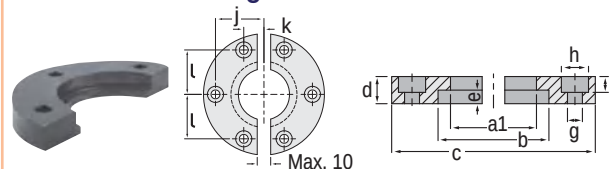


Code: **G05**

a r6	l mm	a1 g6	l1 mm	c mm	d Ø	r
100	250	100	125	10	50	3
	280					
	315					
	355					
125	400	125	140	12	65	4
	315					
	355					
	400					
125	450	125	140	12	65	4
	450					

Bush Holder Flange

Code: **G118**



Bush	a1	b	c	d	e	f	g	h	j	k	l
25	32	41	72	10	5	7	6.6	12	-	20	20
32	40	51	80	12	6	7	6.6	12	-	21	25
40	50	61	100	12	8	7	6.6	12	41	14	38.5
50	63	72	125	16	10	9	9	16	49	17	46
63	80	91	140	20	12	11	11	18	57.5	17	55
80	100	113	180	25	16	13	14	22	72	20	70
100	125	141	200	32	20	13	14	22	85	25	81

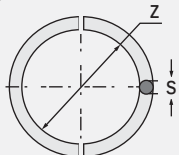
Order Example: **G118**. Bush (G118.25)

Circlip

Code: G112



G02-G03-G04-G05
G06-G07-G09-G20
It is used
with above
guide pillars.



Pillar	z	s
Ø 25	22.5	2.5
Ø 32	28	4
Ø 40	36	4
Ø 50	46	4
Ø 63	57	6
Ø 80	74	6
Ø 100	94	6

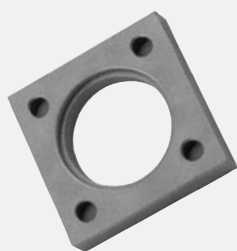


Order: G112. Pillar

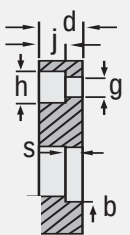
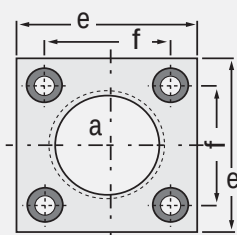
Square Flange for Guide Pillar

Reference: CNOMO
Reference: PSA

Code: G119



G03
G04
G05
It is used
with above
guide pillars.



a Pillar	b	d	e	f	g	h	j	s
25	28	10	45	31	6.6	11	7	2.7
32	37	10	56	36	6.6	11	7	4.2
40	45	12	70	50	6.6	11	7	4.2
50	55	14	80	55	9	16	9	4.2
63	70	18	100	70	11	18	11	6.2
80	87	20	110	80	13	22	14	6.2
100	107	20	140	100	13	22	14	6.2



Order: G119. a (pillar)

Code: G03

a h5	l mm	b	l1 mm	l2 mm	l3 mm	k	r
25	100	22.3	25	8	8	2.7	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						
	400						
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						
	550						
	600						
100	355	93.8	160	16	18	6.2	3
	400						
	450						
	500						



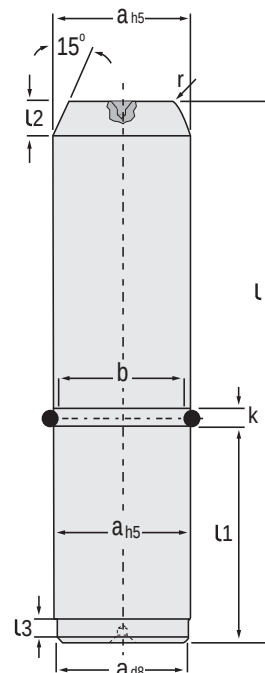
Order: G03. a x l



Guide Pillar

Reference: CNOMO

Code: G03

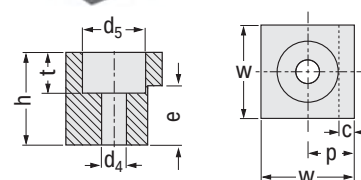


Bush Clamp

Code: G102E

Reference: CNOMO

Order Example:
G102E.40



Bush	w	p	h	e	c	t	d ₄	d ₅
Ø 40	18	9.5	12	8	3	7	6.6	11
Ø 50	22	12	16	10	4	9	9	15
Ø 63	26	15	20	12	5	11	11	18
Ø 80	26	15	25	16	5	11	11	18
Ø 100	26	15	32	20	5	11	11	18



Automotive Standards

RENAULT

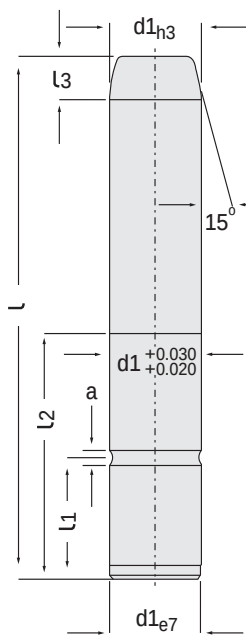


Guide Pillar for Cast Block Bush Flange Cast Bush - Rectangular

Code: G20

Code: G79

G20 Guide pillar type using with G80 rectangular flange cast bush. In progressive form dies, it is reduced disassembly / assembly period of guide pillar & bush. No need to opening of guide pillar & bush holes in die is required. It reduces labor cost and also saves time by shortening production period of die. These are die components consisting of guide bush set inserted into lower and upper case.



Flange Cast Bush Rectangular

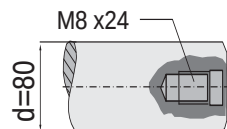
Code: G79



Inner has been honed
to $\varnothing d + 0.015$

Dimension details of
rectangular flange cast bush
are same as other bushes
(G80..)

Order: G79. d1



Guide Pillar

Code: G20

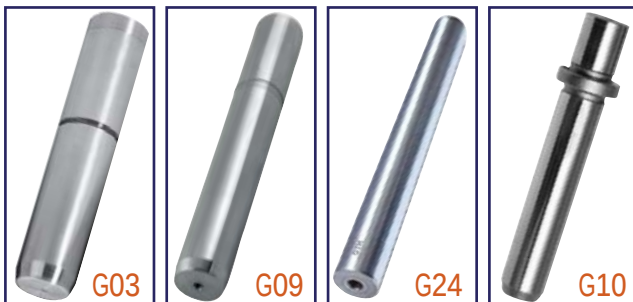
$\varnothing$ d1	l mm	l1	l2	a	l3
40	180	37	77	8	10
	220				
	260				
	300				
	355				
	400				
50	200	47	95	8	10
	240				
	280				
	315				
	355				
	400				
63	240	60	120	8	12
	280				
	315				
	355				
	400				
	450				
80	240	60	120	8	16
	280				
	315				
	355				
	400				
	450				
	500				



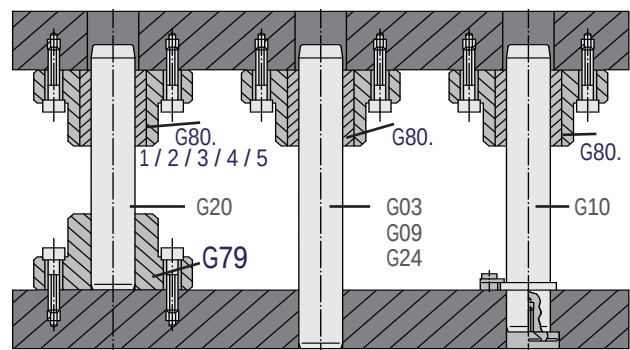
Order: G20. d1 x l
Cast Bush: G79 x d1

Material: 1.1213 (CF53)
Hardness: 58 - 62 HRC

IMPORTANT: Check
perpendicularity of guide
pillars after mounting.



Note: Other guide pillars conforming to rectangular flange cast bush connection. It can be used with G03 - G09 - G24 - G10 - G20 in dies.



Flange Cast Bush - Rectangular

Steel Type

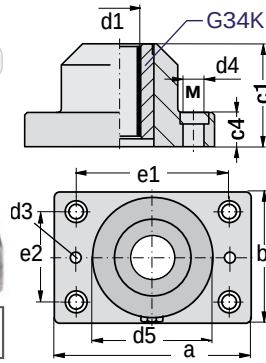
Code: G80.1



G20 + G79 + G80.1
Set as per request



Order: G80.1 x d1



Steel Type

Code: G80.1

Upper and lower parts of flange cast bushes have been machined G34K Guide Bush and grease fitting have been added.

d1	a mm	b mm	c1	c4	d3 Pin	d4 M	Ø d5	e1	e2
40	130	80	77	30	Ø10	13 M12	70	95	45
50	160	96	95	35	Ø10	15 M14	83	118	55
63	180	110	120	35	Ø12	17 M16	94	132	62
80	215	130	120	40	Ø14	21 M20	112	160	75

Flange Cast Bush - Rectangular

Bronze Type

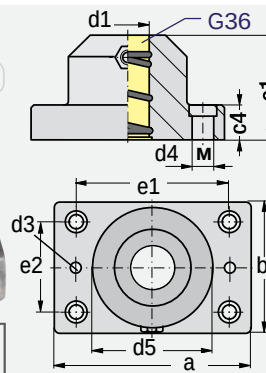
Code: G80.2



G20 + G79 + G80.2
Set as per request



Order: G80.2 x d1



Bronze Type

Code: G80.2

Upper and lower parts of flange cast bushes have been machined G36 Guide Bush and grease fitting have been added.

d1	a mm	b mm	c1	c4	d3 Pin	d4 M	Ø d5	e1	e2
40	130	80	77	30	Ø10	13 M12	70	95	45
50	160	96	95	35	Ø10	15 M14	83	118	55
63	180	110	120	35	Ø12	17 M16	94	132	62
80	215	130	120	40	Ø14	21 M20	112	160	75

Flange Cast Bush - Rectangular

Cast Type

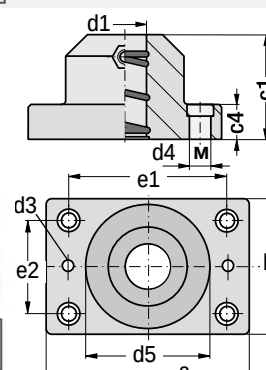
Code: G80.3



G20 + G79 + G80.3
Set as per request



Order: G80.3 x d1



Cast Type

Code: G80.3

Upper and lower parts of Flange cast bushes have been machined inner hole has been machined as cast bush bearing.

d1 R6	a mm	b mm	c1	c4	d3 Pin	d4 M	Ø d5	e1	e2
40	130	80	77	30	Ø10	13 M12	70	95	45
50	160	96	95	35	Ø10	15 M14	83	118	55
63	180	110	120	35	Ø12	17 M16	94	132	62
80	215	130	120	40	Ø14	21 M20	112	160	75

Flange Cast Bush - Rectangular

Ball Cage Type

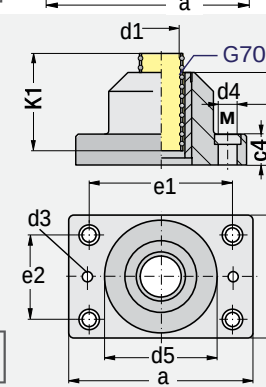
Code: G80.4



G20 + G79 + G80.4
Set as per request



Order: G80.4 x d1



Ball Cage Type

Code: G80.4

Upper and lower parts of flange cast bushes have been machined G38 Guide Bush and G70 Ball Cage Bush have been added.

d1	a mm	b mm	c1	c4	d3 Pin	d4 M	Ø d5	e1	e2	K1
40	130	80	77	30	Ø10	13 M12	70	95	45	80
50	160	96	95	35	Ø10	15 M14	83	118	55	105
63	180	110	120	35	Ø12	17 M16	94	132	62	140
80	215	130	120	40	Ø14	21 M20	112	160	75	140

Flange Cast Bush - Rectangular

Self-Lubricating Type

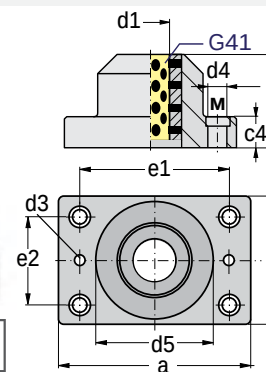
Code: G80.5



G20 + G79 + G80.5
Set as per request



Order: G80.5 x d1



Self-Lubricating Type

Code: G80.5

Upper and lower parts of flange cast bushes have been machined G41 Self-Lub. Guide Bush have been added.

d1	a mm	b mm	c1	c4	d3 Pin	d4 M	Ø d5	e1	e2
40	130	80	77	30	Ø10	13 M12	70	95	45
50	160	96	95	35	Ø10	15 M14	83	118	55
63	180	110	120	35	Ø12	17 M16	94	132	62
80	215	130	120	40	Ø14	21 M20	112	160	75



Guide Pillar with Centre Flange

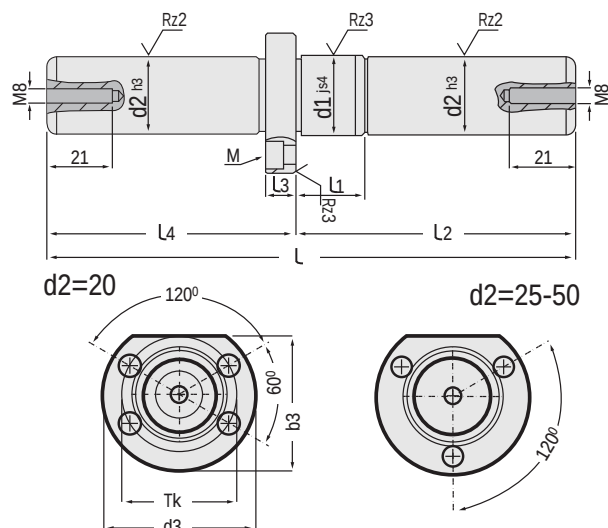
(Screw clamping guide pillar with centre collar)

It can be used in standard pillar systems with many bearing bush connections. No clamping is necessary for die mounting position. It is fixed with hexagon socket head cap screws. The feature of centre flange: The protruding parts near the plate is prevented and a partial empty area is obtained in die mounting. It can be directly mounted in slots drilled on die plate.

Shrink fit punchdown should not be done during mounting.

It can be inserted with compatible tolerances with medium / shrink fit (bushes) and positioned with screws.

Code: **G135**



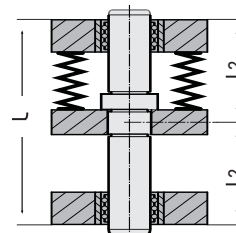
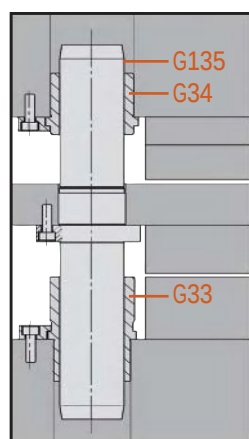
Compatible Bushes

d2	l	l1	l2	l4	l3	d1	d3	b3	Tk	M
20	150	22	80	70	10	22	44	39	33	M5 4 pcs.
	160		90	70						
	180		90	90						
	200		90	110						
25	170	22	90	80	10	26	50	45	38	M5 3 pcs.
	190		110	80						
	210		120	90						
	190		90	100						
	200		100	100						
	260		160	100						
30	220	27	110	110	10	32	58	53	46	M5 3 pcs.
	230		120	110						
	250		120	130						
	260		130	130						
	190		100	90						
	200		110	90						
32	260	27	160	100	10	34	60	55	48	M5 3 pcs.
	220		110	110						
	230		120	110						
	250		120	130						
	260		130	130						
	190		100	90						
40	220	27	120	100	12	42	70	65	56	M6 3 pcs.
	240		120	120						
	250		130	120						
	270		130	140						
	210		110	100						
50	250	36	120	130	15	52	80	75	66	M6 3 pcs.
	260		110	150						
	270		120	150						

Guide Pillar with Centre Flange

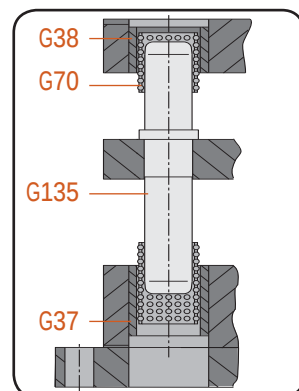
(Ball cage bearing unit)

Dies which are designed with this ball cage bush have high speed and rigid connection. Hole tolerance for shrink fit is N5. Fixing place of die guide pillar affects securing lateral load resistance of die bushings. In dies with guide plates or having guide pillar mounted to die from bottom or top, if the distance (L) applying power is equal, bending and rotary values of guide pillars are equal. By securing die guide pillar to the guide plate, there will be important improvements at bending values of pillars. Until the distance (L / 2) between application point of power and fastening surface reduces to half, load lifting capacity is increased 8 times.



Order: **G135**. d2 x l 2 x l

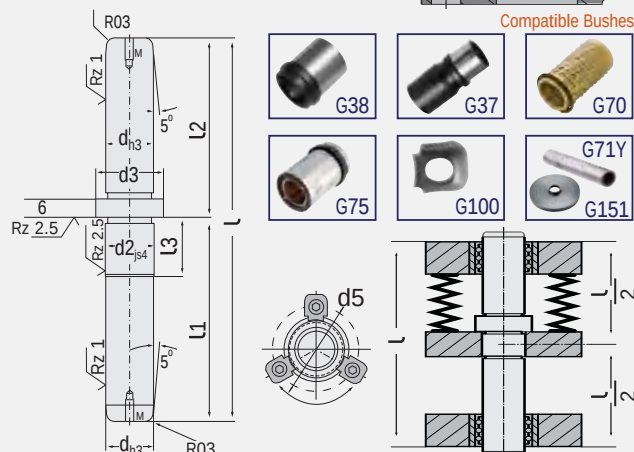
Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC





Code: **G08**

Guide Pillar with Centre Fixing



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

d	l	l1	l2	l3	d2	d3	d5	M
20	160	90	70	19	20.05	26	37.6	M8
	170	100	70					
	180	100	80					
	190	110	80					
	200	110	90					
	210	110	100					
25	180	100	80	22	25.05	32	44.0	M8
	190	110	80					
	200	110	90					
	210	120	90					
	220	120	100					
	230	120	110					
30	180	100	80	25	30.05	38	50.4	M8
	190	110	80					
	200	110	90					
	210	120	90					
	220	120	100					
	230	130	100					
40	200	110	90	27	40.05	50	62.8	M8
	210	120	90					
	220	120	100					
	230	130	100					
	240	130	110					
	250	140	110					



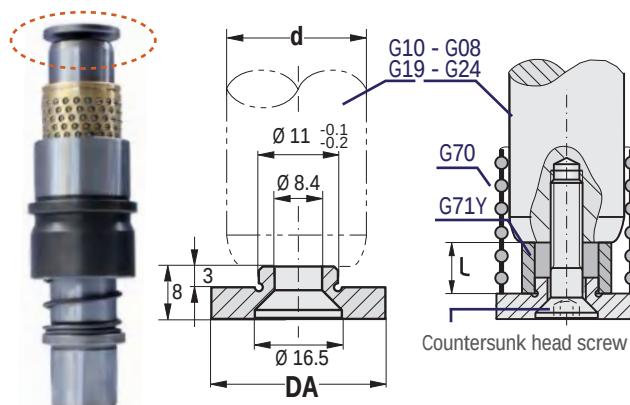
Order: **G08. d x l**

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC



Code: **G151**

Ball Cage Holder Flange (Locking flange for ball cage)



Holder Flange (locking flange for ball cage)

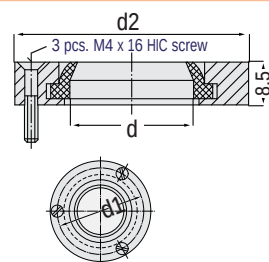
In ball cage bush systems, it prevents detaching of cage (G70) from guide pillar during operating. It is practical and provides convenience in die mounting. In mounting to die: Spacer tube (G71Y) of ball cage stroke distance and countersunk head screw (HIC) can be adjusted in desired length.

d	DA	Pillar Dia.	d	DA	Pillar Dia.
20	25	Ø 20	50	57	Ø 50
25	30	Ø 25	60	67	Ø 60
30	37	Ø 30	63	70	Ø 63
40	47	Ø 40			



Order: **G151. d**

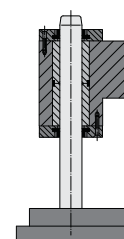
Material: 1.7131 (16MnCr5)



Perforated Flange

Code: **G22**

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

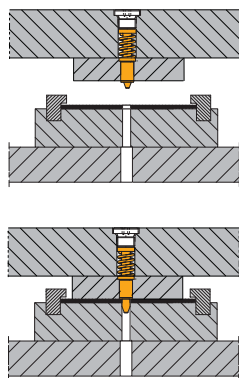


Guide Pillar Protection Flange: Guide pillar protection flange protects dirt to be occurred at dies or thrust etc. Different various usage areas can be created in dies.



Order: **G22. d**

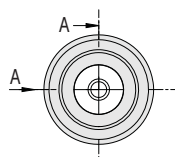
NEW



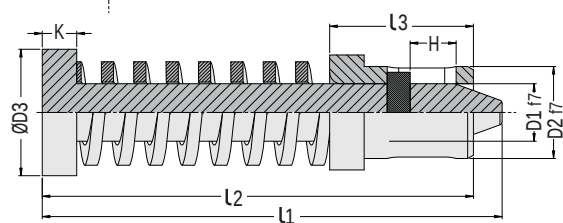
Pilot Unit

Code: G165

"G165" is used for centering of the moving sheet metal in progressive dies in each step. It is a compact and useful product.



$$1N = 0.1 \text{ daN} = 0.102 \text{ kgf}$$

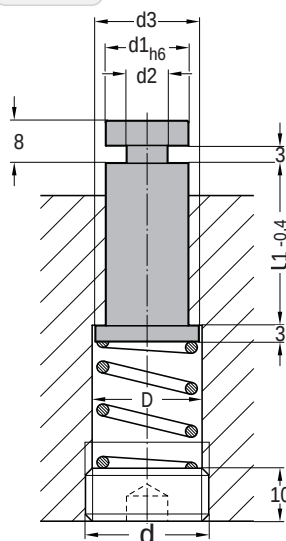


Order Code	F0 (N) preloaded	F1 (N) pressed	D1	L1	D2	D3	L2	L3	K	H
G165.05401	11	30	5	40	8	11	36	12	3	4.5
G165.05402	25	70								
G165.05403	30	84								
G165.05404	40	112								
G165.05405	55	155								
G165.05441	11	30	5	44	8	11	40	16	3	4.5
G165.05442	25	70								
G165.05443	30	84								
G165.05444	40	112								
G165.05445	55	155								
G165.08481	44	122	8	48	12	16	41	16	4	4.5
G165.08482	58	164								
G165.08483	79	220								
G165.08484	123	346								
G165.08485	165	460								
G165.08486	189	530	8	52	12	16	45	20	4	4.5
G165.08521	44	122								
G165.08522	58	164								
G165.08523	79	220								
G165.08524	123	346								
G165.08525	165	460	9.8	63.2	15	18	53	28	4	3.5
G165.08526	189	530								
G165.10631	140	391								
G165.10632	245	680								
G165.10633	540	1512								



Sheet Lifting Pin

Code: G23



(for sheet lifting)

Code: G23

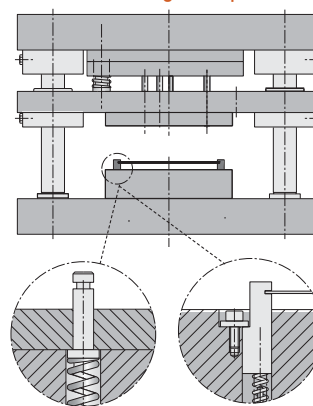
d1 h6	L1-0.4 mm	Ø d2	Ø d3	D d
8	20	5	10	10.5 M.12 x1.5
	25			
	32			
	40			
10	25	6	12	12.5 M.14 x1.5
	32			
	40			
	50			
13	25	7	16	16.5 M.18 x1.5
	32			
	40			
	50			
16	32	8	20	21 M.22 x1.5
	40			
	40			
	50			



Order: G23. d1 x L1

Material: 1.7131 (16MnCr5)
Hardness: 58-60 HRC

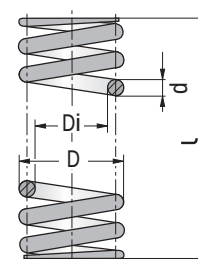
Mounting Example



It is used to align and lifting sheet in progressive / multi-stage forming dies. G145 - Compression spring set screw and round steel spring can be used for mounting.

Round Steel Spring

Code: G23S



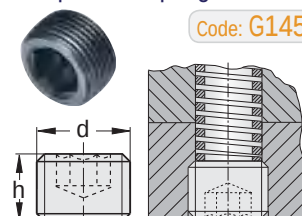
(sheet lifting spring)

D	Di	d	L
10.5	8.5	1.5	40
12.5	10.5	1.5	55
16.5	13	2	40
21	17	2.5	40

L: Spring length / die plate selection as per dimension.

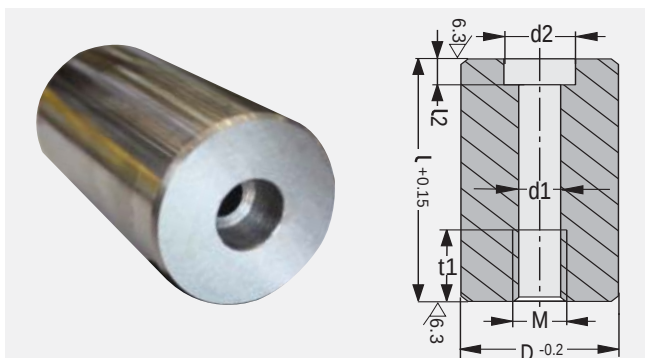
Compression Spring Set Screw

Code: G145



d Thread	dh Hole	h Length	SW Allen
M.12 x 1.5	10.5	10	6
M.14 x 1.5	12.5	10	6
M.18 x 1.5	16.5	10	8
M.22 x 1.5	20.5	10	8



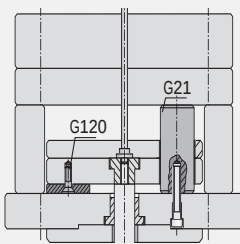


Support Pillar for Injection Mould (Ejector plate / thrust wedge)

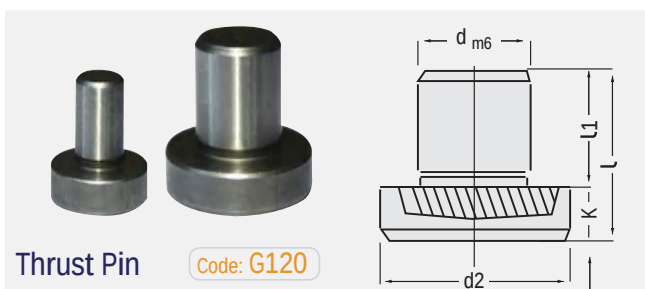
Code: **G21**

D	l	d1	d2	l2	t1	M
32	47	6.5	11	7.5	15	M8
	57					
	67					
	77					
	87					
40	97	8.5	15	10	20	M10
	107					
	117					
	127					
	137					
50	147	10.5	18	12	25	M10
	157					
	167					
	177					
	187					

In injection moulds; The thrust wedge that can be used in order to avoid dent / load 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), G110 mounting flange can be used.



Order: **G21. D x l**



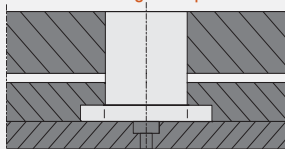
Thrust Pin

Code: **G120**

Stop / Thrust Pin: It is compatible to use between holder plates of injection moulds or dies.

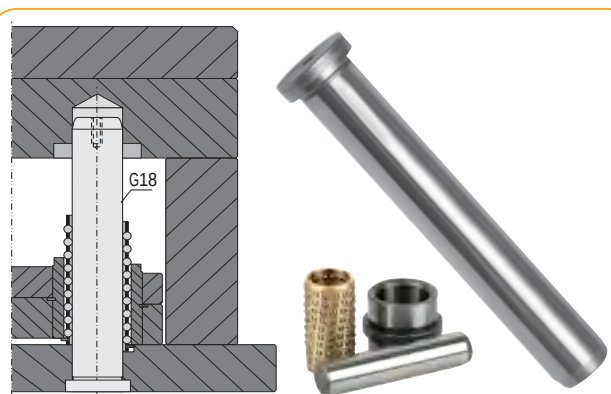
d m6	l mm	l1 mm	d2	K
8	17	12	16	5
	21	15	24	6
14	17	12	16	5
	21	15	24	6

Mounting Example



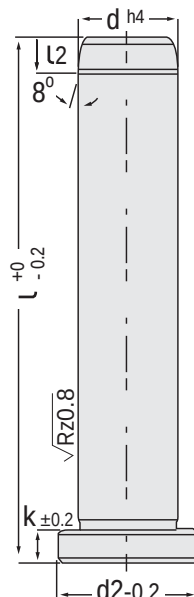
Order: **G120. d x l**

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC



Guide Pillar for Ball Cage

Code: **G18**



Compatible Bushes



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

Code: **G18**

d	l	l2	d2	k
12	80	4	16	4
	100			
	120			
18	120	7	22	6
	140			
	160			
20	120	7	24	6
	140			
	160			
	200			
25	140	7	28	6
	160			
	200			
	240			
30	160	7	36	6
	200			
	240			
40	180	10	48	10
	200			
	240			
	300			



Order: **G18. d x l**

Material: $\leq \varnothing 20 = 1.7131$
 $> \varnothing 20 = 1.1213$ (Cf53)
Hardness: 58 - 62 HRC

G18 - Areas of Usage:

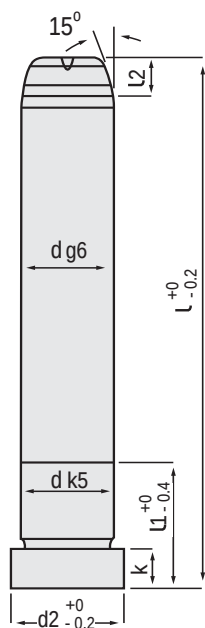
- * In ejector plates, ball cage bush precision ejector systems.
- * It is used in dies as intermediate centering components.



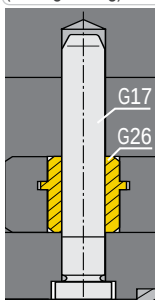
Guide Pillar (without oil groove)

Code: **G17**

It is suitable as ejector plates and core systems at injection moulds and as die inner guide pillar in dies. It is compatible using with self-lubricating bronze bushes or bushing components with oil groove.



guide pillars are polished with surface polishing machine at final stage of production (after grinding).



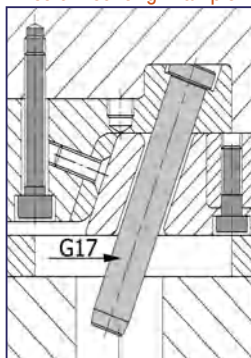
d	l	l1	l2	d2	k
10	40	13	4	12	3
	60				
	80				
	100	15			
	120				
12	40	18	4	16	6
	60				
	80				
	100				
	120	22			
	140				
	160				
14	60	22	4	18	8
	80				
	100				
	120	26			
	140				
	160				
	180				
16	40	16	7	20	8
	60	24			
	80				
	100				
	120				
	140	26			
	160				
	180				
	200				

d	l	l1	l2	d2	k
18	60	26	7	22	8
	80				
	100				
	120				
	140	28			
	160				
	180				
	200				
	240				
20	60	28	7	24	8
	80				
	100				
	120				
	140	32			
	160				
	180				
	200				
	240				
22	80	37	7	26	15
	100				
	120				
	140				
	160	43			
	180				
	200				
	220				
	240				
	300				

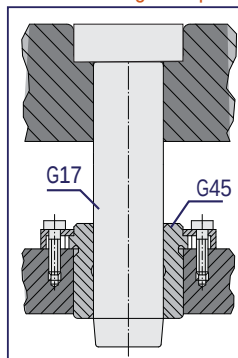
d	l	l1	l2	d2	k
24	80	39	7	28	15
	100				
	120				
	140	45			
	160				
	180				
	200				
	220				
	240				
	300				
NEW Note: Ø 25 Series are added in our stocks.	80	35	7	28	15
	100				
	120				
	140	44			
	160				
	180				
	200				
	220				
	240				
	300				
30	100	45	7	36	15
	120				
	140				
	160				
	180	53			
	200				
	220				
	240				
	300				
40	160	55	10	48	15
	180				
	200				
	220	63			
	240				
	280				
	300				
	320				
	360				
50	160	65	10	58	15
	200				
	240				
	300				
	360				

NEW
Note: Ø 25 Series are added in our stocks.

Mould Mounting Example



Die Mounting Example



Order: **G17. d x l**

Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

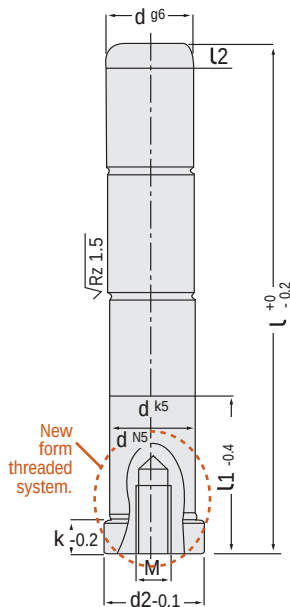
Operating Components: with all lubricated type bushes in injection moulds / dies.



Guide Pillar (with oil groove)

Code: **G11**

It can be fixed by thread in cap direction. By disassembling mould / die without dismantling, it provides process iteration advantage. The corners at oil grooves are chamfered (it reduces friction).



G49
G30

G32



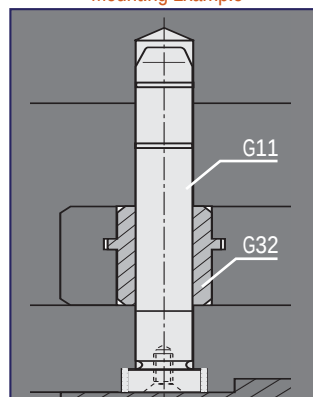
Order: **G11. d x L**

Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (CF53)
Hardness: 58 - 62 HRC

Operating Components: With all unlubricated steel bushes in injection moulds or dies.

d	L	L1	L2	d2	k	M
10	40					
	60	13				
	80		4	12	3	-
	100	15				
	120					
	140					
12	40					
	60	18				
	80					
	100		4	16	6	-
	120					
	140	22				
14	40					
	60	22				
	80					
	100		4	18	8	-
	120					
	140					
16	40	16				
	60					
	80	24				
	100					
	120		4	20	8	6
	140					

Mounting Example



d	L	L1	L2	d2	k	M
18	60					
	80	26				
	100					
	120					
	140		4	22	8	8
	160					
20	60					
	80	28				
	100					
	120					
	140					
	160		6	24	8	8
22	60					
	80	32				
	100					
	120					
	140					
	160					
24	60					
	80	37				
	100					
	120					
	140					
	160		6	26	15	8

d	L	L1	L2	d2	k	M
25	60					
	80	35				
	100					
	120					
	140					
	160					
30	60					
	80	44				
	100					
	120					
	140					
	160					
40	60					
	80	45				
	100					
	120					
	140					
	160					
50	60					
	80	53				
	100					
	120					
	140					
	160					

NEW
Note:
Ø 25
Series
are added
in our
stocks.

IMPORTANT!

Injection Mould:

Our guide pillars & bushes cover standard mould systems. But, guide pillar & bushes with different tolerances should be selected for aluminum injection moulds (high temperature / pressure). It should be requested from our company (production with special materials).

ATTENTION !

Please do not use two products together that have no oil grooves. One of these products should be oil grooved.

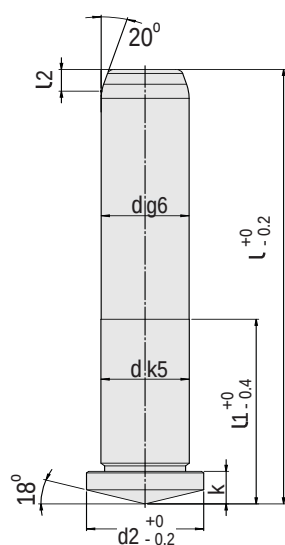
NEW



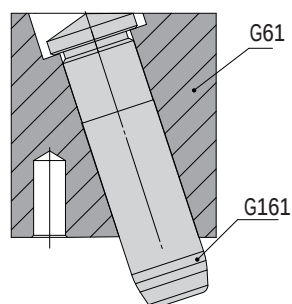
Angled Guide Pillar

Code: G161

- Compatible Guide Bush: "G61"
- No reworking necessary before mounting.



Mounting Example



Order: G161. d x L

Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Code: G161

d	L	L1	L2	d2	k
12	60	34	4	16	6
	80				
	100				
	120				
	140				
	160				
14	60	34	4	18	8
	80				
	100				
	120				
	140				
	160				
16	60	43	7	20	8
	80				
	100				
	120				
	140				
	160				
20	60	43	7	24	8
	80				
	100				
	120				
	140				
	160				
25	60	52	7	28	15
	80				
	100				
	120				
	140				
	160				
30	60	60	7	36	15
	80				
	100				
	120				
	140				
	160				



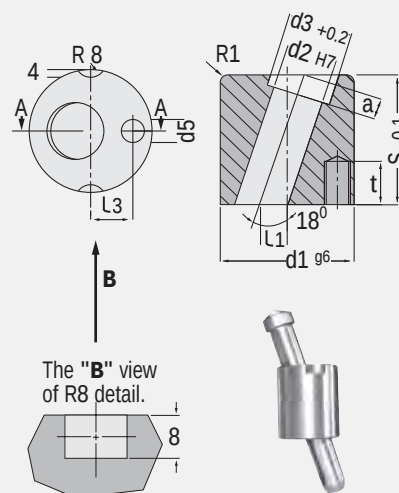
NEW

Angled Guide Bush

Code: G61

(Core pillar holder)

This unit eliminates angular perforation requirement. To insert this unit, only a hole is perforated at the front of the mould. Angled guide bush can be used with G161, G14 or G17 guide pillar.



The "B" view of R8 detail.

Angled Guide Bush

Code: G61

d2 H7	s -0.1	d1 g6	a	d3 +0.2	L1 ±0.15	L3	d5	t
12	36	32	6	17	7	10	M6	11
14	36	36	8	19	7	12	M8	16
16	46	40	8	21	8.5	13.5	M8	16
20	46	45	8	25	8.5	15	M8	16
25	56	50	15	29	10	16	M8	16
30	66	63	15	37	12	21	M10	20



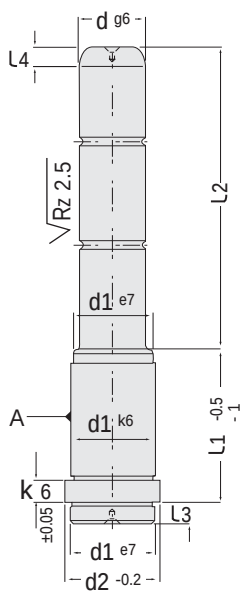
Order: G61. d2

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC



Code: G13

Guide Pillar with Centring Collar (with oil groove & without oil groove)

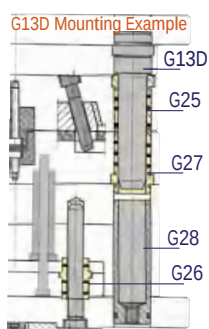
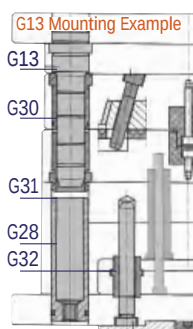


Code: G13



(without oil groove)
"As per request"

Code: G13D



Guide Pillar with Centring Collar (with oil groove & without oil groove) Code: G13

d	L1	L2	L3	L4	d1	d2	k	d	L1	L2	L3	L4	d1	d2	k
15 14	17	35	9	5	20	25	6	15 14	66	55	9	5	20	25	6
		55													
		75													
		95													
15 14	22	30	9	5	20	25	6	15 14	76	35	9	5	20	25	6
		50													
		70													
		90													
		110													
		125													
150															
15 14	27	30	9	5	20	25	6	15 14	96	55	9	5	20	25	6
		45													
		65													
		85													
		105													
		125													
		145													
		165													
15 14	36	35	9	5	20	25	6	15 14	17	55	9	5	26	31	6
		75													
		95													
		115													
		125													
		145													
		155													
		175													
15 14	46	35	9	5	20	25	6	15 14	22	85	9	5	26	31	6
		45													
		65													
		105													
		125													
		145													
15 14	56	35	9	5	20	25	6	15 14	27	105	9	5	26	31	6
		55													
		75													
		95													
		135													
		155													

Order: G13. d x l1 x l2
(with oil groove)

Order: G13D. d x l1 x l2
(without oil groove)

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC

Note: To avoid wrong closing of mould holder plates, 2 different products are used.

Main dimensions: 14 - 20 - 24 - 30 - 40 other auxiliary dimensions: 15 - 18 - 22 - 32 - 42.

To avoid wrong closing of mould holder plates, can be used at 3 main dimensions guide pillar and 1 auxiliary dimension guide pillars. mould pillars were polished with surface polishing machine at final stage of production. The products with oil groove are available in our stocks.

To be continued
on the next page

Guide Pillar with Centring Collar

Code: **G13** (with oil groove)

Code: **G13D** (without oil groove)

d	l1	l2	l3	l4	d1	d2
18 20	36	35				
		55				
		75				
		95				
		115	9	5	26	31
		135				
		165				
		225				
		255				k:6
18 20	46	35				
		45				
		65				
		85	9	5	26	31
		105				
		135				
		165				
		245				k:6
18 20	56	35				
		55				
		75				
		95	9	5	26	31
		115				
		135				
		155				k:6
18 20	66	35				
		55				
		75				
		95	9	5	26	31
		115				
		135				
		145				k:6
18 20	76	35				
		55				
		75	9	5	26	31
		95				
		115				
		135				k:6

d	l1	l2	l3	l4	d1	d2
18 20	86	55				
		75				
		95	9	5	26	31
		125				
		135				k:6
18 20	96	55				
		75	9	5	26	31
		95				
18 20	116	75	9	5	26	31
		115				
18 20	136	135	9	5	26	31
22 24	17	35	9	5	30	35
		55				
		75				
22 24	22	35				
		55				
		75	9	5	30	35
		95				
		105				
		130				k:6
22 24	27	35				
		45				
		65				
		85	9	5	30	35
		105				
		125				
		165				
		205				
		245				k:6
22 24	36	35				
		55				
		75	9	5	30	35
		95				
		115				
						k:6

d	l1	l2	l3	l4	d1	d2
22 24	36	135				
		165				
		205	9	5	30	35
		245				
		285				k:6
22 24	46	35				
		45				
		65				
		85	9	5	30	35
		105				
		125				
		165				
		205				k:6
22 24	56	35				
		55				
		75				
		95	9	5	30	35
		115				
		135				
		165				
		205				k:6
22 24	66	35				
		55				
		75	9	5	30	35
		95				
		115				
		135				
		155				k:6
22 24	76	35				
		55				
		75	9	5	30	35
		95				
		115				
		145				k:6
22 24	86	55				
		75	9	5	30	35
		95				
		125				
		135				k:6
22 24	96	55	9	5	30	35
		75				
		95				
		125				
						k:6

d	l1	l2	l3	l4	d1	d2
22 24	106	55				
		75				
		95	9	5	30	35
		115				
22 24	116	75				
		115	9	5	30	35
		155				
22 24	136	95	9	5	30	35
		135				
32 30	27	35				
		45				
		65				
		85				
		105	9	7	42	47
		125				
		145				
		165				
		185				
		245				k:6
32 30	36	35				
		55				
		75				
		95	9	7	42	47
		115				
		135				
		155				
		245				
		285				k:6
32 30	46	45				
		65				
		85				
		105	9	7	42	47
		125				
		145				
		165				
		245				
		285				k:6



Order: **G13**. d x l1 x l2
(with oil groove)

Order: **G13D**. d x l1 x l2
(without oil groove)

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC

IMPORTANT! Injection Mould: Our guide pillars & bushes cover standard mould systems. But, guide pillar & bushes with different tolerances should be selected for aluminum injection moulds (high temperature / pressure). It should be requested from our company (production with special materials).

To be continued
on the
next page
→

Guide Pillar with Centring Collar (with oil groove & without oil groove) Code: G13

d	l1	l2	l3	l4	d1	d2	k
32 30	56	45	9	7	42	47	6
		55					
		75					
		95					
		115					
		135					
		155					
		175					
32 30	66	245	9	7	42	47	6
		295					
		45					
		55					
		75					
		95					
		115					
		135					
32 30	76	155	9	7	42	47	6
		175					
		245					
		295					
		55					
		75					
		95					
		115					
32 30	86	135	9	7	42	47	6
		155					
		225					
		55					
		75					
		95					
		115					
		135					
32 30	96	155	9	7	42	47	6
		205					
		55					
		75					
		95					
		115					
		135					
		155					
32 30	106	205	9	7	42	47	6
		125					
		145					
		165					



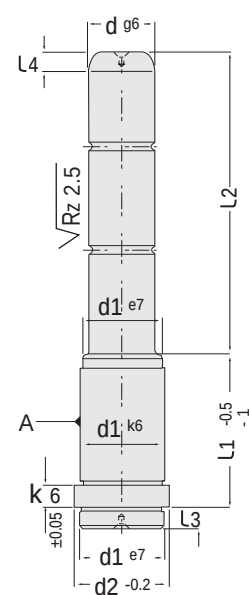
Order : G13. d x l1 x l2
(G13D = without oil groove)

d	l1	l2	l3	l4	d1	d2	k
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					
		175					
32 30	156	115	9	7	42	47	6
		155					
		175					
		195					
		215					
42 40	46	95	12	10	54	60	10
		165					
		75					
		115					
		155					
42 40	56	75	12	10	54	60	10
		115					
		155					
		195					
		215					
42 40	66	75	12	10	54	60	10
		135					
		75					
		115					
		175					
42 40	76	75	12	10	54	60	10
		115					
		175					
		75					
		135					
42 40	86	75	12	10	54	60	10
		135					
		75					
		115					
		155					
42 40	96	95	12	10	54	60	10
		135					
		195					
		75					
		115					
42 40	116	95	12	10	54	60	10
		135					
		195					
		75					
		115					
42 40	136	95	12	10	54	60	10
		135					
		215					
		115					
		155					
42 40	156	155	12	10	54	60	10
		215					
		75					
		115					
		135					
42 40	196	155	12	10	54	60	10
		195					
		235					
		75					
		115					
42 40	246	165	12	10	54	60	10
		245					



Code: G13

Guide Pillar with Centring Collar (with oil groove & without oil groove)

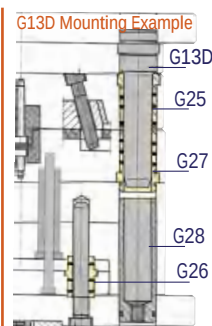
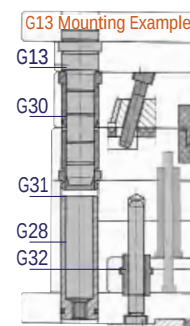


Code: G13



(without oil groove)
"As per request"

Code: G13D



To be continued
on the previous
page



Technical drawing of a shaft assembly showing dimensions and tolerances:

- Top diameter: d_{g6}
- Length of top section: $L2_{0.2}$
- Middle diameter: $d2_{e7}$
- Length of middle section: $L1_{-0.5}^{+0.1}$
- Bottom diameter: $d3_{0_{-0.2}}^0$
- Surface texture symbol: $\sqrt{Rz\ 3}$
- Feature A: $k_{0.1}^{0.1}$

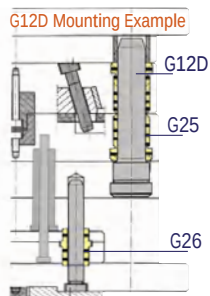
(with oil groove)



(without oil groove)
"As per request"



IMPORTANT: Injection Mould: Our guide pillars & bushes cover standard mould systems. But, guide pillar & bushes with different tolerances should be selected for aluminum injection moulds (high temperature / pressure). It should be requested from our company (production with special materials).



To be continued
on the
next page

Code: **G12D** (without oil groove)

d	l1	l2	d2	d3	k	d	l1	l2	d2	d3	k	d	l1	l2	d2	d3	k
12	26	26	16	19	4	16	56	26	24	28	6	18	56	26	26	31	6
		36															
		46															
		56															
12	36	26	16	19	4			56									
		36															
		46															
		56															
12	46	26	16	19	4			66									
		36															
		46															
		66															
14	26	26	20	25	6	16	66	26	24	28	6	18	66	26	26	31	6
		36															
		46															
		56															
		66															
14	36	26	20	25	6	16	76	26	24	28	6	18	76	26	26	31	6
		36															
		46															
		56															
		66															
14	46	26	20	25	6	16	86	26	24	28	6	18	86	26	26	31	6
		36															
		46															
		56															
		66															
14	56	26	20	25	6	16	86	26	24	28	6	20	26	26	28	32	6
		36															
		46															
		66															
		86															
16	26	26	24	28	6	18	26	26	26	31	6	20	36	26	28	32	6
		36															
		46															
		56															
		76															
16	36	26	24	28	6	18	36	26	26	31	6	20	46	26	28	32	6
		36															
		46															
		56															
		66															
16	46	26	24	28	6	18	46	26	26	31	6	20	56	26	28	32	6
		36															
		46															
		56															
		66															
16	56	26	20	25	6	16	86	26	24	28	6	20	26	26	28	32	6
		36															
		46															
		66															
		106															
16	66	26	20	25	6	16	86	26	24	28	6	20	26	26	28	32	6
		36															
		46															
		66															
		106															
16	76	26	20	25	6	16	86	26	24	28	6	20	26	26	28	32	6
		36															
		46															
		66															
		106															
16	86	26	20	25	6	16	86	26	24	28	6	20	26	26	28	32	6
		36															
		46															
		66															
		106															
16	96	26	20	25	6	16	86	26	24	28	6	20	26	26	28	32	6
		36															
		46															
		66															
		106															
16	106	26	20	25	6	16	86	26	24	28	6	20	26	26	28	32	6
		36															
		46															
		66															
		106															
16	116	26	20	25	6	16	86	26	24	28	6	20	26	26	28	32	6
		36															
		46															
		66															
		106															

Order : G12. d x l1 x l2
(G12D = without oil groove)

Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

guide pillars are polished with surface polishing machine at final stage of production (after grinding).

Guide Pillar - Shouldered

TKS for Turkish Mould Standard

Code: **G12** (with oil groove)

Code: **G12D** (without oil groove)

d	l1	l2	d2	d3	k
20	66	26	28	32	6
		36			
		46			
		56			
		66			
		76			
20	76	96			
		116			
		26			
		36			
		46			
		56			
20	86	66			
		76			
		86			
		106			
		126			
		26			
20	96	36			
		46			
		56			
		66			
		76			
		86			
25	26	106			
		126			
		26			
		36			
		46			
		56			
25	36	66			
		76			
		86			
		106			
		126			
		26			
25	46	36			
		46			
		56			
		66			
		76			
		86			
25	56	106			
		126			
		26			
		36			
		46			
		56			

d	l1	l2	d2	d3	k
25	56	56	34	38	8
		66			
		76			
		96			
		116			
		26			
25	66	36			
		46			
		56			
		66			
		76			
		86			
25	76	106			
		126			
		26			
		36			
		46			
		56			
25	86	66			
		76			
		86			
		96			
		116			
		136			
25	96	36			
		46			
		56			
		66			
		76			
		86			
25	106	116			
		136			
		46			
		56			
		66			
		76			
30	36	86			
		96			
		116			
		136			
		26			
		36			
30	46	46			
		56			
		66			
		86			
		106			
		126			

d	l1	l2	d2	d3	k
30	46	66	39	43	10
		76			
		96			
		116			
		36			
		46			
30	56	56			
		66			
		76			
		86			
		106			
		126			
30	66	36			
		46			
		56			
		66			
		76			
		86			
30	76	96			
		116			
		136			
		36			
		46			
		56			
30	86	66			
		76			
		86			
		106			
		126			
		146			
30	96	46			
		66			
		86			
		106			
		126			
		146			
30	106	56			
		76			
		96			
		116			
		136			
		26			
40	56	86			
		106			
		126			
		146			
		166			
		186			

d	l1	l2	d2	d3	k
40	56	126	54	58	10
		156			
		186			
		216			
40	66	66			
		96			
		116			
		136			
		166			
		196			
40	76	76			
		106			
		126			
		146			
		166			
		196			
40	86	216			
		86			
		126			
		146			
		176			
		206			
40	96	226			
		96			
		136			
		156			
		186			
		216			
40	106	236			
		106			
		126			
		156			
		186			
		226			
40	116	246			
		116			
		136			
		166			
		196			
		236			
40	126	256			
		126			
		166			
		196			
		236			
		266			
40	136	136			
		196			
		226			
		266			



Order : G12. d x l1 x l2
(G12D = without oil groove)

Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

To be continued
on the previous
page

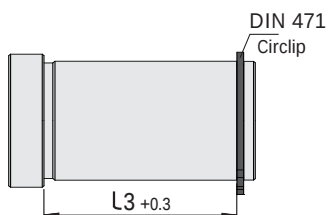
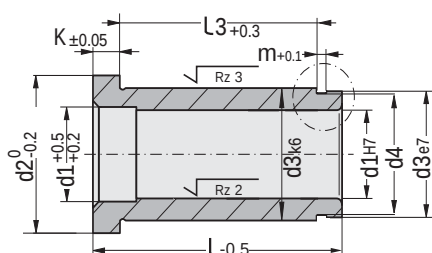
NEW



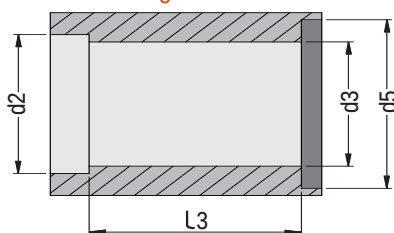
Guide Bush - Headed (with circlip slotted)

Code: G49

For general usage in injection mould guide systems - it prevents the bush protrude in free rotating plates (H6 centre fixing).



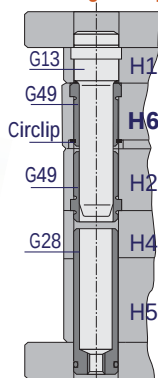
Mounting Dimensions



Compatible Pillars



Mounting Example



Guide Bush - Headed

Code: G49

d1	L	d3	d2	k	L3	m	d4	d5	Circlip
12	27	18	25	6	18	1.5	17	26.7	DIN 471 Ø 18
	36				27				
	46				37				
	56				47				

14	27	20	25	6	18	1.5	19	29.1	DIN 471 Ø 20
	36				27				
	46				37				
	56				47				
	66				57				
	76				67				
	86				77				
	96				87				
15	116				107				

16	27	22	27	6	18	1.4	21	31.7	DIN 471 Ø 22
	36				27				
	46				37				
	56				47				

18	27	26	31	6	18	1.4	25	36.3	DIN 471 Ø 26
	36				27				
	46				37				
	56				47				
	66				57				
	76				67				
	86				77				
	96				87				
20	116				107				
	136				127				

22	27	30	35	6	17	1.8	29	41.4	DIN 471 Ø 30
	36				26				
	46				36				
	56				46				
	66				56				
	76				66				
	86				76				
	96				86				
24	116				106				
	136				126				
	156				146				

30	27	42	47	6	15	2	40	56	DIN 471 Ø 42
	36				24				
	46				34				
	56				44				
	66				54				
	76				64				
	86				74				
	96				84				
32	116				104				
	136				124				
	156				144				
	176				164				
	196				184				

40	36	54	60	10	19	2.25	51	69.3	DIN 471 Ø 54
	46				29				
	56				39				
	66				49				
	76				59				
	86				69				
	96				79				
	116				99				
42	136				119				
	156				139				
	176				159				
	196				179				
	246				229				

50	76	66	72	10	58	3	62	82.7	DIN 471 Ø 65
	96				78				
	116				98				
	136				118				
	156				138				
	196				178				

60	96	80	86	20	68	3	77	99.1	DIN 471 Ø 80
	116				88				
	136				108				
	156				128				
	196				168				
	246				218				



Order: G49. d1 x l

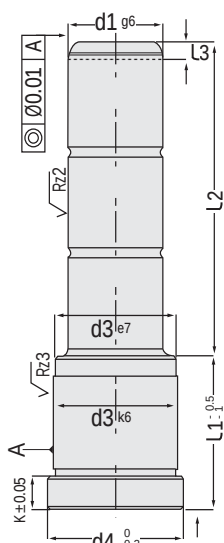
Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

NEW



Code: G50

Guide Pillar - Shouldered



Code: G50
(with oil groove)



Code: G50D
(without oil groove)
"As per request"



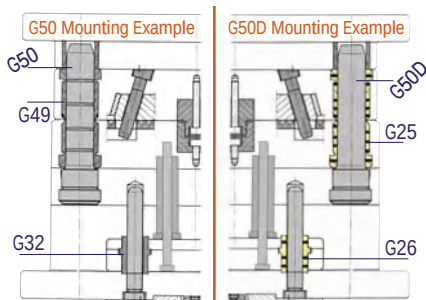
G49



G25

The tolerances and working space of our products are determined according to DIN 7161.

IMPORTANT! Injection Mould: Our guide pillars & bushes cover standard mould systems. But, guide pillar & bushes with different tolerances should be selected for aluminum injection moulds (high temperature / pressure). It should be requested from our company (production with special materials).



guide pillars are polished with surface polishing machine at final stage of production (after grinding).

Order: G50. d1 x l1 x l2
(G50D = without oil groove)

Material: 1.1213 (Cf53)
Hardness: 58 - 62 HRC

To be continued
on the
next page

d1	L1	L2	d3	d4	L3	K
14	17	35	20	25	7	6
		55				
		75				
		95				
14	22	20	20	25	7	6
		35				
		40				
		45				
		50				
		55				
		65				
		70				
14	27	20	20	25	7	6
		35				
		40				
		45				
		55				
		65				
		85				
		105				
14	36	20	20	25	7	6
		35				
		40				
		45				
		55				
		65				
		75				
		95				
14	46	20	20	25	7	6
		35				
		45				
		65				
		85				
		105				
		125				
		145				
14	56	20	20	25	7	6
		35				
		55				
		75				
		95				
		115				
		135				
		155				
14	66	20	20	25	7	6
		35				
		55				
		75				
		95				
		115				
		135				
		155				
14	76	20	20	25	7	6
		35				
		55				
		75				
		95				
		115				
		135				
		155				
14	86	20	20	25	7	6
		35				
		55				
		75				
		95				
		115				
		135				
		155				
14	96	20	20	25	7	6
		35				
		55				
		75				
		95				
		115				
		135				
		155				
14	116	20	20	25	7	6
		35				
		55				
		75				
		95				
		115				
		135				
		155				

d1	L1	L2	d3	d4	L3	K
15	17	35	20	25	7	6
		55				
		75				
		95				
15	22	20	20	25	7	6
		35				
		40				
		45				
		50				
		55				
		65				
		70				
15	27	90	20	25	7	6
		110				
		20				
		35				
		40				
		45				
		55				
		65				
15	36	85	20	25	7	6
		105				
		20				
		35				
		40				
		45				
		55				
		65				
15	46	75	20	25	7	6
		95				
		20				
		35				
		45				
		65				
		85				
		105				
15	56	95	20	25	7	6
		55				
		20				
		35				
		55				
		75				
		95				
		55				
15	66	65	20	25	7	6
		95				
		55				
15	76	95	20	25	7	6
		55				
15	86	95	20	25	7	6
		55				
15	96	95	20	25	7	6
		55				
15	116	75	20	25	7	6
		95				

Guide Pillar - Shouldered

Code: **G50** (with oil groove)

Code: **G50D** (without oil groove)

d1	L1	L2	d3	d4	L3	K
18	56	20	26	31	7	6
		35				
		55				
		75				
18	66	55	26	31	7	6
		75				
		95				
		115				
18	76	55	26	31	7	6
		75				
		95				
		115				
18	86	55	26	31	7	6
		75				
		95				
		115				
18	96	55	26	31	7	6
		75				
		95				
		115				
18	116	115	26	31	7	6
		135				
		155				
		175				
20	17	35	26	31	7	6
		55				
		75				
		95				
20	22	20	26	31	7	6
		35				
		40				
		45				
		50				
		55				
		60				
		65				
		70				
		80				
		85				
		115				
20	27	20	26	31	7	6
		35				
		40				
		45				
		50				
		55				
		60				
		65				
		70				
		80				
		85				
		125				
20	36	20	26	31	7	6
		35				
		40				
		45				

d1	L1	L2	d3	d4	L3	K
20	36	50	26	31	7	6
		55				
		60				
		65				
		70				
		75				
		80				
		95				
20	46	85	26	31	7	6
		105				
		135				
		165				
		20				
		35				
		55				
		75				
20	66	55	26	31	7	6
		75				
		95				
		115				
20	76	55	26	31	7	6
		75				
		95				
		115				
20	86	55	26	31	7	6
		75				
		95				
		115				
20	96	55	26	31	7	6
		75				
		95				
		115				
20	116	115	26	31	7	6
		135				
		155				
		175				
22	17	55	30	35	7	6
		75				
		95				
		115				
22	22	35	30	35	7	6
		55				
		75				
		95				
22	27	25	30	35	7	6
		45				
		50				
		60				
		65				
		70				
		75				
		85				

d1	L1	L2	d3	d4	L3	K
22	27	105	30	35	7	6
		125				
		165				
22	36	25	30	35	7	6
		45				
		50				
		55				
		60				
		70				
		75				
		80				
		95				
		115				
22	46	135	30	35	7	6
		165				
		25				
		45				
		50				
		60				
		65				
		70				
		80				
		85				
22	56	105	30	35	7	6
		125				
		165				
		25				
		45				
		55				
		75				
		95				
		115				
		165				
22	66	55	30	35	7	6
		75				
		95				
22	76	25	30	35	7	6
		45				
		55				
		75				
		95				
		115				
22	86	55	30	35	7	6
		75				
		95				
22	96	55	30	35	7	6
		75				
		95				
22	116	75	30	35	7	6
		115				
		155				

d1	L1	L2	d3	d4	L3	K
30	76	55	42	47	7	6
		75				
		95				
		115				
		155				
30	86	55	42	47	7	6
		75				
		95				
		115				
30	96	55	42	47	7	6
		75				
		95				
		115				
30	116	75	42	47	7	6
		115				
		155				
30	136	95	42	47	7	6
		115				
30	156	115	42	47	7	6
		155				
30	176	135	42	47	7	6
		175				
30	196	155	42	47	7	6
		195				
32	22	35	42	47	7	6
		75				
		130				
32	27	45	42	47	7	6
		65				
		105				
		165				
32	36	55	42	47	7	6
		75				
		95				
		115				
32	46	45	42	47	7	6
		65				
		85				
		105				
		125				
32	56	55	42	47	7	6
		75				
		95				
		115				
		135				

d1	L1	L2	d3	d4	L3	K
32	66	55	42	47	7	6
		75				
		95				
		115				
		135				
32	76	55	42	47	7	6
		75				
		95				
		115				
32	86	55	42	47	7	6
		75				
		95				
		115				
32	96	55	42	47	7	6
		75				
		95				
32	116	55	42	47	7	6
		75				
		95				
32	136	55	42	47	7	6
		75				
		95				
32	156	55	42	47	7	6
		75				
		95				
32	176	55	42	47	7	6
		75				
		95				
32	196	55	42	47	7	6
		75				
		95				
40	36	75	54	60	10	10
		135				
40	46	75	54	60	10	10
		135				
40	56	75	54	60	10	10
		135				
40	66	75	54	60	10	10
		135				
40	76	75	54	60	10	10
		135				
40	86	75	54	60	10	10
		135				
40	96	75	54	60	10	10
		135				

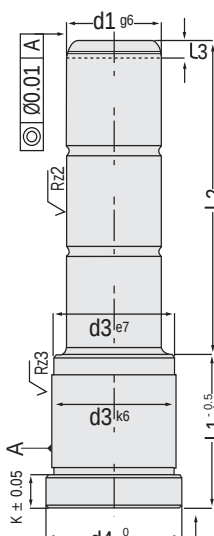
d1	L1	L2	d3	d4	L3	K
40	115	95	54	60	10	10
		135				
		195				
40	136	95	54	60	10	10
		135				
		215				
40	156	115	54	60	10	10
		155				
		215				
40	176	135	54	60	10	10
		155				
		175				
40	196	155	54	60	10	10
		195				
		235				
42	36	75	54	60	10	10
		135				
42	46	95	54	60	10	10
		165				
42	56	75	54	60	10	10
		115				
		155				
42	66	75	54	60	10	10
		135				
		175				
42	76	115	54	60	10	10
		135				
		175				
42	86	75	54	60	10	10
		135				
		175				
42	96	75	54	60	10	10
		115				
		155				
42	115	95	54	60	10	10
		135				
		195				
42	136	95	54	60	10	10
		135				
		215				
42	156	115	54	60	10	10
		155				
		215				
42	176	135	54	60	10	10
		155				
		175				
42	196	155	54	60	10	10
		195				
		235				
50	116	96	66	72	10	10
		135				
		156				
		196				
60	136	96	80	86	10	10
		116				
		136				
		156				

NEW



Code: G50

Guide Pillar - Shouldered



Code: G50D

(without oil groove)
"As per request"

Code: G50

(with oil groove)



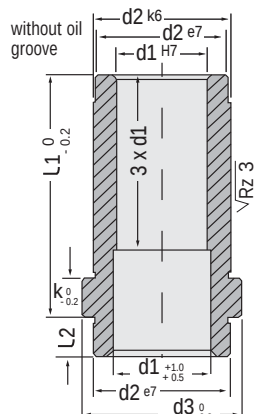
Guide Bush
with Centring Collar

Code: G31

d1	l1	d2	d3	k	l2
15 14	17	20	25	6	9
	22				
	27				
	36				
	46				
	56				
	66				
	76				
18 20	86	26	31	6	9
	96				
	116				
	17				
	22				
	27				
	36				
	46				
22 24	56	30	35	6	9
	66				
	76				
	86				
	96				
	106				
	116				
	136				

Order: G31. d1 x l1

Material: 1.7131 - Hardness: 58 - 62 HRC



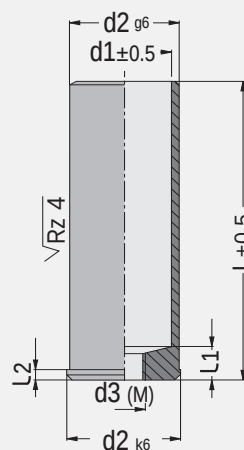
Code: G31

d1	l1	d2	d3	k	l2
32 30	27	42	47	6	9
	36				
	46				
	56				
	66				
	76				
	86				
	96				
42 40	106	54	60	10	12
	116				
	126				
	136				
	156				
	196				
	46				
	56				
42 40	66	54	60	10	12
	76				
	86				
	96				
	116				
	136				
	156				
	196				
42 40	246	54	60	10	12
	46				
	56				
	66				
	76				
	86				
	96				
	116				

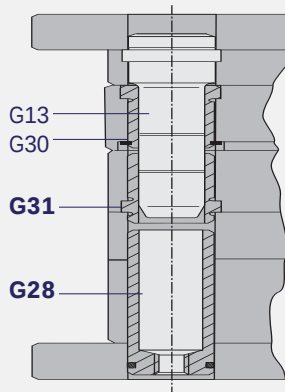
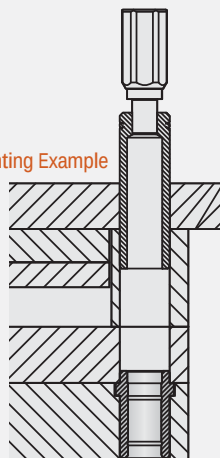


Centring Bush

Code: G28



Mounting Example



Order: G28. d2 x l

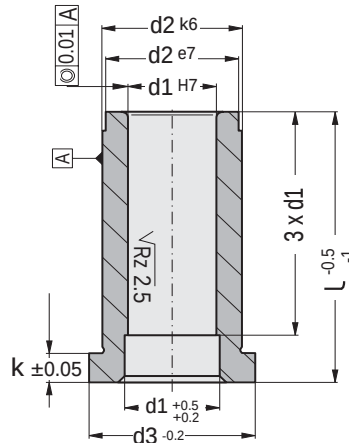
Material: 1.7131 - Hardness: 58 - 62 HRC

Code: G28

d2	l	d1	d3	l1	l2
20	30	16	M. 8	13	2.5
	40				
	60				
	80				
	100				
	120				
	140				
	160				
26	30	21	M. 10	13	2.5
	40				
	60				
	80				
	100				
	120				
	140				
	160				
30	40	25	M. 12	13	2.5
	60				
	80				
	100				
	120				
	140				
	160				
	180				
42	200	33	M. 12	13	4.5
	240				
	40				
	60				
	80				
	100				
	120				
	140				
54	160	43	M. 12	13	4.5
	200				
	240				
	280				
	60				
	80				
	120				
	160				



for Turkish Mould
Standard



Guide Bush - Headed

Code: G30

d1	l	d2	d3	k
10	17	14	16	3
	27			
	36			
	46			
	56			
12	26	16	19	4
	36			
	46			
	56			
	66			
14	26	20	25	6
	36			
	46			
	56			
	66			
	76			
16	26	24	28	6
	36			
	46			
	56			
	66			
	76			
18	26	26	31	6
	36			
	46			
	56			
	66			
	76			
20	26	28	32	6
	36			
	46			
	56			
	66			
	76			



Order: G30. d1 x l

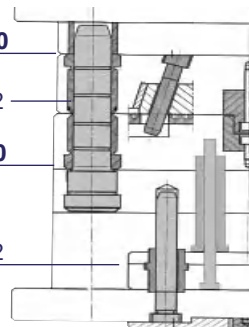
d1	l	d2	d3	k
25	26	34	38	8
	36			
	46			
	56			
	66			
	76			
30	86	39	43	10
	96			
	106			
	116			
	126			
	136			
40	146	54	58	10
	156			
	166			
	176			
	186			
	196			

G30

G12

G30

G32

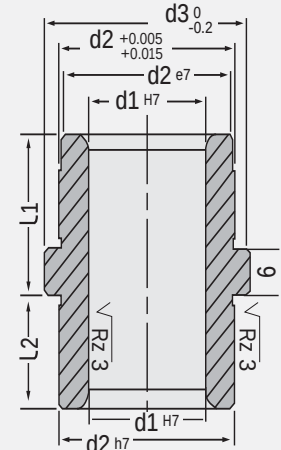


Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC



Guide Bush
with Centre Collar

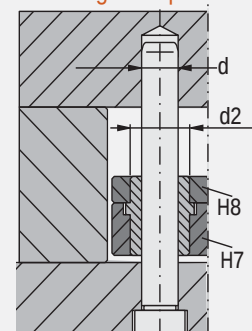
Code: G32



Code: G32

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

Mounting Example



G32 Bushes
ensuring the
movements of
ejector plates
in injection
moulds be
rigid and precise.



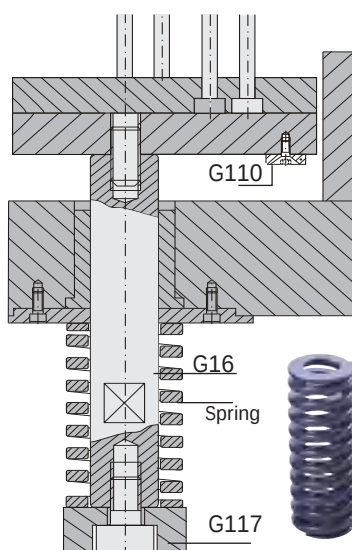
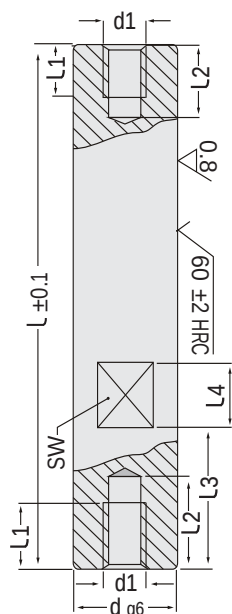
Order: G32. d1 x l1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC



Ejector Rod

Code: G16



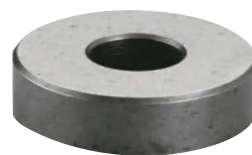
Order:
G16. d x l

Material: $\leq \varnothing 20 = 1.7131$
 $> \varnothing 20 = 1.1213$ (Cf53)
 Hardness: 58 - 62 HRC

Ejector Rod

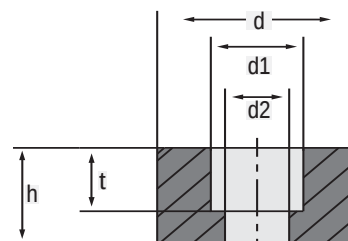
Code: G16

d	L	d1	l1	l2	l3	l4	SW
10	60						
	70						
	80	M.6	10	14	21	10	8
	100						
	140						
14	60						
	80						
	100	M.8	13	16	21	10	10
	120						
	140						
16	60						
	70						
	80	M.10	16	20	21	10	12
	100						
	120						
18	100						
	120						
	140	M.10	20	26	30	10	14
	160						
	180						
20	200						
	220						
	240						
	120						
	140	M.12	24	30	40	16	14
24	160						
	180	M.12	24	30	40	16	17
	200						
	240						
	260						
34	160						
	200	M.16	34	40	50	16	24
	240						
	260						
	300						



Code: G117

Mounting Washer for Ejector Rod



Hex-Socket Head Screw

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

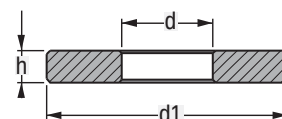


Order: G117. d x h



Code: G114

Thick Mounting Washer
Mould inner mounting washer / thick



DIN 6340

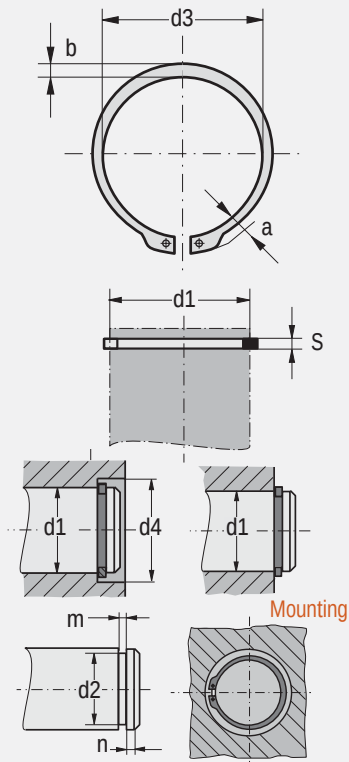
Form	d	d1	h	Weight
M6	6.4	17	3	6 gr.
M8	8.4	23	4	10 gr.
M10	10.5	28	4	16 gr.
M12	13	35	5	35 gr.
M14	15	40	5	40 gr.
M16	17	45	6	60 gr.
M18	19	45	6	60 gr.
M20	21	50	6	75 gr.



Order: G114. Form



External Circlip **Code: DIN471**



Code: DIN471

d1	S	a	b	d3	d4	m
16	1.0	3.5	2.2	14.7	24.4	1.1
20	1.2	4.0	2.6	18.5	29.0	1.3
21		4.1	2.7	19.5	30.2	
22		4.2	2.8	20.5	31.4	
24		4.4	3.0	22.2	33.8	
25		4.4	3.0	23.2	34.8	
26	1.5	4.5	3.1	24.2	36.1	1.6
28		4.7	3.2	25.9	38.4	
29		4.8	3.4	26.9	39.6	
30		5.0	3.5	27.9	41.0	
34		5.4	3.8	31.5	45.8	
37	1.75	5.7	4.1	34.2	49.4	1.85
39		5.8	4.2	35.2	50.6	
45		6.7	4.7	41.5	59.4	
50	2.0	6.9	5.1	45.8	64.8	2.15
54		7.1	5.3	49.8	70.0	



Order : DIN471. d1 x S

Kod: G77

d1	l	d2	d3	K	L2	m	d4	d5	Circlip
12	26	16	19	4	16	1.2	15.2	24.3	DIN 471 Ø 16
	36				26				
	46				36				
	56				46				
	66				56				
14	26	20	25	6	16	1.5	19	29.1	DIN 471 Ø 20
	36				26				
	46				36				
	56				46				
	66				56				
16	26	24	28	6	16	1.4	22.9	34	DIN 471 Ø 24
	36				26				
	46				36				
	56				46				
	66				56				
20	26	28	32	6	16	1.8	26.6	38.5	DIN 471 Ø 28
	36				26				
	46				36				
	56				46				
	66				56				
25	26	34	38	8	14	1.8	32.3	46.1	DIN 471 Ø 34
	36				24				
	46				34				
	56				44				
	66				54				
30	26	39	43	10	21	2.0	37	52.1	DIN 471 Ø 39
	36				31				
	46				41				
	56				51				
	66				61				
40	26	54	58	10	28	51	71	71	DIN 471 Ø 54
	36				38				
	46				48				
	56				58				
	66				68				
	76				78				
	86				88				
	96				98				
	106				108				
	116				118				
	126				128				
	136								
	146								

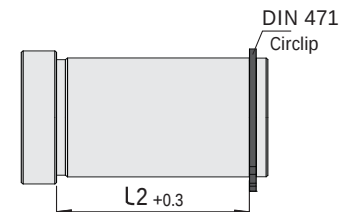
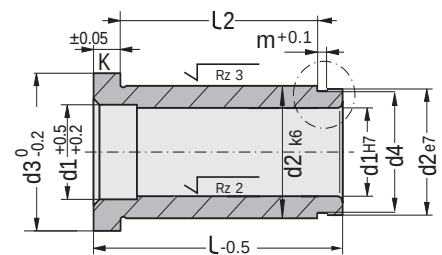


for Turkish Mould Standard

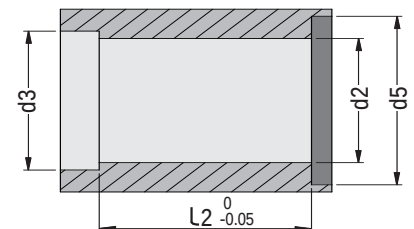


Guide Bush - Headed **Code: G77**
(with circlip slotted)

For general usage in injection mould guide systems - it prevents the bush protrude in free rotating plates (H6 centre fixing).



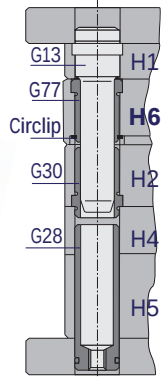
Mounting Dimensions



Compatible Pillars

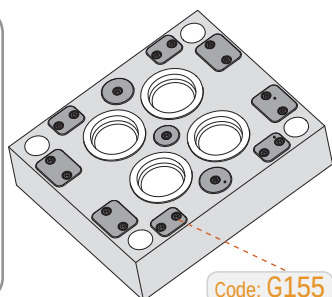


Mounting Example



Order: G77. d1 x l

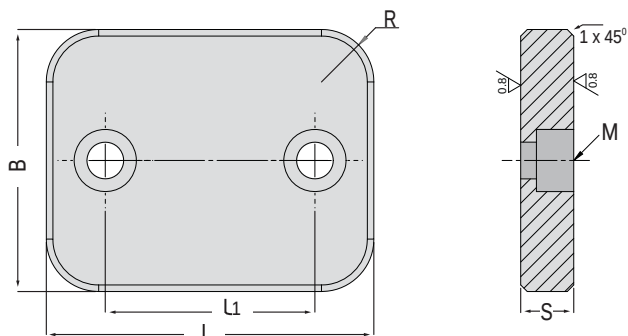
Material: 1.7131 - Hardness: 58 - 62 HRC



Code: **G155**

Wear - Shim Plate

(Core bases, for movable or fixed surfaces)



Wear - Shim Plate, Rectangular

Clamping / locking loads occurred with the support of 1.2842 steel materials and heat treatment during injection and 2nd pressure are equally distributed to mould surfaces except cores, the mould surfaces are protected with this way. It can be used for both (movable and fixed) surfaces when necessary.

Usage: The necessary thickness should be correctly calculated during mounting. The final thickness is achieved by grinding back surface of the product when necessary. Plate to be used for the same core should be ground together. The parts to be used in mould locking should be ground together.

The cleanliness and measurements of the mounting surfaces are important. Mounting hole sizes should be bigger than 0.2 (minimum) from one side. Hexagon socket head cap screws in 12.9 quality are used for connections.

*Connecting screws are provided separately

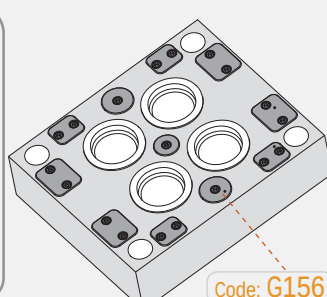
Code: **G155**

B -0.5	L -0.5	S +0.02 0	L1	R	M
32	40	8.1	24	8	M5
	64		40		M5
	100		64		M6
40	50	8.1	32	8	M5
	80	10.1	52		M6
	100	12.1	64		
50	64	10.1	40	8	M6
	100	12.1	64		
	125		80		
64	80	10.1	52	8	M6
	100	12.1	64		
	125		80		
	160		100		



Order:
G155. B x L

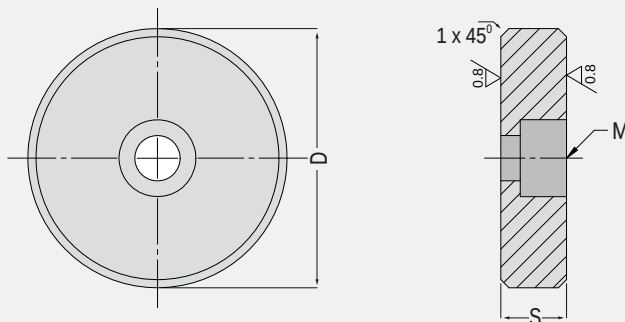
Material: 1.2842 (Heat treated)
Hardness: 54 - 56 HRC



Code: **G156**

Wear - Shim Plate, Round

(Core bases, for movable or fixed surfaces)



Wear - Shim Plate, Round

In injection mould designs: Injection pressure on mould separation surfaces should be distributed according to a predefined value.

Thus, the mould separation surfaces are aligned correctly and the height differences are easily balanced thanks to innovative products such as G155 / G156 / G157 - 1.2842 steel 54 - 56 HRC hardened shim plates are ready to mount with 0.2 mm precision tolerances in embedded mounting holes and round - rectangular versions.

Usage: The necessary thickness should be correctly calculated during mounting. The final thickness is achieved by grinding back surface of the product when necessary. Plate to be used for the same core should be ground together. The parts to be used in mould locking should be ground together. The cleanliness and measurements of the mounting surfaces are important. Mounting hole sizes should be bigger than 0.2 (minimum) from one side. Hexagon socket head cap screws in 12.9 quality are used for connections.

*Connecting screws are provided separately

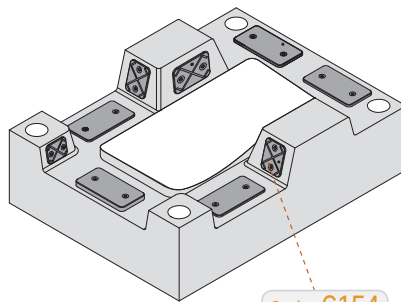
Code: **G156**

D -0.4	S ±0.03	M
20	8.1	M5
32	8.1	M5
40	10.1	M6
50	10.1	M6
64	12.1	M6



Order:
G156. D

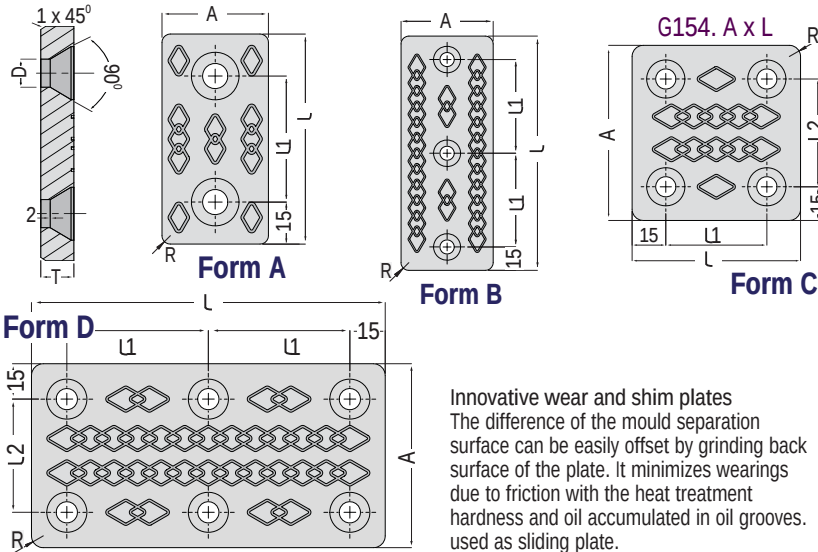
Material: 1.2842 (Heat treated)
Hardness: 54 - 56 HRC



Code: G154

Wear - Shim Plate (with oil grooves)

(Hard, heat-treated core bases, for movable or fixed surfaces)



Clamping / locking loads occurred with the support of 1.2842 steel materials and heat treatment during injection and 2nd pressure are equally distributed to mould surfaces except cores, the mould surfaces are protected with this way. It can be used for both (movable and fixed) surfaces when necessary.

Wear - Shim Plate (with oil grooves)

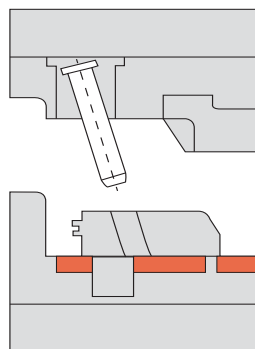
Code: G154

	$\begin{smallmatrix} +0 \\ A-0.2 \end{smallmatrix}$	$\begin{smallmatrix} +0 \\ L-0.2 \end{smallmatrix}$	$\begin{smallmatrix} L1 \\ \pm 0.1 \end{smallmatrix}$	$\begin{smallmatrix} L2 \\ \pm 0.1 \end{smallmatrix}$	$\begin{smallmatrix} T \\ \pm 0.02 \end{smallmatrix}$	R	D	Form	Countersunk Head Screws with Hex-Socket
18	50	20	-	7	3	6.5		A	M6 x 20 2 pcs.
	75	45						B	M6 x 20 - 3 pcs.
	100	70							
	150	60							
28	50	20	-	7	3	9		A	M8 x 20 2 pcs.
	75	45						B	M8 x 20 - 3 pcs.
	100	70							
	150	60							
38	50	20	-	7	3	9		A	M8 x 20 2 pcs.
	75	45						B	M8 x 20 - 3 pcs.
	100	70							
	150	60							
48	75	45	-	7	5	9		A	M8 x 20 2 pcs.
	100	70						B	M8 x 20 - 3 pcs.
	125	95							
	150	60							
58	75	45	-	7	5	9		A	M8 x 20 2 pcs.
	100	70						B	M8 x 20 - 3 pcs.
	125	95							
	150	60							
78	75	45	48	7	5	9		C	M8 x 20 4 pcs.
	100	70						D	M8 x 20 - 6 pcs.
	125	95							
	150	60							

Usage: The necessary thickness should be correctly calculated during mounting. The final thickness is achieved by grinding back surface of the product when necessary. Mounting hole sizes should be bigger than 0.2 (minimum) from one side.

Order: G154. A x L

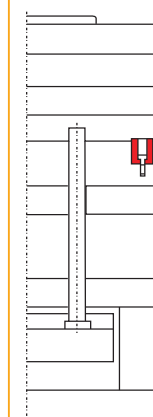
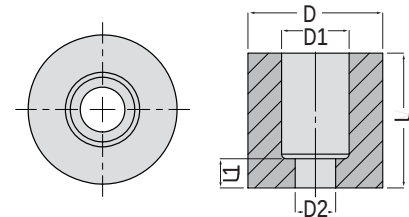
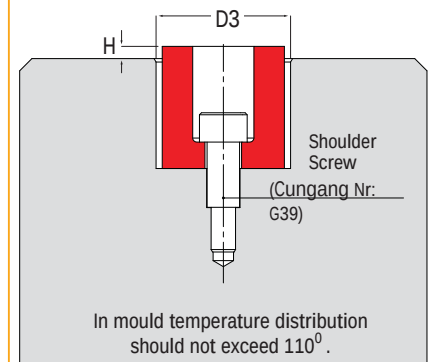
Material: 1.2842 (Heat treated)
Hardness: 54 - 56 HRC



Code: G157

Urethane Spring for Mould Closing

(Cushioning purpose)



Product: Urethane shore hardness 90A.
Usage: All plates / side cores working by clashing each other in injection mould system start mould opening during mould opening before the machine. During closing, cushioning is used and a soft opening is achieved. This way, it reduces practice surface damages and provides cushioning for high speed operations.

Code: G157

D	L	D1	D2	D3	L1	H	G39 Screw
Ø20	25	Ø11	Ø6.5	Ø22	6.5	3	M5xØ6x12
Ø30	30	Ø15	Ø9	Ø33	6.5	3	M6xØ8x16

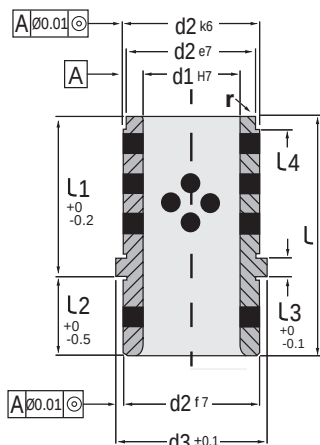


Order: G157. D x L
Provided with shoulder screw (G39).



Code: G26

Guide Bush with Centre Collar, Self-Lubricating

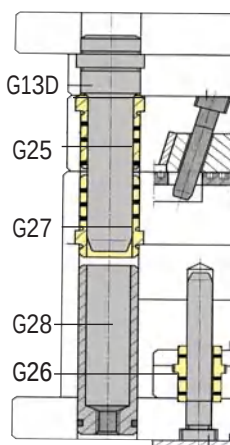
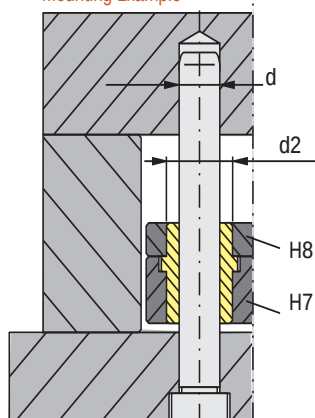


Especially, it can be used in pillar systems of the ejector plates in injection moulds with Guide Pillar without oil groove (G17). Guide bushes are self-lubricating systems.

Heat Resistance: 150° C. It can even work in humid environments.



Mounting Example



Code: G26

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	6	4
50	92	63	72	55	37	8	6	4



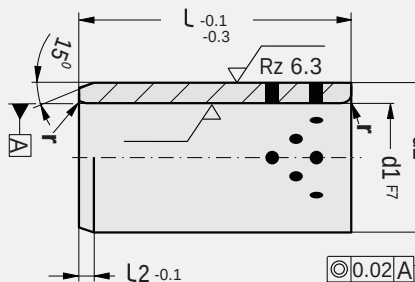
Order: G26. d1 x l

Material: Bronze + graphite inserts



Code: G48

Guide Bush - Plain, Self-Lubricating



G48 products used in hydraulic press and injection mould machines and especially on plain guide pillars in mould systems.



* Hole tolerance for shrink fit: H7

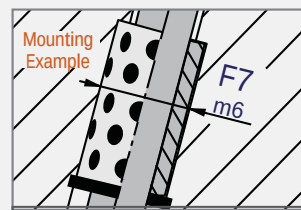
d1	l	d2	l2	r	d1	l	d2	l2	r	d1	l	d2	l2	r
8	8			0.50	24	20				48	30			
	10	12	2			25	33	4			40	60		
	15					30				50	50	62	4	1.50
10	10			0.50	25	35	35		0.75		60	65		
	12	14	2			40				50	70			
	15					50					80			
	20										100			
12	10			0.50	20	25	38			60	40	74	4	2.00
	12					30					50			
	15	18	2		35	30	40	4	0.75		60	75		
	20					35	40				80			
	25				30	45					100			
	30					60				80	40	96		2.00
15	12			0.75	25	30					60			
	16				30						80	96	4	
	20				35	50			1.50		100	100		
	25	22	2		40						120			
	30				50	55	4				140			
	35					60					160			
	40									80	50	120		2.00
18	20	24		0.75	30	35	55		1.50	100	60	140	4	
	25				42						80			
	30					35	60				100	170		
	35				45	40					120			
	40					50					140	180		
	50					60					160			



IMPORTANT!
Self-lub. bushes:
The friction
surface should be
lubricated once in
order to activate
permanent lubricating
at the first use.

Lithium Grease - 1kg.

Order Code: W150206



Order: G48. d1 x d2 x l

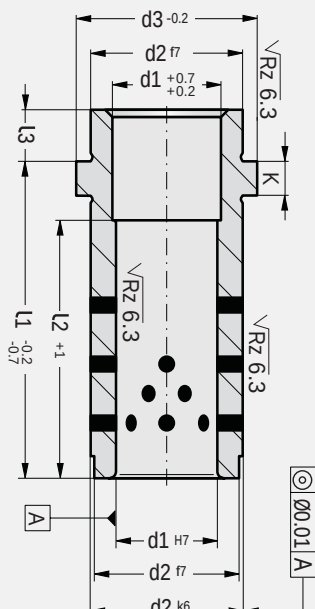


Guide Bush with Collar, Self-Lubricating

Code: G27

G27 products used in injection moulds with G13D guide pillars (without oil groove). Higher stability is achieved with centering of the mould in length. This way, a long-term and precision working environment with other equipment (ejector - core etc.). H7 tolerance is recommended in guide pillar / bush systems. It is compatible with the sudden movements during working. These products are not affected by vibration / impacts.

Heat resistance: 150° C.
It can even work in humid environments.



Code: G27

d1	l1	d2	d3	K	l3				
14	17	20	25	6	6				
	22								
	27								
	36								
	46								
56									
l2 : > 2 - 3 x d1									
16	17					20	25	6	8
	22								
	27								
	36								
	46								
	56								
	66								
76									
l2 : > 2 - 3 x d1									
20	17	26	31	6	8				
	22								
	27								
	36								
	46								
	56								
	66								
	76								
	86								
96									
l2 : > 2 - 3 x d1									
25	22					30	35	6	8
	27								
	36								
	46								
	56								
	66								
	76								
	86								
	96								
116									
l2 : > 2 - 3 x d1									

d1	l1	d2	d3	K	l3
30 32	27	42	47	6	8
	36				
	46				
	56				
	66				
	76				
	86				
	96				
	116				
	136				
l2 : > 2 - 3 x d1					
40 42	46	54	60	10	12
	56				
	66				
	76				
	86				
	96				
	116				
	136				
	156				
	196				
l2 : > 2 - 3 x d1					

Sliding bushing systems provide higher stability. These products are lubricated once as a thin layer and this reduces negative effects.

Order: G27. d1 x l1

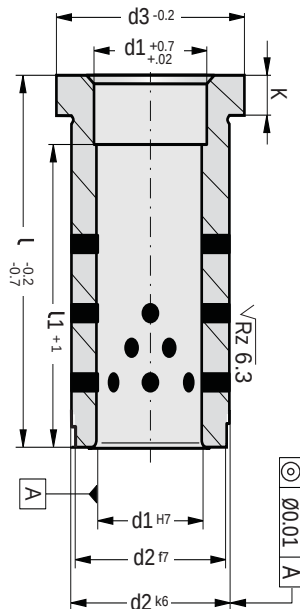


Guide Bush Headed, Self-Lubricating

Code: G25

G25 products used in injection moulds with G12D guide pillars (without oil groove). H7 tolerance is recommended in guide bush systems. It is compatible with the sudden movements during working. These products are not affected by vibration / impacts.

Heat resistance: 150° C.
It can even work in humid environments.



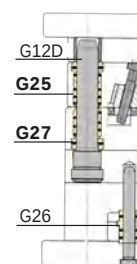
Code: G25

d1	l	d2	d3	K
12	16	18	22	4
	21			
	27			
	36			
			l : 2 - 3 x d1	
16	27	22	27	6
	36			
	46			
	56			
			l : 2 - 3 x d1	
20	27	26	31	6
	36			
	46			
	56			
	66			
	76			
	96			
			l : 2 - 3 x d1	
25	36	30	35	6
	46			
	56			
	66			
	76			
	86			
	96			
			l : 2 - 3 x d1	

Order: G25. d1 x l

Material:
Bronze + graphite inserts

d1	l	d2	d3	K
30 32	36	42	47	6
	46			
	56			
	66			
	76			
	86			
	96			
	116			
l : 2 - 3 x d1				
40 42	36	54	60	10
	46			
	56			
	66			
	76			
	86			
	96			
	116			
	136			
l : 2 - 3 x d1				

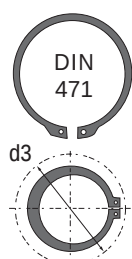
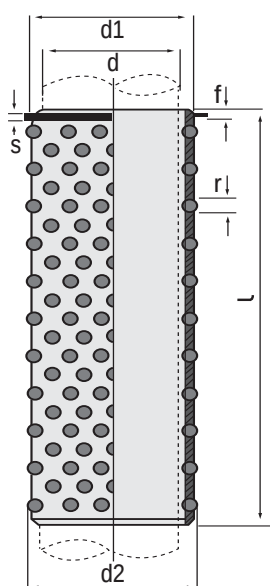




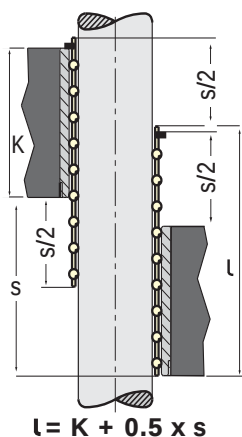
Ball Cage Bush

Heat resistance of ball cage is 120° C.
Ball cages are presented with circlips.

Code: G70



Used together



$$l = K + 0.5 \times s$$



G70

Ball Cage

G70-1

Retaining Spring

G151

Holder Flange

G10

Guide Pillar

G37 - G38

Steel Bushes



Order: G70. d x l

Material: Ms58

Ball: 100 Cr6, Tolerance: +0.001

Code: G70

d mm	l mm	Ø d1	Ball		Circlip		
			d2	r	d3	f	s
12	40	15	16	2	20.5	2.5	1.2
	56						
15	45	20	21	3	29	2.7	1.2
	56						
16	71	21	22		30.2		
18	45	23	24	3	32.6	2.8	1.2
	56						
19	71	24	25	3	33.2	2.9	1.2
	80						
20	95	25	26		34.2		
24	45	29	30	3	39.1	3.2	1.5
	56						
25	71	30	31		40.5		
	80						
	95						
	105						
	120						
32	45	39	40	4	51.4	4.0	1.8
	56						
30	75	37	38		49		
	80						
	95						
	105						
	120						
	140						
	160						
38	56	45	46	4	59.1	4.0	1.8
	71						
40	80	47	48		60.0		
	95						
	105						
	120						
	140						
	160						
	180						
	200						
48	71	55	56	4	70.2	4.3	2.0
	80						
50	95	57	58		72.6		
	105						
	120						
	140						
	160						
	180						
	200						
	220						
60	85	67	68	4	83.1	4.8	2.5
	95						
63	105	70	71		87		
	120						
	140						
	160						
	180						
	200						
	220						
	240						
80	105	90	92	6	108.5	6.2	3.0
	120						
	140						
	160						
	180						
	200						
	220						
	240						

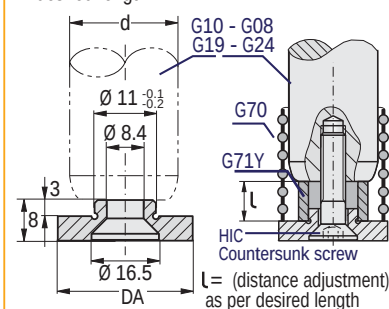
NEW



Code: G151

Ball Cage Holder Flange

In ball cage bush systems, it prevents detaching of cage (G70) from guide pillar during operating. In mounting to die: Spacer tube (G71Y) of ball cage stroke distance and countersunk head screw (HIC) can be adjusted in desired length.



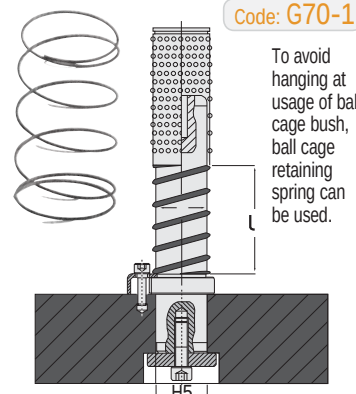
d	DA	Pillar Dia.
20	25	Ø 20
25	30	Ø 25
30	37	Ø 30
40	47	Ø 40
50	57	Ø 50
60	67	Ø 60
63	70	Ø 63

Order:
G151. d (pillar)

Material:
1.7131 (16MnCr5)

Ball Cage Retaining Spring

Code: G70-1



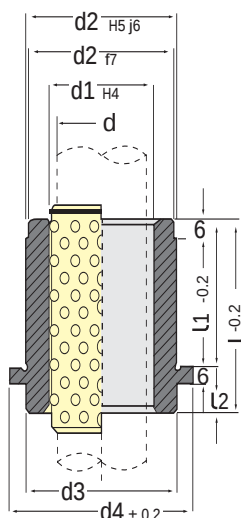
Ø d	l mm	Note:
19	Up to	Production in ball systems or other die inner designs as per request.
20	40 ~ 140	
24	Up to	
25	40 ~ 180	
30	Up to	l: 10 mm ranges
32	50 ~ 230	
38	Up to	
40	60 ~ 280	
48	Up to	Order: G70-1. d x l
50	70 ~ 280	
60	Up to	
63	80 ~ 250	



Guide Bush for Ball Cage (Short type)

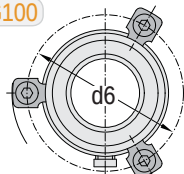
Code: **G38**

G38 guide bushes work without problem at dies, cuttings under 0.5 mm sheet metal 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 precision should be increased.

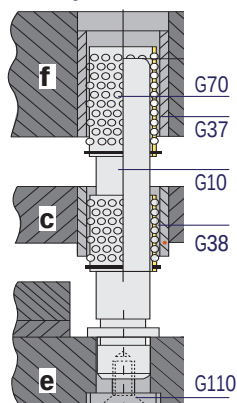


Clamping Detail

Code: **G100**



4 pcs. clamp for d1= 38 mm and larger sizes.



Ø d	l mm	Ø d1	Ø d2	Ø d3	Ø d4	Ø d6	l1 mm	l2 mm
15	35	21	30	30	34	46.2	23	12
16		22						
19	35	25	32	32	40	52.4	23	12
20		26						
24	35	30	40	40	48	60.8	23	12
25		31						
32	42	40	48	48	55	67.8	30	12
30		38						
38	52	46	58	58	65	78.0	37	15
40		48						
48	65	56	70	70	80	93.2	47	18
50		58						
60	80	68	85	85	95	108.4	60	20
63		71						
80	80	92	105	105	118	131.5	60	20

Note: Two different products in section (d) are to avoid reverse closing of dies during mounting by using three pcs. main dimensions and one pcs. auxiliary (d= Ø15 - 19 - 24 - 32 - 38 - 48 - 60 mm) dimensions at same die, is avoided reverse closing of die plate. Thus, symmetrical die closure is ensured.

Example: In the same die (Ø20 x 3 - Ø19 x 1) = 4 pieces

Note: Should be ordered with G70.

Order: **G38**. d x l x l1

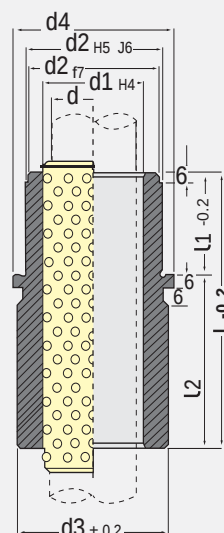
Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC



Guide Bush for Ball Cage (Long type)

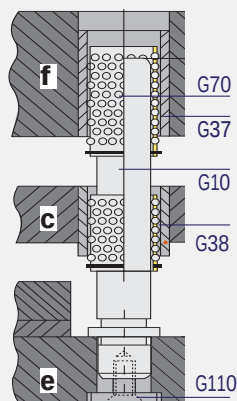
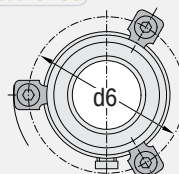
Code: **G37**

High precision guide bushes for ball cage: Despite providing high reliability at high speeds, contacting balls from one point, brings the system to precision status against impacts and side loads. This disadvantage is compensated to give product diameters up to a certain point in the upper tolerance, the working surface should be precise.



Clamping Detail

Code: **G100**



Ø d	l mm	Ø d1	Ø d2	Ø d3	Ø d4	Ø d6	l1 mm	l2 mm
15	43	21	30	32	34	46.2	23	20
16		22						
19	43	25	32	39	40	52.4	23	20
20		26						
24	59	30	40	46	48	60.8	23	36
25		31						
32	75	40	48	53	55	67.8	30	45
30		38						
38	82	46	58	63	65	78.0	37	45
40		48						
48	97	56	70	77	80	93.2	47	50
50		58						
60	116	68	85	92	95	108.4	60	56
63		71						
80	120	92	105	115	118	131.5	60	60

Note: Should be ordered with G70.

Order: **G37**. d x l x l1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

NEW



Plain Guide Bush for Ball Cage

Code: G167

ISO 9448-3

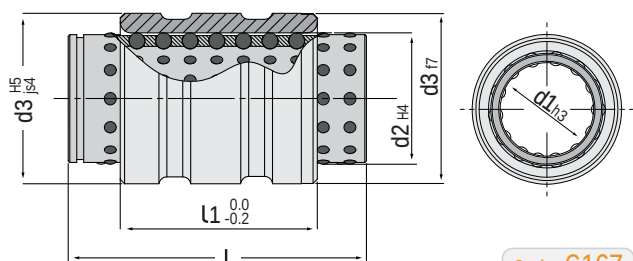
The inner diameter of the products is honed, the outer diameter is precision ground. The grooves on the product are made to provide better adhesion to the hole during mounting.

Advantages of G167: No problem finding the position when changing the bushes. High accuracy and robustness.

Mounting Instruction:

Please secure with adhesive (Order Code: GL.64832)

Do not press-fit.



Code: G167

d1 mm	d2 mm	d3 mm	l1 mm	l mm
12	16	22	23	40
			30	40
			37	40
15	21	28	23	45
			30	45
			37	45
16	22	28	47	56
			60	71
			77	95
19	25	32	23	45
			30	45
			37	45
20	26	32	47	56
			60	71
			77	95
24	30	40	23	45
			30	45
			37	45
25	31	40	47	56
			60	71
			77	95

d1 mm	d2 mm	d3 mm	l1 mm	l mm
30	38	48	30	45
			37	50
			47	56
32	40	48	60	71
			77	95
			95	120
38	46	58	30	45
			37	50
			47	63
40	48	58	60	80
			77	95
			95	120
48	56	70	120	140
			37	50
			47	63
50	58	70	60	80
			77	95
			95	120
60	68	85	120	140
			37	50
			47	63
63	71	85	60	95
			77	95
			95	120
80	92	105	120	140
			37	50
			47	63

Note: Ball Cage "G70" must be ordered separately.



Order:
G167. d1 x l1

Material: 1.7131
Hardness: 60 - 64 HRC

NEW

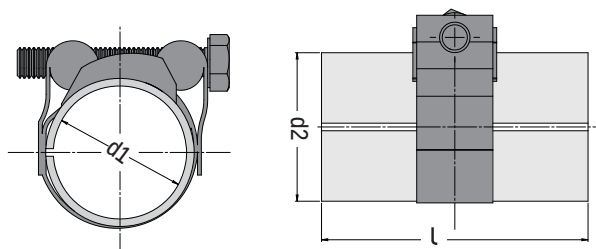


Limiting Bush

Code: G168

It helps to position the working length of the bushes running on the guide pillars.

Mounting Example



Guide Pillar Ø	d1 mm	d2 mm	l mm
15 / 16	16	20	20
19 / 20	20	30	20
24 / 25	25	30	30
30 / 32	32	40	30
38 / 40	40	50	40
48 / 50	50	60	40
60 / 63	63	70	40



Order:
G168. d1

Order Example:
G168. 40



Adhesive / Loctite 648

The adhesive provides optimum push retention for "G167" bushes. For adhesion of bearings, bushes, screws and other machine components. Very fast adhesion to handling strength.

Heat Resistance: -55° / +175° C

Package: 55 g.

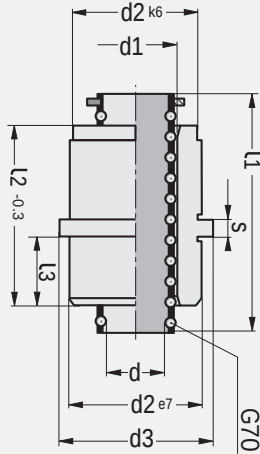
Order Code: GL.64832



Code: G29

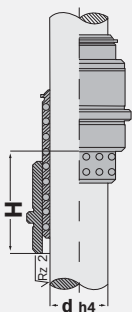
Steel Bush + Ball Cage Bush Set

It provides more precision and rapid motion at ejector plates in injection moulds.



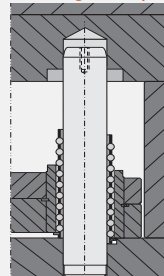
Code: G29

d Ø	L1 mm	L2 mm	L3 mm	d1 Ø	d2 Ø	d3 Ø	S mm	H mm
12	40	24	6	16	22	26	6	50
	56							82
18	45	34	11	24	30	35	6	44
	56							66
	71							96
30	56	54	21	38	46	52	6	32
	75							70
	95							110



Mounting Example

more
precision
and rapid
motion



Order: G29. d x L1

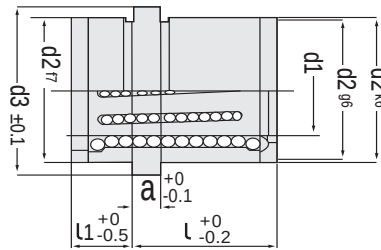
Ball Material: 1.3505 (100Cr6)

Cage: Ms58 - Steel Bush: 1.7131 (16MnCr5)



Code: G75

Linear Ball Bearing Bush



WARNING!

During production stage of G74 & G75 products ball bearings are positioned at a certain angle. Other imitation products has no angle and the balls are at a single centre.

Free stroke, rapid and limitless movement.
New for ejector plate.

Operating Temp.: Max. 200°

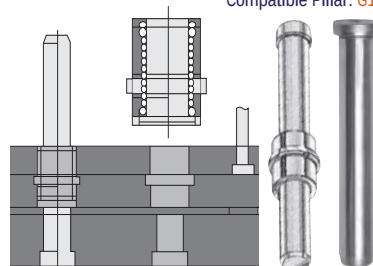
Code: G75

d1 Ø	L mm	d2 Ø	d3 Ø	a mm	L1 mm	Ball Ø
12	22	24	28	6	8	3
18	26	30	34	6	9	3
20	26	32	36	6	9	3
	36					
25	26	40	45	6	10	3
	36					
	46					
30	46	48	54	8	12	4
	66					
40	46	60	66	8	12	4
	66					

New Linear Ball Bearing Bushes G74 / G75:

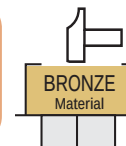
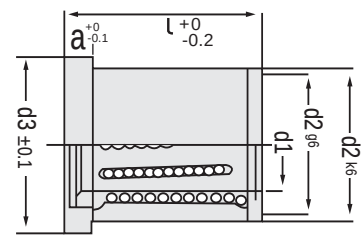
There are balls at inclined - serial - parallel intermediate channels - lines inside of linear G74 & G75 bushes (balls move by rotating in slot and frictionless). In this way, axial motion remains limitlessly free. Also, bearing logic is provided to the steel bush.

Compatible Pillar: G18



Code: G74

Linear Ball Bearing Bush - Headed



Positioning
Pls. do not make
direct fitting.
Precision assembly
recommended with
bronze / brass.

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

Operating Temp.: Max. 200°

Code: G74

d1 Ø	L mm	d2 Ø	d3 Ø	a mm	Ball Ø	Line Pcs.
18	35	30	34	6	3	6
20	35	32	36	6	3	6
	45					
	55					
30	45	48	54	8	4	8
	63					
40	45	60	66	8	4	8
	63					

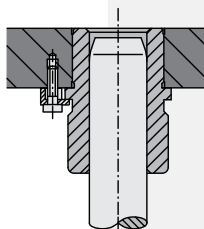
The advantage of our new product G75 according to other similar product G29: Extra stroke distances at unlimited axial direction and robust powerful centering is provided - free motion unlimited with low tolerance absorbs other pinking and taunting.

It is presented unlimited motion advantages with compatibility to high speeds. Linear bush G75: Rigidity in centering with free axial motion at long ejector systems of injection moulds - unlimited frictional motion. Linear bush G74: Quality control equipments - practical and reliable product for machine and mould production and device design. For maintenance and cleaning: "Cungang Signum

(order code: W160110)" spray oil is used.

Order:

G75. d1 x L | G74. d1 x L

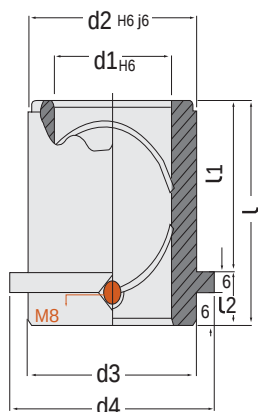


Guide Bush, Thick & Short Type

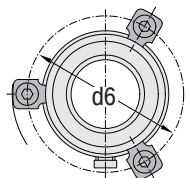
Code: **G34K**

(for heavy dies / with collar & lubricating)

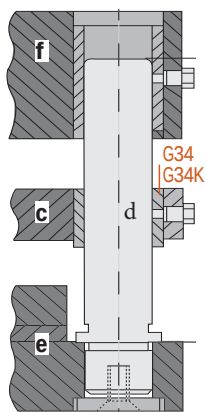
Thick type steel bushes: To provide perpendicularity at bush and guide pillar with new design of Die Components on product suitable flange fixation (balanced layout) on bearing area is created. During mounting, shrink fit should not be done. To avoid clamping and surface disorders at products, by inserting soft tight products to the slots, mounting can be ensured with clamps.



Clamping Detail Code: **G100**



4 pcs. clamp for d1 = 38 mm and larger sizes.



Ø d1	l mm	Ø d2	Ø d3	Ø d4	l1 mm	l2 mm
19	35	32	32	40	23	12
20						
24	35	40	40	48	23	12
25						
32	42	48	48	56	30	12
30						
38	52	58	58	66	37	15
40						
48	65	70	70	80	47	18
50						
60	80	85	85	95	60	20
63						
80	80	105	105	118	60	20



Order: **G34K**. d1 x l x l1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC



IMPORTANT!

Pls. lubricate from grease nipple on bush occasionally.

Lithium Grease - 1kg.

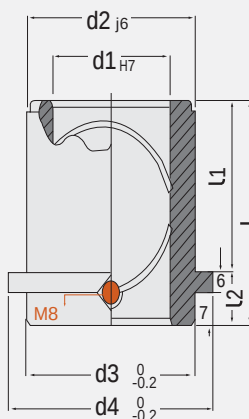
Order Code: W150206

Guide Bush, Thin & Short Type

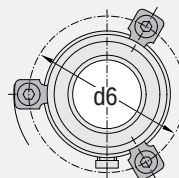
Code: **G34**

(with collar & lubricating)

For being Die Components products having long life and maximum resistance against abrasion, unique precision has provided at surface roughness. This is also created specific bushing system.



Clamping Detail Code: **G100**



4 pcs. clamp for d1 = 38 mm and larger sizes.

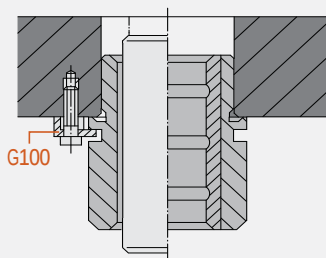
Mounting Details:

Code: **G34K**

Code: **G34**

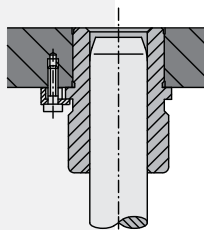
Ø d1	d6
20	52.4
25	60.8
30	69.0
40	79.0
50	93.2
63	108.4
80	131.5

Ø d1	d6
16	46.2
20	46.2
25	51.4
30	56.6
40	66.8
50	77.0



Order: **G34**. d1 x l x l1

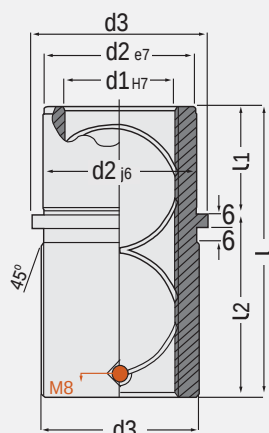
Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC



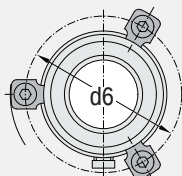
Guide Bush, Thin & Long Type (with collar & lubricating)

Code: **G33**

For being Die Components products having long life and maximum resistance against abrasion, unique precision has provided at surface roughness. This is also created specific bushing system.



Clamping Detail Code: **G100**



4 pcs. clamp for d1 = 38 mm and larger sizes.

Mounting Details:

Code: **G33**

Ø d1	d6
16	46.2
20	46.2
25	51.4
30	56.6
40	66.8
50	77.0

Code: **G33K**

Ø d1	d6
20	52.4
25	60.8
30	69.0
40	79.0
50	93.2
63	108.4
80	131.5

Ø d1	l mm	Ø d2	Ø d3	l1 mm	l2 mm
16	70	28	34	23	47
20	70	28	34	23	47
25	80	34	39	23	57
30	90	39	44	37	53
40	100	50	54	37	63
50	120	60	64	47	73



Order: **G33**. d1 x l x l1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC



Lithium Grease - 1kg.

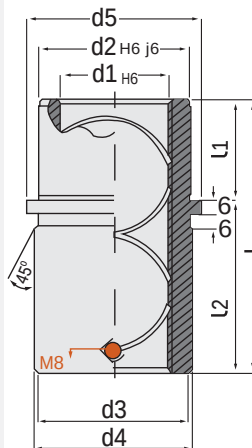
Order Code: W150206

IMPORTANT!
Pls. lubricate from grease nipple on bush occasionally.

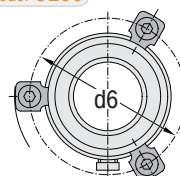
Guide Bush, Thick & Long Type (for heavy dies / with collar & lubricating)

Code: **G33K**

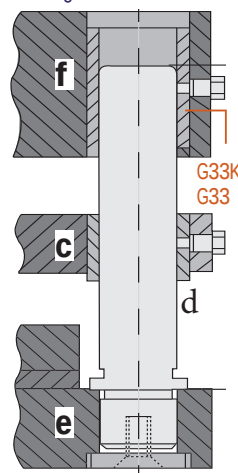
Thick type steel bushes: Please don't use two products without oil groove together. One of product in guide pillar or bushes should be used as set with oil groove. While using guide pillar and bush sets, should be considered that both of them have same brand. Because, grinding tolerance can be different in different guide pillars and bushes. Also, this can be caused big problems during both mounting and operating. The dimensions not giving their tolerance are subjected to general tolerance (production according to standards).



Clamping Detail Code: **G100**



4 pcs. clamp for d1 = 38 mm and larger sizes.



Ø d1	l mm	Ø d2	Ø d3	Ø d4	Ø d5	l1 mm	l2 mm
19	43						20
20	59	32	32	39	40	23	36
24	59						36
25	79	40	40	46	48	23	56
32	75						45
30	93	48	48	53	56	30	63
38	82						45
40	108	58	58	63	66	37	71
48	97						50
50	127	70	70	77	80	47	80
60	116						56
63	150	85	85	92	95	60	90
80	120						60
	150	105	105	115	118	60	90

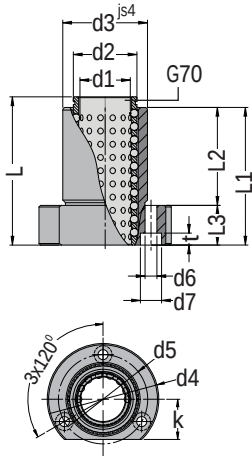


Order: **G33K**. d1 x l x l1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

Guide Bush with Flange, for Ball Cage Code: G72.1

NEW



- * 3 pcs "IMB" coded screws are used to fixed product.
- * Clamping Screws & "G70" coded Ball Cage Bush should be ordered separately.



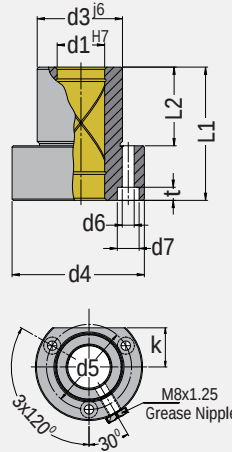
Order:
G72.1 x d1 x L1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

Ø d1	Ø d2	Ø d3	Ø d4	Ø d5	Ø d6	Ø d7	t mm	k mm	L1 mm	L2 mm	L3 mm	L mm
19 / 20	25	32	50	40	4.5	8	5	18	38	23	15	44
	26								45	30		56
									52	37		72
24 / 25	30	40	63	50	5.5	10	6	23	38	23	15	44
	31								55	30		44
									62	37		72
30 / 32	38	48	72	58	5.5	10	6	28	45	20	25	55
	40								62	37		70
									72	47		80
38 / 40	46	58	85	70	7	11	7	33	55	25	30	65
	48								67	37		80
									77	47		95
48 / 50	56	70	104	86	9	15	9	38	62	37	25	80
	58								89	47		95
									102	60		120
60 / 63	68	85	120	100	9	15	9	46	89	47	42	95
	71								102	60		120
80	92	105	148	125	11	18	12	56	125	75	50	140

Guide Bush with Flange, Bronze Plated Code: G72.2

NEW



- * 3 pcs "IMB" coded screws are used to fixed product.
- * Clamping Screws should be ordered separately.



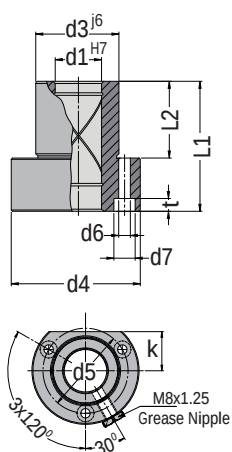
Order:
G72.2 x d1 x L1

Material: 1.1213 (Cf53)
Bronze Casting

Ø d1	Ø d3	Ø d4	Ø d5	Ø d6	Ø d7	t mm	k mm	L1 mm	L2 mm
19 / 20	32	50	40	4.5	8	5	18	38	23
								45	30
								52	37
24 / 25	40	63	50	5.5	10	6	23	38	13
								55	30
								62	37
30 / 32	48	72	58	5.5	10	6	28	45	20
								62	37
								72	47
38 / 40	58	85	70	6.6	11	7	33	55	25
								67	37
								77	47
48 / 50	70	104	86	9	15	9	38	62	37
								89	47
								102	60
60 / 63	85	120	100	9	15	9	46	89	47
								102	60
80	105	146	125	11	18	12	56	125	75

Guide Bush with Flange, Steel Code: G72.3

NEW



- * 3 pcs "IMB" coded screws are used to fixed product.
- * Clamping Screws should be ordered separately.



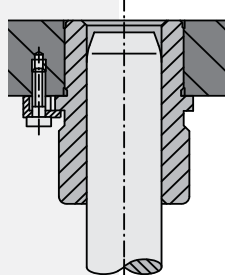
Order:
G72.3 x d1 x L1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

Ø d1	Ø d3	Ø d4	Ø d5	Ø d6	Ø d7	t mm	k mm	L1 mm	L2 mm
19 / 20	32	50	40	4.5	8	5	18	38	23
								45	30
								52	37
24 / 25	40	63	50	5.5	10	6	23	38	13
								55	30
								62	37
30 / 32	48	72	58	5.5	10	6	28	45	20
								62	37
								72	47
38 / 40	58	85	70	6.6	11	7	33	55	25
								67	37
								77	47
48 / 50	70	104	86	9	15	9	38	62	37
								89	47
								102	60
60 / 63	85	120	100	9	15	9	46	89	47
								102	60
80	105	146	125	11	18	12	56	125	75



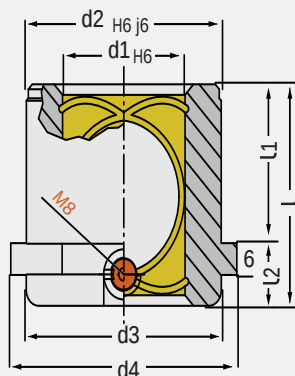
Code: G36



Code: G35

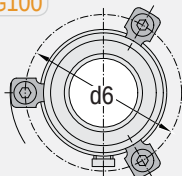
Guide Bush, Bronze Plated & Short Type

It has helical lubrication and inner lubrication system, its position can be lubricated with grease nipple from outside. Finally, equal distance to all lubrication points is ensured. Due to oil intake feature of bronze plated to inside it, there is no need for frequent lubrication, recommended operating speed is 15-30 mt / min. If some conditions such as lubrication clearance, stroke length, radial load and heat distribution are provided, to reach speed as 600 - 800 stroke per minute is possible.



Clamping Detail

Code: G100



4 pcs. clamps for d1= 38 mm and larger sizes.

Mounting Details:

Code: G36

Ø d1	d6
20	52.4
25	60.8
30	69.0
40	79.0
50	93.2
63	108.4
80	131.5

Code: G35

Ø d1	d6
20	52.4
25	60.8
30	69.0
40	79.0
50	93.2
63	108.4
80	131.5

In order to avoid reverse closing of die, Ø 19 - 24 - 32 - 38 - 48 - 60 can be used with 1 Pcs. main dimension.

Bronze Plated Bushes:

Due to soft structure of the bronze material, the steel body material is only left in induction hardness.

Accordingly, you need to be careful when fitting during mounting.

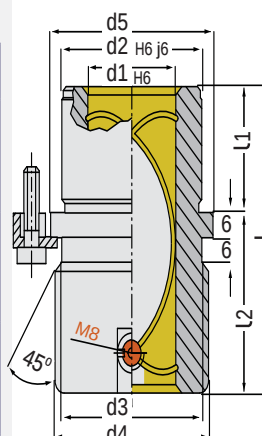


Order: G36. d1 x l x l1

Material: 1.1213 (CF53)
Bronze SnBz 10 HB 160 - 180

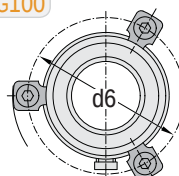
Guide Bush, Bronze Plated & Long Type

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.

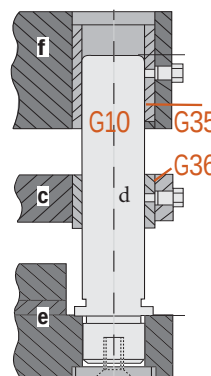


Clamping Detail

Code: G100



4 pcs. clamps for d1= 38 mm and larger sizes.



Order: G35. d1 x l x l1

Material: 1.1213 (CF53)
Bronze SnBz 10 HB 160 - 180

Ø d1	l mm	Ø d2	Ø d3	Ø d4	Ø d5	l1 mm	l2 mm
19	43						20
20	59	32	32	39	40	23	36
24	59						36
25	79	40	40	46	48	23	56
32	75						45
30	93	48	48	53	56	30	63
38	82						45
40	108	58	58	63	66	37	71
48	97						50
50	127	70	70	77	80	47	80
60	116						56
63	150	85	85	92	95	60	90
80	120	105	105	115	118	60	60
	150						90

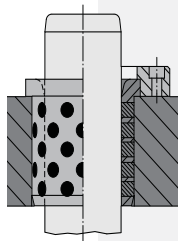


IMPORTANT!

Pls. lubricate from grease nipple on bush occasionally.

Lithium Grease - 1kg.

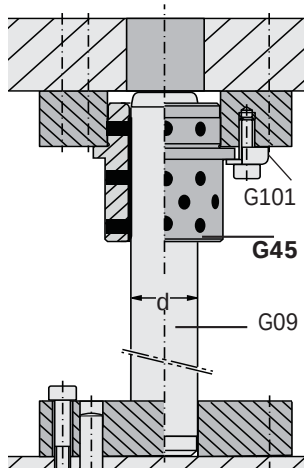
Order Code: W150206



d1	l	d2	d3	d4	d6	d5	l1	l2
19 20	32	32	40	32	57.4	-	20	12
	50					34		30
	70					34		50
24 25	35	40	48	40	65.4	-	23	12
	60					42		37
	80					42		57
32 30	42	48	56	48	73.4	-	30	12
	75					50		45
	95					50		65
38 40	50	58	66	58	83.4	-	35	15
	80					60		45
	110					60		75
48 50	65	70	80	70	97.4	-	45	20
	90					74		45
	120					74		75



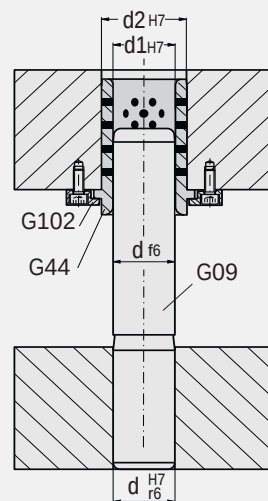
Material: Bronze + graphite inserts

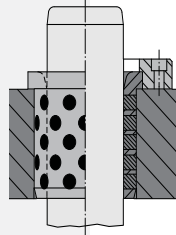


A diagram of a neutron star, represented as a dark gray circle with four smaller dark gray dots in the center. An upward-pointing arrow is positioned above the circle.

d1	l	d2	d3	d6		l1	l2	l3	r	ra2
20	32	28	34	G102 Form A	53.4	12	6.3	3.0	3	1
25	40	32	40		57.4	10	6.3	3.0	3	1
30	50	40	50		65.4	12	6.3	4.0	3	1
32	50	40	50		65.4	12	6.3	4.0	3	1
40	63	50	63	G102 B or G102 C		15	6.3	5.0	3	1
50	71	63	71			17	6.3	6.3	5	1
63	80	80	90							
80	100	100	112	G102 Form D	122.4	19	10	8.0	6	1
					142.4	22	10	10	8	1
100	125	125	140		167.4	21	10	12.5	10	1
125	160	160	180		202.4	30	10	16	12	1
160	200	200	220		242.4	32	10	16	18	1

Material: Bronze + graphite inserts



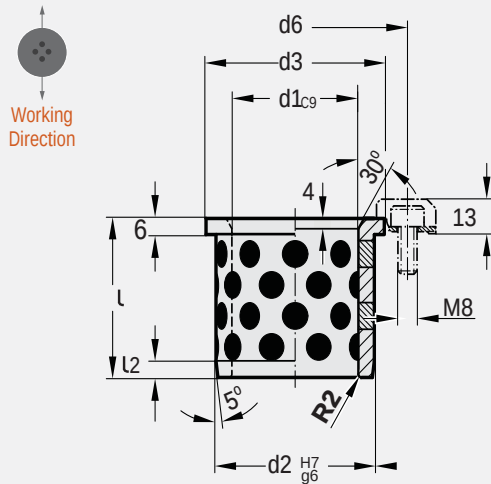


Guide Bush, Headed - NAAMS

Self-Lubricating

Code: **G41**

Heat Resistance: < 150°C



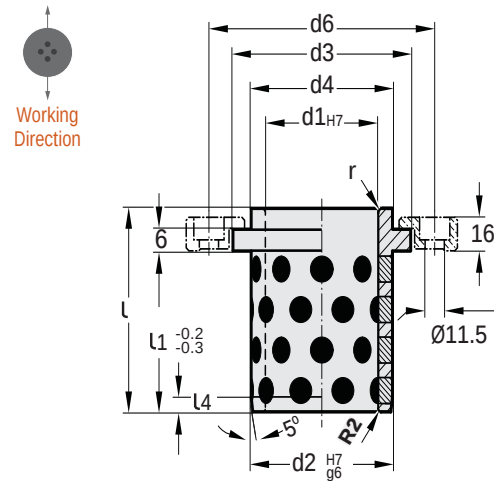
d1	l	d2	d3	d6	l2
25	40	32	40	57.4	4
32	50	40	50	67.4	4
40	55	50	63	80.4	5
50	63	63	71	88.4	6
63	75	80	90	107.4	8
80	90	100	112	129.4	10
100	115	125	140	157.4	12
125	138	160	180	197.4	12

Guide Bush with Collar - NAAMS

Self-Lubricating

Code: **G40**

Heat Resistance: < 150°C

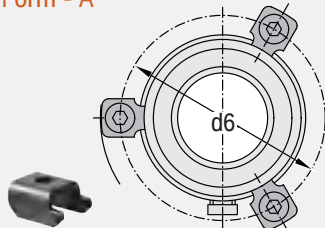


d1	l	d2	d3	d4	d6	l1	l4	r
20	40	28	34	28	51.4	30	3	3
25	40	32	40	32	57.4	30	4	3
30	50	40	50	40	67.4	40	4	3
32	50	40	50	40	67.4	40	4	3
40	63	50	63	50	80.4	50	5	3
50	71	63	71	63	88.4	56	6	5
63	80	80	90	80	107.4	63	8	6
80	100	100	112	100	129.4	80	10	8
100	125	125	140	125	157.4	106	12	10
125	160	160	180	160	197.4	132	12	12

Clamping Detail

Code: **G101**

Form - A



Order: **G41**. d1 x l

IMPORTANT!

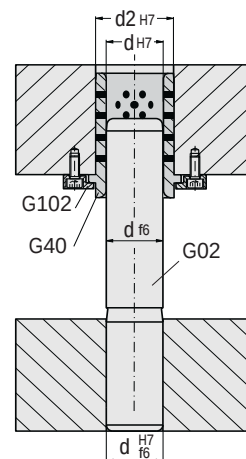
Self-lubricating components should be lubricated once in order to activate permanent lubricating at the first use.



Lithium Grease - 1kg.

Order Code: W150206

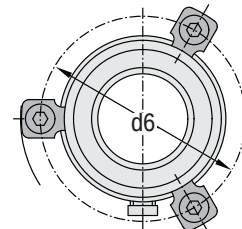
Material: Bronze + graphite inserts



Clamping Detail

Code: **G101**

Form - A



Order: **G40**. d1 x l

Material: Bronze + graphite inserts

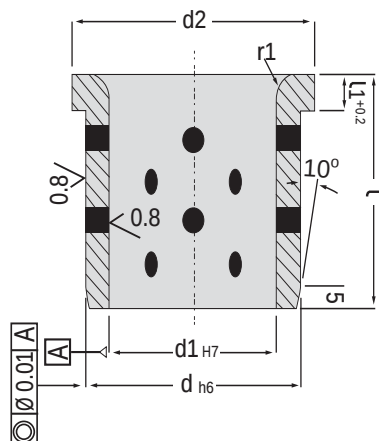


Code: G42

Guide Bush Headed, Self-Lubricating



Heat Resistance:
< 150°C

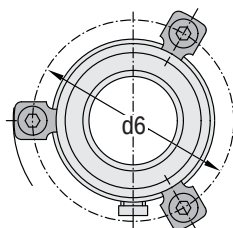


d1	l	d	d2	d6	l1	r1
20	35	28	36	49.4	8	2
25	40	32	40	53.4	8	4
30	55	40	50	63.4	8	6
32	55	40	50	63.4	8	6
40	70	50	60	73.4	8	6
42	70	50	60	73.4	8	6
50	75	63	75	95.4	12	8
52	75	63	75	95.4	12	8
63	80	80	90	110.4	12	8
80	100	100	110	130.4	12	8
100	125	125	135	155.4	12	8

Clamping Detail



Code: G102E



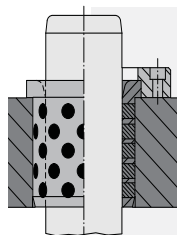
Order: G42. d1 x l

Material: Bronze + graphite inserts



Lithium Grease - 1kg.
Self-lubricating components
should be lubricated once in
order to activate permanent
lubricating at the first use.

Order Code: W150206



Code: G107

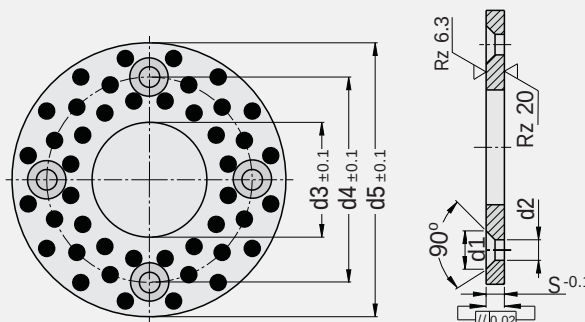
Thrust Washer - Perforated, Self-Lubricating

In-Die & Mould Slide Systems

Heat Resistance: < 150°C

* Spare part for in-die applications

* Spare part in core systems etc. in injection moulds

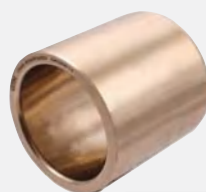


d3	d5	d4	S	d1	d2	Hole
12.2	40	28	3	6.9	3.0	2
16.2	50	28	3	6.9	3.0	2
20.2	50	35	5	11.5	5.5	2
25.2	55	40	5	11.5	5.5	2
30.2	60	45	5	11.5	5.5	2
35.2	70	50	5	11.5	5.5	2
40.2	80	60	7	13.8	6.6	2
45.3	90	67.5	7	13.8	6.6	2
50.3	100	75	8	13.8	6.6	4
60.3	120	90	8	18.3	9.0	4
70.3	130	100	10	18.3	9.0	4
80.3	150	120	10	18.3	9.0	4



Order: G107. d3 x d5

Material: Bronze + graphite inserts

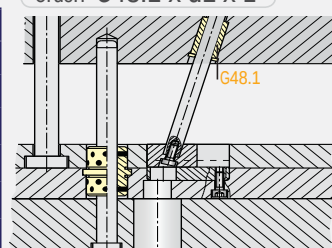


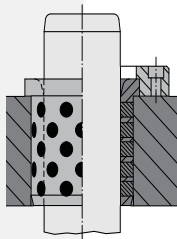
Code: G48.1

Bronze Bush - Plain

Order: G48.1 x d1 x L

d1	L	d2	R
10	14	14	1.0
10	20	14	1.0
12	20	17	1.5
12	25	17	1.5
16	25	22	2.0
16	32	22	2.0



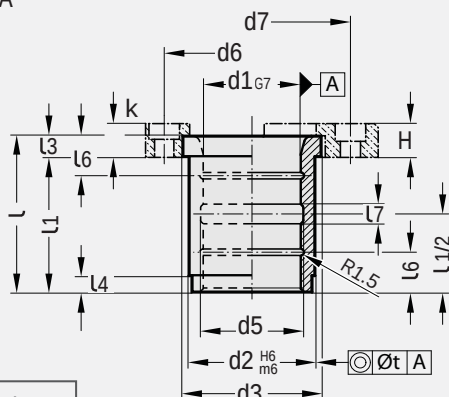


Code: **G86**

Guide Bush, Bronze CNOMO / PSA

Heat Resistance: < 150°C

Working
Direction



Order: **G86**. d1 x l

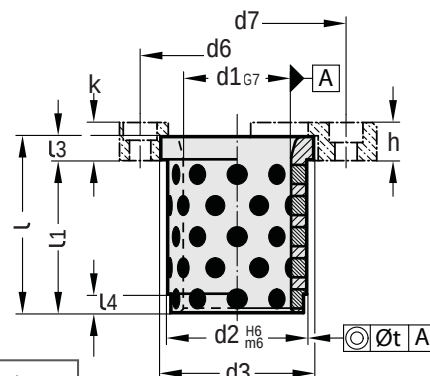
d1 mm	l mm	d2 mm	d3 mm	d4 mm	d5 mm	d6 G102E	d7 G118	l1 mm	l2 mm	l3 mm	l4 mm	l5 mm	l6 mm	l7 mm	h mm	k mm
20	32	28	32	22	-	-	-	28	4	3	-	5	10	-	-	-
25	40	35	40	27	-	-	-	35	5	5	-	5	10	-	-	-
32	50	44	50	34	-	-	-	44	6	8	12	5	12	-	-	-
40	63	52	60	42	73.4	82	55	8	8	16	8	12	12	12	-	-
50	80	63	71	52	87.4	98	70	10	8	20	10	16	16	16	-	-
63	100	80	90	65	110.4	115	88	12	10	25	12	20	20	20	-	-
80	125	100	112	82	132.4	144	109	16	10	32	16	25	25	25	-	-
100	160	125	140	102	160.4	170	140	20	10	40	20	32	32	32	-	-

Guide Bush, Headed - CNOMO Self-Lubricating

Code: **G43**

Heat Resistance: < 150°C

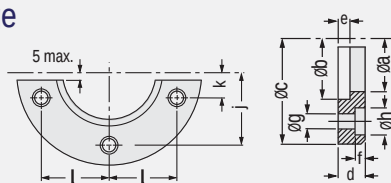
Working
Direction



Order: **G43**. d1 x l

d1 mm	l mm	d2 mm	d3 mm	d4 mm	d5 mm	d6 G102E	d7 G118	l1 mm	l2 mm	l3 mm	l4 mm	h mm	k mm	(A)t
20	32	28	32	-	-	-	-	28	4	3	10	-	-	0.01
25	40	35	40	-	-	-	-	35	5	5	10	-	-	0.01
32	50	44	50	-	-	-	-	44	6	5	12	-	-	0.01
40	63	52	60	73.4	82	55	8	8	12	12	12	12	0.02	0.02
50	80	63	71	87.4	98	70	10	8	16	16	16	16	0.02	0.02
63	100	80	90	110.4	115	88	12	10	20	20	20	20	0.02	0.02
80	125	100	112	132.4	144	109	16	10	25	25	25	25	0.02	0.02
100	160	125	140	160.4	170	140	20	10	32	32	32	32	0.02	0.02

Bush Holder Flange

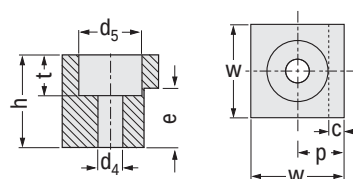


Order: **G118**. Bush

Code: **G118**

Bush	a	b	c	d	e	f	g	h	j	k	l
25	32	41	72	10	5	7	6.6	12	-	20	20
32	40	51	80	12	6	7	6.6	12	-	21	25
40	50	61	100	12	8	7	6.6	12	41	14	38.5
50	63	72	125	16	10	9	9	16	49	17	46
63	80	91	140	20	12	11	11	18	57.5	17	55
80	100	113	180	25	16	13	14	22	72	20	70
100	125	141	200	32	20	13	14	22	85	25	81

Bush Clamp CNOMO



Order: **G102E**. Bush

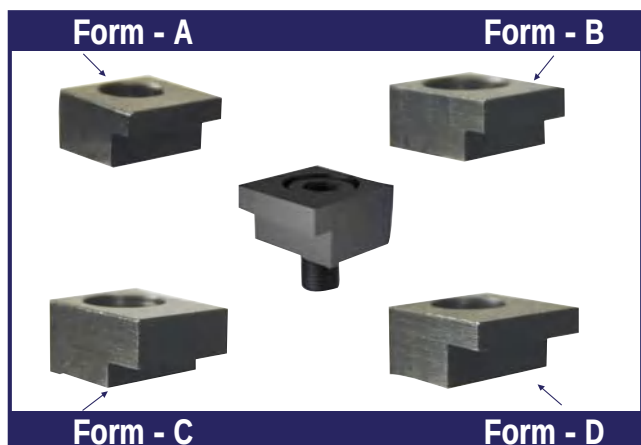
FORM - E

Code: **G102E**

Bush	w	p	h	e	c	t	d4	d5
Ø 40	18	9.5	12	8	3	7	6.6	11
Ø 50	22	12	16	10	4	9	9	15
Ø 63	26	15	20	12	5	11	11	18
Ø 80	26	15	25	16	5	11	11	18
Ø 100	26	15	32	20	5	11	11	18

Note: Used with G03 / G43 guide pillars and bushes. Instead of this clamp in these standards, the clamps with code nr. G102 may be used.

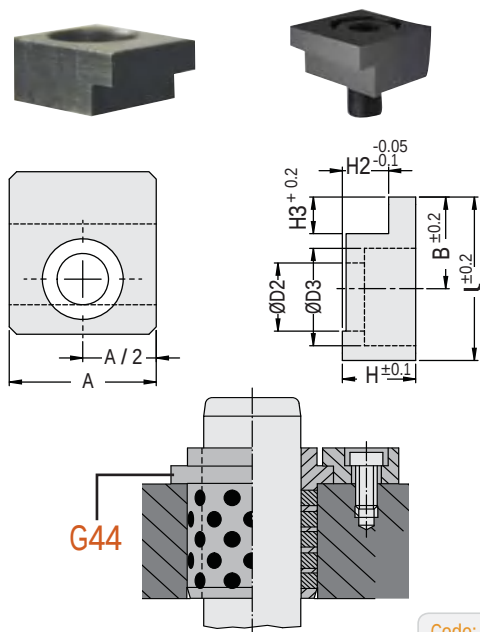
Clamps for Guide Components



Guide Bush Clamp Form: A-B-C-D

Code: **G102**

It is used to fix from cap or flange portion at guide pillar and self lubricating bush. While using for self-lubricating guide bushes and other bush components with bushes for $\varnothing \leq 63$ - 2 pcs. and for $\varnothing \geq 80$ - 3 pcs. clamps are used. Mounting screws should be supplied separately.



Code: **G102**

$\varnothing d - d1$ Pillar / Bush	A mm	B mm	l mm	H mm	H2 mm	H3 mm	D2 $\varnothing$	D3 $\varnothing$	Form Screw
25 - 32 40 - 50	20	12.5	20	10	6.3	5	7	11	A M6x16
63 - 80 100 - 125 160	20	15	25	12	6.3	5	9	15	B M8x20
63 - 80 100 - 125	25	21	32	16	6.3	10	11	18	C M10x20
63 - 80 100 - 125 160	32	21	32	16	10	10	11.5	17.5	D M10x20



Order: **G102. Form**

Order Example:

G102.A

Guide Pillar & Bush Clamp Order Code: **G100**

Can be used in clamping of demountable guide pillars (G10 - G15 - G01 - G08) in clamping system of guide pillars.

Guide Pillar & Bush Clamp Code: **G143**

Thick and walled clamps used in clamping of guide pillar / bush sets in dies.

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

Order: **G143. Form** Order Example: **G143.B**

NEW

Hex-socket Button Head Screw with Flange Code: **IMBF**

ISO 7380-2 10.9 Zinc Plated

d	l	d1	d2	SW
M6	10	13.6	3.3	4
	12			
	16			
M8	16	17.8	4.4	5
	20			
M10	20	21.9	5.5	6

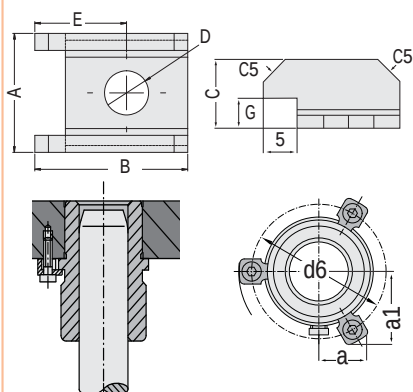
Mounting Example

Order: **IMBF. d x l**



Guide Bush Clamp Code: G101

While using for self-lubricating guide bushes and other bush components with bushes for $\varnothing \leq 63$ 2 pcs. and for $\varnothing \geq 80$ 3 pcs. clamps are used. Mounting screws are supplied separately.



Code: G101

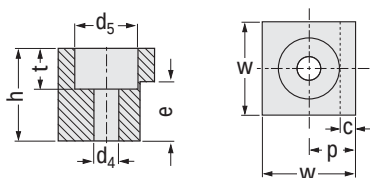
$\varnothing$ d Bush	A mm	B mm	C mm	D mm	E mm	G mm	Form
32 / 40 50 / 63 63 / 80 100 115	17.5	22.5	12	6.5	13.5	6	A M6 x 20
32 / 40 50 / 63 63 / 80 100 115 125	21	25.5	13.5	8.5	15	5.5	B M8 x 20



Order: G101. Form

Bush Clamp

Code: G102E



Order Example:
G102E.40

Reference: CNOMO

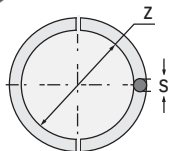
Bush	w	p	h	e	c	t	d ₄	d ₅
$\varnothing$ 40	18	9.5	12	8	3	7	6.6	11
$\varnothing$ 50	22	12	16	10	4	9	9	15
$\varnothing$ 63	26	15	20	12	5	11	11	18
$\varnothing$ 80	26	15	25	16	5	11	11	18
$\varnothing$ 100	26	15	32	20	5	11	11	18

Circlip

Code: G112



G02-G03-G04-G05
G06-G07-G09-G20
It is used
with above
guide pillars.



Pillar	z	s
$\varnothing$ 25	22.5	2.5
$\varnothing$ 32	28	4
$\varnothing$ 40	36	4
$\varnothing$ 50	46	4
$\varnothing$ 63	57	6
$\varnothing$ 80	74	6
$\varnothing$ 100	94	6

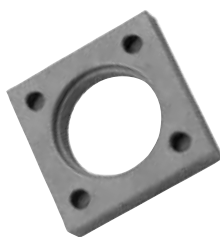


Order: G112. Pillar

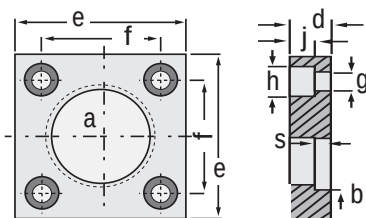
Square Flange for Guide Pillar

Reference: CNOMO
Reference: PSA

Code: G119



G03
G04
G05
It is used
with above
guide pillars.



a Pillar	b	d	e	f	g	h	j	s
25	28	10	45	31	6.6	11	7	2.7
32	37	10	56	36	6.6	11	7	4.2
40	45	12	70	50	6.6	11	7	4.2
50	55	14	80	55	9	16	9	4.2
63	70	18	100	70	11	18	11	6.2
80	87	20	110	80	13	22	14	6.2
100	107	20	140	100	13	22	14	6.2



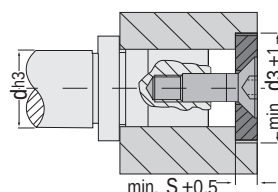
Order: G119. a (pillar)



Mounting Flange

Code: G110

Guide pillar fixation & Support washer



Countersunk
Head Screw

* Reliable product used for
guide pillar with centre
collar mountings min. d3+1

* It can also be used to
support for ejector plates
in injection moulds / etc.

Ø d3	Pillar Diameter d	Flange S	Screw 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

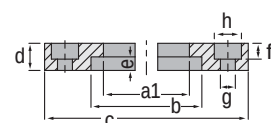
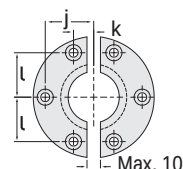


Order:
G110. d3

Guide pillar fixation (Die)
Support washer (Mould)

Bush Holder Flange

Code: G118



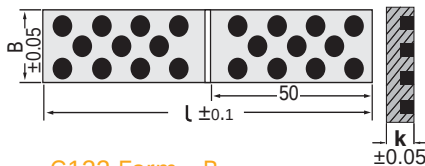
* For product selection and details,
refer to page 40



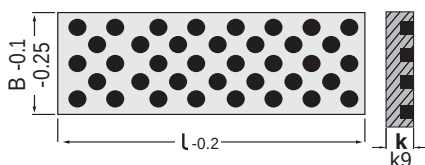
Code: G122

Wear Plate, Plain Type Self-Lubricating

G122 Form - A



G122 Form - B



Heat Resistance 150°C Working Direction

Code: G122

k	l	B	Form
5.3	302	20	A
		35	
		50	
10.3	302	20	A
		35	
		50	
5	50	25	B
	71		
	90		
5	50	40	B
	71		
	80		
	90		
6	100	40	B
	125		
	160		
	200		
	200		



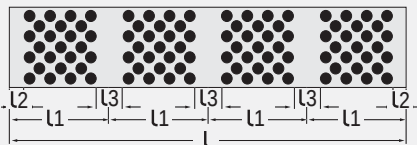
Order: G122. k x l x B x Form

Long strip wear plates is compatible for use by perforated connection holes and cutting by user (in desired length). Working surfaces should be lubricated for once.

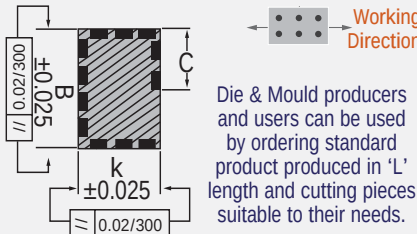


Code: G123

Wear Plate, Two-Way Sliding Type Self-Lubricating



Heat Resistance 150°C



Die & Mould producers and users can be used by ordering standard product produced in 'L' length and cutting pieces suitable to their needs.

Code: G123

k	B	l	C	l1	l2	l3
10.3	15.3	75	6	25	3	6
		100				
		150				
		200				
		250				
		300				
15.3	25.3	105	8	35	4	8
		140				
		175				
		210				
		245				
		280				
		315				
		350				
		385				
		420				
25.3	35.3	135	12	45	5	10
		180				
		225				
		270				
		315				
		360				
		405				
		450				
		496				
35.3	45.3	165	16	55	6	12
		220				
		275				
		330				
		385				
		440				
		495				

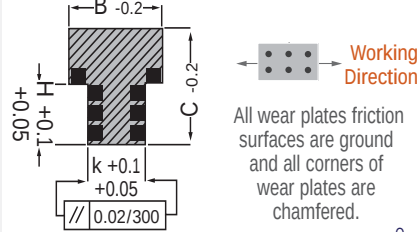
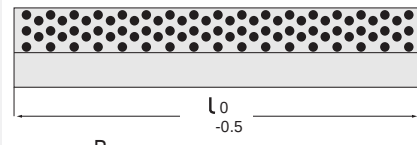


Order: G123. k x l x B



Code: G121

Wear Plate, "T" Shaped Self-Lubricating



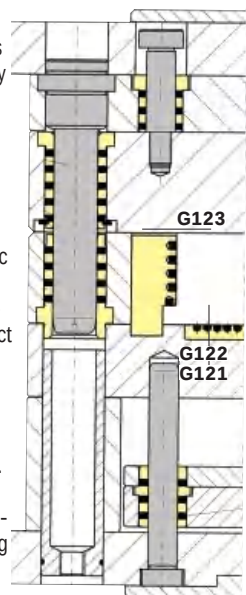
Heat Resistance 150°C

Code: G121

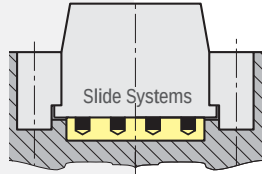
C	l	B	k	H
12	350	18	8	5
25	350	22	12	15
35	350	28	18	20

Usage of self-lub. wear plates on injection moulds:

Self-lubricating components provides load carrying capacity beyond expectations in low sliding speeds and a wide temperature range. The graphite inserts are positioned with an appropriate geometric structure. By this means, maximum lubricating effect is achieved during sliding. They especially work better with hardened and ground bearings. Sliding surfaces should be slightly lubricated before starting to work.



Order: G121. C x l



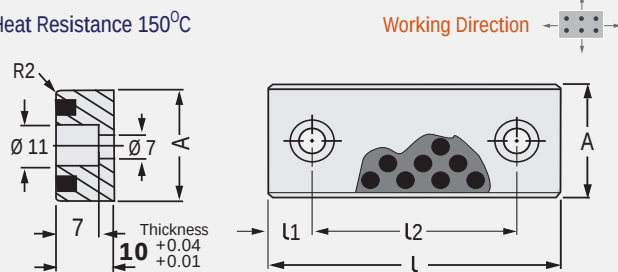
Wear Plate, Self-Lubricating

Code: G85

Thickness: 10 mm / with 2 holes

Self-lubricating components provides load carrying capacity beyond expectations in low sliding speeds and a wide temperature range. The graphite inserts are positioned with an appropriate geometric structure. By this means, maximum lubricating effect is achieved during sliding. They especially work better with hardened and ground bearings. Sliding surfaces should be slightly lubricated with lithium grease during mounting before starting to work. 25-30% of the surface in plain, self-lubricating bearings and pillar bearings are formed with graphite inserts. The part corresponding to self-lubricating bearing component should be ground and fixed to the sliding axis in parallel.

Heat Resistance 150°C



Code: G85

A	l	l1	l2	Hole
18	75	15	45	2 pcs. M6 x 20
	100	25	50	
	125		75	
	150		100	
28	75	15	45	
	100	25	50	
	125		75	
	150		100	
38	75	15	45	
	100	25	50	
	125		75	
	150		100	
48	75	15	45	
	100	25	50	
	125		75	
	150		100	



Order: G85. A x l

Material: Bronze + graphite inserts



Lithium Grease - 1kg.

Self-lubricating components should be lubricated once in order to activate permanent lubricating at the first use.

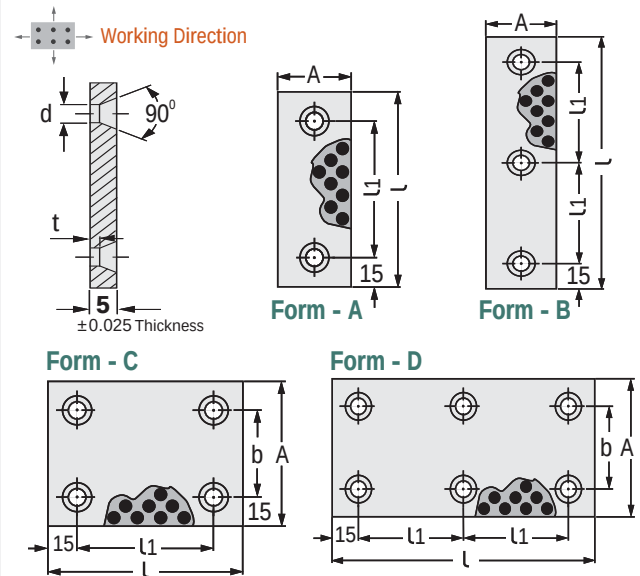
Order: W150206

Wear Plate, Self-Lubricating

Code: G83

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

Self-lubricating plates are generally preferred because of their strength against lateral loads in large dies or injection moulds (cores). They are maintenance-free, self-lubricating and work long time.



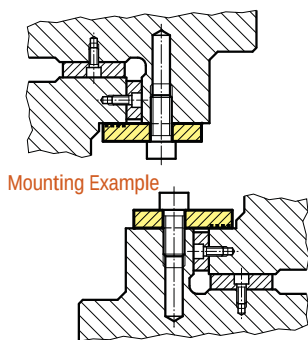
Code: G83

A	l	l1	b	d	t	Form	Screw
18	50	20	-	6.5	1	A	2 pcs. M6 x 10
	75	45					
	100	70				B	3 pcs.
	150	60					
28	50	20	-	9	0.5	A	2 pcs. M8 x 10
	75	45					
	100	70				B	3 pcs.
	150	60					
38	50	20	-	9	0.5	A	2 pcs. M8 x 16
	75	45					
	100	70				B	3 pcs.
	150	60					
48	75	45	-	9	0.5	A	2 pcs. M8 x 16
	100	70					
	125	95				B	3 pcs.
	150	60					
75	75	45	45	9	0.5	C	4 pcs. M8 x 16
	100	70					
	125	95				D	6 pcs.
	150	60					
100	100	70	70	9	0.5	C	4 pcs. M8 x 16
	125	95					
	150	60				D	6 pcs.



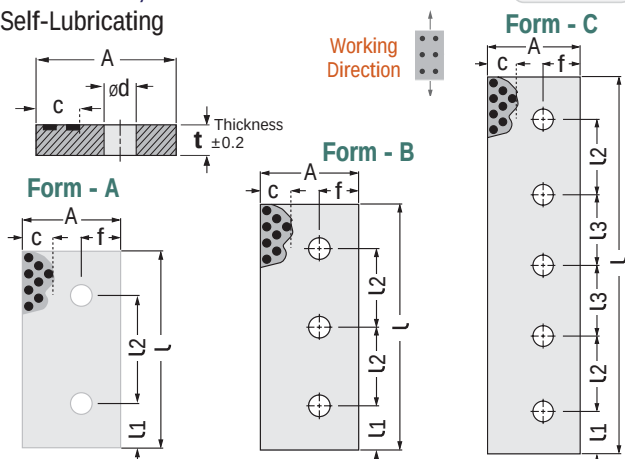
Order: G83. A x l

Material: Bronze + graphite inserts



Wear Plate, VDI 3357 Self-Lubricating

Code: G95



Code: G95

A	l	l1	l2	l3	t	c	f	d	Form
35	160	45	70	-	10	10	15	11	A
	200		110						B
	250		80						B
45	160	45	70	-	15	15	15	13.5	A
	200		110						B
	250		80						B
55	160	45	70	-	15	20	20	17.5	A
	200		110						B
	250		80						B
75	160	45	70	-	25	25	35	17.5	A
	200		110						B
	250		80						B
100	160	45	70	-	25	30	40	17.5	A
	200		110						B
	250		80						B
	400		80	75					C
	160		70	-	30	30	40	22	A
	200		110						B
	250		80						B
	400		80	75					C
125	160	45	70	-	30	30	50	22	A
	200		110						B
	250		80						B
	400		80	75					C



Order: G95. A x l x t

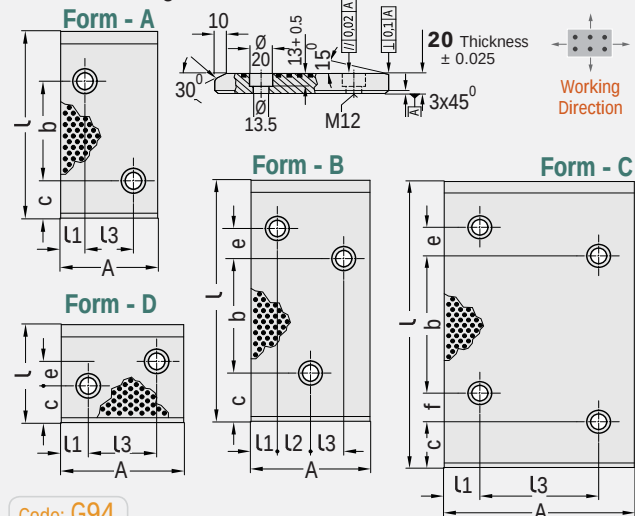
Material: Bronze + graphite inserts



Code: G94C
(steel type)

Wear Plate, NAAMS Self-Lubricating / Steel

Code: G94



Code: G94

A	l	l1	l2	l3	c	f	b	e	Hole	Form					
50	100	25	-	-	30	-	30	-	2	A					
	150				80										
	200				40		120								
80	100	20	-	40	30	-	30	-	2	A					
	150				80										
	200				120										
	250				170										
	315		20	20	210		25				3	B			
100	50	22	-	56	14	-	-	13	2	D					
	80				30		20								
	100				30		-								
	150				80		-								
	200		28	28	40		95	25	3	B					
	250						145								
	315						210								
	315						40				210				
125	80	25	-	75	30	-	-	20	2	D					
	100						30	-							
	150						80	-							
	200		37	38	40		95	25	3	B					
	250						145								
	315						185				4	C			
	160		100	30			100	30	-	30	-	2	A		
150		80													
200		95													
250			50		40	120	25	3		B					
315						100						25	185	4	C
315						25						185			

* G94: Bronze + self-lubricating type.

* G94C: Steel type.

* The dimensions of G94 & G94C are same.

Order: G94 or G94C. A x l



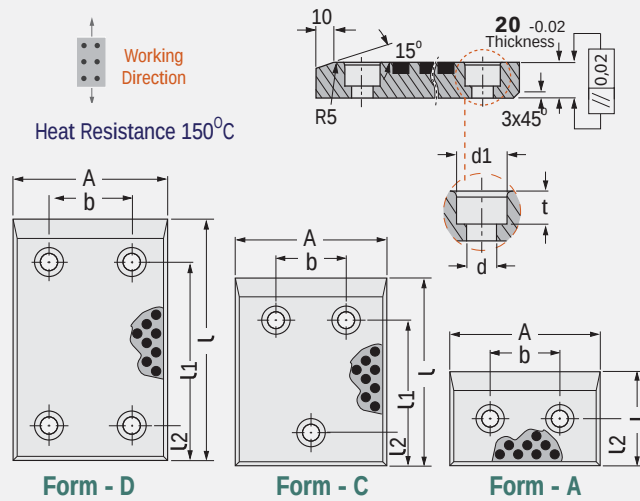
Code: G91C (steel type)



Wear Plate, VDI 3357

Self-Lubricating, Thickness: 20 mm / Form: A - C - D

Code: G91



* Please specify Form A - C - D when placing order.

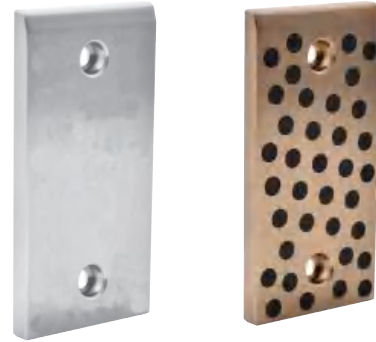
Code: G91

A	l ±0.2	l1	l2 ±0.2	b ±0.2	d H13	d1 H13	t	Form	Screw
80	50	-	25	30	9	15	9	A	M8x25
100	50	-	25	50	13.5	20	13	A	2 pcs. M12x25
	80	-	40						
125	50	-	25	75	13.5	20	13	A	2 pcs. M12x25
	80	-	40						
	100	75							
	125	100	25						
	160	135		75	13.5	20	13	C	3 pcs. M12 x 25
	200	175							
	250	210	40						
	315	275							
160	50	-	25	110	13.5	20	13	A	2 pcs. M12x25
	80	-	40						
	100	75							
	125	100	25						
	160	135		110	13.5	20	13	C	3 pcs. M12 x 25
	200	175							
	250	210	40						
	315	275							
160	250	210	40	110	13.5	20	13	D	4 pcs. M12x25
	315	275							

Order:
G91 or G91C. A x l x Form

* G91: Bronze + self-lubricating type.
* G91C: Steel type.
* The dimensions of G91 & G91C are same.

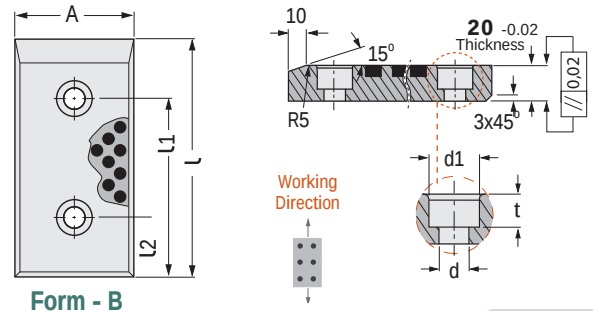
Code: G90C (steel type)



Wear Plate, VDI 3357

Self-Lubricating, Thickness: 20 mm

Code: G90



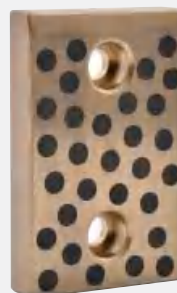
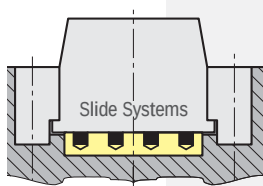
Code: G90

A	l ±0.2	l2 ±0.2	l1	d H13	d1 H13	t	Form	Screw
50	80		55	9	15	9		M8x25
	100		75					
	125	25	100	13.5	20	13	B	2 pcs. M12 x 25
	160		135					
	200		175					
80	80		55					
	100		75					
	125	25	100	13.5	20	13	B	2 pcs. M12 x 25
	160		135					
	200		175					
	250	40	210					
	315		275					
100	100		75					
	125	25	100	13.5	20	13	B	2 pcs. M12 x 25
	160		135					
	200		175					
	250	40	210					
	315		275					



Order:
G90 or G90C. A x l

* G90: Bronze + self-lubricating type.
* G90C: Steel type.
* The dimensions of G90 & G90C are same.

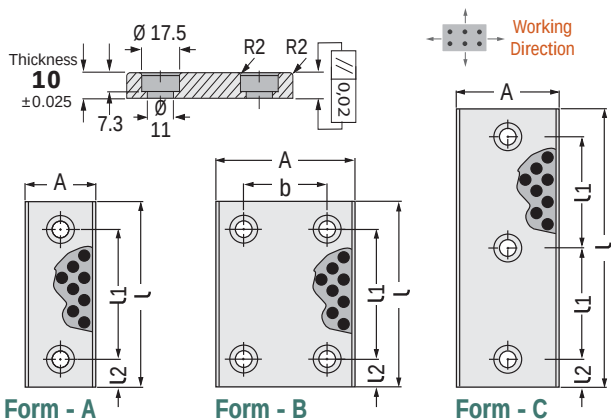


Code: **G87C**
(steel type)

Wear Plate

Self-Lubricating, Thickness: 10 mm / Form: A - B - C

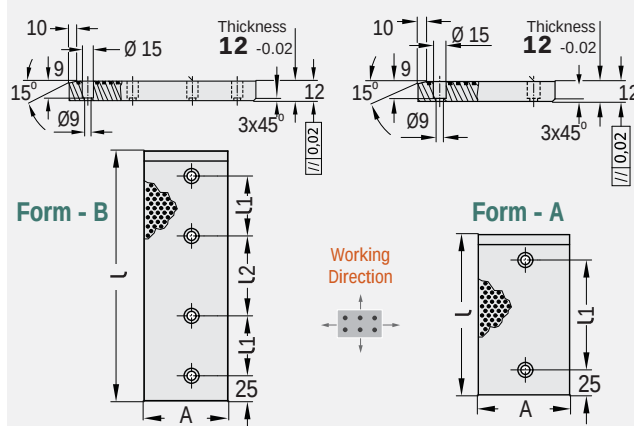
Code: **G84**



Wear Plate, VDI 3357

Self-Lubricating, Thickness: 12 mm / Form: A - B

Code: **G87**



Code: **G84**

Code: **G87**

A	l	L1	L2	b	Form
28	75	45	15	-	A
	100	50	25		
	125	75			
	150	100			
38	75	45	15	-	A
	100	50	25		
	125	75			
	150	100			
48	75	45	15	-	A
	100	50	25		
	125	75			
	150	100			
	200				
58	75	45	15	-	A
	100	50	25		
	125	75			

A	l	l1	l2	b	Form
58	150	100	25	-	A
	200		50		
75	75	45	15	-	A
	100	50	25		
	125	75			
	150	100			
	200	75	25	-	C
100	100	50	25	50	B
	125	75			
	150	100			
	200	150			
	250	200			
125	150	100	25	50	B
	200	150			
	250	200			
150	150	100	25	100	B
	200	150			

A	L	L1	L2	Hole	Form
30	80	30	-	2	A
	100	50			
	125	75			
	160	110			
	200	150	4	B	B
	225	175			
	250	60			
	260	60			
40	80	30	-	2	A
	100	50			
	125	75			
	160	110	4	B	B
	200	150			
	225	175			
50	80	30	-	2	A
	100	50			
	125	75			
	160	110			
	200	150	4	B	B
	225	175			
	250	60			
	300	80			
60	80	30	-	2	A
	100	50			
	125	75			
	160	110			
80	80	30	-	2	A
	100	50			
	125	75			
	160	110	4	B	B
	200	150			
	225	175			
100	80	30	-	2	A
	100	50			
	125	75			
	160	110	4	B	B
	200	150			
	225	175			

* G87: Bronze + self-lubricating type.
 * G87C: Steel type.
 * The dimensions of G87 & G87C are same.
 * Fixing screws: M8.

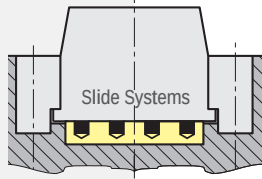


Order: **G84**. A x L

* Fixing screws: M10x20.



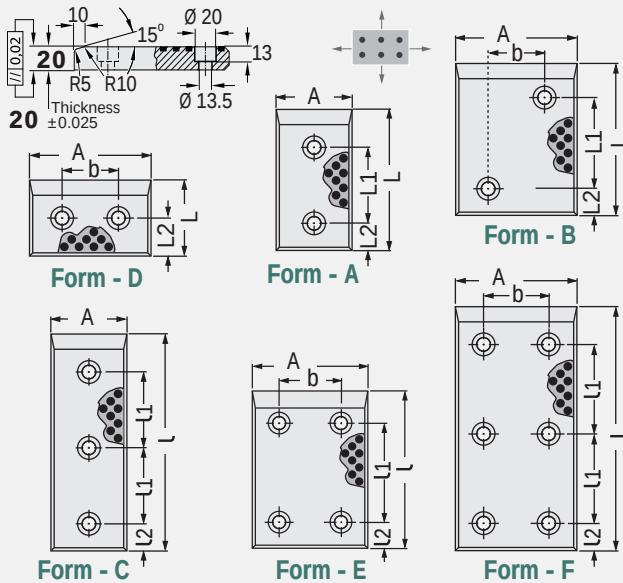
Order:
G87 or G87C. A x L



Wear Plate, ISO 9183-1

Code: G89

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



A	l	l1	l2	b	Form
50	80	35	20	-	A
	100	55			
	125	80			
	160	115			
	200	155			
	250	100			C
80	50	-	25	40	D
	80	35	20	40	B
	100	55			
	125	80			
	160	115	20	40	E
	200	155			
	250	100	20	40	F
	315	132			
100	50	-	25	60	D
	80	35	20	60	B
	100	55			
	125	80			
	160	115	20	60	E
	200	155			
	250	100	20	60	F
	315	132			

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

* Heat Resistance 150°C.

* Fixing screws: M12 x 25.

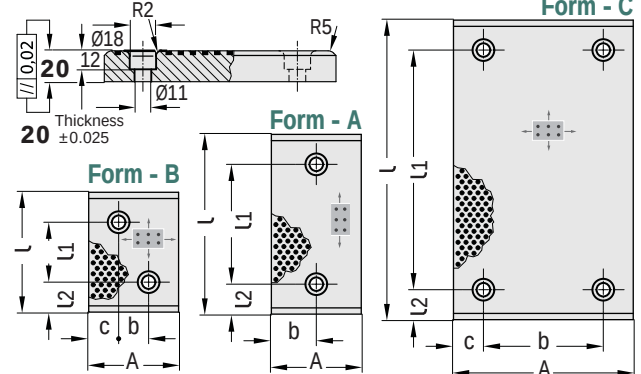


Order: G89. A x L

Wear Plate

Code: G88

Self-Lubricating, Thickness: 20 mm / Form: A - B - C



* Please specify Form A - B - C when placing order.

Code: G88

A	l	l1	l2	c	b	Form
28	75	45	15	-	14	A
	100	50	25			
	125	75				
	150	100				
38	75	45	15	-	19	A
	100	50	25			
	125	75				
	150	100				
	200	150				
48	75	45	15	-	24	A
	100	50	25			
	125	75				
	150	100				
	200	150				
58	75	45	15	-	29	A
	100	50	25			
	150	100				
75	75	45	15	-	37.5	A
	75	25	25	25	25	B
	100	50		-	37.5	A
	100	50		25	25	B
	125	75		-	37.5	A
	150	100			37.5	
	200	150			37.5	

A	l	L1	L2	c	b	Form
100	100	50	25	25	50	C
	125	75				
	150	100				
	200	150				
125	250	200	25	37.5	50	C
	300	250				
	350	300				
	125	75				
150	150	100	25	25	100	C
	200	150				
	250	200				
	300	250				
200	200	150	25	25	150	C
	250	200				
	300	250				

* Heat Resistance 150°C.

* Fixing screws: M10 x 25.



Order:
G88. A x L x Form

Advantages of Self-Lub. Wear Plate:

- Highly compatible with sudden movements.
- Maximum load carrying capacity at low speeds.
- Can be used under water or with chemical solutions.
- Wide range of temperature resistance.
- Resistant to impact in case of vibration.



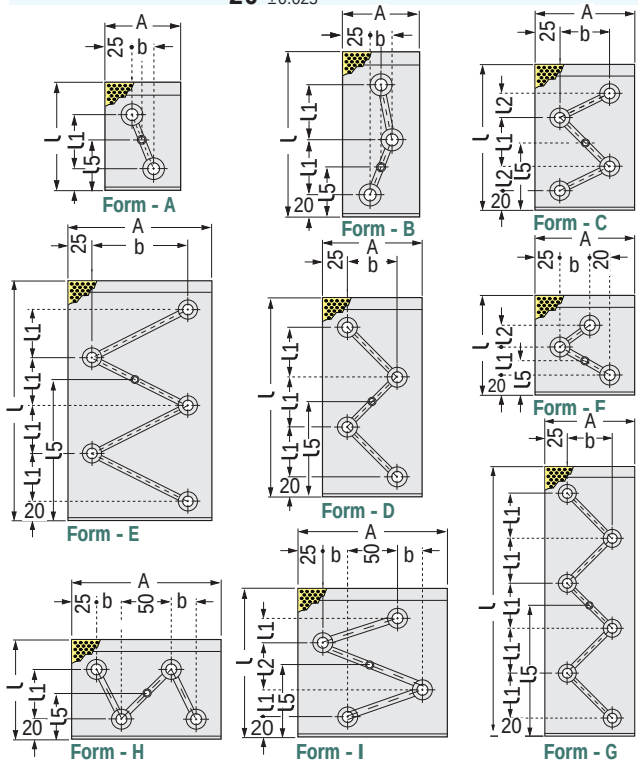
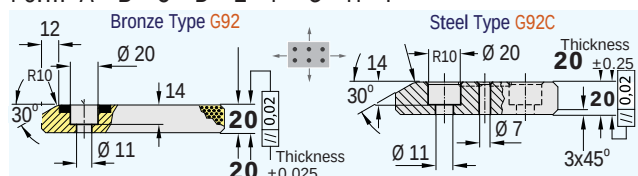
Code: G92C (steel type)



Wear Plate, AFNOR / ISO 9183-2

Form A - B - C - D - E - F - G - H - I

Code: G92

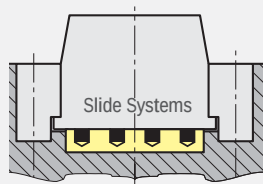


A	l	b	l1	l2	l5	Hole	Form
70	100	20	50	-	45	2	A
	150	10			45	3	B
	200	20			95	4	D
100	150	50	50	25	70	4	C
	200			-	95	4	D
	250				145	5	E
150	200	100	50	-	95	4	D
	250				145	5	E
100	100	30	25	25	32.5	3	F
	300	50	50	-	145	6	G
150	100	25	50	-	45	4	H
	150		25	50	70	4	I
	300		50	-	145	6	G
200	100	50	50	-	45	4	H



Order:
G92 or G92C. A x l

* G92: Bronze + self-lubricating type.
* G92C: Steel type.
* Fixing screws: M10.

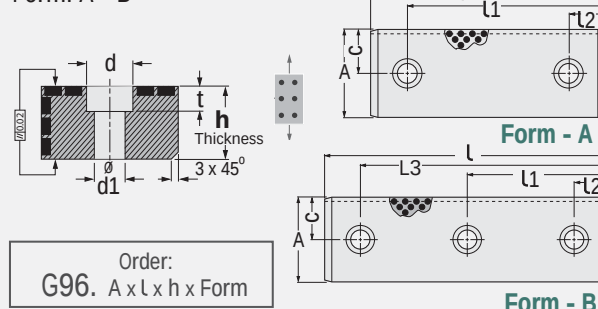


Wear Plate, VDI 3357

Self-Lubricating / Two-Way Sliding Type

Code: G96

Form: A - B



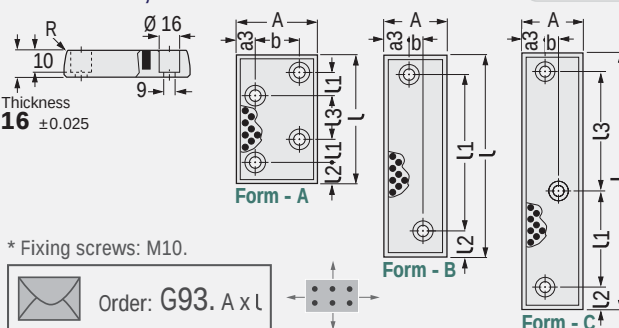
Order:
G96. A x l x h x Form

A	l	l1	l2	l3	c	h	d	d1	t	Form
-0.02		±0.2		±0.2		-0.02	H13	H13	+0.5	
25	110	85	25	-	12.5	12	15	9	8.5	A
	120	95				15	18	11	10.5	
	110	85								
	120	95								
60	125	100	25	-	30	30	20	13.5	13	A
	150	125								
	160	135								
	200	100				30				
60	125	100	25	-	30	40	20	13.5	13	B
	150	125		-						
	160	135		-						
	200	100		175						A
	200	100		175						



Wear Plate, CNOMO

Code: G93

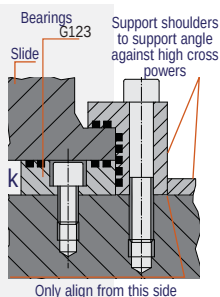


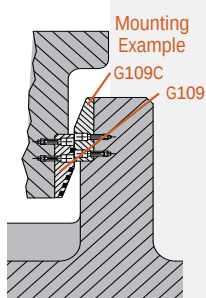
* Fixing screws: M10.

Order: G93. A x l

A	l	l1	l2	l3	b	a3	Hole	Form
50	63	39	12	-	20	15	2	B
50	160	126	21	-	12	19	2	B
50	250	100	21	116	12	19	3	C
63	100	18	15	34	39	12	4	A







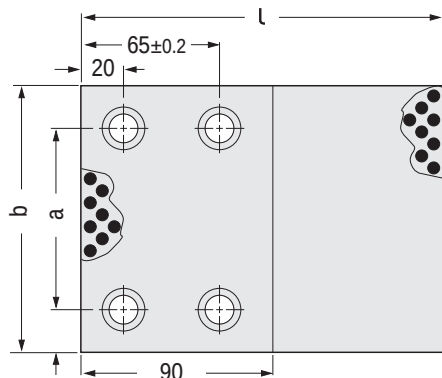
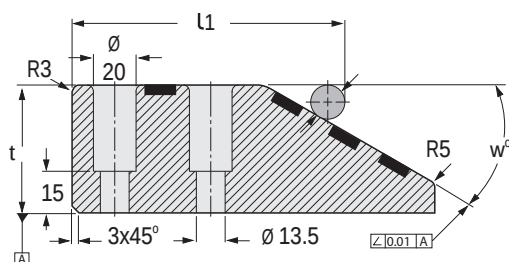
Cam Driver Plate, VDI 3357

Code: **G109**

Self-Lub. Angular Wear Plates for Upper and Lower Body of Cam Units

Tolerance between hole distances is ± 0.25 .

± 0.25 is used for all dimensions where tolerance is not specified.



Code: **G109**

b	l	t	l1	a	w
100	170	45	143.37	60	20°
125	170	45	143.37	85	20°
150	170	45	143.37	110	20°
100	150	45	127.86	60	30°
100	170	60	127.86	60	30°
125	150	45	127.86	85	30°
125	170	60	127.86	85	30°
150	150	45	127.86	110	30°
150	170	60	127.86	110	30°

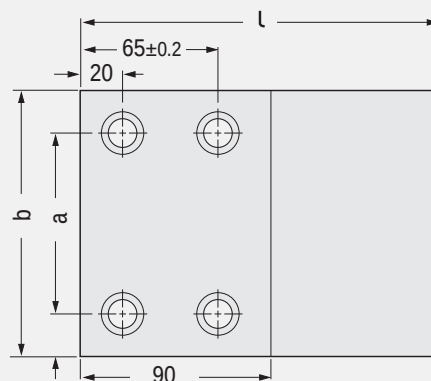
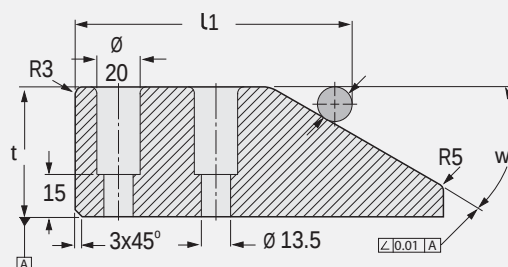
Cam Driver Plate, VDI 3357

Code: **G109C**

Steel Type, Angular Wear Plates for Upper and Lower Body of Cam Units

Tolerance between hole distances is ± 0.25 .

± 0.25 is used for all dimensions where tolerance is not specified.



Code: **G109C**

b	l	t	l1	a	w
100	170	45	143.37	60	20°
125	170	45	143.37	85	20°
150	170	45	143.37	110	20°
200	170	45	143.37	160	20°
100	150	45	127.86	60	30°
100	170	60	127.86	60	30°
125	150	45	127.86	85	30°
125	170	60	127.86	85	30°
150	150	45	127.86	110	30°
150	170	60	127.86	110	30°
200	150	45	127.86	160	30°
200	170	60	127.86	160	30°



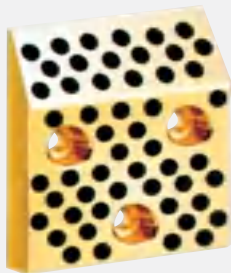
Order: **G109**. b x l x t

Material: Bronze + graphite inserts

Material: 1.2379
Steel Hardness: 63 - 65 HRC



Order:
G109C. b x l x t



Code: **G108C** (steel type)

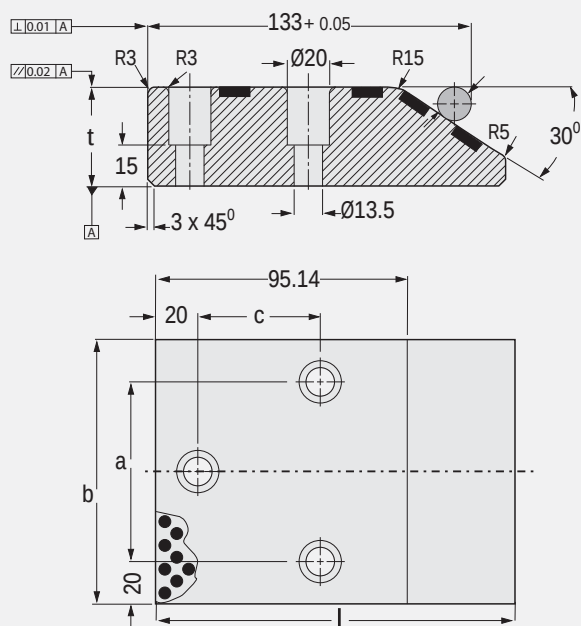
Cam Driver Plate

Code: **G108**

Self-Lub. & Steel Angular Wear Plates for Upper and Lower Body of Cam Units

Tolerance between hole distances is ± 0.25 .

± 0.25 is used for all dimensions where tolerance is not specified.



Code: **G108**

b	L	t	a	c
100	125	30	60	50
	150	45		45
	170	60		45
125	125	30	85	50
	150	45		45
	170	60		45
160	125	30	120	50
	150	45		45
	170	60		45

Order:
G108 or G108C. b x L

* The dimensions of G108 & G108C are same.
* Fixing screws: M12

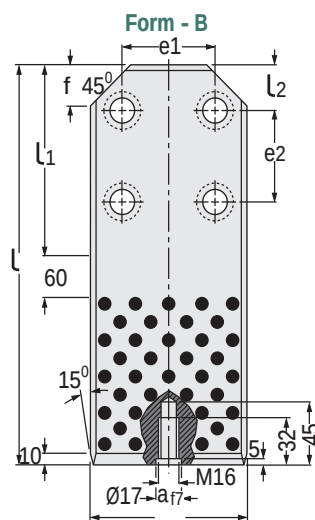
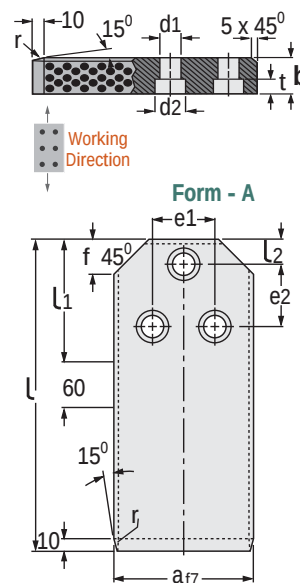


Code: **G106C** (steel type)

Guide Bar, VDI 3387

Code: **G106**

Self-Lubricating & Steel Types



Code: **G106**

a	b	L	t1	t2	e1	e2	f	r	d1	d2	t	Form
63	36	200	90	20	36	50	18	16	14	20	16	A
71												
90												
112	45	250	100	50	28	25	18	26	21	21	21	B
112												
140	45	400	150	40	90	80	36	31.5	22	33	25.5	B
140												
140												
190	56	500	250	160	160	26	40	30.5	26	40	30.5	B
240												
240												

Material: Bronze with graphite inserts

Material: 1.2379
Steel Hardness: 63 - 65 HRC

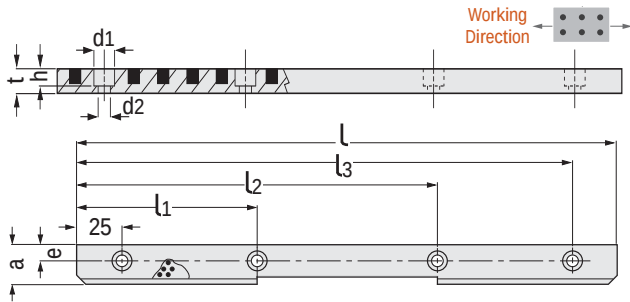
Order:
G106 or G106C. a x b x L

Order Example:
G106. 140 x 45 x 400



Wear Plate, Replaceable

Code: **G138**



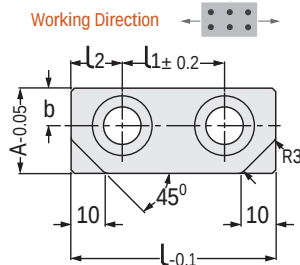
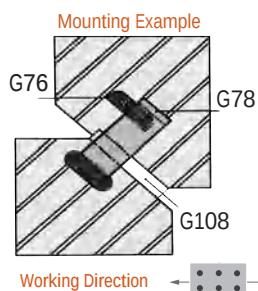
a	l	l1	l2	l3	t	h	e	d1	d2
22	100	-	-	75	10	7	9	11	6.5
	150	75	-	125					
	200	75	125	175					
	250	100	150	225					
	300	100	200	275					
50	150	75	-	125	12	9	22	14	9
	200	75	125	175					
	250	100	150	225					
	300	100	200	275					
	350	100	200	275					

Order: **G138**. a x l

Material: Bronze with graphite inserts

Return Cam Plate

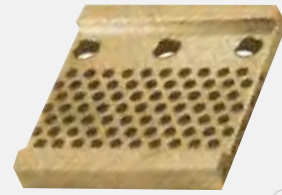
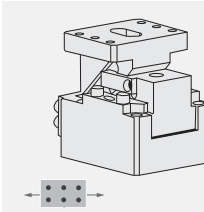
Code: **G76**



A	l	b	t	l1	l2	d	d1	h
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

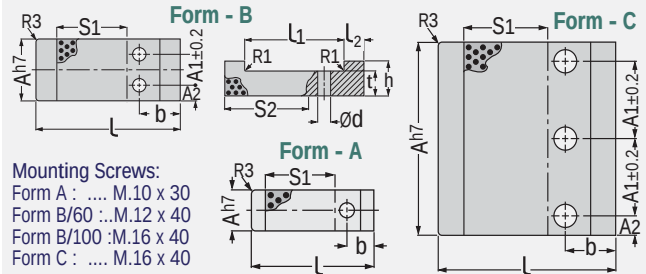
Order: **G76**. A x l

Material: Bronze with graphite inserts



Code: **G137**

Cam Plate



Mounting Screws:

Form A : M.10 x 30

Form B/60 :...M.12 x 40

Form B/100 :M.16 x 40

Form C : M.16 x 40

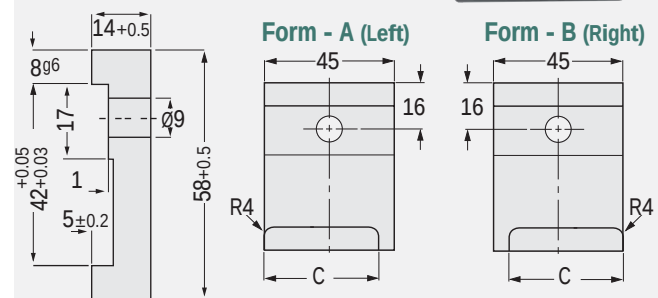
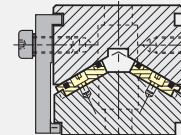
Form	A	L	h	L1	L2	A1	A2	S1	S2	b	d	t
A	30	70	17	50	10	-	-	30	40	20	11	12
		90	25	70				50	60			
B	45	70	25	50	10	22	11.5	30	40	20	11	15
		90	35	70				50	60			
B	60	120	35	80	20	30	15	40	60	40	13	25
		140	45	100				60	80			
B	100	120	45	80	20	70	15	40	60	40	18	25
		140	55	100				60	80			
C	150	120	55	80	20	60	15	40	60	40	18	25
		140	65	100				60	80			
C	150	160	65	120	20	60	15	80	100	40	18	25
		180	75	140				100	120			



Order: **G137**. Form x A x l

Positive Return Plate

Code: **G78**



* "C" dimension in the technical drawing is determined by the customer.

Form	Direction
AB	Both sides
A	Left
B	Right



Order: **G78**. Form

Material: 1.2343
Hardness: 40 - 45 HRC

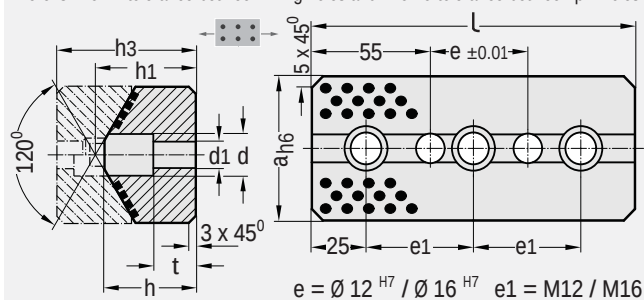


Cam Plate, "V" Guide

Code: **G111**

Self-Lubricating

There is ± 0.12 tolerance between fixing holes and ± 0.10 tolerance between pin holes.



a	L	h1	h	h3	e	e1	d	d1	t	Hole
65	150	47	44	65	45	100	20	13.5	20	2
	200				95	150				
	250				145	100				3
	300				195	125				
125	150	52	47	85	45	100	26	17.5	15	2
	200				95	150				
	250				145	100				3
	300				195	125				

Material: Bronze with graphite inserts

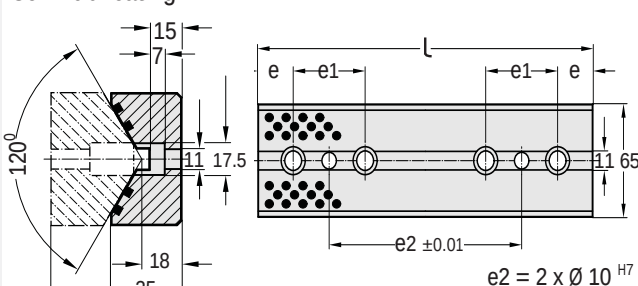
Order: **G111**. a x L



Cam Plate, "V" Guide

Code: **G139**

Self-Lubricating



h3	L	e	e1	e2	Hole
65	100	20	60	20	2
	150	25	50	50	3
	200			100	4
	250			150	5
	300			200	6

Material: Bronze with graphite inserts

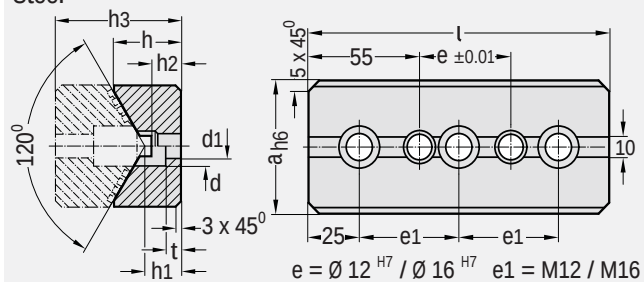
Order: **G139**. h3 x L



Cam Plate, "V" Guide

Code: **G111C**

Steel



a	L	h1	h	h2	h3	e	e1	d	d1	t	Hole
65	150	18	35	17	65	45	100	20	13.5	8	2
	200					95	150				
	250					145	100				3
	300					195	125				
125	150	33	60	32	85	45	100	26	17.5	15	2
	200					95	150				
	250					145	100				3
	300					195	125				

Material: 1.2379
Steel Hardness: 63 - 65 HRC

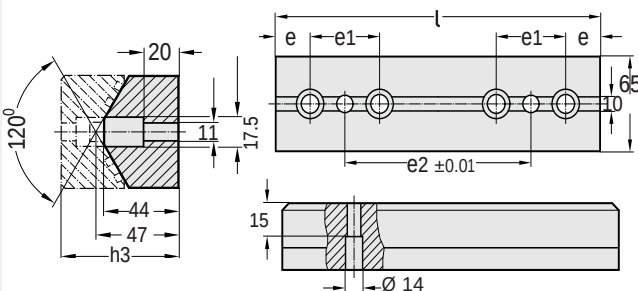
Order: **G111C**. a x L



Cam Plate, "V" Guide

Code: **G139C**

Steel



h3	L	e	e1	e2	Hole
65	100	20	60	20	2
	150	25	50	50	3
	200			100	4
	250			150	5
	300			200	6

Material: 1.2379
Steel Hardness: 63 - 65 HRC

Order: **G139C**. h3 x L

Cam Units Short Definitions

Cam Units: In dies, by turning vertical motion of press to horizontal motion within the die, drilling - cutting - form processes are provided in dies. These cam units are standard compact design components, and grouped as die mounted / angular or aerial cam types. As well as standard cam models are suitable to many general usages, also special models are produced as per request. Also, upper casing holes can be finished (with reamer / H7). Also, plate lock systems or gas spring options may be selected. Cam Units: They 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: Lateral loads should be avoided. Cam unit should not be exposed to dirt and burrs (friction surfaces may get damaged).

* To maintain repeated operation of cam unit, it should be secured to the die 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 self-lubricating wear plates, they should be lubricated with thin oil regularly.

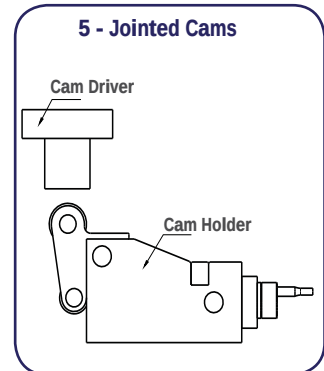
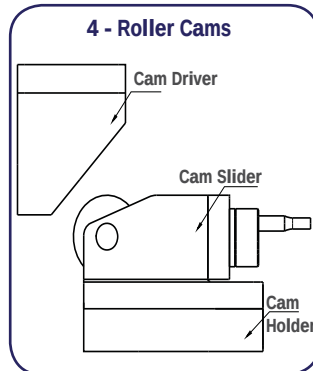
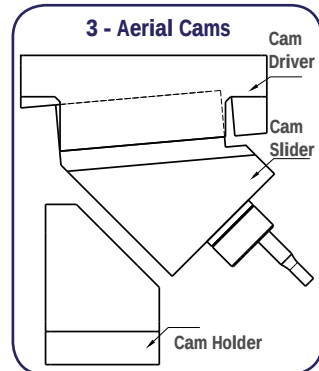
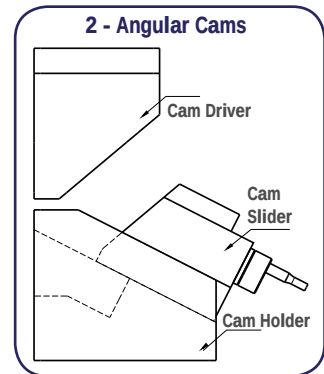
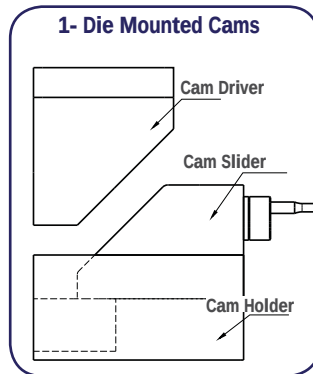
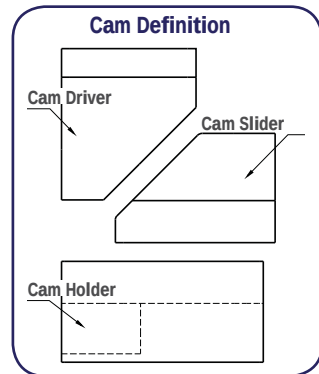
* In case of replacement of worn plates, you should be sure that all and centering elements are in their right position.

* If necessary, technical setting should be remade and fixed.

* For technical service, you can contact with our company.

Cam Units Group and Types:

Cam Unit Code	Nominal Size
DK Die Mounted Cam Units	52
	65
	100
	150 ~ 300
	400 ~ 600
DAK Angular Cam Units	65
	100
	150
AKSD	52
AKSCD	52
AKHTF	65
AKUC Aerial Cam Units	50
	65
	80
	150
AKSUK	65
	100
	200
AKBK	65 ~ 200
AKUG Aerial Cam Units	50
	65
	80 ~ 200
	300
AKUSL	500 ~ 1000
AKUNR	70
	80
	165 ~ 400
AKCD	52
	90
AKKP	50
	80
	200 ~ 300
AKKSL	500 ~ 1000
AKUSV	60 ~ 110
	165 ~ 400
RK	01 ~ 03
MK	01 ~ 02



Cam products selection: You can select cam products from our catalogue according to the feature of sheet metal used in your dies in production and load calculations or you can use our technical support service for this matter.

The main purpose in die production is to minimize die production process in terms of time and cost and to simplify the die. This simplification can only be ensured by using standard products as far as possible. In some cases, cam units may be customized according to the operation conditions they will be used. In such cases, if you contact us about product selection or design, we can offer solutions for you.

Cast casing cam type (DK02): Standard (delivery from stock).

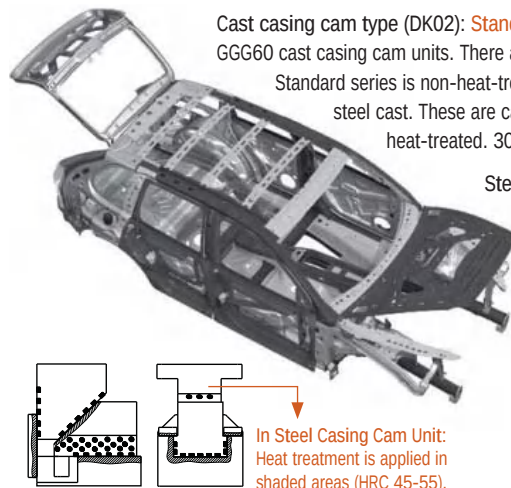
GGG60 cast casing cam units. There are 2 models: Heat-treated and non-heat-treated cams.

Standard series is non-heat-treated. Heat-treated cams: Are produced from hardenable steel cast. These are cams of which friction surfaces (cam holder - slider) are heat-treated. 300 - 500 grade is suitable for sheet metals press.

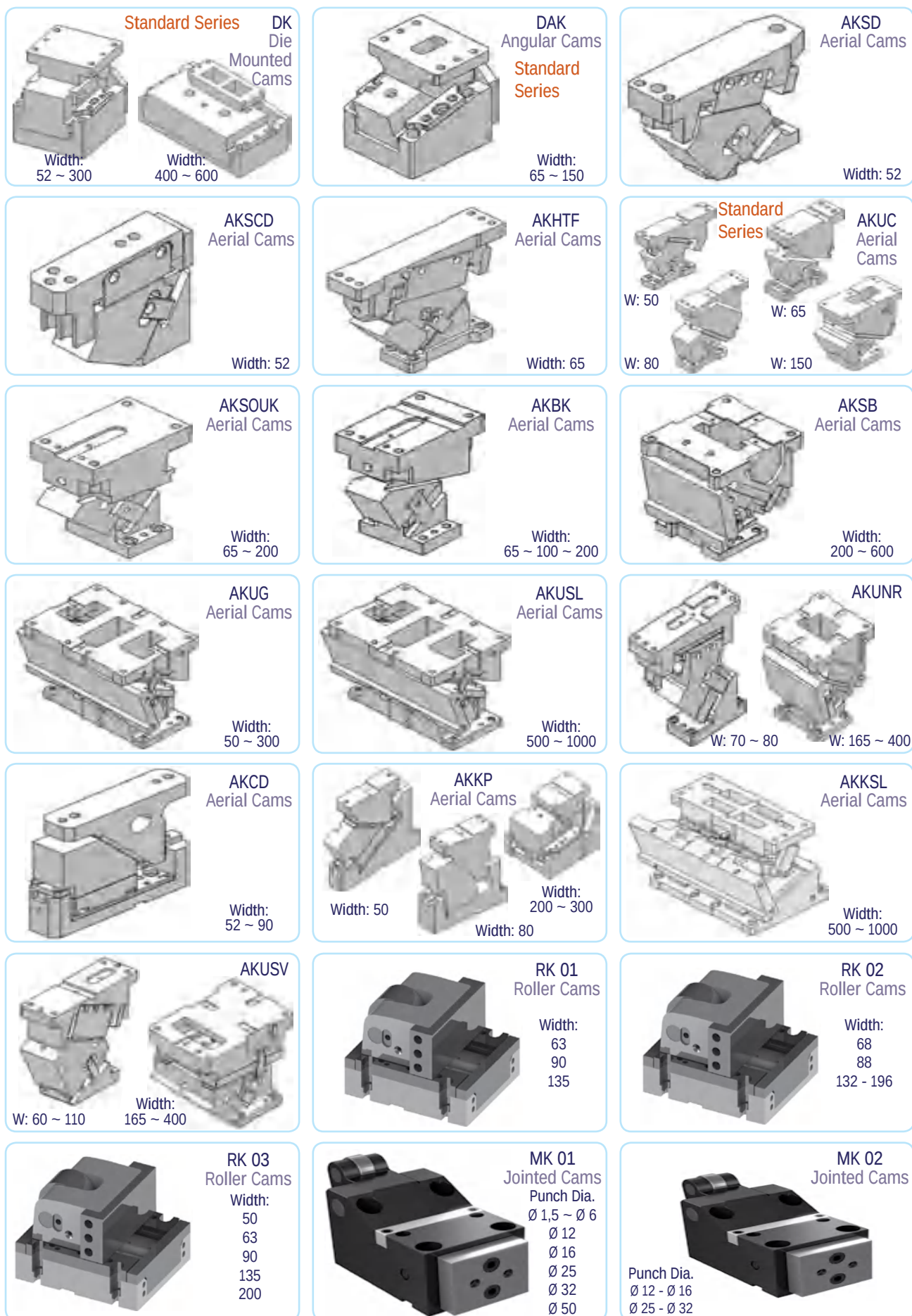
Steel casing cam type (DK01) : Order as per request.

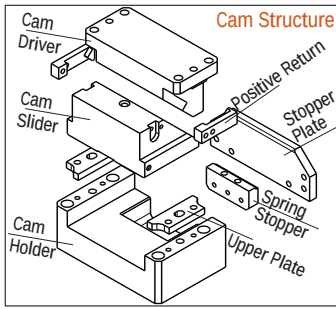
Cams with mono block steel casing, of which friction surfaces (lower casing and driver) are applied heat treatment. It has a feature to be used in die 400 - 650 grade and over. They work efficiently in performance 1.5 - 2 times better than load values specified in catalogue in proportion to the normal cast type cams and they give better results in high quantity productions (150.00 - 200.00 pieces / year).

If periodic maintenance, cleaning and lubrication is done, cams can press 1.000.000 pieces and over.



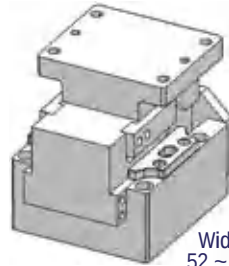
In Steel Casing Cam Unit:
Heat treatment is applied in shaded areas (HRC 45-55).



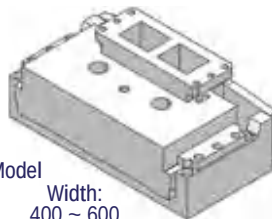


Die Mounted Cam Unit

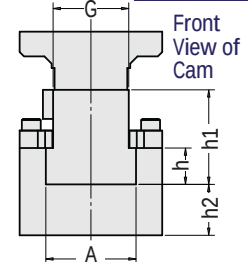
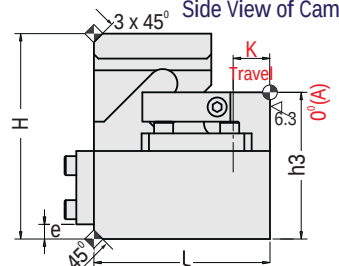
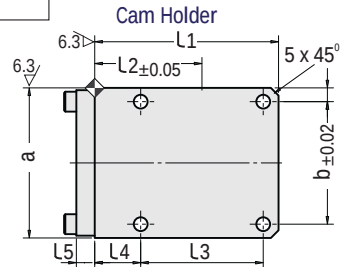
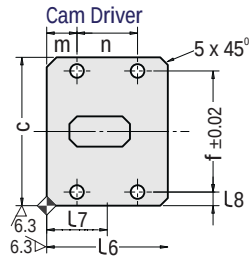
Code: DK02



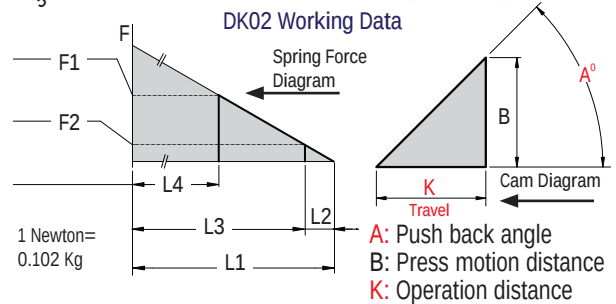
Model
Width:
52 ~ 300



Width:
400 ~ 600



“Order” DK02	Working & Spring Force							Cam Diagram		
	F N/mm	F1 kg.	F2 kg.	L1 mm	L2 mm	L3 mm	L4 mm	A° Angle	B mm	K Travel
52 25	9	60.7	14.7	70	8	62	37	45°	25	25
52 40	6.3	61.4	10.2	100	8	92	52		40	40
52 60	4.2	62.8	11.2	150	13	137	77		60	60
65 40	7.8	76.8	12.8	100	8	92	52	45°	40	40
65 60	5.2	77.4	13.8	150	13	137	77		60	60
100 40	11.8	115	19	100	8	92	52		40	40
100 60	7.8	117	21	150	13	137	77	45°	60	60
100 80	7.1	133	18	200	12	188	108		80	80
150 40	19.2	188	32	100	8	92	52		40	40
150 60	12.7	190	34	150	13	137	77	45°	60	60
200 40	19.2	282	47	100	8	92	52		40	40
200 60	12.7	285	51	150	13	137	77		60	60
250 40	25.1	369	62	100	8	92	52	45°	40	40
250 60	16.7	372	66	150	13	137	77		60	60
300 40	25.1	369	62	100	8	92	52		40	40
300 60	16.7	372	66	150	13	137	77	45°	60	60
400 60	37.7	953	31	150	2	148	88		60	60
500 60										
600 60										



Spring Diagram (Technical Drawing) Detail

F: Load = N / mm (Final load)

F1: Final load = (Process pressure spring force)

F2: Initial load N = Spring initial loading

L1: Spring free length mm = Open spring length

L2: Spring initial loading mm = Clamping

L3: Spring length under first load mm

L4: Spring length under last load

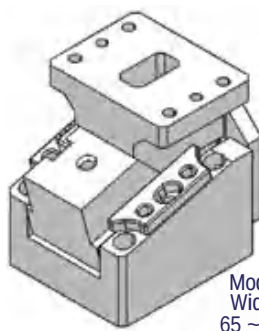
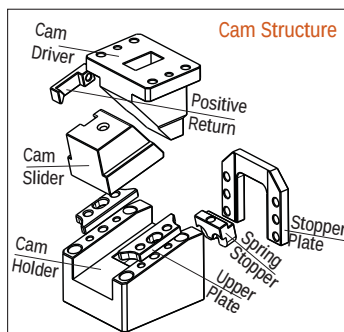
Optional (As per request) P: Self-lubricating wear plate model

F8: Front Holes Ø 8 H7 finish pin hole may be changed

GY: Gas spring may be used. I: Heat treatment may be applied.

Order Example: DK02.6540

“Order” DK02	Working Force		Cam W. Kg.	Cam Front View (mm)					Cam Side View (mm)					Cam Driver (mm)								Cam Holder (mm)						
	Standard	Allowable		G	A	h	h1	h2	K Travel	L	H	h3	e	c	f	m	n	L6	L7	L8	a	b	L1	L2	L3	L4	L5	
52 25	1.5 Ton	3 Ton	8	52	62	25	65	35	25	120	140	100	10	98	80	20	40	80	40	9	98	80	120	70	80	30	12	
52 40			8						40	135							50	90	45				135	80	95			
52 60			14						60	180							70	110	55				180	55	140			
65 40	2 Ton	4 Ton	20	65	80	30	70	45	40	140	160	115	25	130	105	20	60	100	50	12.5	130	105	145	80	100	30	12	
65 60			21						60	190							70	110	55				180	105	125	40		
100 40	3 Ton	6 Ton	37	100	120	40	100	50	40	190	200	150	30	165	140	20	80	120	60	12.5	175	140	190	105	130	45	16	
100 60			38						60	210							100	140	70				220	135	160			
100 80			44						80	250							110	150	75				220	135	160			
150 40	6 Ton	9 Ton	63	150	180	40	100	70	40	190	220	170	45	230	200	20	80	120	60	15	260	210	190	105	125	45	19	
150 60			69						60	210							100	140	70				200	110	135			
200 40	8 Ton	12 Ton	82	200	230	40	110	70	40	200	240	180	40	280	250	20	90	130	65	15	310	260	200	110	135	45	20	
200 60			84						60	220							110	150	75				210	120	145			
250 40	10 Ton	15 Ton	106	250	280	50	130	80	40	210	270	210	50	330	300	20	100	140	70	15	360	310	200	105	135	45	20	
250 60			127						60	230							120	160	80				220	125	155			
300 40	12 Ton	18 Ton	106	300	330	50	130	80	40	210	270	210	50	380	350	20	100	140	70	15	410	360	200	105	135	45	20	
300 60			128						60	230							120	160	80				220	125	155			
400 60	14	21	203	400	435	60	125	125	60	320	250	195	15	360	300	20	100	140	70	15	525	142	300	210	280	70	50	
500 60			237	500	535												120	160	80				625	162				
600 60			279	600	635												120	160	80				725	192				



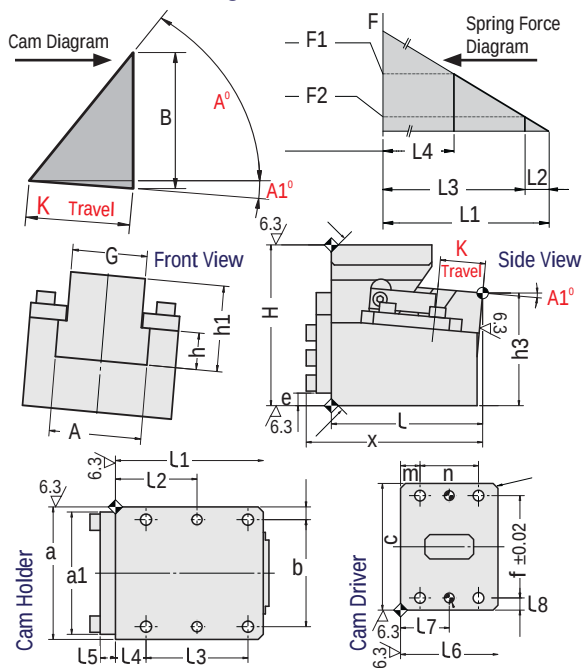
Model Width:
65 ~ 150



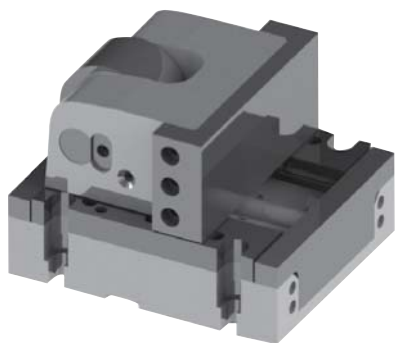
“Order” DAK02	Working & Spring Force							Cam Diagram			
	F N/mm	F1 kg.	F2 kg.	L1 mm	L2 mm	L3 mm	L4 mm	A° Angle	A1° Angle	B mm	K Trav
65 05 45	6.3	75.5	18	125	14	111	66	55°	5°	67.9	45
65 05 70	5.6	99	19.4	175	17	158	88			105.7	70
65 10 45	6.3	75.5	18	125	14	111	66	50°	10°	60.6	45
65 10 70	5.6	99	19.4	175	17	158	88			94.3	70
65 15 45	6.3	75.5	18	125	14	111	66	45°	15°	55.1	45
65 15 70	5.6	99	19.4	175	17	158	88			85.7	70
65 20 45	6.3	75.5	18	125	14	111	66	40°	20°	50.8	45
65 20 70	5.6	99	19.4	175	17	158	88			79.1	70
100 05 45	9.4	113	27	125	14	111	66	55°	5°	67.9	45
100 05 70	6.8	117	20	175	14.5	161	91			105.7	70
100 10 45	9.4	113	27	125	14	111	66	50°	10°	60.6	45
100 10 70	6.8	117	20	175	14.5	161	91			94.3	70
100 15 45	9.4	113	27	125	14	111	66	45°	15°	55.1	45
100 15 70	6.8	117	20	175	14.5	161	91			85.7	70
100 20 45	9.4	113	27	125	14	111	66	40°	20°	50.8	45
100 20 70	6.8	117	20	175	14.5	161	91			79.1	70
150 05 45	15.3	184	44	125	14	111	66	55°	5°	67.9	45
150 05 70	11	188	32	175	14	161	91			105.7	70
150 10 45	15.3	184	44	125	14	111	66	50°	10°	60.6	45
150 10 70	11	188	32	175	14	161	91			94.3	70
150 15 45	15.3	184	44	125	14	111	66	45°	15°	55.1	45
150 15 70	11	188	32	175	14	161	91			85.7	70
150 20 45	15.3	184	44	125	14	111	66	40°	20°	50.8	45
150 20 70	11	188	32	175	14	161	91			79.1	70

Die Mounted - Angular Cam Unit

Code: DAK02

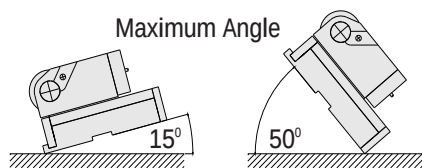
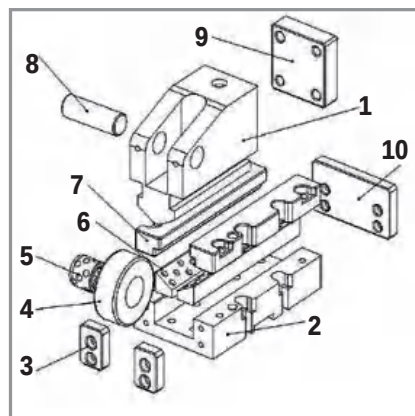
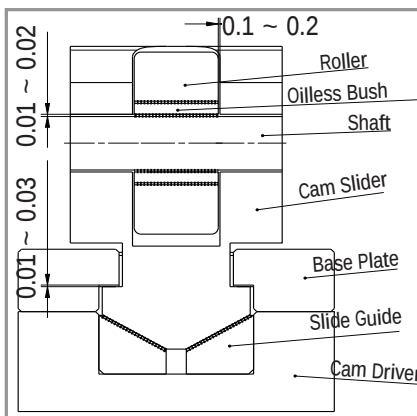


“Order” DAK02	Working Force		Cam W. Kg.	Cam Front View (mm)				Cam Side View (mm)						Cam Driver (mm)								Cam Holder (mm)									
	Standard	Allowable		G	A	h	h1	K	L	x	H	h3	e	c	f	m	n	L6	L7	L8	a	a1	b	L1	L2	L3	L4	L5			
65 05 45	2	4	19	65	80	30	70	45	151	176	160	112	12.5	130	105	20	60	100	50	12.5	130	120	105	145	80	100	30	15			
65 05 70	Ton	Ton	22.2					70	195	220	170	123	25											180	65	125	40				
65 10 45	2	4	20	65	80	30	70	45	155	180	160	109	25	130	105	20	60	100	50	12.5	130	120	105	145	79	100	30	15			
65 10 70	Ton	Ton	20.5					70	199	224	170	111	25											180	65	125	40				
65 15 45	2	4	22	65	80	30	70	45	158	183	170	105	25	130	105	20	60	100	50	12.5	130	120	105	145	80	100	30	15			
65 15 70	Ton	Ton						70	202	227		104	40				70	110	55					180	65	125	40				
65 20 45	2	4	22	65	80	30	70	45	160	185	170	101	30	130	105	20	60	100	50	12.5	130	120	105	145	80	100	30	15			
65 20 70	Ton	Ton	21					70	203	228		96	40				70	110	55					180	65	125	40				
100 05 45	4	8	33	100	120	40	90	45	172	197	200	145	27.5	165	140	20	60	100	50	12.5	175	150	140	160	90	105	40	15			
100 05 70			38					70	207	234		147	30				80	120	60					190	70	130	45				
100 10 45	4	8	33	100	120	40	90	45	178	205	200	135	30	165	140	20	60	100	50	12.5	175	150	140	160	90	105	40	15			
100 10 70	Ton	Ton	38					70	213	240		134	30				80	120	60					190	70	130	45				
100 15 45	4	8	33	100	120	40	90	45	183	210	200	129	32.5	165	140	20	70	110	55	12.5	175	150	140	160	90	105	40	15			
100 15 70	Ton	Ton	38					70	217	244		130	35				90	130	65					190	70	130	45				
100 20 45	4	8	32	100	120	40	90	45	186	213	200	118	35	165	140	20	70	110	55	12.5	175	150	140	160	90	105	40	15			
100 20 70	Ton	Ton	39					70	219	246		121	45				90	130	65					190	70	130	45				
150 05 45	6.6	10	62	150	180	40	100	45	193	229	220	159	30	230	200	20	70	110	55	15	260	220	210	190	105	125	45	20			
150 05 70			73					70	218	254		167	40				90	130	65					200	120	135					
150 10 45	6.6	10	63	150	180	40	100	45	200	236	220	152	40	230	200	20	70	110	55	15	260	220	210	190	105	125	45	20			
150 10 70			73					70	224	260		153	40				90	130	65					200	120	135					
150 15 45	6.6	10	65	150	180	40	100	45	205	240	220	144	40	230	200	20	80	120	60	15	260	220	210	190	105	125	45	20			
150 15 70			77					70	229	265	230	153	55				100	140	70					200	120	135					
150 20 45	6.6	10	66	150	180	40	100	45	208	224	220	136	40	230	200	20	80	120	60	15	260	220	210	190	105	125	45	20			
150 20 70			75					70	232	268	230	137	55				100	140	70					200	120	135					



Roller Cam Unit

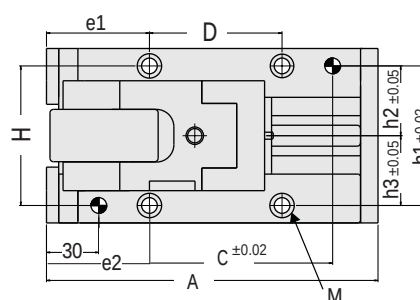
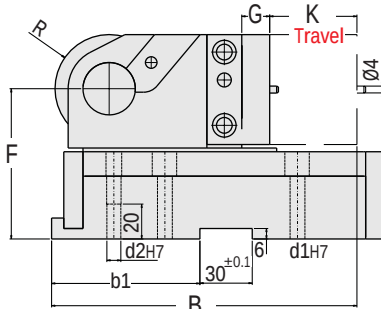
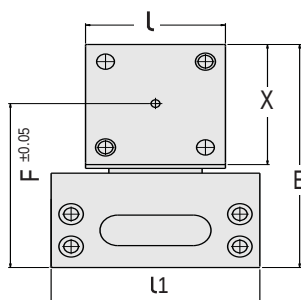
Code: RK



N - Newton = (0.102)Kg.
daN -10 Newton = (1.020)Kg.

Part No.	Description	Material
1	Cam Slider	CK45
2	Cam Driver	CK45
3	Stopper Plate	CK45
4	Roller	1.7131
5	Oilless Bush	SAE 430B

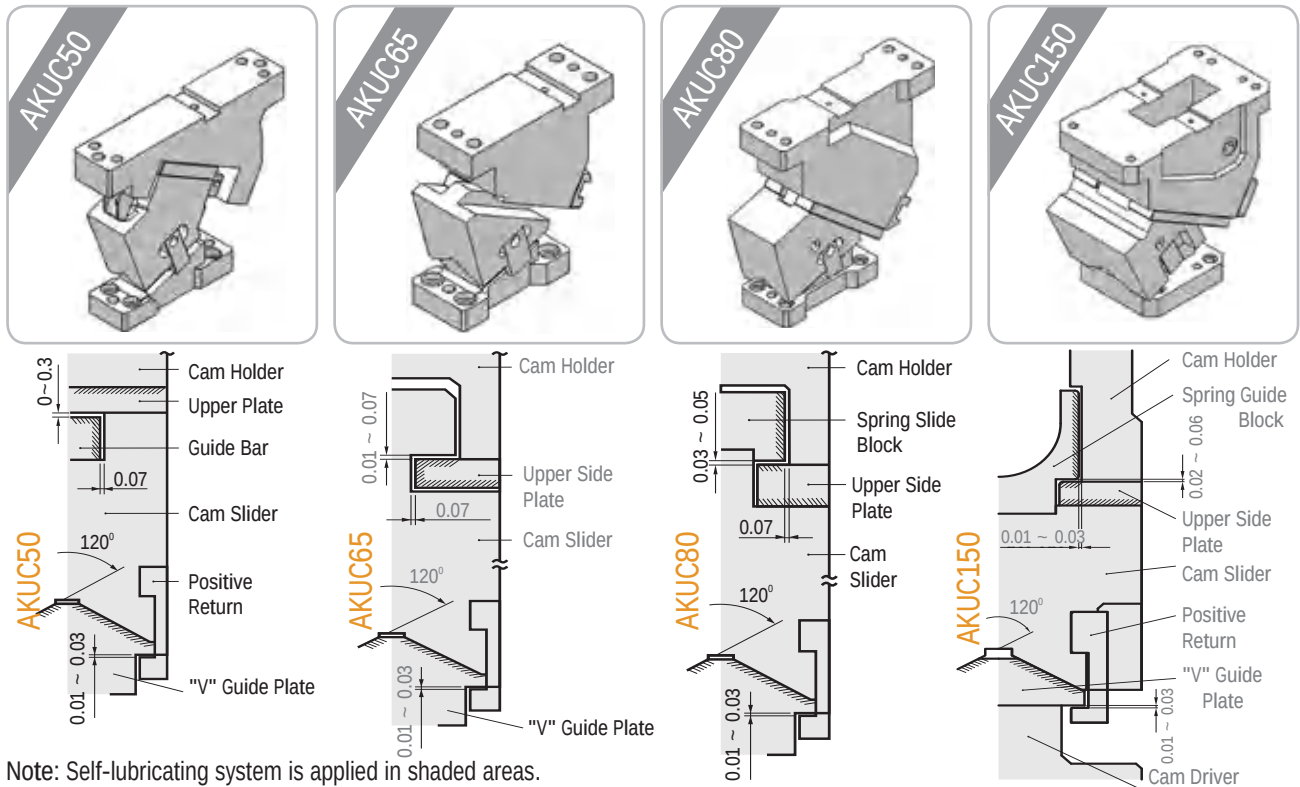
Part No.	Description	Material
6	Slide Guide	SAE 430B
7	Base Plate	SAE 430B
8	Shaft	1.7131
9	Punch Plate	CK45
10	Spring Plate	CK45



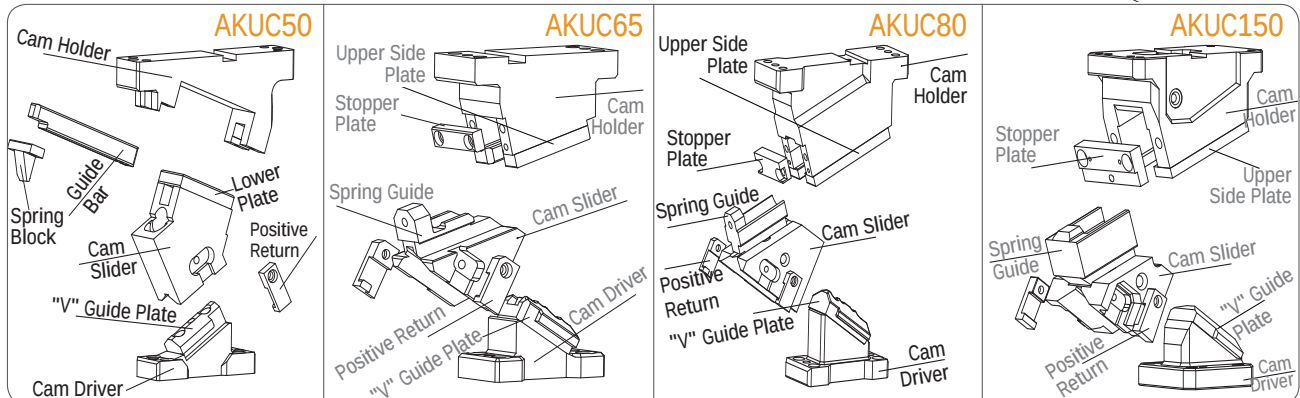
Order Codes Model / Dimension	Punch Force Max.	Return Spring Force daN		K Travel	Dimension / mm																			
		Min.	Max.		L	X	F	E	L1	A	B	C	D	H	G	b1	h1	h2	h3	e1	e2	M	d1	R
RK01 3000 50	3000	300	440	50	63	63	86	117	94	190	198	56	88	79	20	75	79	39.5	39.5	51	67	4 x M8	Ø 8	31
RK01 3000 80	daN	350	580	80						220	228	86	118											
RK01 5000 50	5000 daN	300	440	50						190	198	56	88											
RK01 5000 80				80	90	74	103	140	120	220	228	86	118	105	20	75	105	52.5	52.5	51	67	4 x M8	Ø 8	36
RK01 5000 100		350	580	100			120	157		260	268	126	158		30									
RK01 15000 50	15000 daN	570	1070	50						190	198	56	88		20									
RK01 15000 80		500	870	80	135	90	120	165	170	220	228	86	118	155	20	75	155	77.5	77.5	51	67	4 x M8	Ø 8	45
RK01 15000 100		500	870	100						260	268	126	158		30									
RK02 3000 50	3000 daN	300	440	50						200	208	56	116											
RK02 3000 80				80	68	63	117	86	100	230	238	86	146	82	-	90.5	82	41	41	48	76	4 x M8	Ø 8	31
RK02 3000 100		350	580	100						260	258	106	166											
RK02 5000 50	5000 daN	300	440	50						200	208	59	116											
RK02 5000 80				80	88	74	140	103	120	230	238	89	146	102	-	90.5	102	51	51	48	73	4 x M8	Ø 8	36
RK02 5000 100		350	580	100						260	258	109	166											
RK02 15000 50	15000 daN	570	1070	50						220	216	47	123											
RK02 15000 80				80	132	92	165	120	170	250	246	77	153	150	-	96.5	150	75	75	50	88	4 x M10	Ø 10	45
RK02 15000 100		500	870	100						270	266	97	173											
RK02 20000 50	20000 daN			50						250	258	67	143											
RK02 20000 80		750	1490	80	196	110	150	205	240	280	288	97	173	222	-	102	222	111	111	52	90	4 x M12	Ø 12	55
RK02 20000 100				100						300	308	117	193											
RK03 2000 22	2000 daN	200	460	22	50	50	63	85	75	115	103	30	50	63	15	65	63	31.5	31.5	32.5	43	4 x M6	Ø 6	23
RK03 2000 35					35						136	137	51	71										
RK03 3000 50	3000 daN	300	450	50						190	167	134	76											
RK03 3000 80				80	63	63	86	117	100	220	227	164	106	80	16	85	80	40	40	59	-	4 x M8	Ø 8	31
RK03 3000 100		350	580	100			87	110	141		260	287	204	146										
RK03 5000 50	5000 daN	300	440	50						190	167	134	76											
RK03 5000 80			350	580	80	90	74	103	140	130	220	227	164	106	110	16	85	110	55	55	59	-	4 x M8	Ø 8

Aerial Cam Unit

Code: AKUC



Note: Self-lubricating system is applied in shaded areas.



AKUC50

Order	Angle	Travel
AKUC 50 00	00	30.2
AKUC 50 05	05	30.5
AKUC 50 10	10	30.3
AKUC 50 15	15	30.5
AKUC 50 20	20	30.4
AKUC 50 25	25	30.0
AKUC 50 30	30	32.0
AKUC 50 35	35	35.4
AKUC 50 40	40	38.6
AKUC 50 45	45	42.3
AKUC 50 50	50	46.7
AKUC 50 55	55	52.1
AKUC 50 60	60	59.1
AKUC 50 65	65	58.3
AKUC 50 70	70	57.6

AKUC65

Order	Angle	Travel
AKUC 65 00	00	15
AKUC 65 05	05	15.1
AKUC 65 10	10	15.2
AKUC 65 15	15	15.5
AKUC 65 20	20	16.5
AKUC 65 25	25	17.1
AKUC 65 30	30	18.5
AKUC 65 35	35	19.6
AKUC 65 40	40	21.5
AKUC 65 45	45	23.3
AKUC 65 50	50	26.5
AKUC 65 55	55	29.7
AKUC 65 60	60	35.0
AKUC 65 65	65	41.3
AKUC 65 70	70	51.1

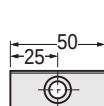
AKUC80

Order	Angle	Travel
AKUC 80 00	00	32.1
AKUC 80 05	05	38.4
AKUC 80 10	10	38.9
AKUC 80 15	15	39.7
AKUC 80 20	20	46.1
AKUC 80 25	25	47.8
AKUC 80 30	30	54.3
AKUC 80 35	35	57.4
AKUC 80 40	40	64.3
AKUC 80 45	45	69.6
AKUC 80 50	50	77.8
AKUC 80 55	55	87.2
AKUC 80 60	60	98.5
AKUC 80 65	65	81.6
AKUC 80 70	70	86.4

AKUC150

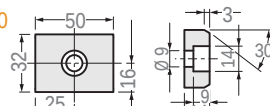
Order	Angle	Travel
AKUC 150 00	00	32.1
AKUC 150 05	05	32.3
AKUC 150 10	10	38.9
AKUC 150 15	15	39.7
AKUC 150 20	20	46.1
AKUC 150 25	25	47.8
AKUC 150 30	30	54.3
AKUC 150 35	35	57.4
AKUC 150 40	40	64.3
AKUC 150 45	45	69.6
AKUC 150 50	50	77.8
AKUC 150 55	55	87.2
AKUC 150 60	60	98.5
AKUC 150 65	65	93.2
AKUC 150 70	70	86.4

Key / Lock Systems:

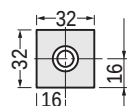


AKUC50
AKUC65

AKUC80

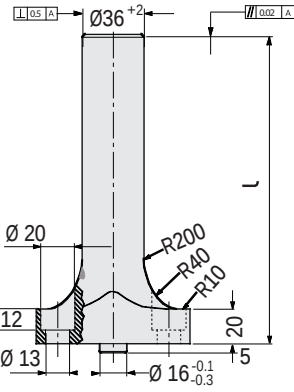


AKUC150

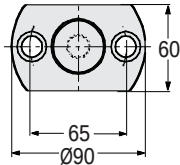


Stable and reliable Die & Mould production is obtained with components having a reliable quality. Cungang tends towards the highest quality standards with all development and test efforts.

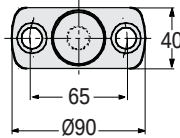




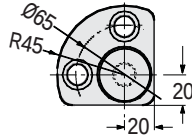
Form A



Form B



Form C



Air Pin VDI 3002

Code: G69B

l
150 mm
155 mm
160 mm
165 mm
170 mm
175 mm
180 mm
185 mm
190 mm
195 mm
200 mm
205 mm
210 mm

l
215 mm
220 mm
225 mm
230 mm
235 mm
240 mm
245 mm
250 mm
255 mm
260 mm
265 mm
270 mm

l
275 mm
280 mm
285 mm
290 mm
295 mm
300 mm
310 mm
320 mm
330 mm
340 mm
350 mm
360 mm

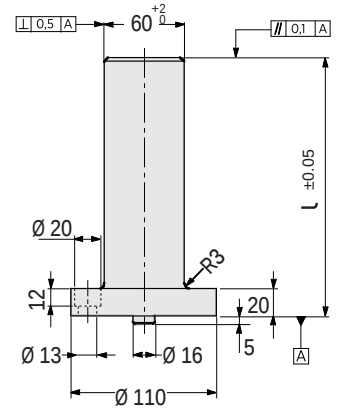
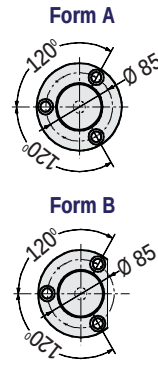
Material: CK45
800 ÷ 1000 N / mm² Forged

Max. Load (kN): 50



Order: G69B. l . Form

Order Example:
G69B.160.C



Air Pin

Code: G69-1

Order Code	Form	Max. Load kN	l
G69-1.A. (l)	A	80	optional
G69-1.B. (l)	B	80	optional

Material: CK45
800 ÷ 1000 N/mm² Forged

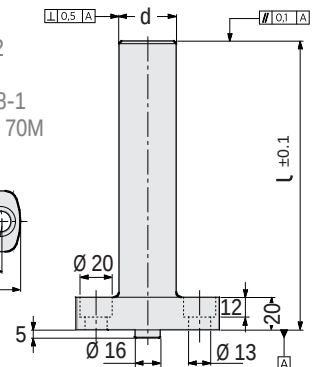
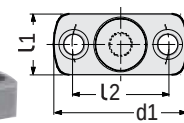


The length (l) is specified by the customer.

Order Example:
G69-1.A.400



Reference:
BMW B2 2615 12
OPEL F33 15
VW AUDI 39D 638-1
FORD WVDX 17 - 70M



Air Pin

Code: G69

Order Code	d	d1	l1	l2	Max. Load kN	l
G69-36. (l)	36	90	40	65	50	optional
G69-45. (l)	45	100	50	75	70	optional

Material: CK45
800 ÷ 1000 N/mm² Forged



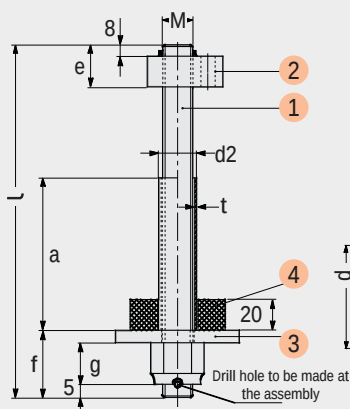
The length (l) is specified by the customer.

Order Example:
G69-36.200

NEW

Retainer Bolt FCA - FORD

Code: G169



Order Code	M	d	d1	d2	e	f	g	l1	l2	l3	l4	t	Max. Load (kg)
G169.M16. (l . a)	M16	65	50	22	28	30	19	50	35	20	20	2	250
G169.M20. (l . a)	M20	82	63	25	28	35	22	50	40	20	20	2	450
G169.M24. (l . a)	M24	105	80	30	28	42	27	50	45	20	20	2.5	750
G169.M30. (l . a)	M30	130	100	38	33	50	33	63	50	28	26	2.5	1250

- Material: 1.6511
Screw: 8.8
- Material: St 37
- Material: CK45
- Material: Polyurethane
92 Shore

Order Example:
G169.M16.200.160



The lengths (l and a) are specified by the customer.

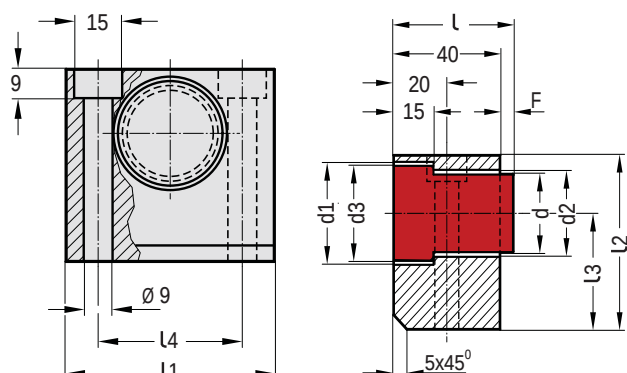
* Please pay attention to the Max. Load.



Slide Stop Block

Code: G97

Note: Fixing screws (M8 cylinder head cap screws) should be provided separately.

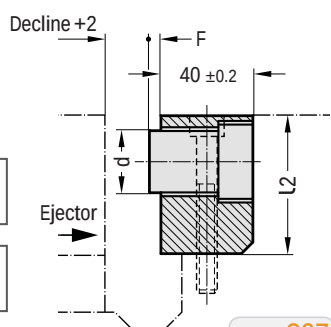


Reference:
BMW - Ford - VW - Audi



Order: G97. L1

Material: CK45 Steel
Polyurethane 90 Shore



Code: G97

L1	Load N	d	d1	d2	d3	L	L1	L2	L3	L4	F
65	5200	27	35	30	34	45	65	60	40	45	5
75	9800	36	45	40	44	45	75	70	45	55	5

Slide Stopper

Code: G97A

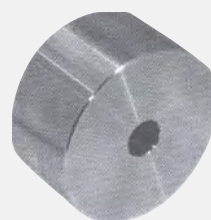
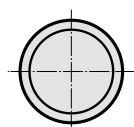
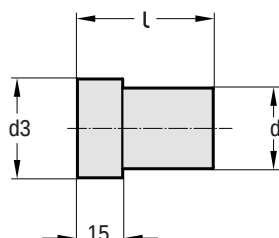


Slide stopper for is 90 Shore.
Used with slide stop block.

d	d3	L
27	34	45
36	44	45



Order: G97A. d



Cylinder Stopping Block

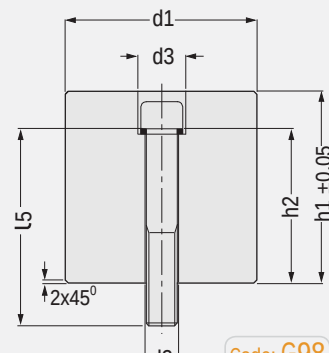
Code: G98

Note: Fixing screws
should be provided separately.



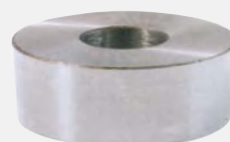
Order: G98. d1

Material: 1.7131 (16MnCr5)
Hardness: 60 - 64 HRC



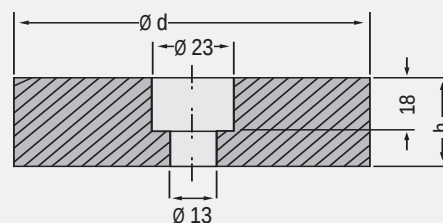
Code: G98

d1	Screw	d2	d3	h1	h2	L5
40	M.10	11	18	30 ~ 60	20	30 - 40
60	M.12	14	20	40 ~ 80	22	40 - 50
80	M.12	14	20	56 ~ 100	42	50 - 60
100	M.16	18	26	80 ~ 160	62	80
120	M.20	22	33	104 ~ 160	82	100
150	M.20	22	33	124 ~ 160	102	120



Cylinder Stopping Block

Code: G98B



Reference: FCA

Code: G98B

d	h
Diameter 80 mm	Thickness 25 mm
Diameter 80 mm	Thickness 30 mm
Diameter 100 mm	Thickness 25 mm
Diameter 100 mm	Thickness 30 mm
Diameter 120 mm	Thickness 25 mm
Diameter 120 mm	Thickness 30 mm



Order: G98B. d x h

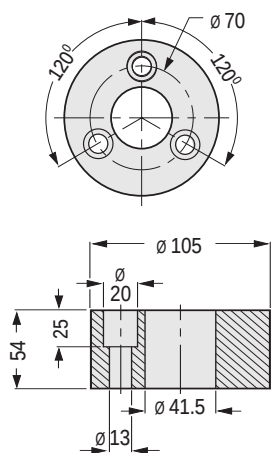
Material: 1.7131 (16MnCr5)
Hardness: 60 - 64 HRC



Code: **G99**

Cylinder Locating Block

(FCA Code: CNT_ST_01)



Order: **G99.105**

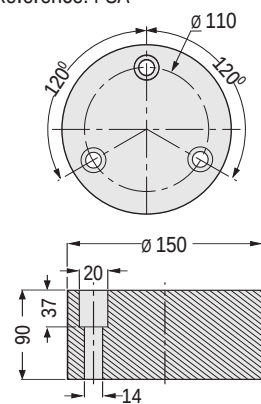
Material: 1.7131 (16MnCr5)
Hardness: 60 - 64 HRC



Code: **G99B**

Cylinder Locating Block

Reference: PSA



Order: **G99B.150**

Material: 1.7131 (16MnCr5)
Hardness: 60 - 64 HRC

Guide

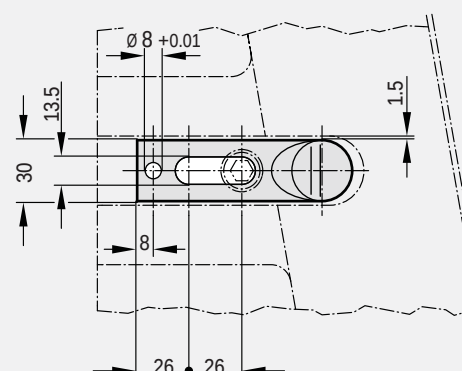
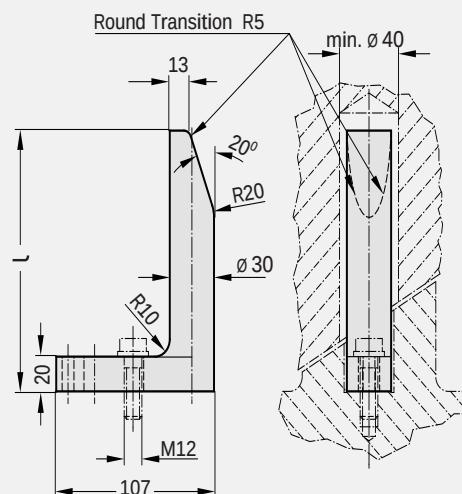


Code: G67
Material: CK45 Forged

Code: G67S
Material: CK45 Forged
Hardened 50 - 55 HRC

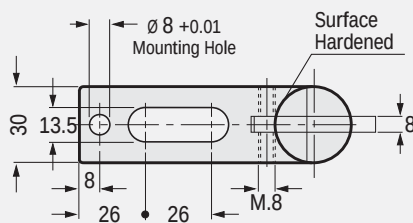
Order Code		l
G67.065	G67S.065	65 mm
G67.090	G67S.090	90 mm
G67.120	G67S.120	120 mm
G67.150	G67S.150	150 mm
G67.180	G67S.180	180 mm
G67.250	G67S.250	250 mm
G67.300	G67S.300	300 mm
G67.350	G67S.350	350 mm

Code: **G67 - G67S**

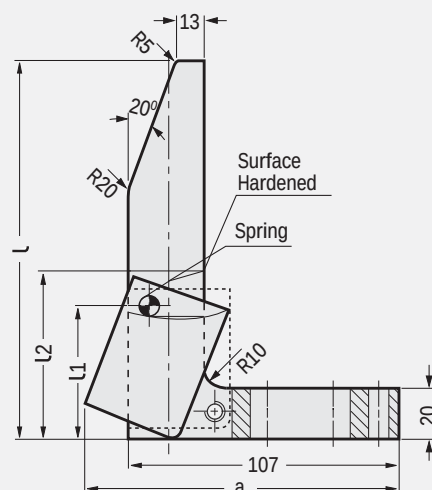


Guide with Part Position Control

Code: **G68**



Order Code	l	l1	l2	a
G68.120	120	55	70	120
G68.150	150	55	70	120
G68.180	180	105	120	124
G68.250	250	105	120	124



Material: CK45 Forged
Hardened 50 - 55 HRC



Centring Pin

VW / AUDI
Ref.: 39V 1205

BMW
Ref.: B2 4068 2

Code: G65



Centring Pin

Mercedes-Benz Standard
Ref.: B8 0602 321 008 801

Code: G62

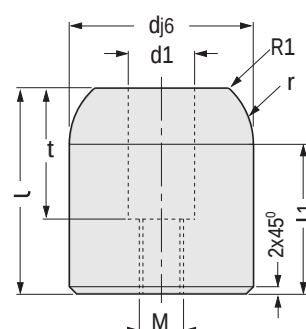
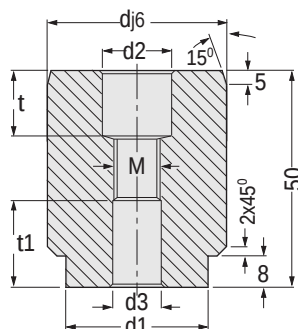
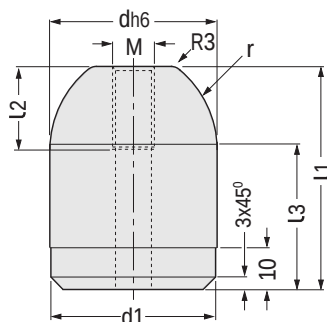


Centring Pin

FCA
Ref.: STQ.40015

Code: G66

Centring Pins: It is used for centring of perforated parts. Using centring pin provides centring repeatedly with high sensitivity at dies and fixtures. Mounted parts are centered with high sensitivity and quickly. Screws used for mounting of products should be provided by user.



Code: G65

d	L1	L2	L3	d1	M	r
22	45	16	35	21.95	M8	15
22	55	16	45	21.95	M8	15
32	50	20	35	31.95	M10	20
40	55	20	35	39.95	M10	25
40	65	20	45	39.95	M10	25
50	55	20	35	49.95	M10	25

Code: G62

d	d1	d2	d3	M	t	t1
22	16	11	9	M8	13	16
25	18	11	9	M8	13	16
32	25	11	9	M8	13	16
40	32	15	11	M10	16	20
50	42	15	11	M10	16	20

Code: G66

d	L	L1	d1	t	M	r
22	45	37.5	14	25	M10	20
32	50	40	18	35	M12	20
40	55	40	18	35	M12	20
50	55	40	18	35	M12	20



Order: G66. d



Order: G62. d

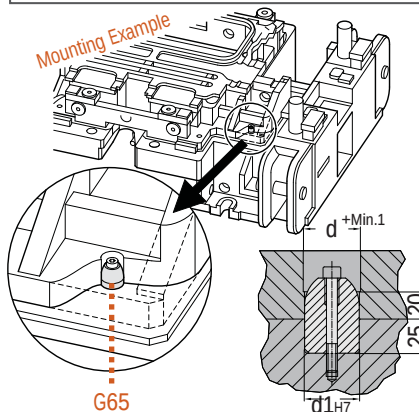


Order: G65. d x L1

Material: 1.7131 (16MnCr5)
Hardness: 58 - 62 HRC

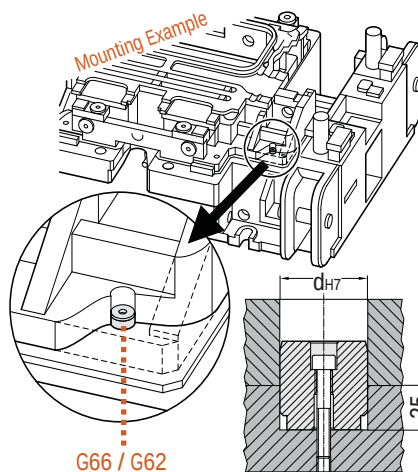
All dimensions without tolerance
are in EN 22768 - 1 (m) standards.

Mounting Example



G65

Mounting Example



G66 / G62

NEW



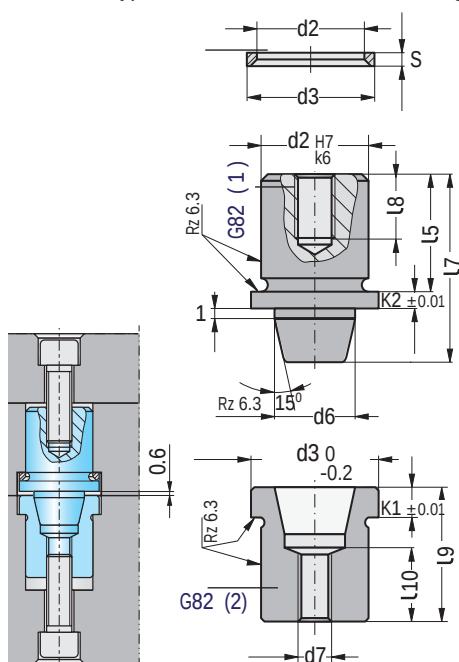
Code: G82

Tapered Locating Unit, Headed

Tapered Locating Units: They are used to increase speed of repeatability while providing precision centring in dies and moulds.

Mounting screws are provided with products and the support washer (G59) can be provided as per request.

Headed Type: It is suitable to be used for centring in female and male plates in moulds (seal-rubber & blowing moulds).



Code: G82

d2	d3	d6	d7	K1	K2
14	17	12	M.8	4	2.5
24	28	20	M.8	6	4
34	38	30	M.8	8	5
42	46	35	M.8	8	5

d2	l5	l7	l8	l9	l10	S
14	17	24.5	15	19.5	13	1.7
24	27	42	20	32	18	2.0
34	28	42	20	32	18	3.0
42	28	48	20	47	28	3.0

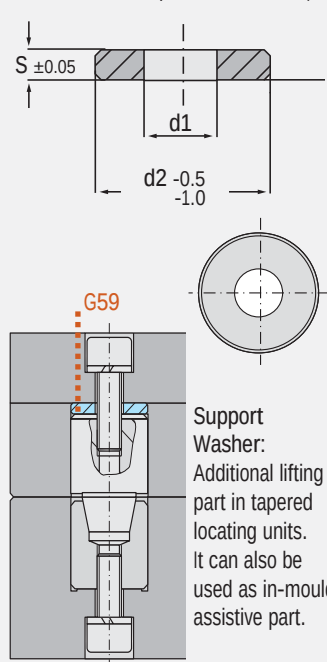
Order: G82. d2

Material: 1.7131 (16MnCr5)
Hardness: 60 - 62 HRC



Code: G59

Support Washer



Support Washer:
Additional lifting part in tapered locating units.
It can also be used as in-mould assistive part.

Code: G59

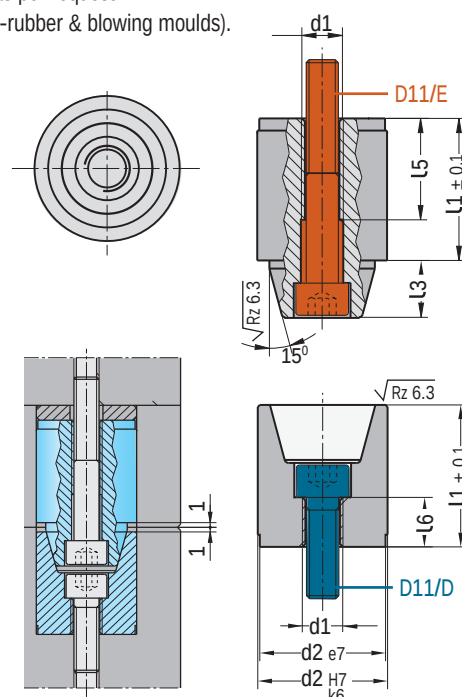
d2	S	d1
12	5	6.5
14	5	6.5
16	5	6.5
17	5	8.5
20	5	8.5
25	5	8.5
26	10	8.5
30	5	10.5
32	5	10.5
40	5	10.5
42	5	10.5
50	5	13

Order: G59. d2 x S



Code: G60

Tapered Locating Unit



Code: G60

d2	l1	l3	l5	l6	d1	Screw D11/D-E
12	16	4.5	9.6	7	M4	M 3x15 M 3x25
14	16	6	12.4	6	M5	M 4x15 M 4x25
16	16	6	12.4	6	M5	M 4x15 M 4x25
20	26	9	19.7	10.5	M8	M 6x20 M 6x35
25	26	10	19.7	10.5	M8	M 6x30 M 6x40
30	35	14	25	11.5	M10	M 8x25 M 8x50
32	35	14	25	12.4	M10	M 8x25 M 8x50
42	45	18	27	18.5	M10	M 8x30 M 8x70

Note: "D11" bolts are delivered with the product.

Order: G60. d2

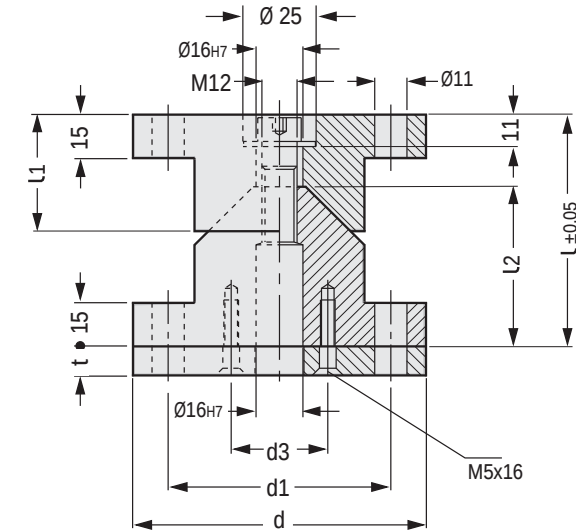
Material: 1.7131 (16MnCr5)
Hardness: 60 - 62 HRC



Locating Cone

Code: **G64**

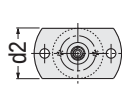
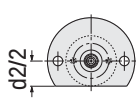
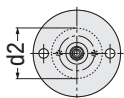
Shim plates are with the unit in thickness (t) specified dimensions as a standard. Except this, other form (A - B - C) shim plates can be ordered as per request. Mounting screws are excluded.
Material: 1.7131 / Hardness: 60 - 64 HRC



Form - A

Form - B

Form - C



Code: **G64**

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		



Order:
G64. d x l x t x Form

Order Example:

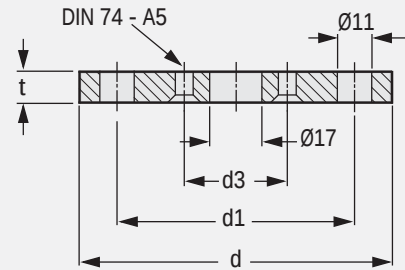
G64. 120 x 90 x 10 x A



Shim Plate for Locating Cone

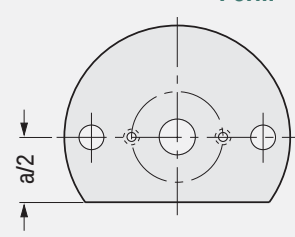
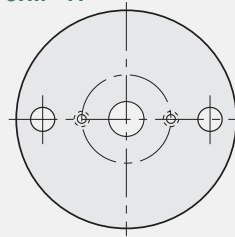
Code: **G64A**

(Custom-made products as per request)

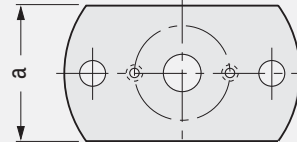


Form - A

Form - B



Form - C



Note: Fixing screws will be provided separately.

Code: **G64A**

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	



Order:
G64A. d x t x Form

Material: 1.0503 (CK45)

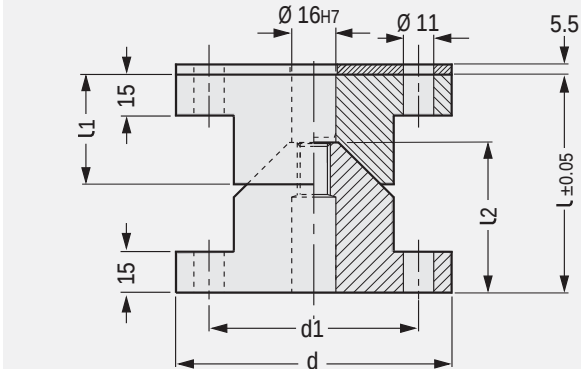


Locating Cone - NAAMS

Code: G63

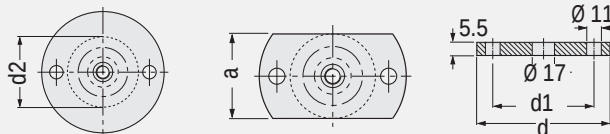
Shim Plate (as per request, Form A - B)

Reference: NAAMS G91



Form - A

Form - B



Code: G63

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	

Shim plates are with locating cones in (5.5 mm) dimension as a standard. For your custom-made shim plate orders, you can make selections from the following table.



Order:
G63. d x Form

Material: 1.7131 (16MnCr5)
Hardness: 60 - 64 HRC



Shim Plate

Code: G63A

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



Order:
G63A. d x Form

Material: 1.0503 (CK45)

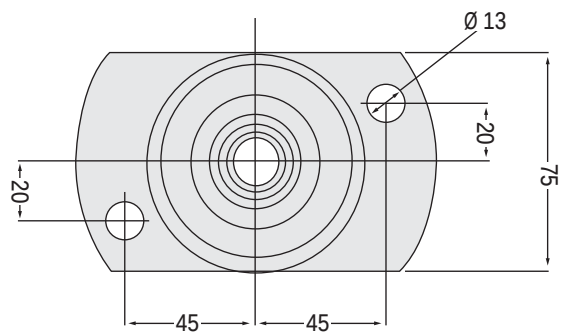
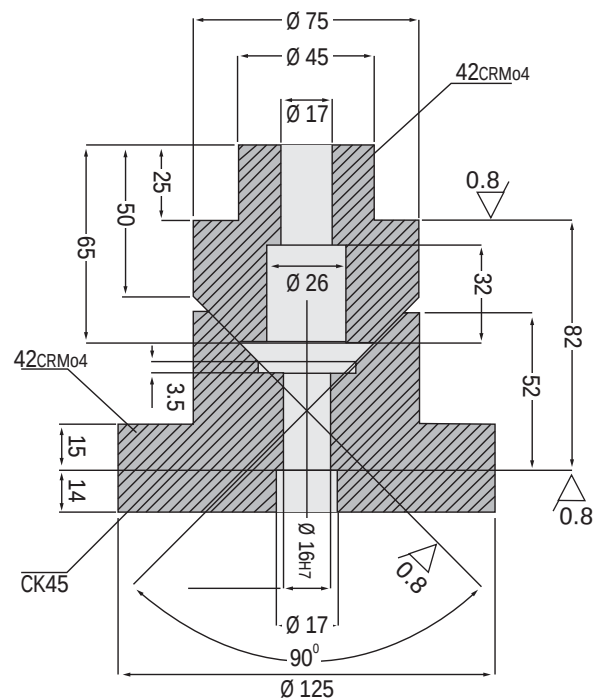


Locating Cone

Code: G46

(Custom-made products as per request)

Note: For all dimensions without tolerance according to EN 22768-1 (m), all corners will be chamfered.



Order: G46

Material:
See Technical Drawing

NEW



Bar Lock Slide Block Code: G152K

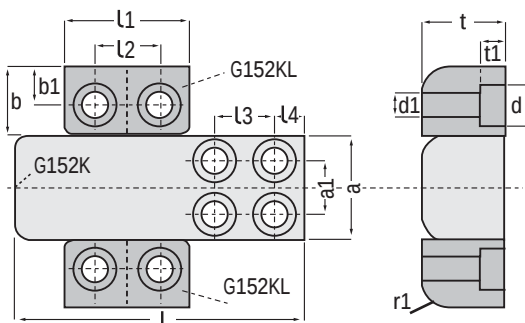
It provides making selections among ready-made products for wide moulds with movable plates more than one for mould designers. During production, insert locks and only wipe outer surfaces. Please do not touch thin layer of lubrication in joints.



Order: G152K. a x l

Material: 1.2343
Hardness: 58 - 62 HRC

Bar Lock System Code: G152



Order: G152. t x l

Bar Lock Guide Jaw Code: G152KL

All parts, including part holder rings, are applied a thin layer of oil (fit for food industry) before all areas dry and get hardened. G152KL product can be used in group applications for each mould as 2 pieces and multi bar lock guide jaws can be used in different designs. There are 2 pcs jaws in 1 set.

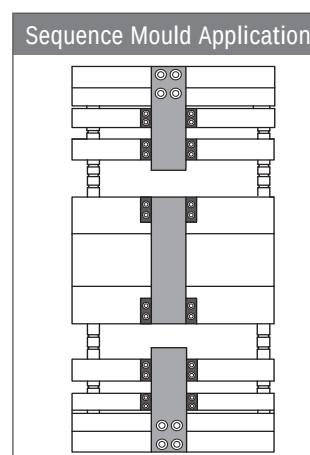
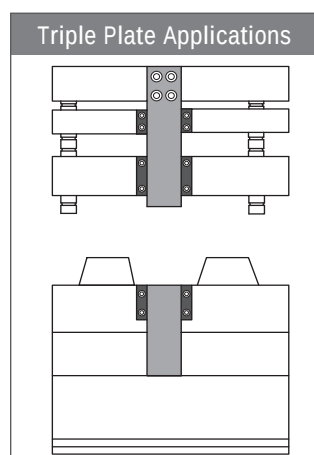
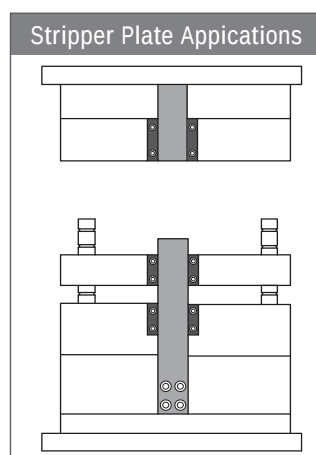
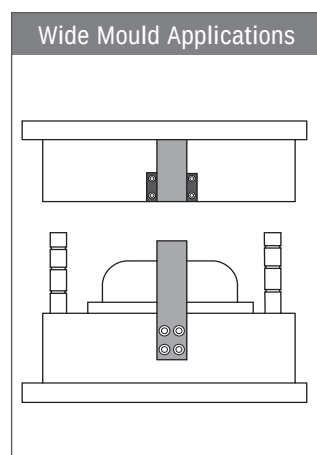


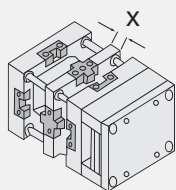
Order: G152KL. l1 x b

Material: 1.2343
Hardness: 52 - 54 HRC

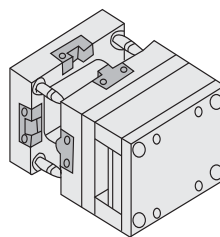
Bar Lock System Contents (G152): G152K= 1 pcs. + G152KL= 1 set (2 pcs).

a g5	l -0.1 / -0.2	l3	l4	a1	t -0.1	l1	b g5	l2	b1	d1 Ø	d Ø	t1 mm	r1
32	70	18	9	14	22	36	20	16	10	6.6 M6	11	6.8	6
	90												
	112												
50	90	21	12	24	30	46	25	24	11	9 M8	15	9	8
	125												
	150												
60	112	26	15	30	32	56	32	30	16	11 M10	18	11	10
	150												
	175												
80	112	26	15	44	35	56	35	30	16	11 M10	18	11	12
	150												
	175												
100	175	32	18	55	50	76	40	40	17	13.5 M12	20	13	15
	200												
	250												
120	200	35	20	75	65	86	45	50	20	13.5 M12	20	13	15
	250												
	300												



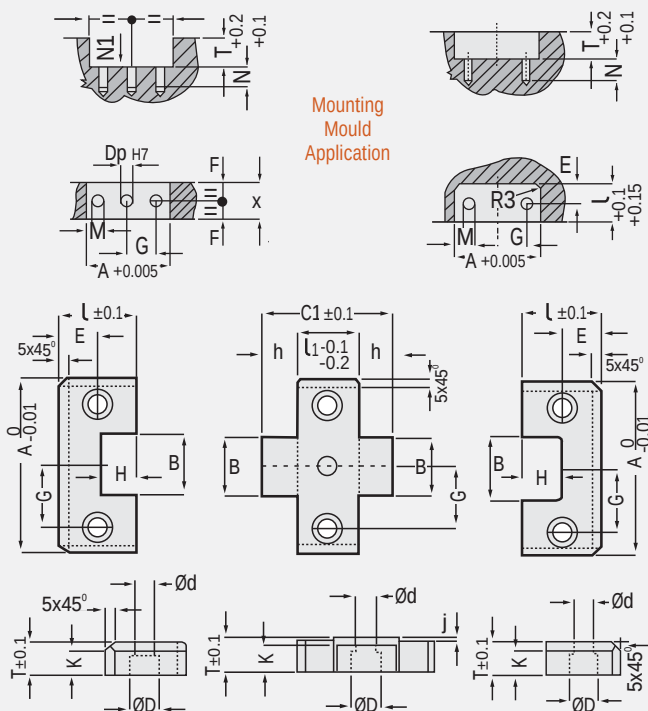


Oil grooves were created on the working surfaces of the products.



Group Locating - Centring Unit

Code: G127



Mounting
Mould
Application

Code: G127

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					

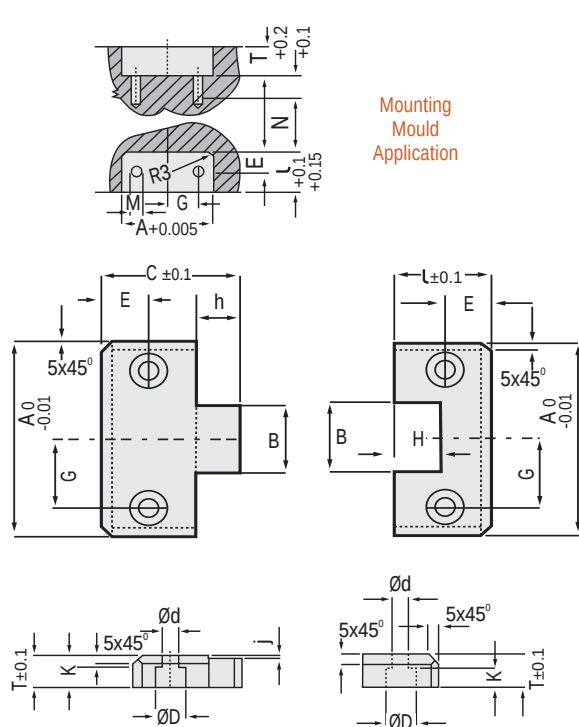


Order: G127. A . X

Material: 1.2510
Hardness: 52 - 54 HRC

Square Locating - Centring Unit

Code: G128



Mounting
Mould
Application

Code: G128

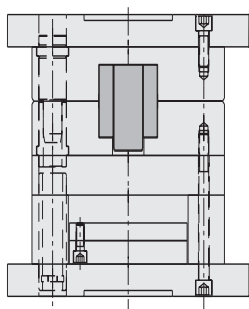
A	G	E	M	l	T	N
38	11	7	M5	17	13	15
50	17	11	M6	21.5	16	15
75	25	18	M10	36	19	20
100	35	22	M10	45	19	20
125	42	22	M10	45	25	20

A	B	C	d	D	h	H	j	K
38	11	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



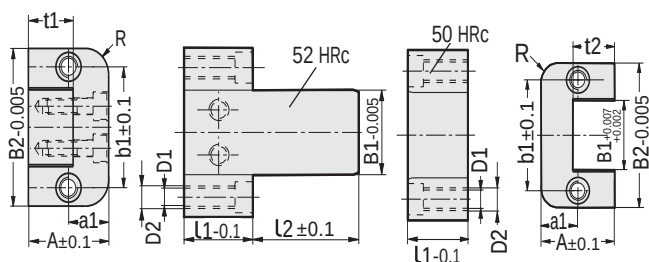
Order: G128. A

Material: 1.2510
Hardness: 52 - 54 HRC



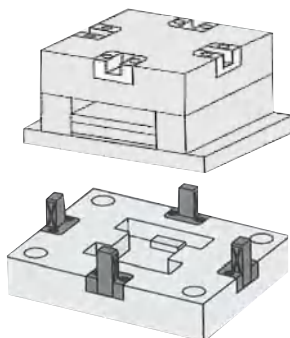
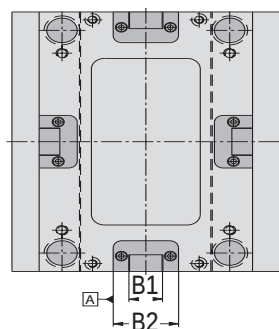
Square Locating - Centring Unit

Code: G130



Code: G130

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									
		50									
		63	46	100	10.3	M12	23	74	25.5	26	12.5
		80									
77	56	50									
		71	60	150	14	M16	30	114	35.5	36	16
		100									



Order: G130. B1 x L1 x L2

Material: 1.2510 Hardness: 52 - 54 HRC

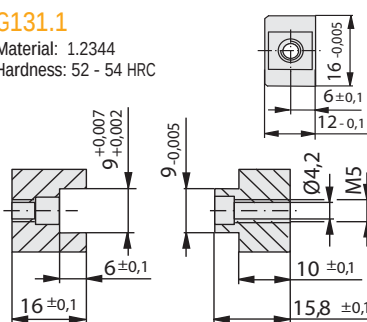
Centring Unit - DLC Coated

Code: G131

This product is suitable for rotational multi component moulds.

G131.1

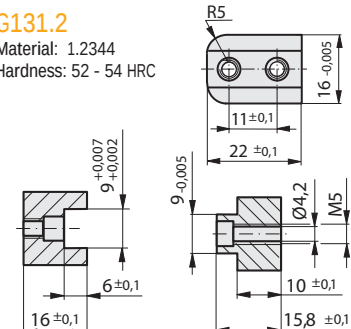
Material: 1.2344
Hardness: 52 - 54 HRC



Order:
G131.1

G131.2

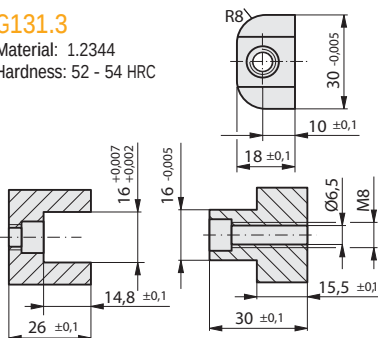
Material: 1.2344
Hardness: 52 - 54 HRC



Order:
G131.2

G131.3

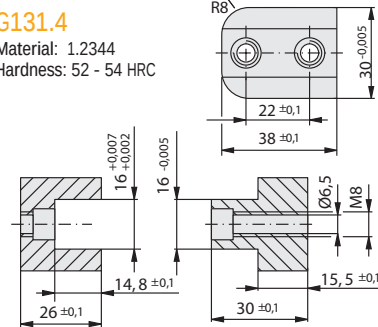
Material: 1.2344
Hardness: 52 - 54 HRC



Order:
G131.3

G131.4

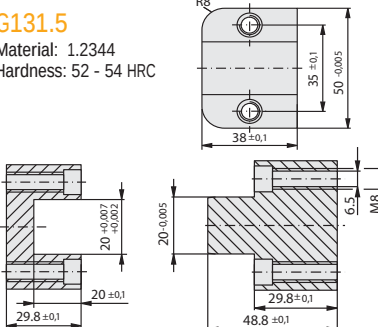
Material: 1.2344
Hardness: 52 - 54 HRC



Order:
G131.4

G131.5

Material: 1.2344
Hardness: 52 - 54 HRC

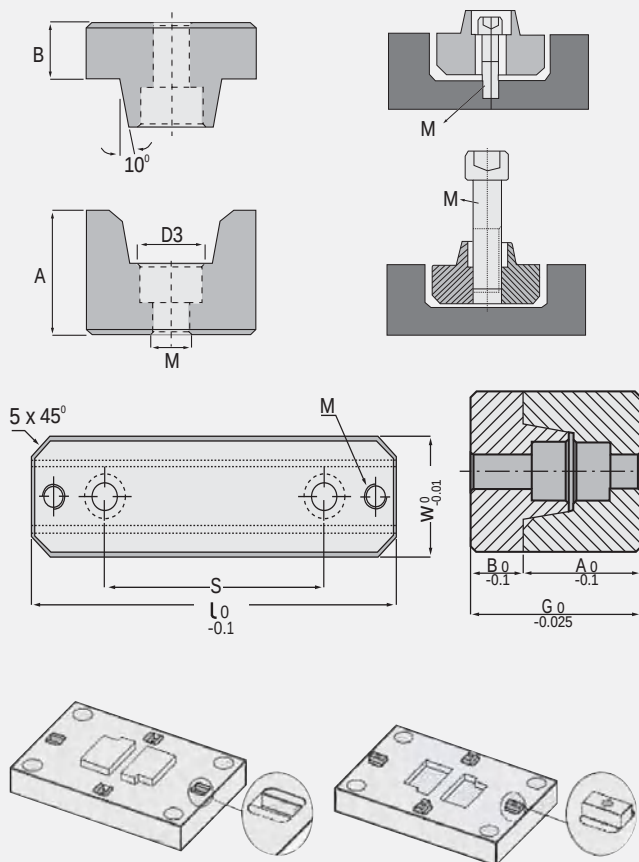


Order:
G131.5



Locating - Centring Unit

Code: **G132**



W	L	A	B	G	S	D3	M
25	50	17.5	8	25.5	-	9.6	M5
30	100	22	10	32	60	11	M6
40	150	25	13	38	100	14	M8

Order: **G132. W**

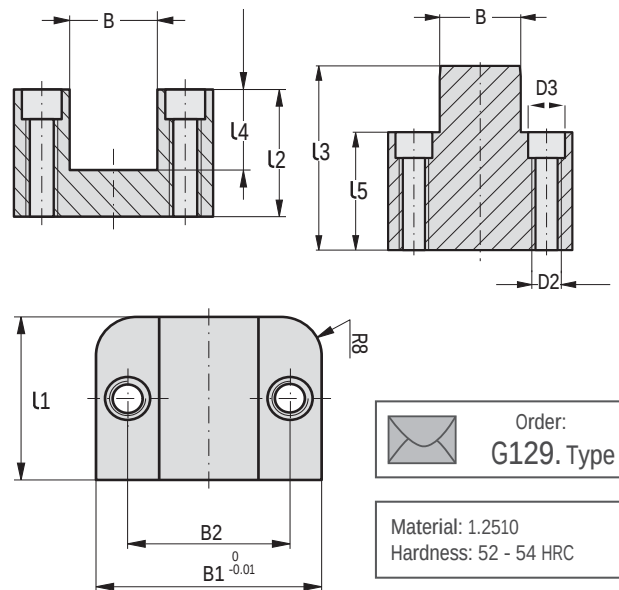
Material: 1.2510
Hardness: 52 - 54 HRC



Oil grooves were created on the working surfaces of the products.

Locating - Centring Unit

Code: **G129**



Order: **G129. Type**

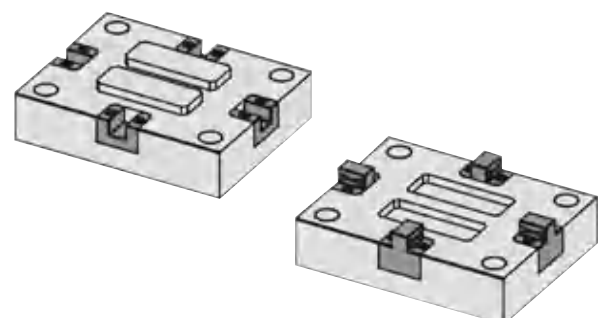
Material: 1.2510
Hardness: 52 - 54 HRC

Code: **G129**

Type	B	B1	B2	L1	L2	L3	L4	L5	D3	D2
1	12.7	38.1	25.5	25.4	22.2	22	13.3	9.5	9	M6
2	25.5	63.5	44.5	38.1	34.9	34.8	19.5	15.9	11	M8
3	36.6	88.9	63.5	50.8	44.5	44.2	25.7	19	18	M12

Note: This product is not suitable for the rotational (multi component) moulds. Please use "G131" products for the rotational multi component moulds.

Mounting Example





PROGRESSIVE
COMPONENTS

Progressive
Patented System
Ref: 2.166.237

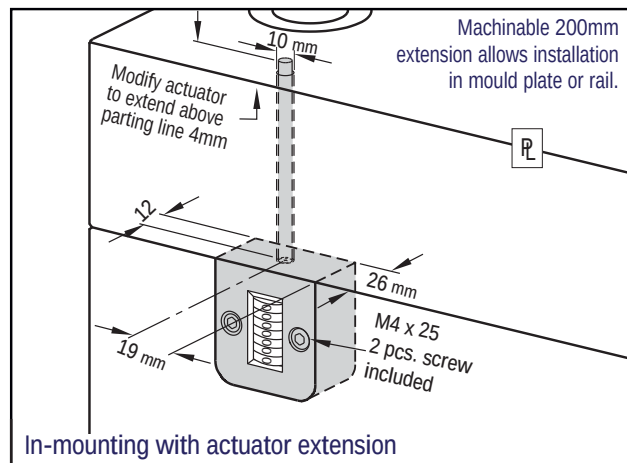
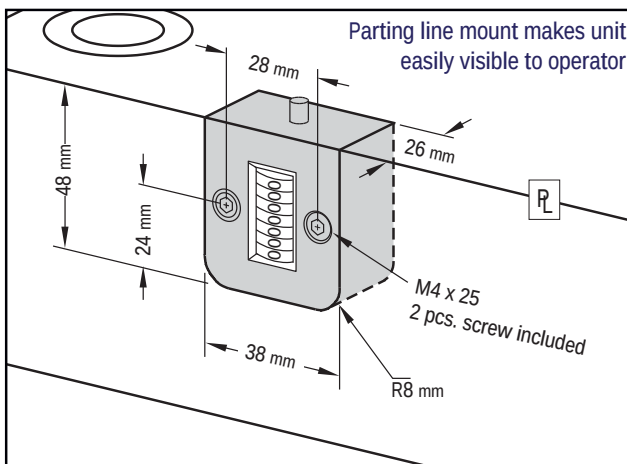
Europe Patent:
EP726129



Cycle Counter

Code: **CVPL.200**

- * Maximum operating temperature is 120°C.
- * Non-resettable, 7-digit mechanical counter.
- * Material: Glass fibre reinforced polyester casing.



Advantages of product:

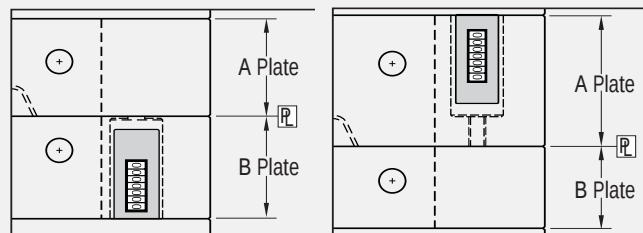
- * The product has a non-resettable 7-digit mechanical counter.
- * It provides creating or developing protective maintenance programs by evaluating process follow-up systems and confirming records kept manually.
- * Mould producers and authorized sellers can keep permanent records related to cycle status of the moulds out of the working area.
- * It is very important for mould producers to communicate correctly in situations where especially cycle guarantee is given.

Order: **CVPL.200**

Cycle Counter - Round Type

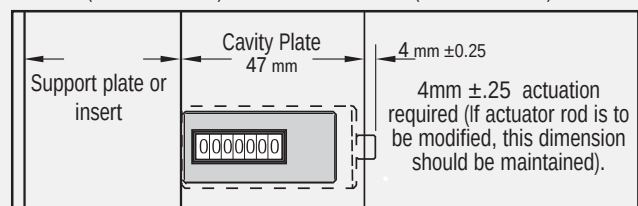
Code: **CVR**

- * Maximum operating temperature is 120°C.
- * Non-resettable, 7-digit mechanical counter.
- * Material: Glass fibre reinforced polyester casing.

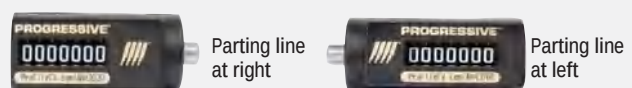
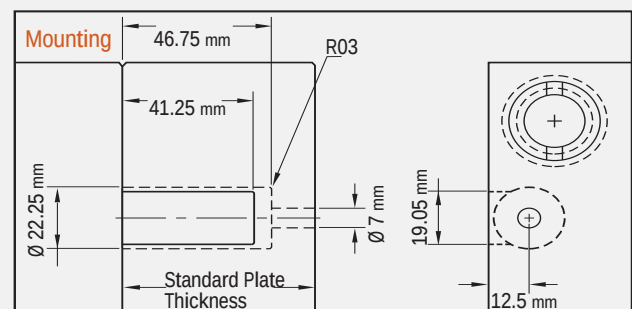


Right hand (actuated with parting line on the right) Cycle Counter mounted in B Plate (CVR-18 shown).

Left hand (actuated with parting line on the left) Cycle Counter mounted in A Plate (CVR-23 shown).

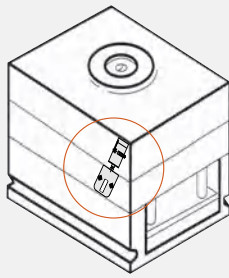


The R-Series CounterView can be installed in the A or B plates with a minimum thickness of 47mm. Larger plates utilize a threaded rod (included with each) that is pre-machined to the appropriate length for standard plate thicknesses to provide consistent actuation.



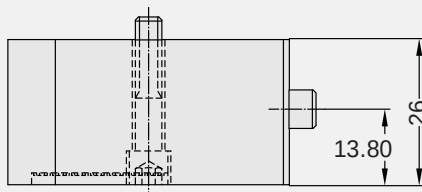
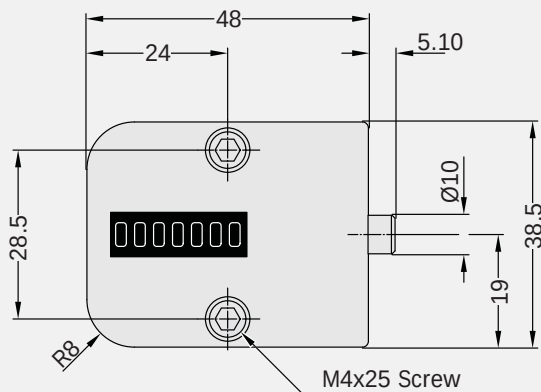
Order	Plate Thickness
CVR - 56	56 mm
CVR - 66	66 mm
CVR - 76	76 mm
CVR - 96	96 mm
CVR - 116	116 mm
CVR - 196	196 mm

Order	Plate Thickness
CVRL - 56	56 mm
CVRL - 66	66 mm
CVRL - 76	76 mm
CVRL - 96	96 mm
CVRL - 116	116 mm
CVRL - 196	196 mm

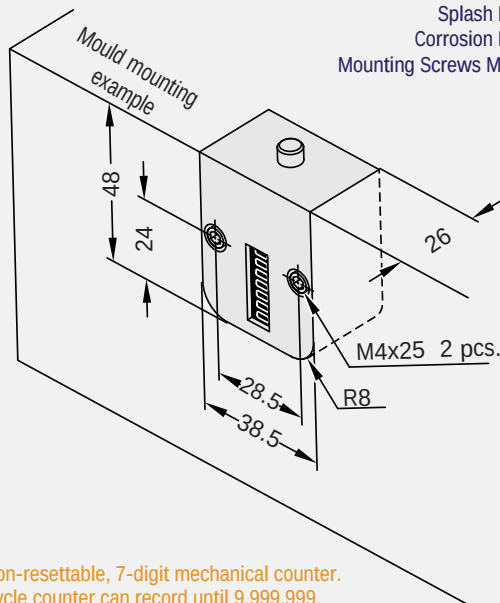


Cycle Counter (economic type)

Code: G124E



Max. Operation Temperature 120°C
Splash Proof
Corrosion Proof
Mounting Screws M4x25



* Non-resettable, 7-digit mechanical counter.
* Cycle counter can record until 9.999.999.

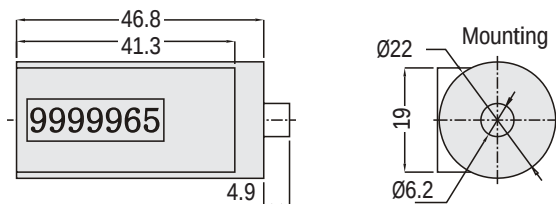


Order: G124E

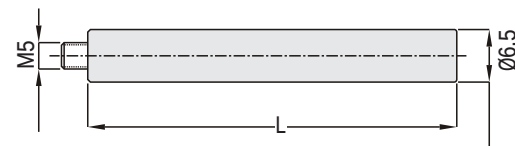


Cycle Counter - Round Type (economic type)

Code: G142E



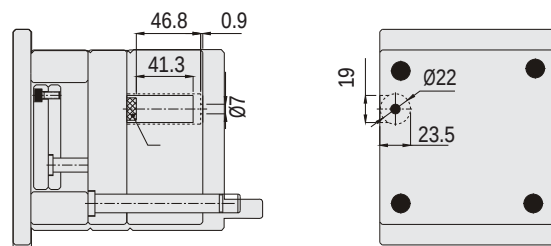
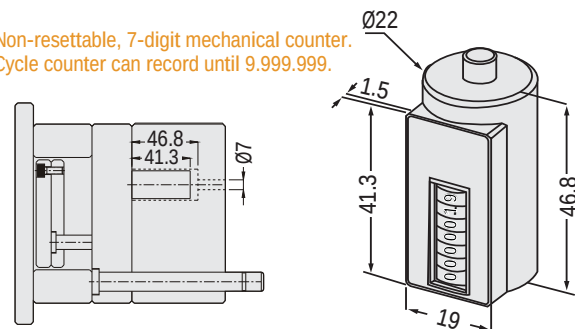
Actuator Extension Rod (processable in desired dimension)



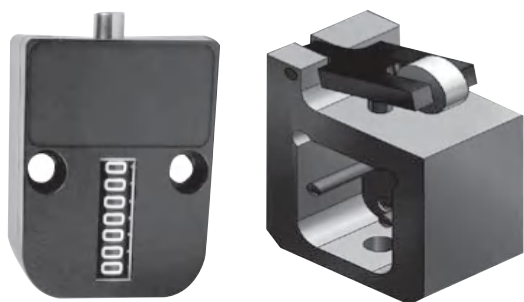
Round Cycle Counter: Production counter / unite has round (cylindrical) structure and can be mounted inside of support plate according to the following drawings (if your mould support / holder is in suitable position). In case your support / holder is high / long, additional operation can be provided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

Processing Advantage: During mounting of round cycle counter to mould, only mounting slot is opened with drill (22,5 mm), (42 x 17) housing is generated. According to the standard model, it is provided mounting practicability at application. Maximum operation temperature is 120°C.

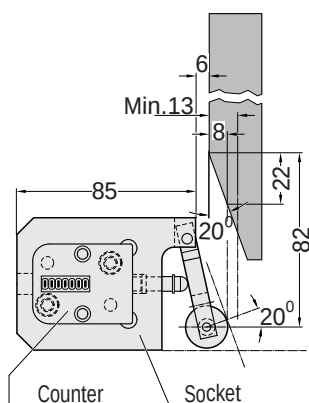
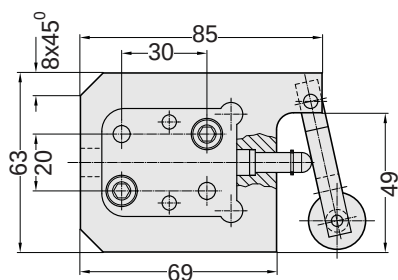
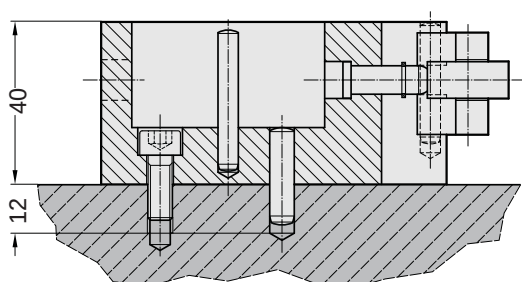
* Non-resettable, 7-digit mechanical counter.
* Cycle counter can record until 9.999.999.



Order: G142E

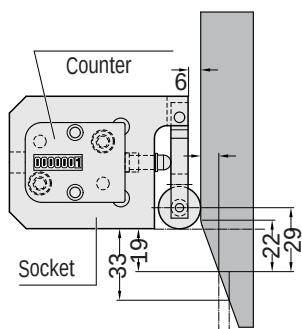


Installation Socket for Cycle Counter Code: G124.1



Mounting:
Please fix cycle counter
in the hole of socket
and use 2 pcs.
of cylinder head cap
screws and dowel pin.

Operation Mode:
Cycle counter is
non-detachable
when mounted.



Order: G124.1

Mechanical Counters



Professional Type
* 5 - digit
* Overhead pulsative
* Side zeroing

Order: RS207



Economic Type
* 5 - digit
* Overhead pulsative
* Side zeroing

Order: 13701



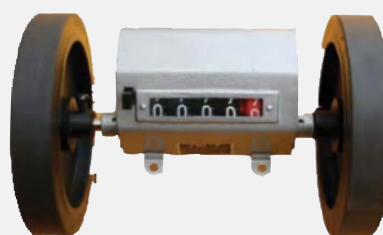
Economic Type
* 5 - digit
* Overhead pulsative
* Side zeroing

Order: D29003



Economic Type
* 5 - digit
* Pulling Counter
* Knob Type

Order: D29002



Counter
* 5 - digit
* With the rubber
wheel for meter

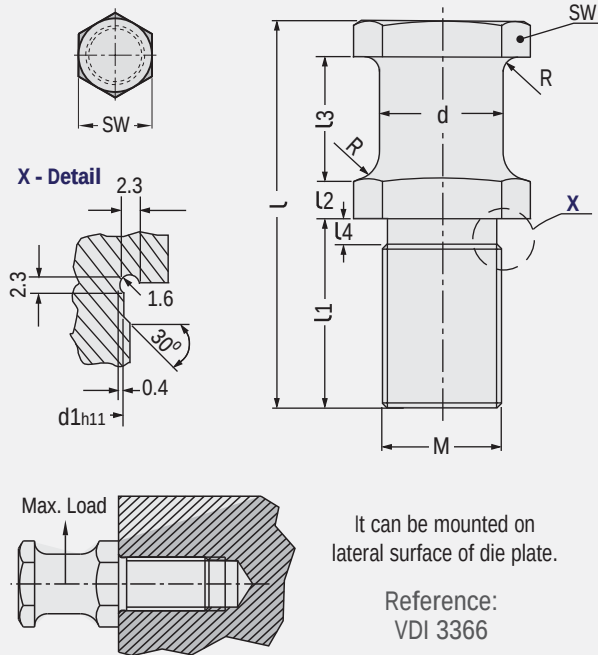
Order: D29001



Die Lifting Bolt - Heavy Duty

VDI 3366

Code: G47



When used for transport purpose 4 pcs.
When used for die turning 2 pcs. of bolts are used.
Max. load should not be exceeded during operation.

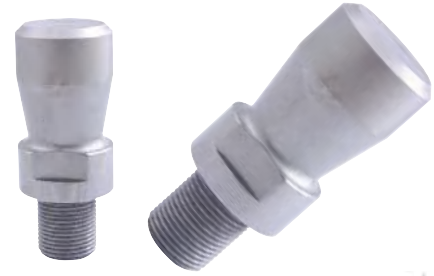
Code: G47

M Thread	1 Bolt Max. Load Kg.	Ø d	Ø d1	l mm	l1 mm	l2 mm	l3 mm	l4 mm	Radius R	Head SW
M16	250	16	12	58	28	5	20	3	5	24
M20	500	20	16	68	34	6	22	3	5	30
M24	1000	25	19	78	38	8	25	4	6	36
M30	1500	32	24	95	45	10	32	5	6	41
M36	2500	40	30	118	56	12	40	5	8	50



Order: G47. M

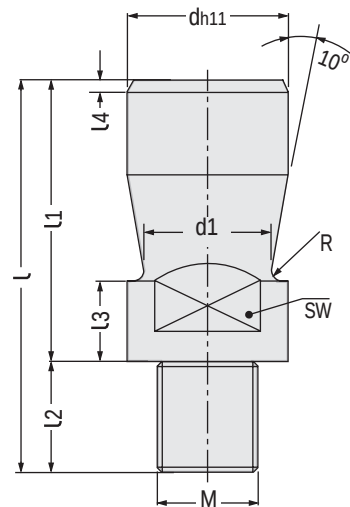
Material: CK45
700 - 800 N mm²



Die Lifting Bolt

DIN ISO 10242-1

Code: G54



Clamping bolts are components providing connection of upper group of die to the ram group of press.
Clamping bolt is mounted to the die 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.

Code: G54

M Thread	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:
G54. M x d

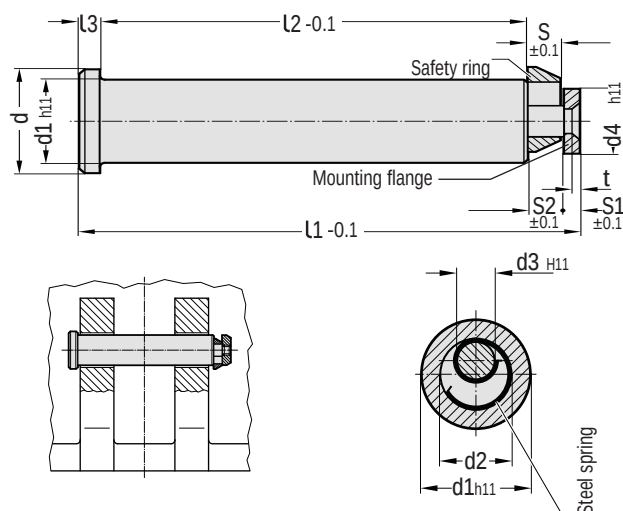
Reference:
DIN ISO 10242 - 1



Die Lifting Pin - CNOMO

Code: **G153**

CNOMO Norm EM24.50.4000 02/2014



Code: **G153**

d_1	d	d_2	d_3	d_4	l_1	l_2	l_3
32	40	22	12	25	154	132	6
40	50	28	16	32	197.75	170	8
50	63	36	20	40	247.6	212	10
63	80	45	25	50	309	265	12

Code: **G153**

d_1	S	S_1	S_2	t	Max. Cap. 2 Pins
32	10	5	11	2.5	12000 Kg
40	12.5	6	13.75	3	18.000 Kg
50	16	8	17.6	4	28.000 Kg
63	20	10	22	5	45.000 Kg

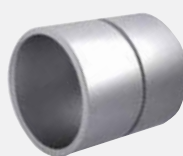


Order:
G153.d1

Material: CK45

Bush for Lifting Pin

Code: **G51.1**

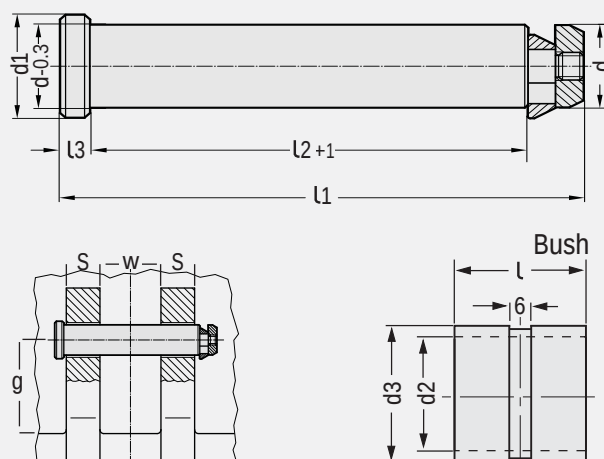


Code: **G51**



Die Lifting Pin / WDX 22 - 60

FORD Norm WDX 22 - 60



Code: **G51**

Code: **G51.1**

d	d_1	l_1	l_2	l_3	S	w	g	d_2	d_3	l
35	45	165	124	10	30	50	60	37	45	30
50	63	230	189	10	50	70	65	52	60	50
63	76	320	279	10	80	100	70	65	75	80
80	89	370	319	15	100	100	80	82	90	100

Lifting Pin Capacity

d	Max. Load	Max. Capacity
35	1500 Kg	3000 Kg
50	5000 Kg	10000 Kg
63	20000 Kg	40000 Kg
80	30000 Kg	60000 Kg

* Due to safety reasons, die weight should not exceed maximum load that 2 lifting pins can bear (max. capacity). Max. load should be considered.

* Lifting equipment should be correctly mounted on workpieces on which they are used.

* Damaged - broken parts should not be used.



G51. d (Pin)
G51.1 . d2 (Bush)

Material: CK45



STQ4002

STQ4001

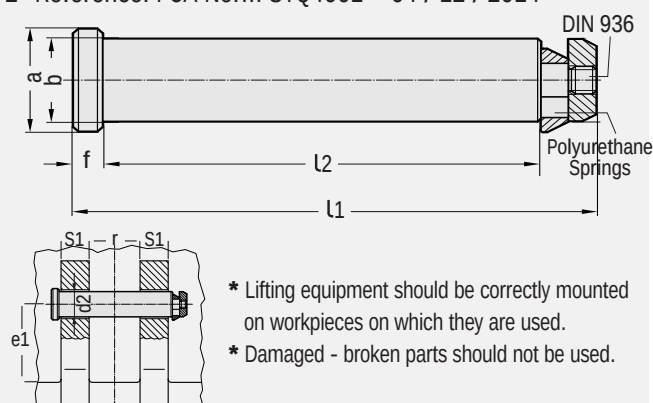


Die Lifting Pin - FCA

Code: G55

1- Reference: FCA Norm STQ4002 04 / 12 / 2014

2- Reference: FCA Norm STQ4001 04 / 12 / 2014



2- Reference: FCA Norm STQ4001 04 / 12 / 2014

a	b h11	d2	e1	f	l1	l2	R	S1	Max. Load Kg	Max. Capacity Kg
25	15.6	16	28	6	102.5	77	11	29.5	600	1200
30	20.6	21	29	6	113.5	86	13	33	1000	2000
35	25.6	26	40	6	128.5	100	20	35	2000	4000
43	33	34	55	6	166.5	135	55	35	4000	8000
53	43	44	60	8	210.5	175	60	50	7000	14000

1- Reference: FCA Norm STQ4002 04 / 12 / 2014

a	b h11	d2	e1	f	l1	l2	R	S1	Max. Load Kg	Max. Capacity Kg
38	29	30	60	6	178.5	150	60	40	2000	4000
43	33	35	65	6	200.5	170	60	50	3200	6400
53	43	45	85	8	233	195	80	50	5000	10000
65	53	55	105	10	282	235	100	60	8000	16000
65	53	55	75	10	227	180	65	50	8000	16000
78	63	65	130	12	352.5	295	120	80	12000	24000
78	63	65	100	12	272.5	215	80	60	13000	26000
95	78	81	150	14	421.5	355	140	100	30000	60000

Due to safety reasons, die weight should not exceed maximum load that 2 lifting pins can bear.



Order: STQ1
G55. a x l2



Order: STQ2
G55. a x l2



G52. d1 (Pin)
G52.1 . d2 x d4 (Bush)

Material: CK45

Bush for Lifting Pin

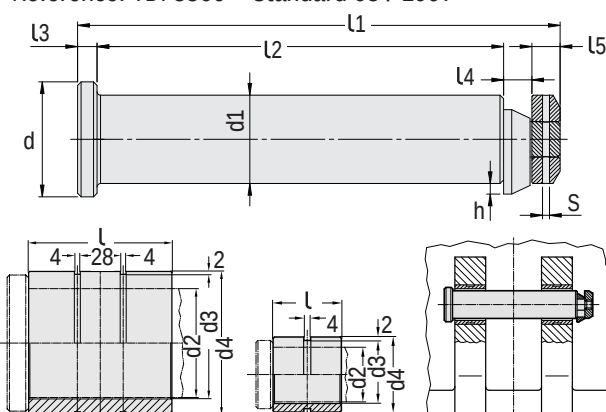
Code: G52.1



Die Lifting Pin - VDI 3366

Code: G52

Reference: VDI 3366 Standard 03 / 1997



Form - B

Form - A

Code: G52

d1 h11	d Ø	l1 +1	l2 +1	l3 mm	l4 mm	l5 mm	h +0.2	S Safety Pin
32	40	175	145	10	9	10	4	3x30
40	50	225	188	10	13	13	6	4x35
50	65	273	230	11	15	16	6	4x45
63	75	347	295	14	17	20	7.5	5x60
76	95	422	360	15	19	27	8	5x70

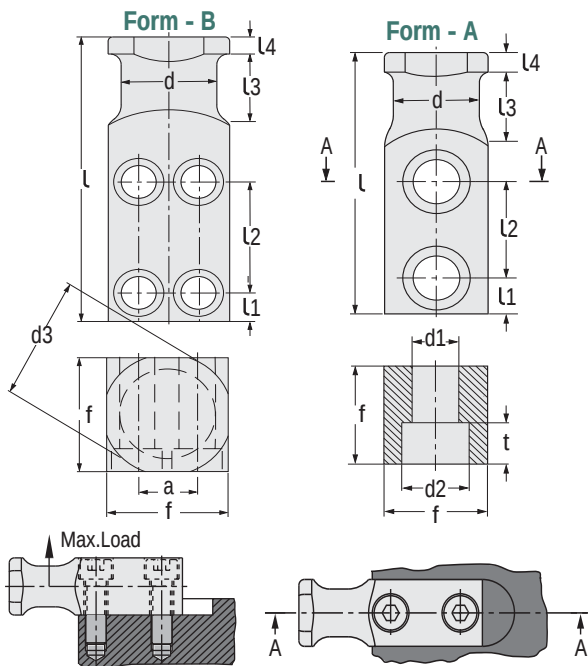
Code: G52.1

d1 h11	Max. Load Kg.	Max. Capacity Kg.	d2 +1	d3	d4	l	Form
32	3200	6400	32	34	44	40	Form A
40	5000	10000	40	42	52	50	
50	8000	16000	50	52	62	60	
63	12500	25000	63	65	75	80	
76	31500	63000	76	78	100	100	Form B
-	-	-	76	78	105	100	



Die Lifting Lug - VDI 3366

Code: G134



f	l	l1	l2	l3	l4	Screw	a	Form
20	80	10	34	20	6	M8 x25	-	Form A
25	90	10	37	25	8	M10 x30	-	
35	100	12	38	30	8	M12 x40	-	
40	120	16	46	32	10	M16 x45	-	
50	140	18	56	40	10	M20 x60	-	
60	160	22	59	45	12	M24 x70	-	
80	200	20	78	50	12	M20 x90	40	Form B
100	250	25	100	65	15	M24 x110	50	
120	300	30	125	80	15	M30 x130	60	

f	d	d1	d2	d3	t	Max.Load	Max.Capacity
20	16	9.5	14.5	24	9	320 Kg.	640 Kg.
25	20	11.5	17.5	30	11	630 Kg.	1260 Kg.
35	25	14	20	40	13	1250 Kg.	2500 Kg.
40	32	18	26	50	17.5	2000 Kg.	4000 Kg.
50	40	23	33	60	21.5	3200 Kg.	6400 Kg.
60	50	27	39	70	25.5	5000 Kg.	10000 Kg.
80	63	23	33	90	21.5	8000 Kg.	16000 Kg.
100	80	27	39	110	25.5	12500 Kg.	25000 Kg.
120	100	33	48	130	32	20000 Kg.	40000 Kg.

Due to safety reasons, die weight should not exceed maximum load that 2 lifting lugs can bear.



Order: G134.f

Material: CK45
700 - 800 N mm²



Order: G58.f

Material: CK45
700 - 800 N mm²

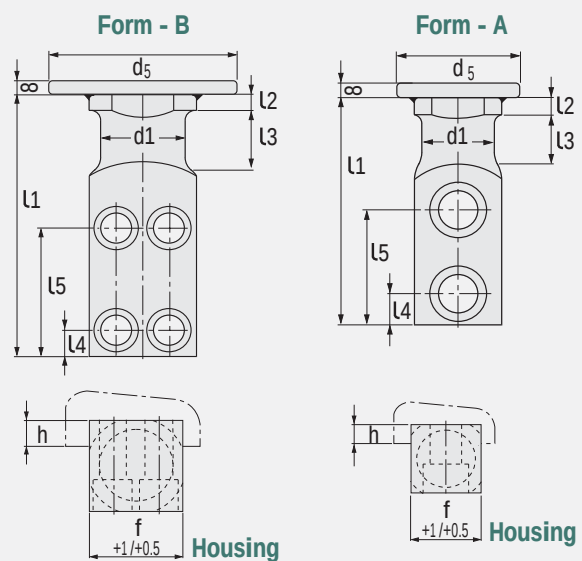


NEW



Die Lifting Lug with Rope Stop Safety

Code: G58



Code: G58

f	h	l1	l2	l3	l4	l5	Screw	Form
20	6	80	6	20	10	44	M8 x25	Form A
25	8	90	8	25	10	47	M10 x30	
35	10	100	8	30	12	50	M12 x40	
40	10	120	10	32	16	62	M16 x45	
50	12	140	10	40	18	72	M20 x60	
60	14	160	12	45	22	81	M24 x70	
80	16	200	12	50	20	98	M20 x90	Form B
100	18	250	15	65	25	125	M24 x110	
120	20	300	15	80	30	155	M30 x130	

f	d1	d5	Max.Load	Max.Capacity	Form
20	16	60	320 Kg.	640 Kg.	Form A
25	20	70	630 Kg.	1260 Kg.	
35	25	70	1250 Kg.	2500 Kg.	
40	32	110	2000 Kg.	4000 Kg.	
50	40	110	3200 Kg.	6400 Kg.	
60	50	150	5000 Kg.	10000 Kg.	
80	63	150	8000 Kg.	16000 Kg.	Form B
100	80	150	12500 Kg.	25000 Kg.	
120	100	150	20000 Kg.	40000 Kg.	

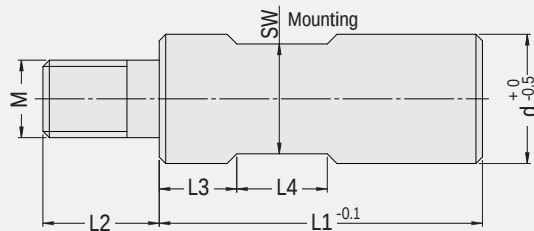
NEW



Support Bolt

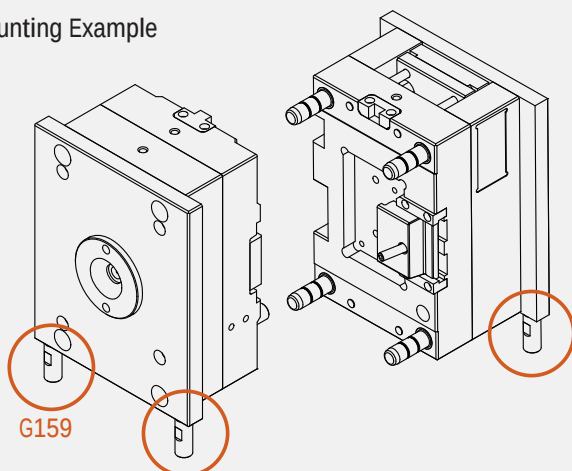
Code: **G159**

These bolts form a gap on mould surfaces in order to prevent damage to water unions and cooling hose systems protruding on injection mould surfaces and hydraulic - pneumatic core systems. Minimum four bolts should be used according to each mould size. Especially, it is used to protect protruding parts of moulds during shelf forming.



d -0.5	M Metric	L1 mm	L2 mm	L3 mm	L4 mm	SW Mounting
20	M12	35	18	14	12	17
		50				
		80				
32	M16	35	24	18	12	27
		50				
		80				
39	M20	120	30	24	16	32
		80				

Mounting Example



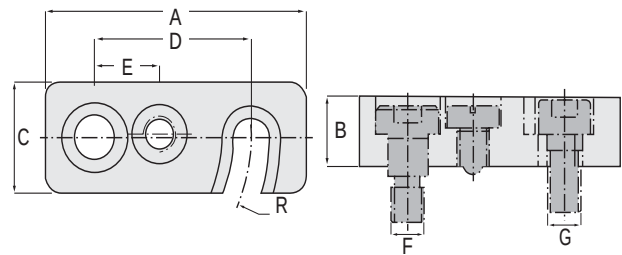
Order:
G159. d x L1

Material: CK45



Mould Safety Latch

Code: **G103**



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

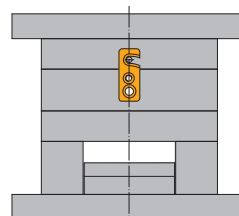


Order:
G103. A

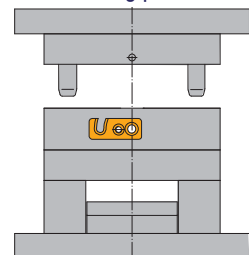
Material: 1.0503 Steel
Forging Sandblasting

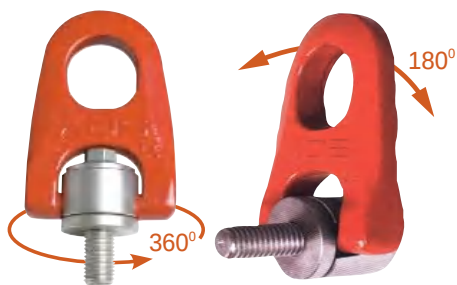
Mould Safety Latch: This system is mounted outside of the mould. It is used to carry the mould safely. It is fixed on the mould with a cylinder head cap screw. Other cylinder head cap screw hole is drilled at the opposite party. Mounting or demounting can be easily done with spring plunger. It is a compact product having no loose parts. It has no protruding parts as a clamping lock.

safe transport position



in working position



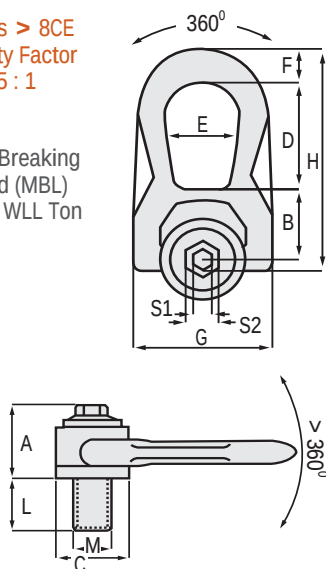


Double Swivel Ring - Eyebolt

Code: AK400

Class > 8CE
Safety Factor
5 : 1

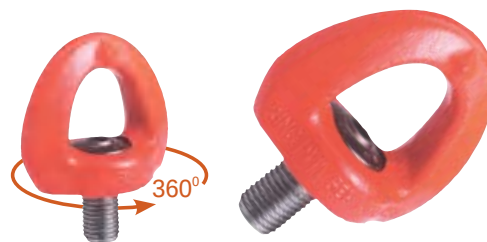
Min. Breaking
Load (MBL)
= 5 x WLL Ton



Lifting equipment manufactured as forging in Turkey, has been registered that its production quality is in European standards with "Approval of Material Manufacturer" certificate given by Germanischer Lloyd.



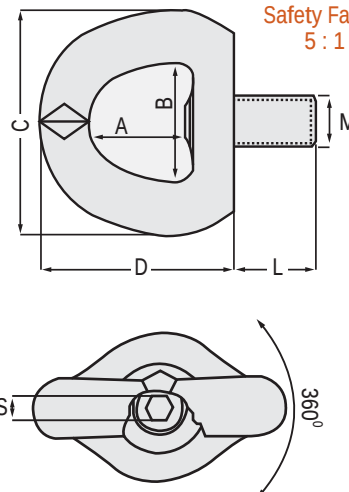
Code: AK400



Heavy Tonnage Swivel Ring Eyebolt

Code: AK450

Class > 8CE
Safety Factor
5 : 1



p : Load / Capacity ● Eyebolt

Code: AK450

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 Load (Safety Factor ≥ 5:1)

P=Ton

M	p	p	p	p	p	p	p	p
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

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 Load (Safety Factor ≥ 5:1)

P=Ton

M	p	p	p	p	p	p	p	p
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



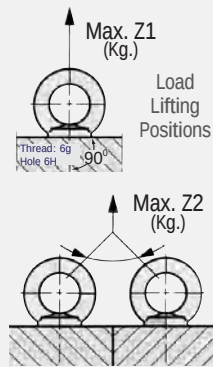
Order:
AK400. M

Material: Class > 8CE
Safety Certified



Order:
AK450. M

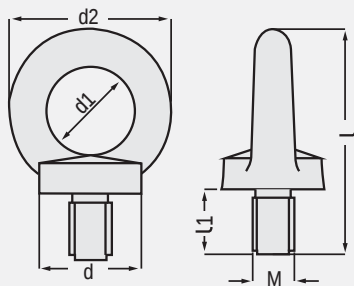
Material: Class > 8CE
Safety Certified



Lifting Eyebolt

DIN 580

Code: G141



Order:
G141. M

Material: C15 Forged
EYEBOLT: Class > 8
EYENUT: Class > 8

Usage:
Standard: G141
Heavy Duty: AK-580C

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

Code: G141

M x Thread	d	d2	d1	l	l1	Weight	Z1 Ton	Z2 Ton
M8 x 1.25	20	36	20	49	13	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	1.66 kg.	3.60	2.50
M36 x 4.0	75	126	70	182	54	2.65 kg.	5.10	3.60
M42 x 4.50	85	144	80	210	63	4.03 kg.	7.00	4.90
M48 x 5.0	100	166	90	236	68	8.80 kg.	8.60	5.90



For Heavy Duty Parts

Order:
AK-580C
EYEBOLT

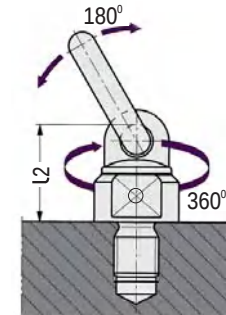
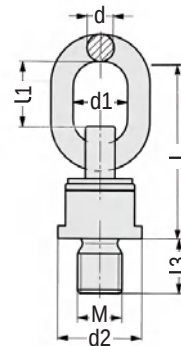


EYEBOLT (Heavy d.) AK - 580C: M27 / M30 / M36 / M42 / M45 / M48 / M56 / M60
EYENUT (Heavy d.) AK - 582S: M27 / M30 / M36 / M42 / M45 / M48 / M56 / M60



Rotary Safety Eyebolt

Code: G140



Rotary Safety Eyebolt: By absorbing sudden and rigid motion during lifting - bending and breaking of sling / rope / chain that can be occurred due to swinging of load, it will amortise costs above possible damages with safety lifting and carrying. Special forged steel (class 8) product, 4 times safety against fracture in rotation direction of full load, hinged rotary design that can be taken correct position and be turned axially by aligning movable ring 180° in loaded position.

Code: G140

M x Thread	d	d1	d2	l	l1	l2	l3	Weight
M8 x 1.25	12	30	40	98	44	46	12	0.5 kg.
M10 x 1.50	12	30	40	98	44	46	19	0.5 kg.
M12 x 1.75	12	30	40	98	44	46	19	0.5 kg.
M16 x 2.0	12	30	40	98	44	46	31.8	0.5 kg.
M20 x 2.50	20	40	70	160	67	75	38.1	2.5 kg.
M24 x 3.0	20	40	70	160	67	75	38.1	2.5 kg.
M30 x 3.50	22	51	79	206	95	91	50	4.0 kg.
M36 x 4.0	22	51	79	206	95	91	54	4.0 kg.
M42 x 4.50	26	65	93	230.5	108	100.5	63	6.0 kg.
M48 x 5.0	26	65	93	230.5	108	100.5	68	6.0 kg.
M56 x 5.5	32	70	105	278	120	132	84	11.0 kg.
M64 x 6.0	32	70	105	278	120	132	95	11.0 kg.

Maximum Lifting Load (Safety Factor ≥ 5:1)

P=Ton

Product	Vertical p 0°	Lateral p 90°	Two Angled p 0-45°	Two Angled p 45-60°	Four Angled p 0-45°	Four Angled p 45-60°
M8 x 1.25	0.6	0.3	0.4	0.3	0.6	0.4
M10 x 1.50	0.9	0.45	0.6	0.45	0.9	0.6
M12 x 1.75	1.2	0.6	0.8	0.6	1.2	0.9
M16 x 2.0	2.6	1.3	1.8	1.3	2.7	1.9
M20 x 2.50	4	2	2.8	2	4.2	3
M24 x 3.0	7	3.5	4.9	3.5	7.3	5.2
M30 x 3.50	10	5	7	5	10.5	7.5
M36 x 4.0	15	8	11.2	8	16.8	12
M42 x 4.50	17	12	16.8	12	25.2	18
M48 x 5.0	18	13	18.2	13	27.3	19.5
M56 x 4.0	28	16	22.4	16	33.6	24
M64 x 6.0	28	16	22.4	16	33.6	24



Order: G140. M

Order Example:

G140. M24

Mould Testing & Assembly Unit

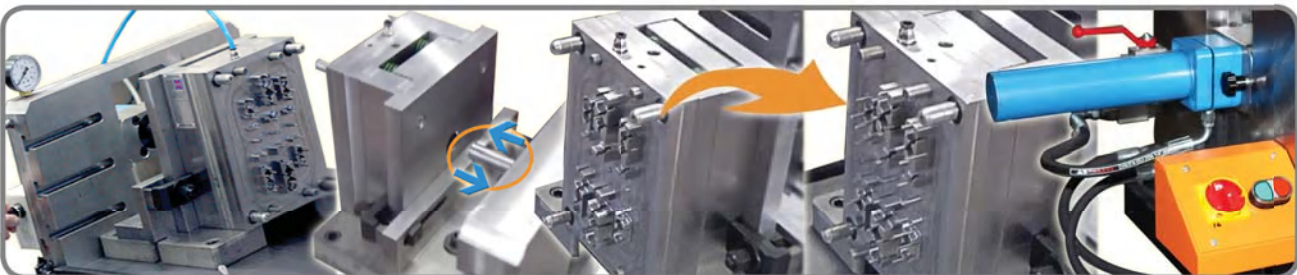


Mould Delivery: No problem / successful

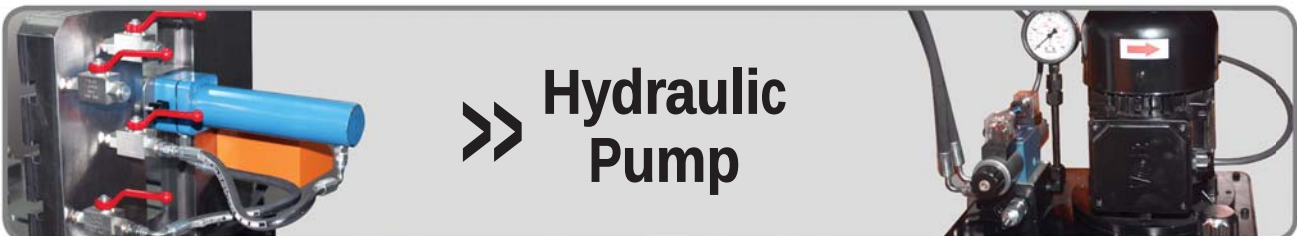
We maintain our innovative investments with the force we have taken from mould masters. We also present "Mould Testing & Assembly Unit" and "Core System with Hydraulic Piston" (page 282) which we hope that they support mould production with proud. We are sure that these products will be useful for mould collection and offer you a joyful working environment with quick and easy mounting.



Mould Testing Unit: It provides easy mounting and control possibility for your moulds with its suitable sizes and durable steel construction in anywhere of your workshop (by forklift). It enables to open your mould bases / to separate plates easily by providing sliding motions with air cushions on the table of the unit. In this way, the plates can be moved forward - backward easily (with the logic of cnc machine) and your operations on moulds are ready.



Hydraulic Power is mounted in the unit; the controls of Hydraulic System which can be mounted to the mould if required and Injection Motion controls, especially Ejector Motions and Other Lifter / Slide Systems are monitored. And their adjustments may be done in precision position on the unit. All these motions can also be monitored.



>> Hydraulic Pump

Compressed Air Energy: The air equipment on the unit enables you to test water/cooling channels in your moulds with a Manometer (air bar measuring) by installing it in your existing air system in the workshop. It provides support for you to detect leakages and problems in the water cooling channels with the pressure monitored in Manometer counter. This system prevents corrosion in your new moulds because it does not use water. The existing air energy will make contribution to your other mounting works.

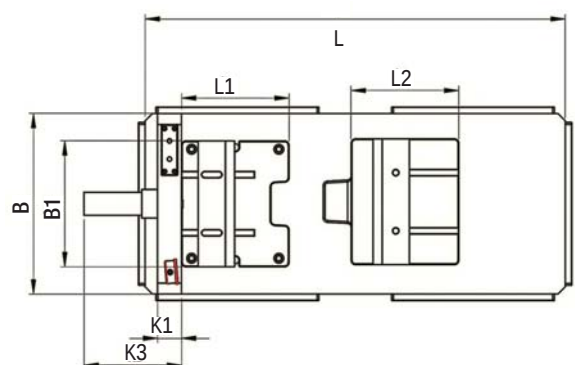
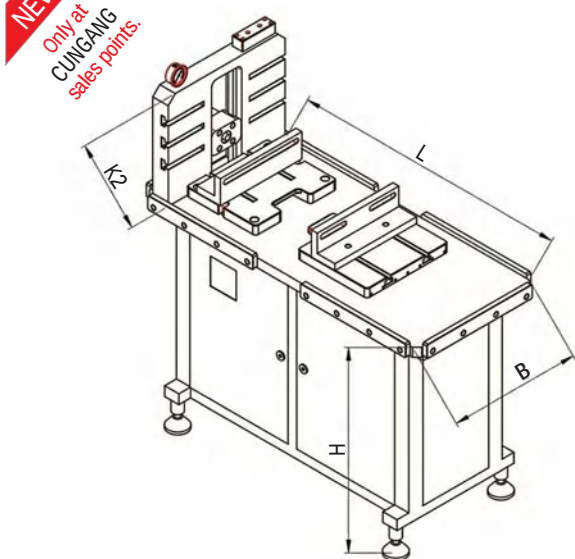


Except above mentioned important working possibilities of mould testing unit, it is a compact (with no effusing part) and innovative product equipped with table safety retainers / supports, mould angulation thrusts - electrical panel, air control buttons - hydraulic unit control counter - hydraulic valve - hydraulic piston tool - moving piston slot and holder - fixed plate and pins - moving plate control - mould ejector and connection plates. All spare part and services are given by our company.

NEW
Only at
CUNGANG
sales points.

CE

Mould Testing & Assembly Unit

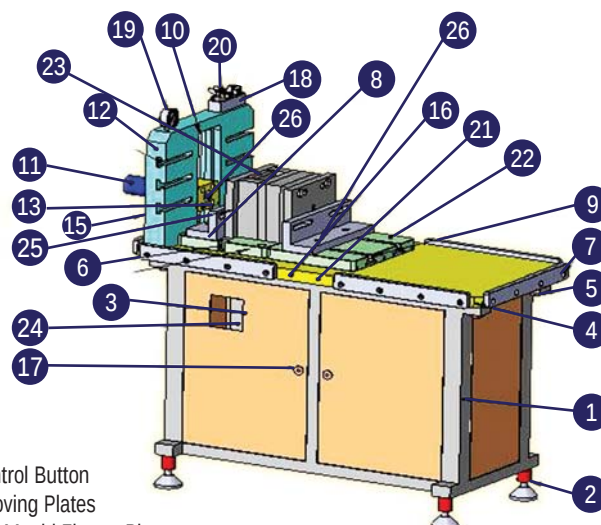


Perfect mould table that enables fast / easy opening and closing of moulds in accordance with the occupational safety principles and carrying out repair and mounting works on moulds and monitoring precision and performing many tests.

Order Code	Max. Capacity Loading	Air Power	Electrical Motor Power	Unit Weight	L mm	H mm	L1 mm	L2 mm	B mm	B1 mm	K1 mm	K2 mm	K3 mm	Special Offer
GTH-001	3000 Kg.	6 Bar	3 Kw	530 Kg.	1156	854	296	296	496	346	66	400	268	4.590 €
GTH-002	3000 Kg.	6 Bar	3 Kw	730 Kg.	1346	854	346	346	636	526	76	500	280	6.490 €
GTH-003	4000 Kg.	8 Bar	5 Kw	1050 Kg.	1470	876	386	386	740	590	86	640	290	9.690 €

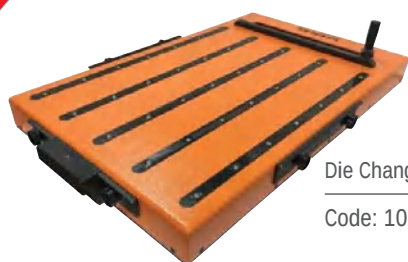
Mould Testing Unit Schema / Descriptions:

- 1 - Steel Profile (60 x 40 x 3) Chassis
- 2 - Powerful Metal Screw Pressing Feet
- 3 - Hydraulic Pressure Plexy Transparent Indicator
- 4 - Moving (precision ground) Unit Table
- 5 - Table Chassis Skid Plates
- 6 - Fixed Plate Pins
- 7 - Table Safety Side Holders
- 8 - Fixed (precision ground) Plate for Mould
- 9 - Chuck "T" Channels
- 10 - Moving Piston Slot
- 11 - Hydraulic Piston Arm
- 12 - Air Outlet for Water / Cooling Channel Test
- 13 - Moving, Hydraulic Piston Holder
- 14 - Precision Ground (for small moulds) Set Square
- 15 - Electrical Panel
- 16 - Air Control Button
- 17 - Openable Unit Cover
- 18 - Extra Hydraulic Distribution Control Button
- 19 - Air Control / Manometer
- 20 - Hydraulic Distribution Valves



- 21 - Moving Plate Control Button
- 22 - Air Cushioned Moving Plates
- 23 - Precision Ground Mould Ejector Plate
- 24 - Hydraulic Unit
- 25 - Precision Ground Mould Connection Plates
- 26 - Hydraulic Piston Extension Tool

NEW



Die Changing Table (1Ton)

Code: 1024-500670

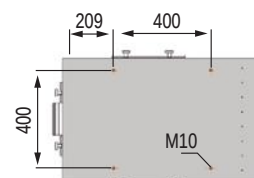
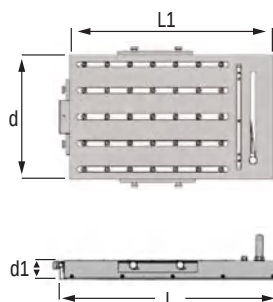


Die Changing Cart (1Ton)

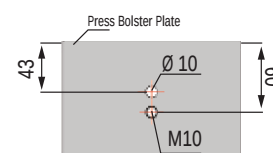
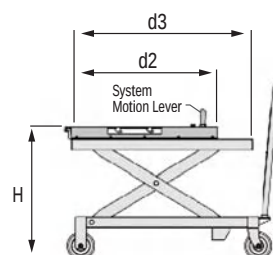
Code: 1024-500671

Die Changing Cart & Die Changing Table

► Mounting Holes for Cart and Similar Equipment



► Hole Template

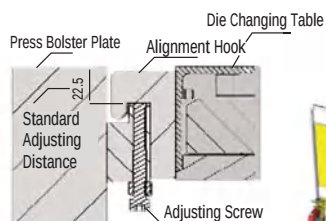


Die Changing Cart

Code: 1024

* Dies up to "1 ton" weight, it reduces surface contact when it desired to be moved during changing to be placed on the press bolster plate or shelves. Thus, it provides the possibility of changing the dies easily and quickly without the need for much power.

* It can be mounted on pallet truck or forklifts and can be easily used.



Advantages:

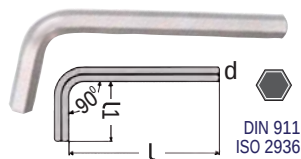
- * Time-saving
- * Flexible application-possibilities
- * Gentle transport
- * Exact positioning
- * Safe positioning of the cart by parking brake

Order Code	d mm	d1 mm	d2 mm	d3 mm	L mm	L1 mm	H Min. - Max.	Type	Capacity
1024-500670	500	71	-	-	1015	670	-	Table	1 Ton
1024-500671	500	-	818	1015	-	670	480 - 1050	Cart	1 Ton

Some Applications:

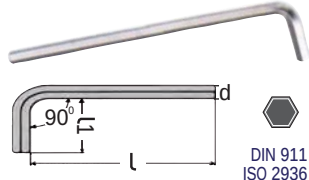


Allen Wrench



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

Allen Wrench, Long Type



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

Allen Wrench Set



Order	Diameter
AAS10 (10pcs)	2-2.5-3-4 5-6-7-8 9-10
AAS12 (12pcs)	2-2.5-3-4 5-6-7-8-9 10-12

Die & Mould Mounting Kit

Code: IW3C14



Capacity: 16 mm
Max. Torque: 1492 Nm (150Kg.)
Length: 190 mm
Min. Hose Size: 10 mm
Air Pressure: 6.3 Bar

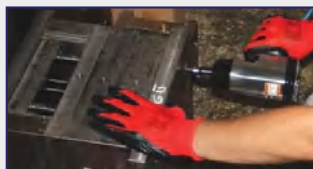
1/2" Air Nutrunner

1/2" Allen End

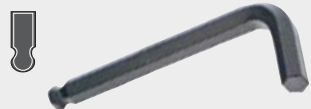
Code: 111300610..

There is 1 pcs. allen end per dimension in the Die & Mould Mounting Kit.

Order	d	l	In Kit
11130061006	6	60 mm	1 pcs.
11130061008	8		1 pcs.
11130061010	10		1 pcs.
11130061012	12		1 pcs.
11130061014	14		1 pcs.



Round Head Allen Wrench



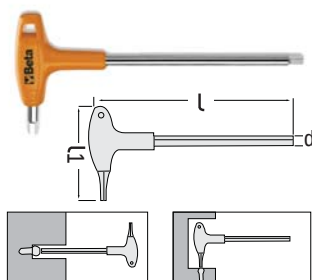
Order	d	l	l1
BA.20	2	50	16
BA.25	2.5	60	18
BA.30	3	63	20
BA.40	4	70	25
BA.50	5	80	28
BA.60	6	90	32
BA.80	8	100	36
BA.100	10	112	38

Key Wrench for Torx Head



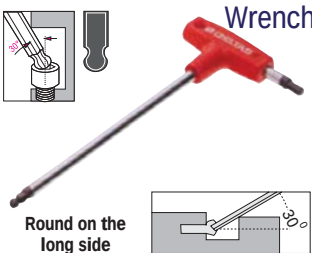
Order	d	l	l1
TX.T6	T6	42	16
TX.T7	T7	48	16
TX.T8	T8	48	16
TX.T9	T9	48	16
TX.T10	T10	51	17
TX.T15	T15	54	18
TX.T20	T20	57	19
TX.T25	T25	60	20

Hexagon Key Wrench



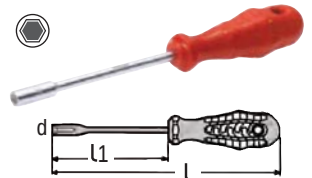
Order	d	l	l1
TA.20	2	139	52
TA.25	2.5	153	55
TA.30	3	153	55
TA.35	3.5	179	70
TA.40	4	179	70
TA.45	4.5	200	84
TA.50	5	200	84
TA.60	6	221	103
TA.70	7	236	106
TA.80	8	255	117
TA.100	10	285	132

Round Head Hex. Key Wrench



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

Hexagon Socket Wrench



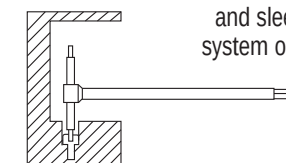
Order	d	l	l1
LA.4	4	210	125
LA.6	6	210	125
LA.7	7	220	125
LA.8	8	220	125
LA.10	10	220	125
LA.12	12	230	125
LA.14	14	230	125

"T" Allen Wrench

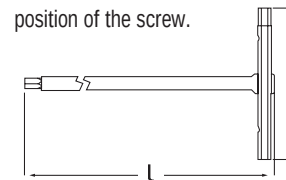
Code: AKH



Functional use with strong steel thick body and sleeve system on it



"T" Type Triple Hexagon Head Allen Wrench: Free / quick rotating via cold-rolled hexagon profile and sleeve on it and it is ready to process with robust and free insert handle. Chrome vanadium steel and black ends are suitable for screws in depth under high torques. Thanks to its handle, screwdriver set can be optimally adapted according to the position of the screw.



Order (AKH)	Dia	l	l1
AKH.03	3	125	63
AKH.04	4	180	87
AKH.05	5	180	90
AKH.06	6	210	105
AKH.08	8	250	125
AKH.10	10	300	145
AKH.12	12	320	160
AKH.14	14	340	165

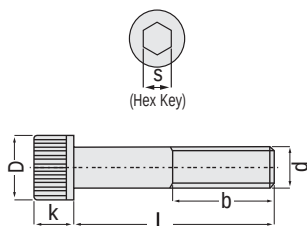
360° Rotary Arm





Inox
Hex-socket Head Cap Screw
DIN 912 ISO 4762, A2-A4

Code: IMBP



d	l mm	b	D	k	s
M3 x 05	6	6	5.5	3	2.5
	8	8			
	10	8.5			
	12	12			
	15	15			
	16	16			
	20	18			
	25	23			
	30	20			
	35	33			
M4 x 07	8	6	7	4	3
	10	8			
	12	10			
	16	15			
	20	18			
	25	23			
	30	20			
	35	20			
	40	20			
	45	20			
M5 x 08	8	6	8.5	5	4
	10	8			
	12	12			
	16	15			
	20	18			
	25	23			
	30	22			
	35	22			
	40	22			
	45	22			
	50	22			
	60	22			
	70	22			
	80	22			
	90	22			
	100	22			

d	l mm	b	D	k	s
M6 x 1	10	7	10	6	5
	12	12			
	16	16			
	20	17			
	25	22			
	30	27			
	35	24			
	40	24			
	45	24			
	50	24			
	60	24			
	70	24			
	80	24			
	90	24			
	100	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			
	60	28			
	70	28			
	80	28			
	90	28			
	100	28			
	120	28			
M10 x 1.50	16	16	16	10	8
	20	16			
	25	21			
	30	26			
	35	31			
	40	36			
	45	32			
	50	32			
	60	32			
	70	32			
	80	32			
	90	32			
	100	32			
	110	32			
	120	32			
	130	32			
	140	32			
	150	32			

Code: IMBP

d	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			
	60	36			
	70	36			
	80	36			
	90	36			
	100	36			
	110	36			
	120	36			
	130	36			
	140	36			
	150	36			



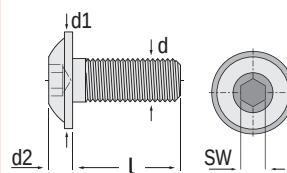
Order:
IMBP. d x l

NEW

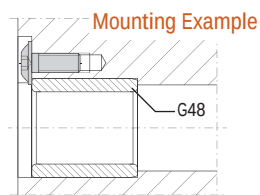


Code: IMBF

Hex-socket Button Head
Screw with Flange
ISO 7380-2
10.9
Zinc Plated



d	l	d1	d2	SW
M6	10	13.6	3.3	4
	12			
	16			
M8	16	17.8	4.4	5
	20			
M10	20	21.9	5.5	6

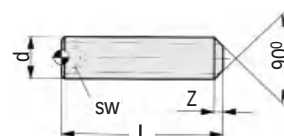


Order:
IMBF. d x l



Code: SECP

Inox Hex-socket Set Screw
DIN 916 ISO 4029, A2-A4



d	l mm	Z	SW
M3 x 05	8	0.5	1.5
	10		
	16		
M4 x 07	8	0.7	2
	10		
	16		
M5 x 08	10	0.75	2.5
	16		
	20		
	25		
	30		
M6 x 1	10	1.0	3.0
	16		
	20		
	25		
	30		
	35		
M8 x 1.25	40	1.2	4.0
	10		
	16		
	20		
	25		
	30		
	35		
M10 x 1.50	40	1.5	5.0
	45		
	50		
	10		
	16		
	20		
	25		
M12 x 1.75	30	2.0	6.0
	35		
	40		
	45		
	50		
	55		
	60		
	60		

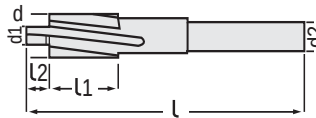


Order:
SECP. d x l

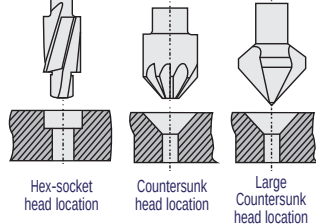


Code: ICF

Socket Cap Screw Counterbore



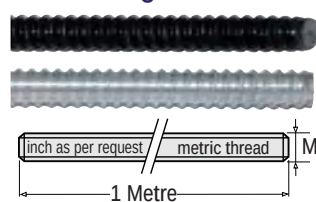
Application Examples



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

Order: ICF. M x d

Straight Stud



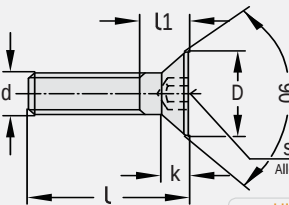
Order	M	Steel	INOX
GSM.3	M3	✓	
GSM.4	M4	✓	
GSM.5	M5	✓	
GSM.6	M6	✓	✓
GSM.8	M8	✓	✓
GSM.10	M10	✓	✓
GSM.12	M12	✓	✓
GSM.14	M14	✓	✓
GSM.16	M16	✓	✓
GSM.18	M18	✓	
GSM.20	M20	✓	
GSM.22	M22	✓	
GSM.24	M24	✓	



Order / Code: HIC. d x L

Countersunk Head Screw

Class: 10.9 DIN 7991



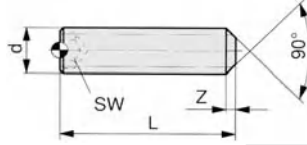
Code: HIC

d	lmm	l1	D	k	s
M3 x 05	8	3.2	6	1.7	2
	10				
	15				
M4 x 07	10	4.4	8	2.3	2.5
	15				
	20				
	25				
M5 x 08	30	5.2	10	2.8	3
	10				
	15				
	20				
	25				
	30				
	35				
M6 x 1	40	6.3	12	3.3	4
	10				
	15				
	20				
	25				
	30				
	35				
M8 x 1.25	40	8.2	16	4.4	5
	10				
	15				
	20				
	25				
	30				
	35				
M10 x 1.50	40	10	20	5.5	6
	15				
	20				
	25				
	30				
	35				
	40				
M12 x 1.75	50	11.8	24	6.5	8
	20				
	25				
	30				
	35				
	40				
	50				
M16 x 2	60	15.4	30	8.5	10
	25				
	30				
	35				
	40				
	50				
	60				



Order / Code: SEC. d x L

Hex-socket Set Screws



Code: SEC

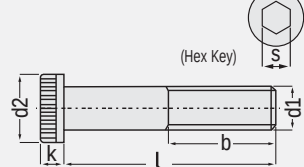
d	l mm	Z	SW
M3 x 05	8	0.5	1.5
	10		
	15		
M4 x 07	8	0.7	2
	10		
	15		
	20		
M5 x 08	10	0.75	2.5
	15		
	20		
	25		
M6 x 1	30	1.0	3.0
	10		
	15		
	20		
	25		
	30		
	35		
M8 x 1.25	40	1.2	4.0
	10		
	15		
	20		
	25		
	30		
	35		
M10 x 1.50	40	1.5	5.0
	10		
	15		
	20		
	25		
	30		
	35		
M12 x 1.75	40	2.0	6.0
	10		
	15		
	20		
	25		
	30		
	35		
M14 x 2	40	2	7
	10		
	15		
	20		
	25		
	30		
	35		
M16 x 2	40	2	8
	10		
	15		
	20		
	25		
	30		
	35		



Order / Code: DKM. d1 x L

Low Head Socket Cap Screw

Class: 8.8 DIN 79849



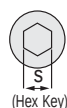
Code: DKM

d1	l mm	b	d2	k	s
M4	10	8	7	2.8	2.5
	12	10			
	16	14			
	20	14			
M5	25	14	8,5	3,5	3
	10	8			
	12	10			
	16	14			
	20	16			
	25	16			
	30	16			
M6	35	16	10	4	4
	40	16			
	50	16			
	10	8			
	12	10			
	16	14			
	20	18			
M8	25	18	13	5	5
	30	18			
	35	18			
	40	18			
	50	18			
	16	14			
	20	18			
M10	25	22	16	6	7
	30	22			
	35	22			
	40	22			
	50	22			
	60	22			
	20	18			
M12	25	23	18	7	8
	30	28			
	35	30			
	40	30			
	50	30			
	60	30			
	20	18			

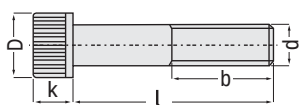


Hex-socket Head Cap Screw

Code: IMB



DIN 912 ISO 4762
Class: 12.9



d	l mm	b	D	k	s
M3 x 05	10	8.5	5.5	3	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			
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			



Order: IMB. d x l

d	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			
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			
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			

d	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			
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			
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			

d	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			
M24 x 3	50	50	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			

Code: IMB

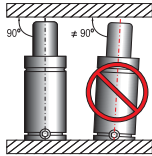
Operating Instruction !

Gas Spring Controlled Tour / Cycle

Do not use gas spring cylinders out of max. values specified.



Set up the gas spring in vertical position. Use it vertical.



Do not apply any mechanical process on the body or the shaft.



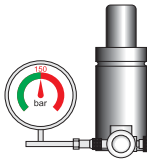
Please do not allow to become polluted the surface of the cylinder with solid and liquid contaminants.



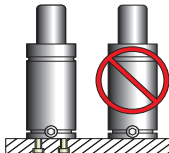
Please do not charge the gas cylinder with any gas other than nitrogen / N₂.



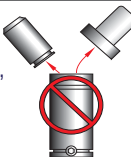
Do not charge gas cylinder with pressure over 150 bar.



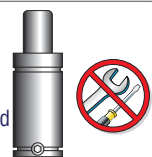
Do not mount the gas cylinder without securing it.



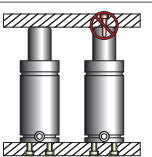
Do not demount the cylinder. When compulsory, the gas cylinders can be used as reversed.



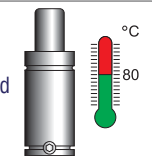
The gas cylinder should not be mounted / maintained other than the authorized personnel.



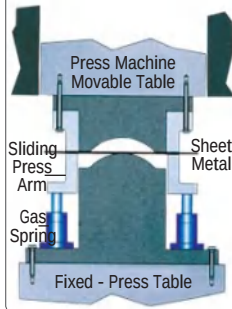
Do not use the hole on the shaft while securing the gas cylinder.



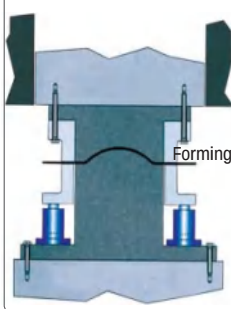
When using the gas cylinder, do not allow to exceed 80°C of the die temperature.



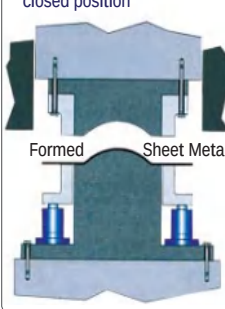
- Starting of running cycle
- Die gas spring is released



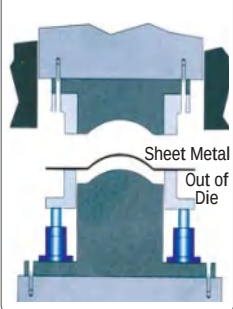
- Press die in closed position
- Gas springs in loading



- Press die in open position
- Gas springs are pending in closed position



- Press die in open position
- Gas springs are released

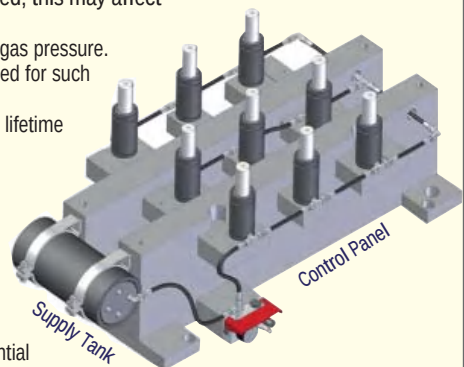


Cungang Gas Springs: The gas springs are coded with colours according to their spring forces. All springs are designed independent on their spring forces. The reason that the forces are different from each other is that the gas is filled under different pressures. At the bottom of the spring, the pressure of the spring can be adjusted. All gas springs are delivered filled with nitrogen (N₂) gas as a standard. As per request; it is delivered empty for systems with series connection hoses. You can fill the gas. To use the die gas springs safely and for a long time, follow the instructions below !

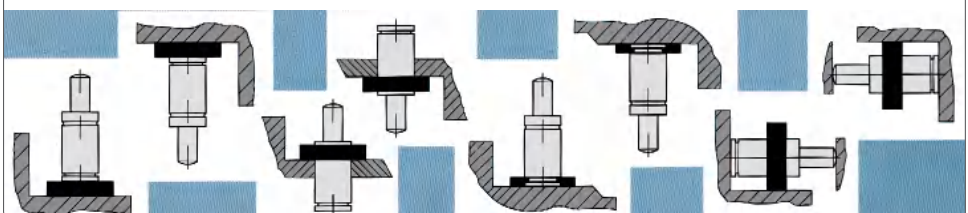
- * During mounting gas spring into the hole, it should be inserted loosely (+1).
- * They are designed with a stroke reserve between 1 to 3 mm. Thus, the nominal value can totally be applied. However, it is recommended that 90% of the stroke value given should not be exceeded in order to avoid any stroke risk due to in-die changes and errors. Otherwise, it may cause damages / explosions, hazards in the cylinders.
- * The thread tapped in the gas spring piston is not used for mounting purposes. The thread for repair purposes is for the maintenance of the thread at the top of the piston. Do not use this part.
- * Do not allow the gas spring piston release suddenly. This causes damage to the gas spring.
- * The gas springs should not be exposed to lateral loads.
- * Ensure that the gas spring is inserted parallel to the forces to come.
- * The working surface of the gas spring piston should be reinforced with a plate hardened enough.
- * The gas spring piston should be protected from mechanical damages and liquids.
- * We do not recommend that the last 5 mm of the gas spring strokes or 10% of the total stroke is used! *

The recommended filling pressure should not be exceeded; this may affect the safety of the gas spring.

- * In some special cases, it should be necessary to check the gas pressure. In such cases, the pressure measurement equipment required for such measurement should be used.
- * Exceeding temperature value recommended will reduce the lifetime of the gas spring.
- * The whole piston / working surfaces should be used.
- * Do not exceed the max. pressure level recommended for each model when filling the spring.
- * During discharging the gas spring, keep the gas flow in the opposite direction to the operator.
- * Before disposing the gas spring ensure that all pressure remaining is completely discharged.
- * When the gas springs are reversed, it is seen that a substantial improvement is achieved.



Mounting: gas springs can be used in any mounting position as long as they are not affected by external forces. The gas springs should be placed to surface on flat and in vertical position, the surface should encountered the gas spring force. The gas springs should be fixed in the die or the machine securely. You can use the holes or flanges at the bottom of the gas springs. When connecting, do not exceed the torque value of these screws (M6 = 10 Nm - M8 = 24 Nm - M10 = 45 Nm - M12 = 80 Nm) If there is a vibration, retighten the screws according to their torque values.



Gas Spring Production Series Selection

Model	Stroke mm	Initial Force	Final Force	Cylinder Dia.	Piston Dia.	Length mm
KN 19	10 ~ 100	125 Kg.	250 Kg.	Ø 19	Ø 10	65 ~ 245
KN 25	10 ~ 125	150 Kg.	260 Kg.	Ø 25	Ø 12	65 ~ 295
SN 150	10 ~ 125	150 Kg.	200 Kg.	Ø 32	Ø 12	70 ~ 300
SN 250	10 ~ 125	250 Kg.	360 Kg.	Ø 38	Ø 15	70 ~ 300
SN 500	13 ~ 160	500 Kg.	725 Kg.	Ø 45	Ø 20	110 ~ 405
SN 700	13 ~ 300	750 Kg.	1230 Kg.	Ø 50	Ø 25	120 ~ 695
SN 1500	25 ~ 300	1500 Kg.	2250 Kg.	Ø 75	Ø 36	160 ~ 710
SN 3000	25 ~ 300	3000 Kg.	4800 Kg.	Ø 95	Ø 60	170 ~ 720
SN 5000	25 ~ 300	5000 Kg.	8500 Kg.	Ø 120	Ø 65	1190 ~ 740
SN 7500	25 ~ 300	7500 Kg.	12300 Kg.	Ø 150	Ø 80	205 ~ 755
SN 10000	25 ~ 300	10000 Kg.	16000 Kg.	Ø 195	Ø 95	210 ~ 760
Y 300	10 ~ 125	300 Kg.	550 Kg.	Ø 32	Ø 16	70 ~ 300
Y 500	10 ~ 125	500 Kg.	1050 Kg.	Ø 38	Ø 20	70 ~ 300
Y 7000	13 ~ 160	700 Kg.	1100 Kg.	Ø 45	Ø 24	110 ~ 405
Y 1000	13 ~ 300	1000 Kg.	1750 Kg.	Ø 50	Ø 30	120 ~ 695
Y 2400	13 ~ 300	2400 Kg.	4250 Kg.	Ø 75	Ø 45	160 ~ 710
Y 4200	13 ~ 300	4200 Kg.	7700 Kg.	Ø 95	Ø 60	170 ~ 720
Y 6600	13 ~ 300	6600 Kg.	12500 Kg.	Ø 120	Ø 75	190 ~ 740
YO 200	5 ~ 50	200 Kg.	300 Kg.	Ø 25	Ø 12	40 ~ 130
YO 300	5 ~ 125	300 Kg.	550 Kg.	Ø 32	Ø 16	40 ~ 280
YO 500	5 ~ 125	500 Kg.	950 Kg.	Ø 38	Ø 20	40 ~ 280
YO 700	5 ~ 125	700 Kg.	1400 Kg.	Ø 45	Ø 24	50 ~ 282
YO 1000	5 ~ 125	1000 Kg.	2250 Kg.	Ø 50	Ø 30	58 ~ 288
YO 1500	5 ~ 125	1500 Kg.	2950 Kg.	Ø 63	Ø 36	64 ~ 294
YO 2400	10 ~ 125	2400 Kg.	4850 Kg.	Ø 75	Ø 45	55 ~ 170
YO 4200	16 ~ 125	4200 Kg.	8600 Kg.	Ø 95	Ø 60	97 ~ 315
YO 6600	16 ~ 125	6600 Kg.	13200 Kg.	Ø 120	Ø 75	107 ~ 325
YO 11800	19 ~ 125	11800 Kg.	20500 Kg.	Ø 150	Ø 100	116 ~ 328
MG 170	7 ~ 125	173 Kg.	280 Kg.	Ø 19	Ø 10	44 ~ 285
MG 320	7 ~ 125	320 Kg.	500 Kg.	Ø 25	Ø 15	44 ~ 285
MG 500	10 ~ 125	500 Kg.	770 Kg.	Ø 38	Ø 20	50 ~ 280
MG 750	10 ~ 125	750 Kg.	1200 Kg.	Ø 45	Ø 25	52 ~ 828
MG 1000	13 ~ 125	1000 Kg.	1550 Kg.	Ø 50	Ø 28	64 ~ 288
MG 1500	13 ~ 125	1500 Kg.	2400 Kg.	Ø 63	Ø 36	70 ~ 294
GC 420	6 ~ 50	420 Kg.	840 Kg.	Ø 25	Ø 12	56 ~ 195
GC 750	6 ~ 50	750 Kg.	1200 Kg.	Ø 25	Ø 20	63 ~ 195
GC 1000	6 ~ 50	1000 Kg.	1450 Kg.	Ø 32	Ø 20	61 ~ 230
GC 1800	6 ~ 50	1800 Kg.	2700 Kg.	Ø 32	Ø 30	66 ~ 220
GC 3000	10 ~ 50	3000 Kg.	4650 Kg.	Ø 50	Ø 38	85 ~ 205
GC 4700	10 ~ 50	4700 Kg.	6350 Kg.	Ø 75	Ø 50	80 ~ 240
GC 7500	10 ~ 50	7500 Kg.	10500 Kg.	Ø 95	Ø 65	90 ~ 255
GC 12000	10 ~ 50	12000 Kg.	16200 Kg.	Ø 120	Ø 80	100 ~ 260
GC 18500	10 ~ 50	18500 Kg.	26820 Kg.	Ø 150	Ø 105	110 ~ 270



BUREAU
VERITAS

CE 0062

PED
97/23/EC



Advantages of Nitrogen Die Gas Springs

- * For the same operating range and force, advantages such as reducing die area at a height and more space in the dies according to wire die springs.
- * No pre-loading. Easier and quicker mounting.
- * Same force advantage at each contact point.
- * The forces can be located at required points, advantage of monitoring the system pressure all the time.
- * Maximum control on the parts when forming and designing.
- * Using of gas cylinders in order to provide required real force, usage guarantee for specified forces, advantages of using flexibly for different force applications of the same cylinder, dynamism is ensured in any die solutions. All these advantages also provides economic saving.

Gas Springs:

They are filled with N2 gas and they do not need an additional energy. They operate for a long time without any problem as long as they are mounted meticulously. You only need to lubricate the piston part occasionally.

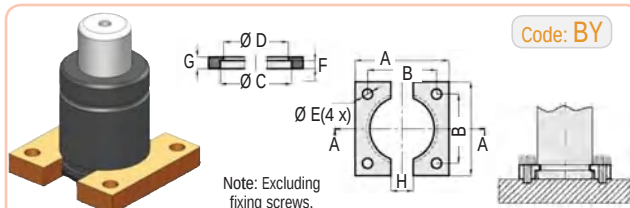
Mounting / series connections should be made by the authorized personnel. They can be used in any mounting position unless it is affected by external forces.

Cungang Gas Springs produced in accord with the European Instructions and tested by our authorized engineers.

Cungang Gas Springs are producing in Turkey

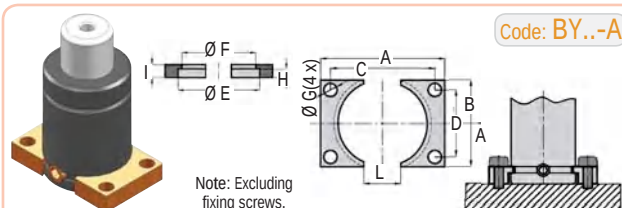
Model	Stroke mm	Initial Force	Final Force	Cylinder Dia.	Piston Dia.	Length mm
AD 500	6 ~ 125	500	700	45	20	62 ~ 300
AD 750	6 ~ 125	750	1150	50	25	62 ~ 300
AD 1500	25 ~ 100	1500	2300	75	36	110 ~ 260
AD 3000	25 ~ 100	3000	4600	95	50	120 ~ 270

Gas Spring Fixing Elements, Mounting



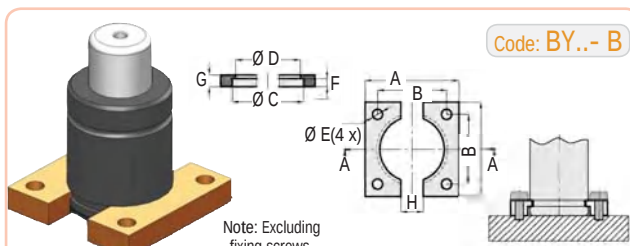
Code: BY

Order	Cylinder Ø	A	B	C	D	E	F	G	H
BY.32	Ø 32	50	35	32.5	28.5	6.6	4	7	5
BY.38	Ø 38	55	40	38.5	34.5	6.6	4	7	5
BY.45	Ø 45	70	50	45.5	41.5	9	4	7	20
BY.50	Ø 50	75	56.5	50.5	44.5	9	8	12	24
BY.63	Ø 63	85	63.5	63.5	57.5	11	8	12	24
BY.75	Ø 75	100	73.5	75.5	68.5	11	8	12	24
BY.95	Ø 95	120	92	95.5	88.5	13.5	8	12	24
BY.120	Ø 120	140	109.5	120.5	113.5	13.5	8	12	24
BY.150	Ø 150	190	138	150.5	143.5	17.5	8	12	24
BY.195	Ø 195	210	170	195.5	188	17.5	8	13	24



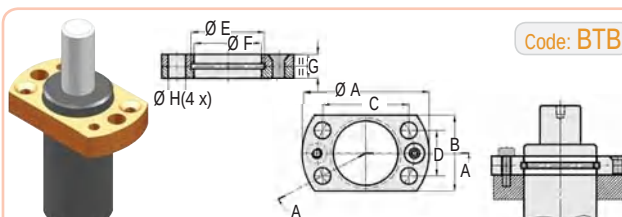
Code: BY..-A

Order	Cylinder Ø	A	B	C	D	E	F	G	H	I	L
BY.32-A	Ø 32	50	27	40	18	32.5	28.5	6.6	4	7	20
BY.38-A	Ø 38	55	33	44	20	38.5	34.5	6.6	4	7	20
BY.45-A	Ø 45	70	40	57	27	45.5	41.5	9	4	7	25
BY.50-A	Ø 50	75	45	62	32	50.5	44.5	9	8	12	25
BY.63-A	Ø 63	85	58	69	42	63.5	57.5	11	8	12	30
BY.75-A	Ø 75	100	70	84	54	75.5	68.5	11	8	12	30
BY.95-A	Ø 95	120	90	100	70	95.5	88.5	13.5	8	12	40
BY.120-A	Ø 120	140	115	120	95	120.5	113.5	13.5	8	12	50
BY.150-A	Ø 150	190	145	165	120	150.5	143.5	17.5	8	12	60
BY.195-A	Ø 195	210	190	185	165	195.5	188	17.5	8	12	80



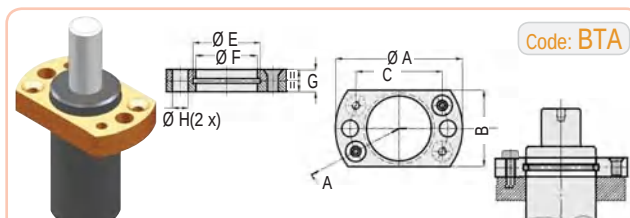
Code: BY..-B

Order	Cylinder Ø	A	B	C	D	E	F	G	H
BY.32-B	32	50	35	32.5	28.5	6.6	4	7	12
BY.38-B	38	55	40	38.5	34.5	6.6	4	7	12
BY.63-B	63	100	73.5	64	57.5	11	8	12	24



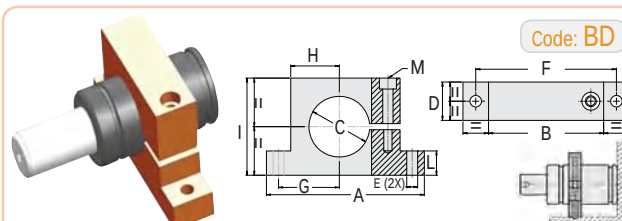
Code: BTB

Order	Cylinder Ø	A	B	C	D	E	F	G	H	Ring
BTB.19	Ø 19	44	25	30	12	6.6	M4	19.5	9	Ø 2
BTB.25	Ø 25	50	30	34	18	6.6	M4	25.5	9	Ø 2



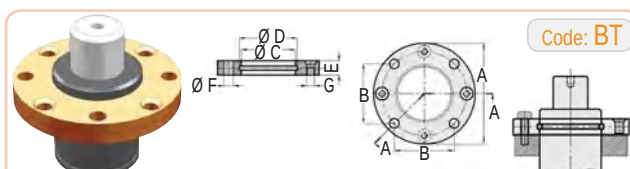
Code: BTA

Order	Cylinder Ø	A	B	C	E	F	G	H	Ring
BTA.12	Ø 12	34	21	24	6.6	M3	13.7	9	Ø 1.6
BTA.15	Ø 15	37	24	27	6.6	M3	16.7	9	Ø 1.6
BTA.19	Ø 19	45	25	32	6.6	M4	19.5	9	Ø 2
BTA.25	Ø 25	50	30	38	6.6	M4	25.5	9	Ø 2
BTC.19	Ø 19	45	25	32	6.6	M3	19.5	7	Ø 2



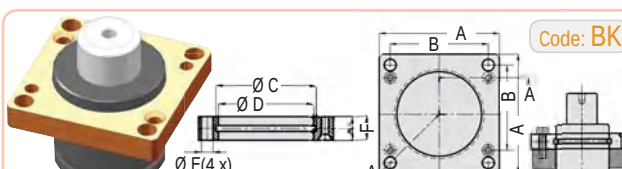
Code: BD

Order	Cylinder Ø	A	B	C	D	E	F	G	H	I	L	M
BD.32	32	90	54	32	20	9	72	31	22	45	15	M8
BD.38	38	95	59	38	20	9	77	34	25	55	15	M8
BD.45	45	100	64	45	20	9	82	37	28	60	15	M8
BD.50	50	130	90	50	30	9	110	50	40	80	20	M8
BD.75	75	160	115	75	30	11	137	63.5	52.5	105	20	M10
BD.95	95	195	145	95	30	13.5	170	80	67.5	125	20	M12
BD.120	120	220	165	120	30	13.5	195	92.5	77.5	148	20	M12
BD.150	150	260	200	150	30	13.5	230	110	95	200	20	M12



Code: BT

Order	Cylinder Ø	A	B	C	D	E	F
BT.32	32	60	35	34	32.5	9	7
BT.38	38	68	40	40	38.5	9	7
BT.45	45	86	50	47	45.5	13	9
BT.50	50	95	56.5	54	50.5	13	9
BT.63	63	122	73.5	67	63.5	16	11
BT.75	75	122	73.5	80	75.5	16	11
BT.95	95	150	92	100	95.5	18	13.5
BT.120	120	175	109.5	125	120.5	21	13.5
BT.150	150	220	138	155	150.5	27	17.5
BT.195	195	290	170	200	195.5	27	17.5



Code: BK

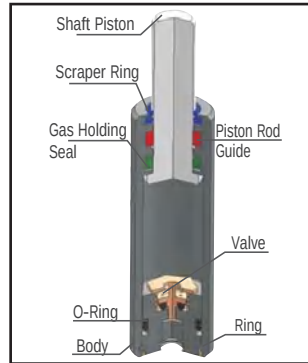
Order	Cylinder Ø	A	B	C	D	E	F	Ring	J
BK.32	32	45	35	9	32.5	7	M4	2	17
BK.38	38	52	40	9	38.5	7	M4	2	17
BK.45	45	64	50	13	45.5	9	M5	2	23
BK.50	50	70	56.5	13	50.5	9	M5	4	24
BK.63	63	90	73.5	16	63.5	11	M5	5	27
BK.75	75	90	73.5	16	75.5	11	M6	5	29
BK.95	95	110	92	18	95.5	13	M6	5	33
BK.120	120	130	109.5	21	120.5	13	M6	5	36
BK.150	150	162	138	27	150.5	17.5	M6	5	41
BK.195	195	210	170	27	195.5	17.5	M6	5	47
BK.63-1	63	80	64	16	63.5	11	M5	5	27

KN Series, Gas Spring - Mini & Low Force

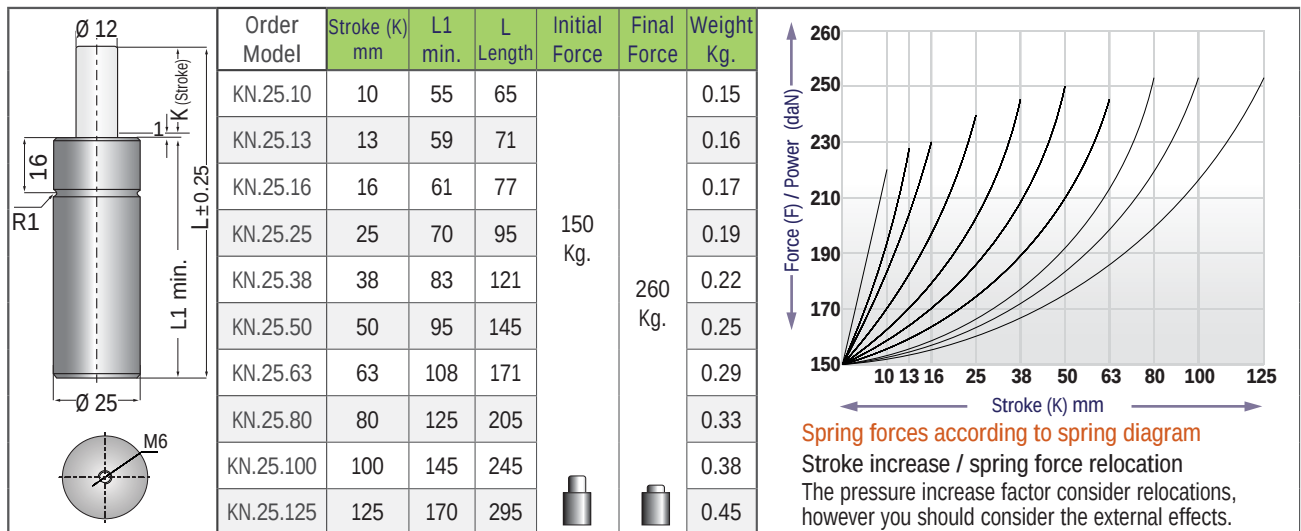
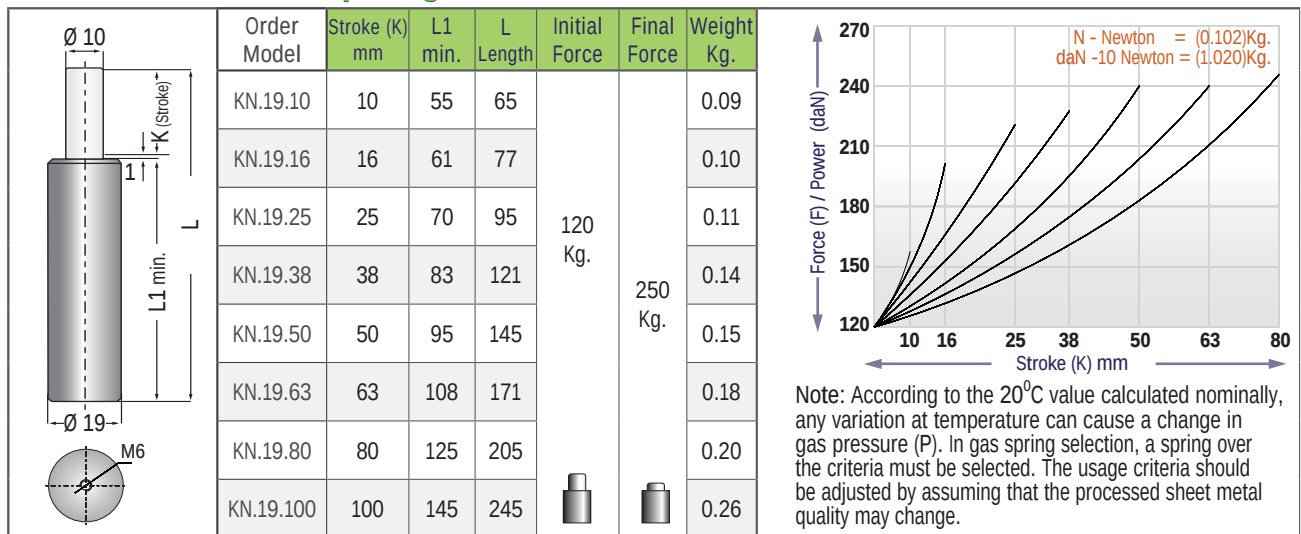
Adjustable forces, maximum flexibility.

KN Series; In many series such as die fixtures ejector, shock absorber fixing and it is also used as die matrix remover. All gas springs are designed the same without depending on the spring forces. The reason that the forces are different is that they are filled with the gas in different pressures. The pressure of the spring can be adjusted at the bottom of the spring. Do not repair worn springs. The worn springs should be completely replaced.

Max. Pressure: 150 Bar - Max. Speed : 0.6 m/s - Max. Temp. : 0-80°C



KN Series, Gas Spring - Mini & Low Force



Fixing with screw from the bottom is only recommended for stroke lengths up to 25mm.
Mounting selections:
BT - BTA - BTB

Mounting at the housing
Volume
Ø
+1.0
+0.5

Bottom mount
M6

Supported
Ø
+1.0
+0.5

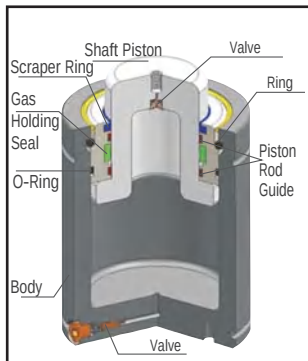
Gas Spring Mounting Examples:
Mount gas springs directly via threaded holes at the bottom or by using fixing elements. Generally for other fitting position of gas springs that are completed their mounting by extractor with screw from bottom in compliance with your die, you can select fitting type specified at drawing.

All Gas Spring Cylinders: They are designed with a stroke reserve between 1 to 3 mm. Thus, the nominal value (stroke) can be totally implemented. However, it is recommended not to exceed 90% of the stroke value in order to avoid an extra stroke risk caused by the changes or errors in the system. Otherwise, it may cause irreparable damages to the cylinders and serious dangers for the personnel.

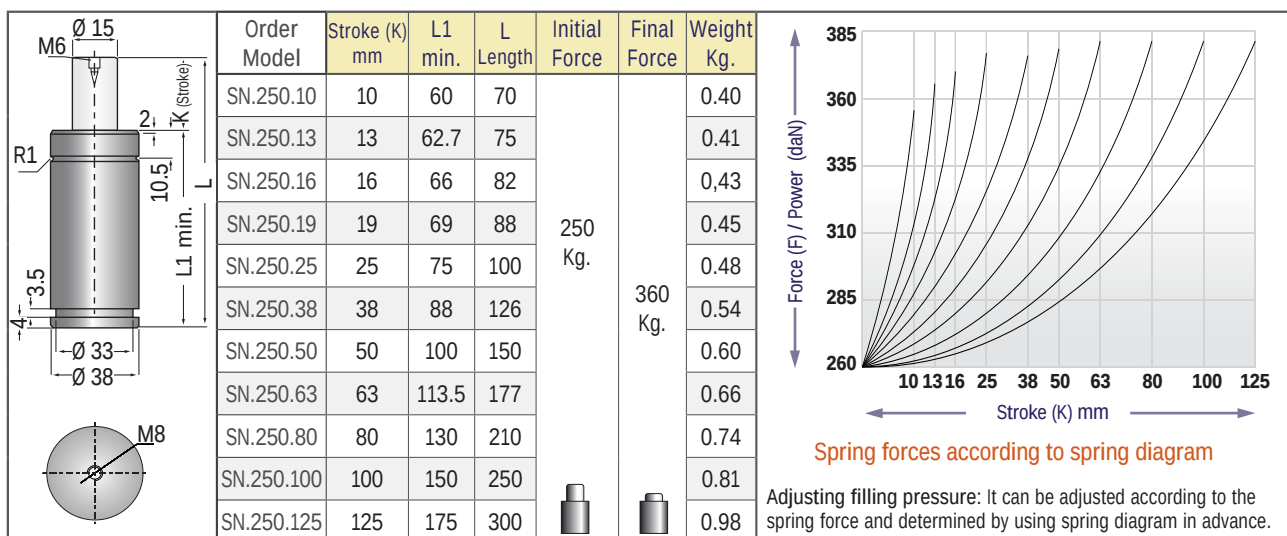
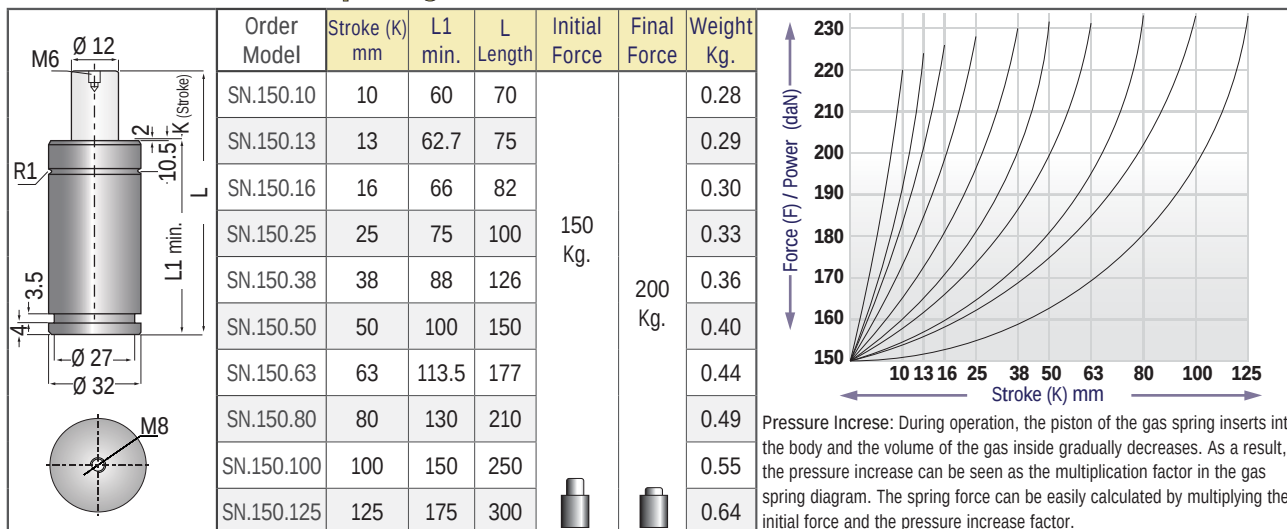
SN Series, Gas Spring - ISO 11901

Standard gas springs with series connection and wide selection. It can be connected to hose systems with wide selections among standard series in compliance with ISO 11901. Do not be confused about recommended maximum cycle/minute specified in diagrams for a certain type of product group and maximum speed. The force curves are especially related to stroke (20°C). So, the decrease in the gas volume and other factors are not taken into consideration. The wide connections and accessories for all kinds of applications are recommended when these standard series connection supply tanks are used.

Max. Pressure: 150 Bar - Max. Speed : 1.6 m/s - Max. Temp. : 0-80°C



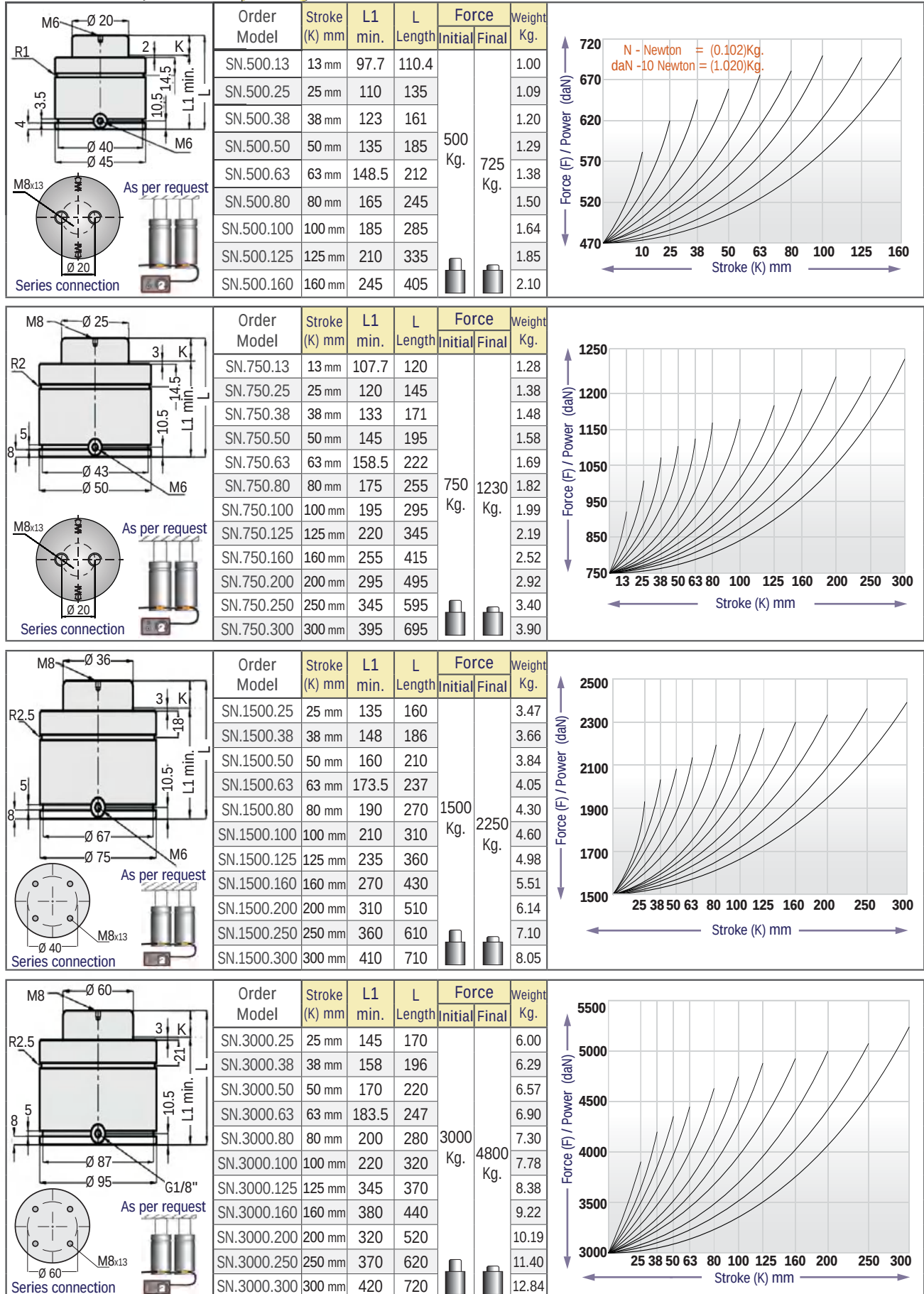
SN Series, Gas Spring - ISO 11901



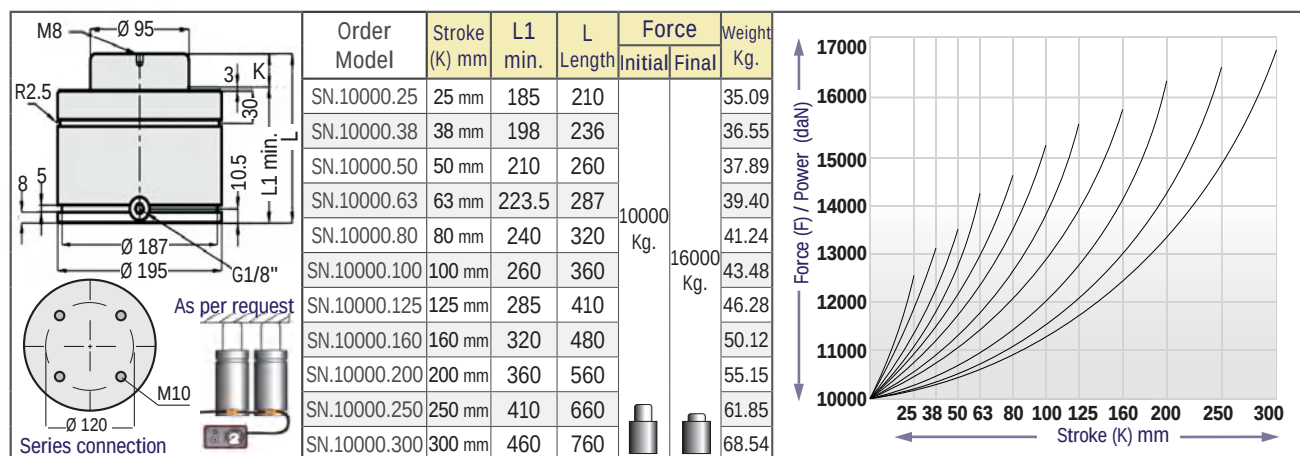
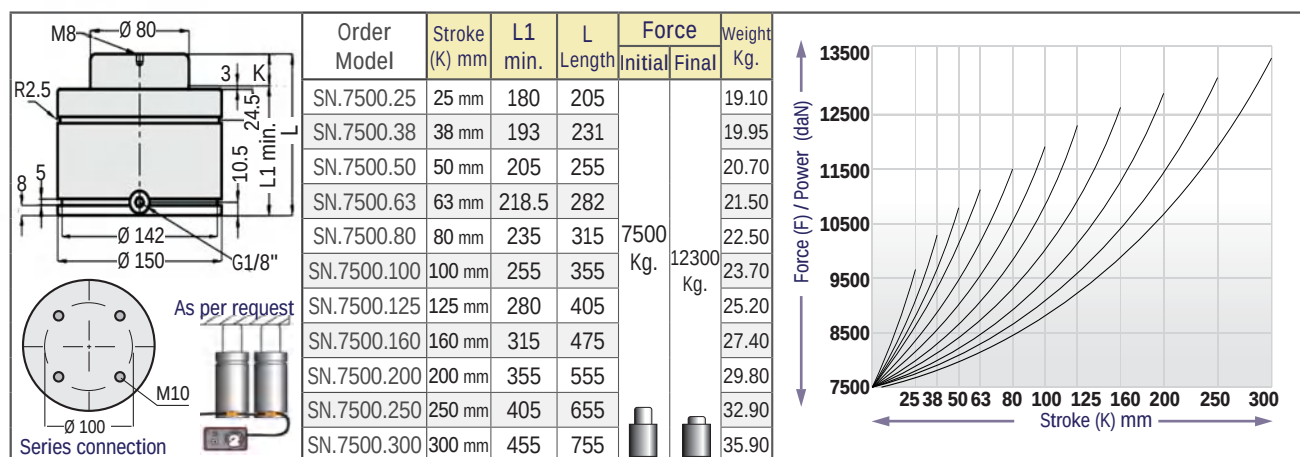
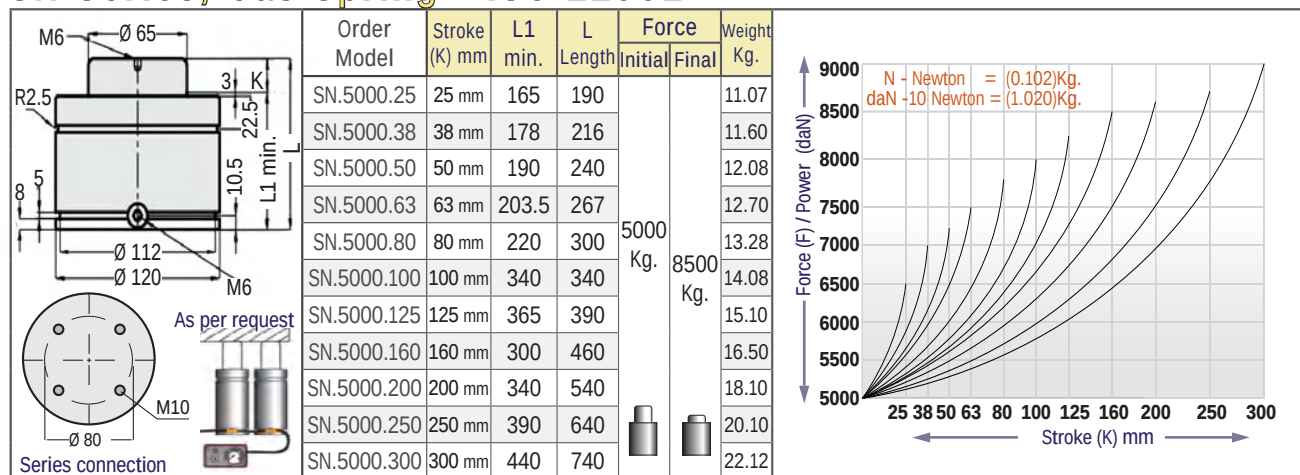
Code: BY - BYB - BD	Code: BT	Bottom mount M6	Mounting at the housing Volume Ø +1.0 +0.5	SN.150 & SN.250 Mounting Recommendations: * The gas spring should be positioned on the surface. * The spring force should be encountered by the surface. * It is not recommended when the gas springs are connected each other.
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Gas Spring Usage Rules: The screw at the top of the piston head must not be used for mounting of gas spring! This screw is just for maintenance...
 Wrong tapping causes wearing in sealing elements and shortening their lifetime. The gas spring should be mounted in parallel to the force to be applied.
 The body bottom or retaining flange should be positioned vertically for the force. The surfaces that contacting the bottom and the piston should be hardened.

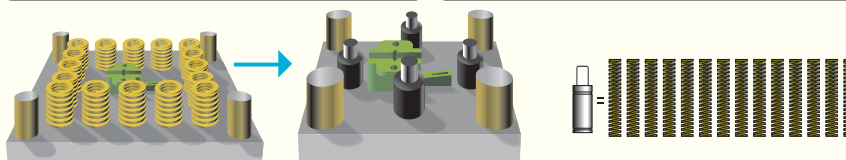
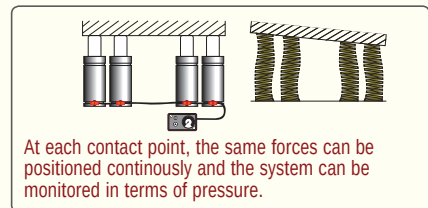
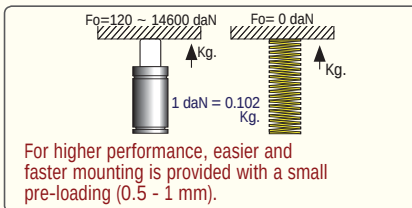
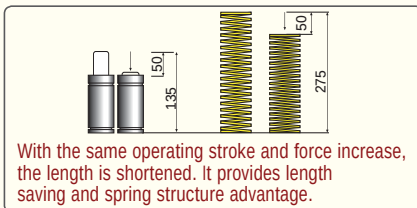
SN Series, Gas Spring - ISO 11901



SN Series, Gas Spring - ISO 11901



Gas Spring Usage Advantages

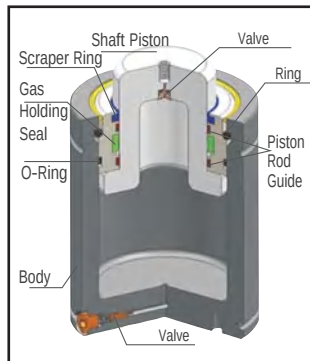


Y Series, Gas Spring - Space Saving

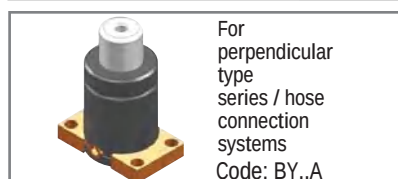
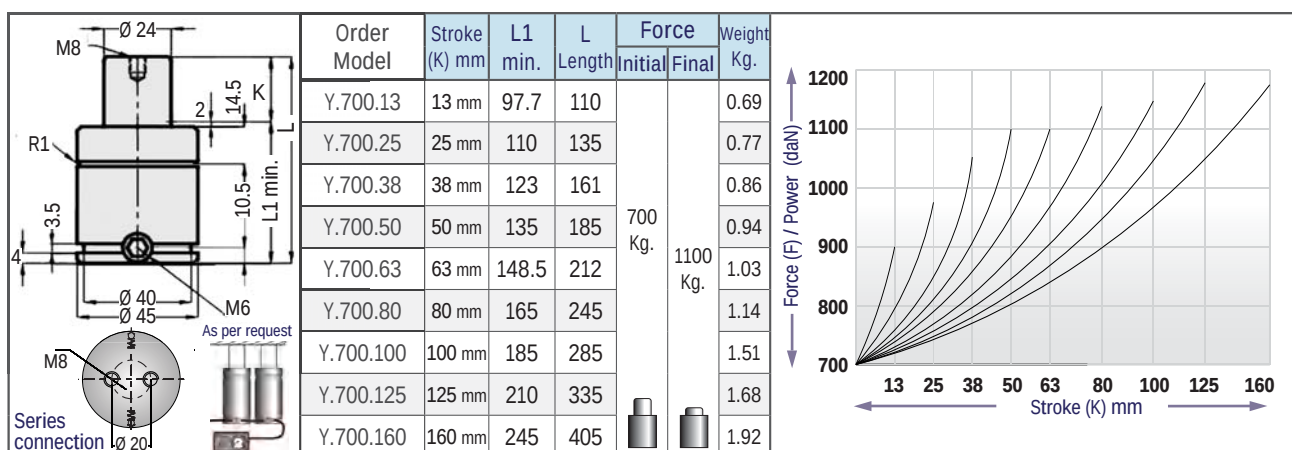
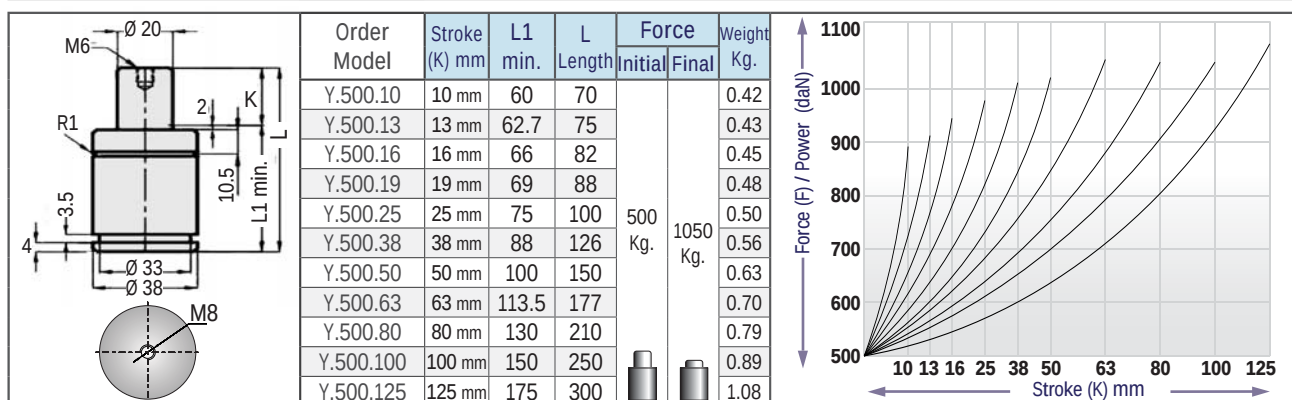
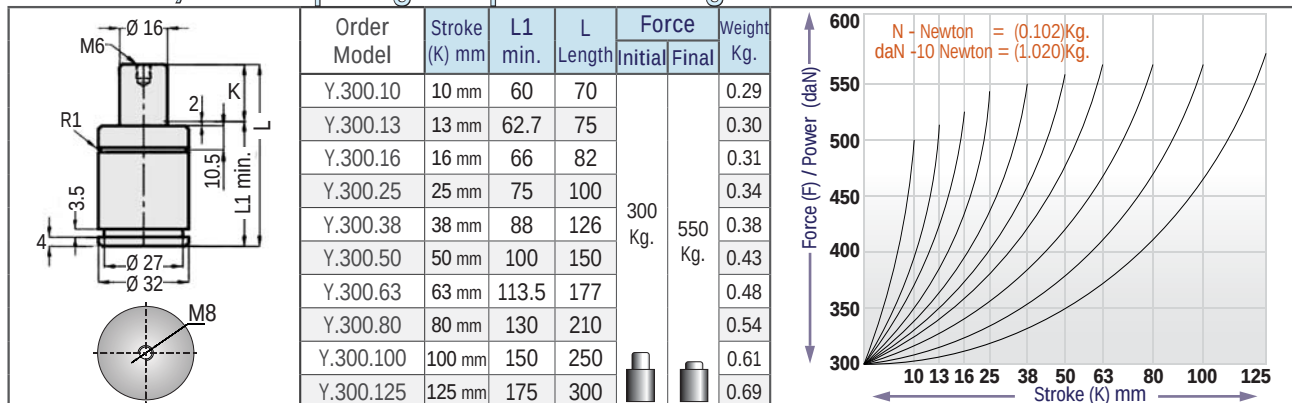
It may be connected to hose systems (after Y.500) and used in different measurements for space saving in SN / ISO series. Do not be confused about recommended maximum cycle/minute specified in diagrams for a certain type of product group and maximum speed. The force curves are especially related to stroke (20°C). So, the decrease in the gas volume and other factors are not taken into consideration.

The wide connections and accessories for all kinds of applications are recommended when these standard series connection supply tanks are used. In gas spring selection, a spring over the criteria must be selected. The usage criteria should be adjusted by assuming that the processed sheet metal quality may change.

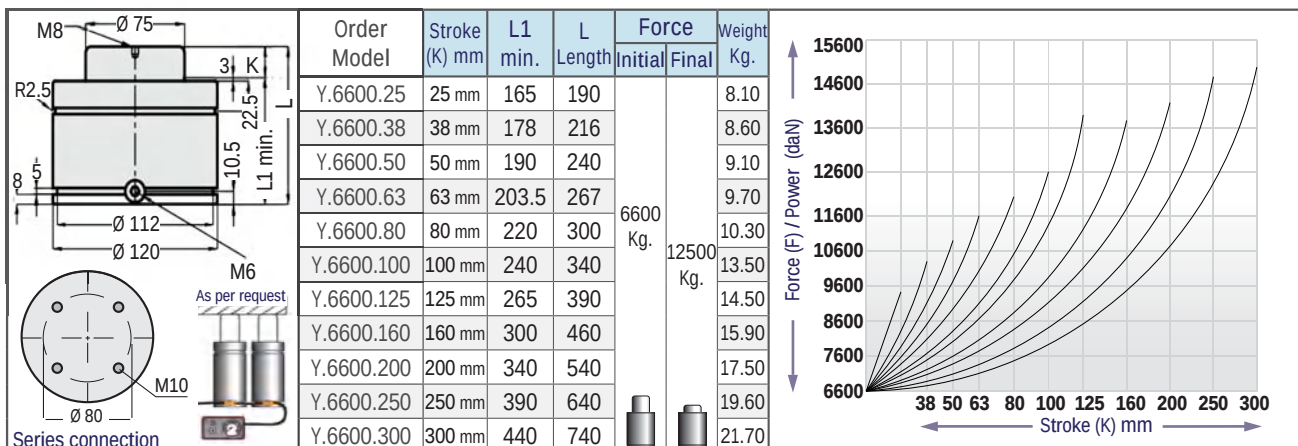
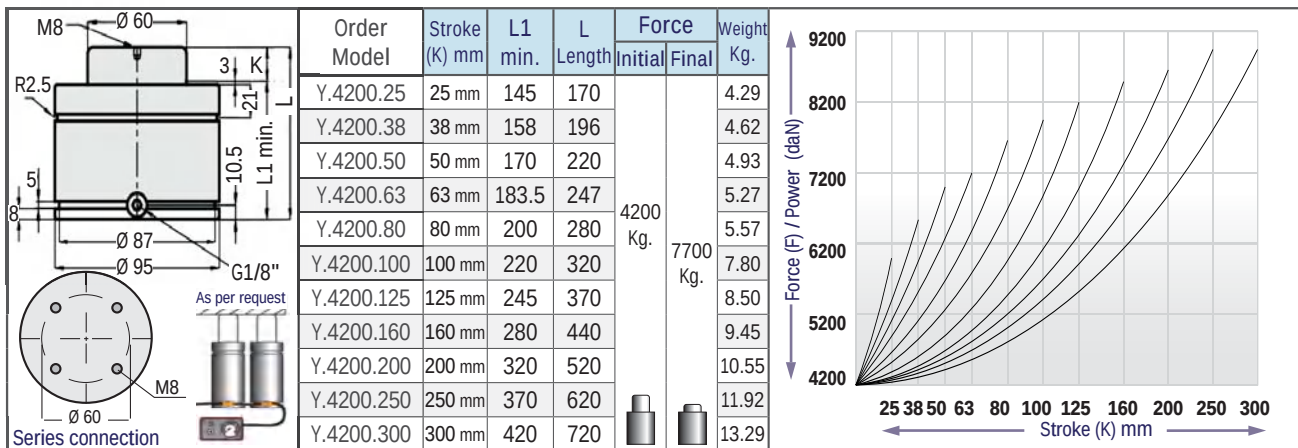
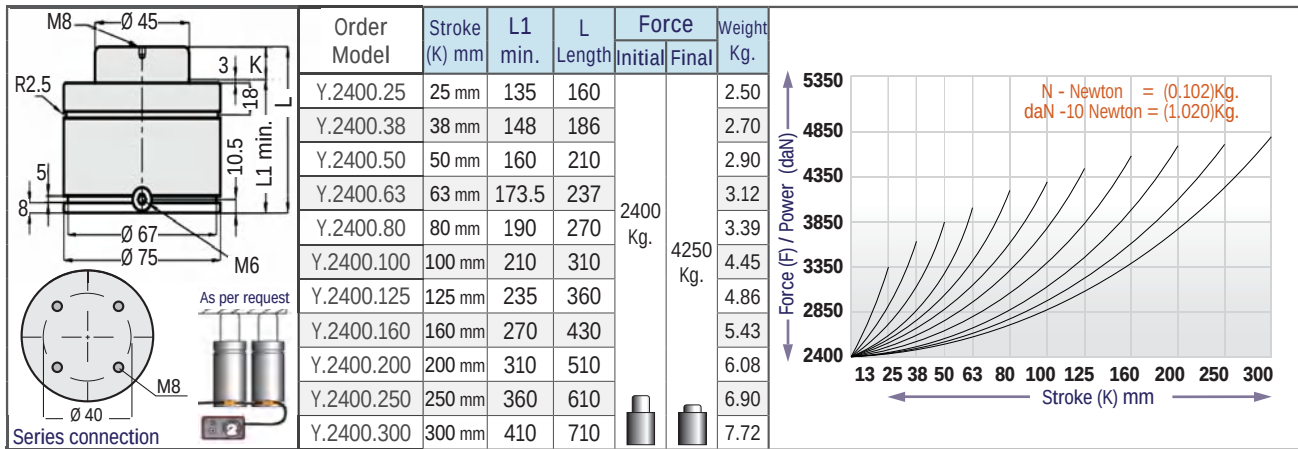
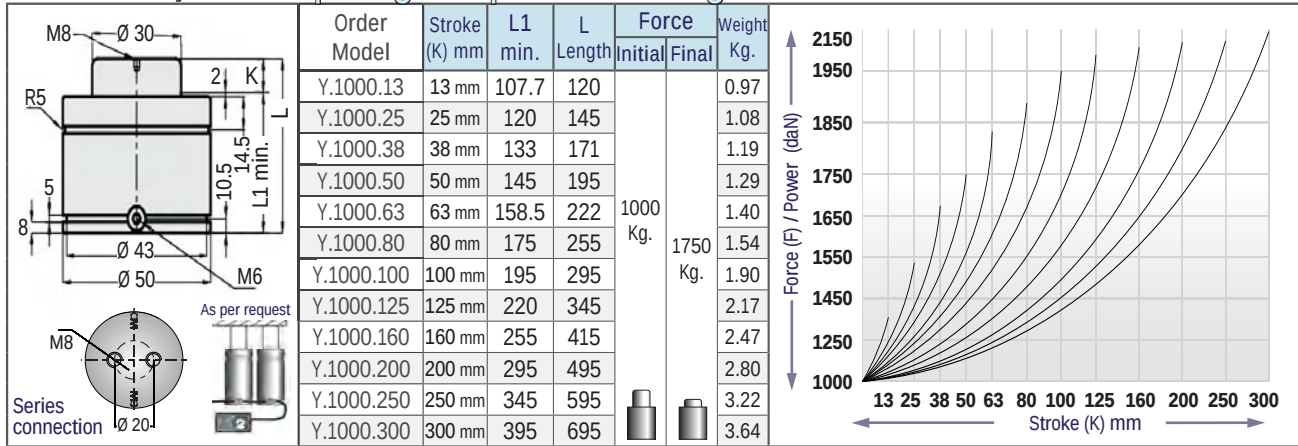
Max. Pressure: 150 Bar - Max. Speed : 1.6 m/s - Max. Temp. : 0-80°C



Y Series, Gas Spring - Space Saving



Y Series, Gas Spring - Space Saving



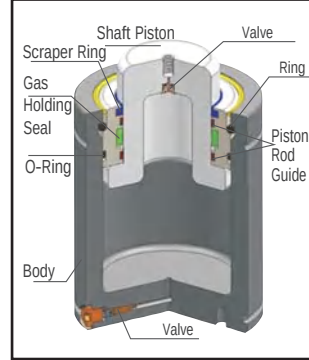
YO Series, Gas Spring - High Force

YO series are designed to save space and they provide minimum height as possible today with the highest forces. They can be connected in series to the hose systems. Wide connection range and accessories for all kinds of applications.

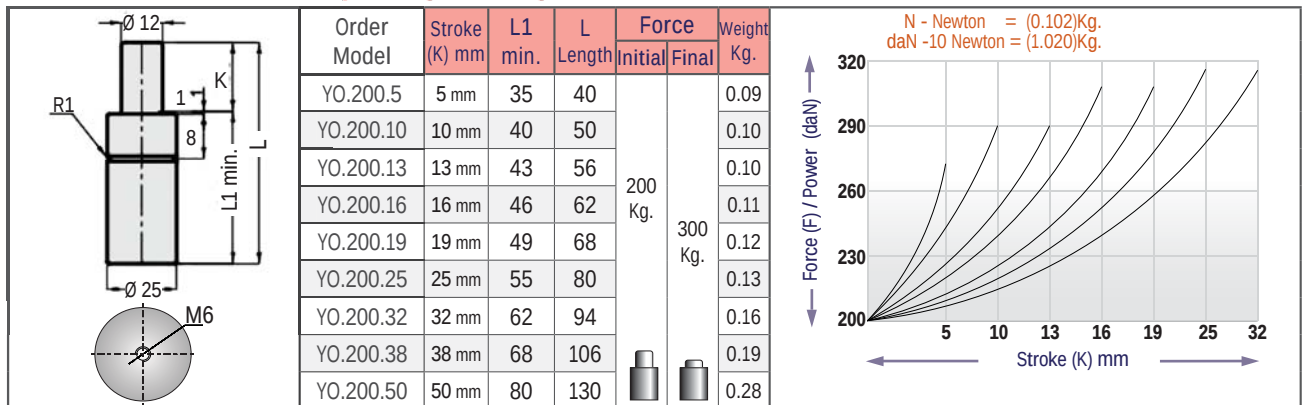
When filling / charging the gas spring, the maximum pressure level recommended for each model should not be exceeded (150 bar).

This standard series connection is recommended when supply tanks are used. In gas spring selection, a spring over the criteria must be selected. The usage criteria should be adjusted by assuming that the processed sheet metal quality may change.

Max. Pressure: 150 Bar - Max. Speed : 1.6 m/s - Max. Temp. : 0-80°C



YO Series, Gas Spring - High Force



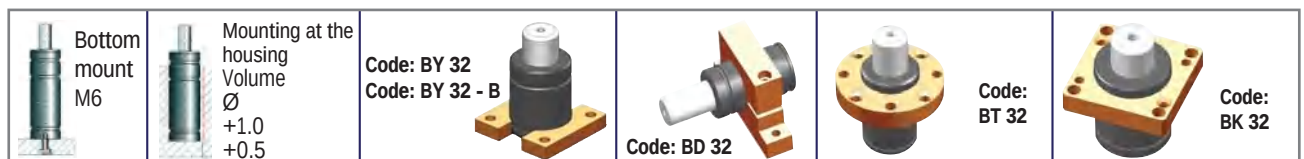
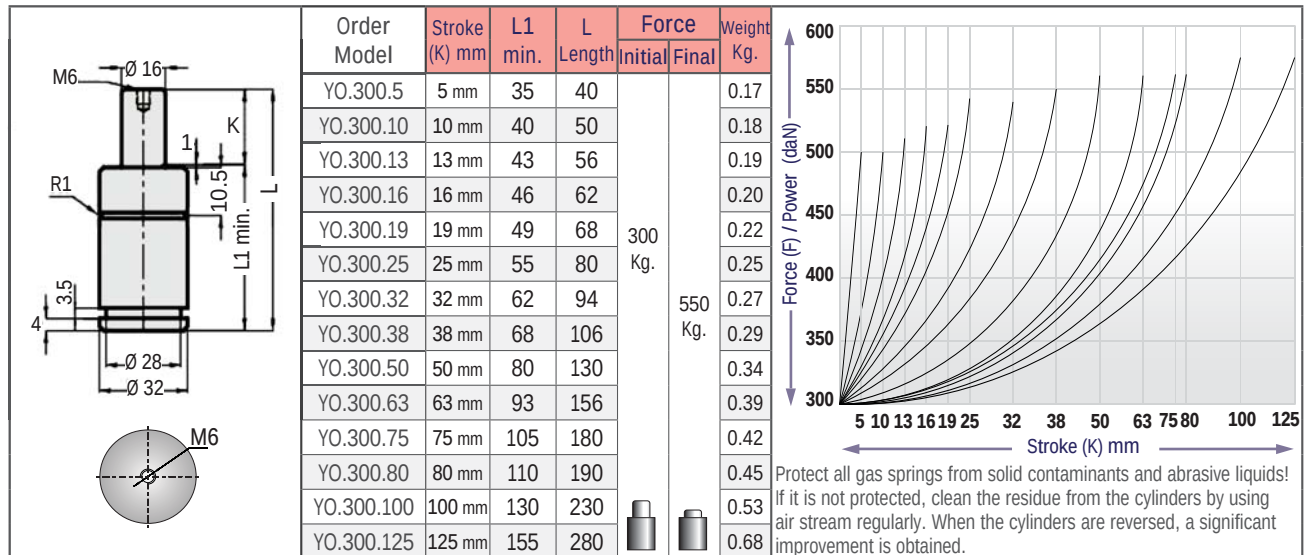
Pressure Increase: During operation, the piston of the gas spring inserts into the body and the volume of the gas inside gradually decreases.

As a result, the pressure increase can be seen as the multiplication factor in the gas spring diagram. The spring force can be easily calculated by multiplying the initial force and the pressure increase factor.

Adjusting filling pressure: It can be adjusted according to the spring force and determined by using spring diagram in advance.

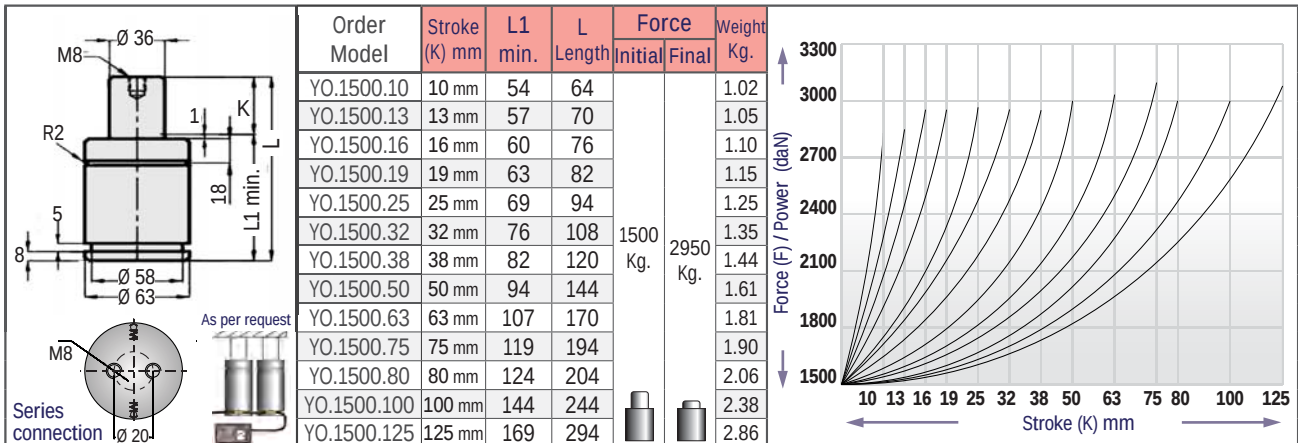
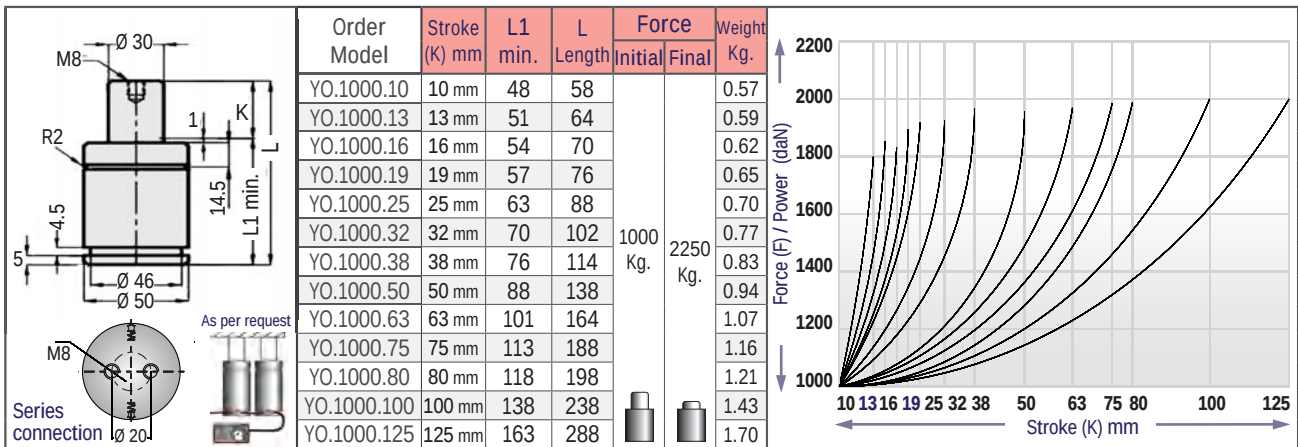
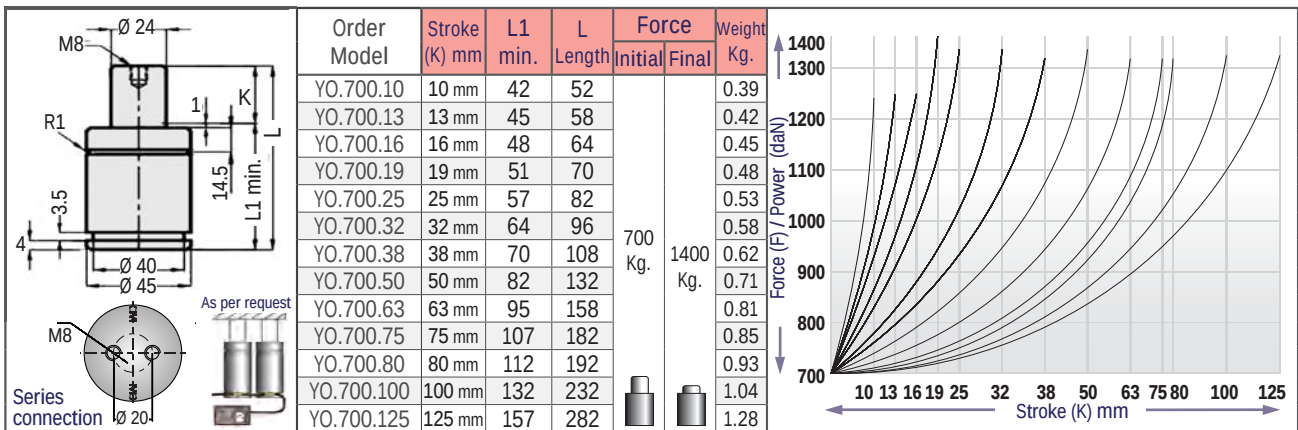
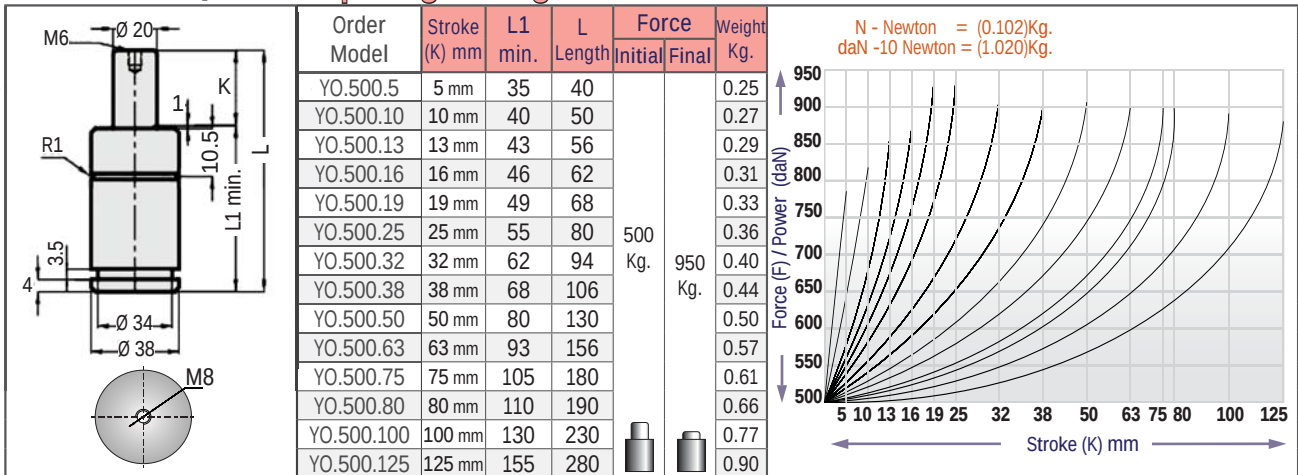
Spring forces according to spring diagram: The stroke increase / spring force replacement, pressure increase factor and replacements are considered, however you should take into consideration external effects. Lateral loads should not be applied on gas springs.

When press goes down, the lateral forces and the vibrations from the die should be checked.

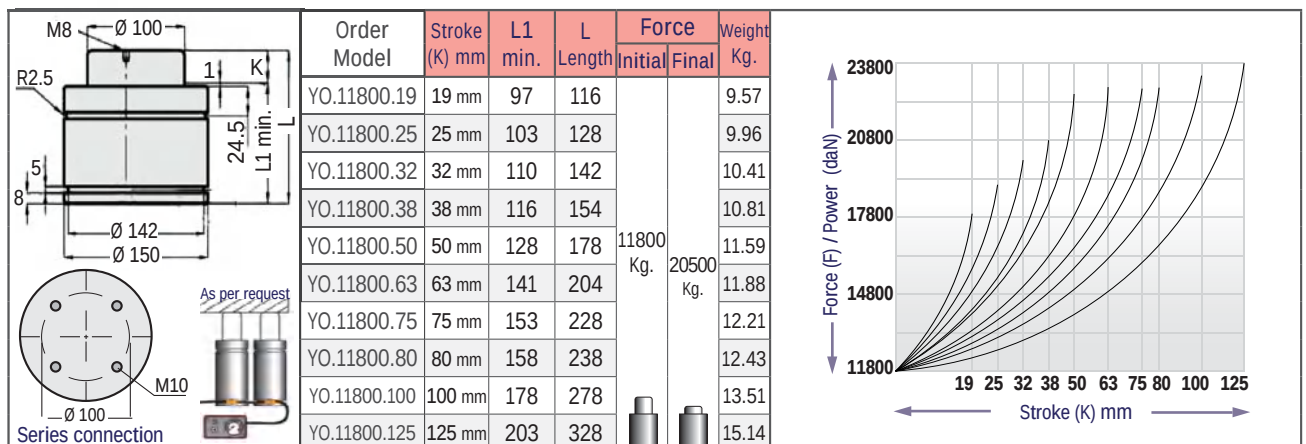
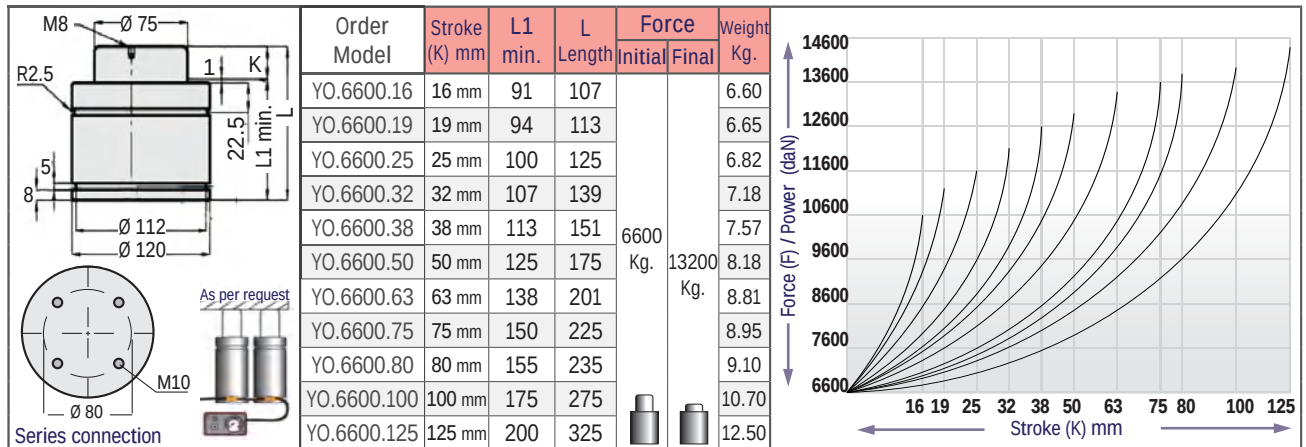
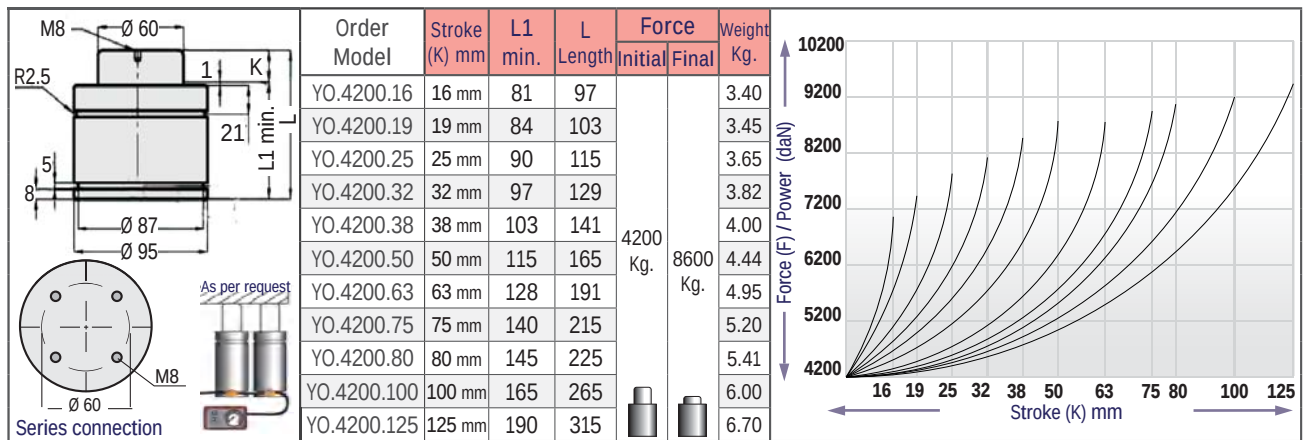
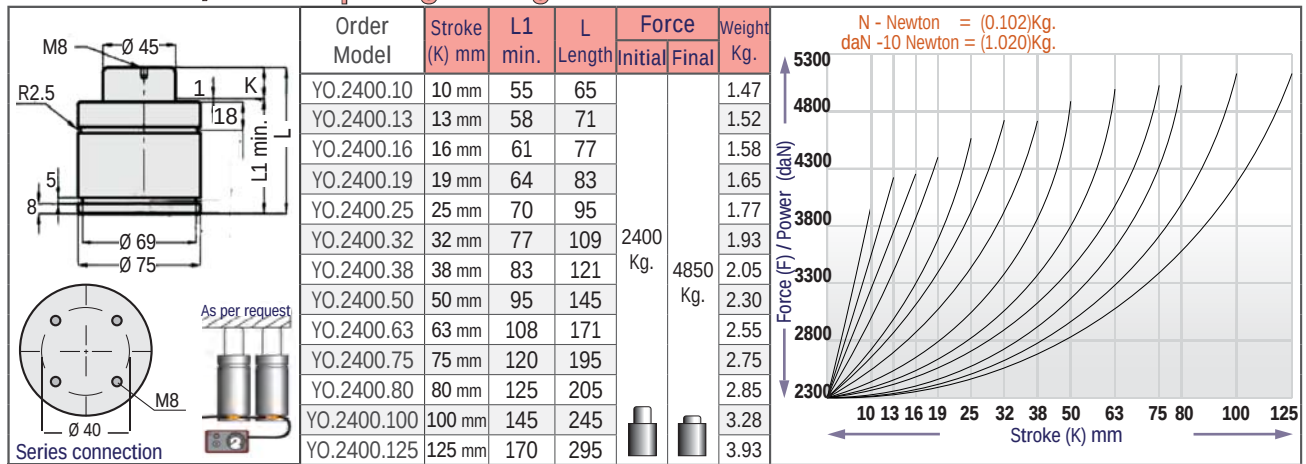


Mounting: The gas springs should be placed to surface on flat and in vertical position, the surface should encountered the gas spring force. Do not repair worn springs. The worn springs should be replaced.

YO Series, Gas Spring - High Force



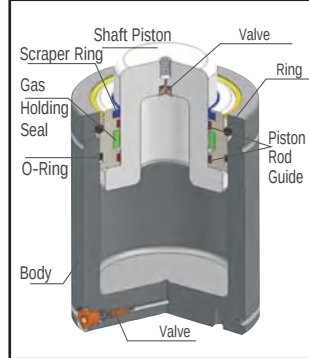
YO Series, Gas Spring - High Force



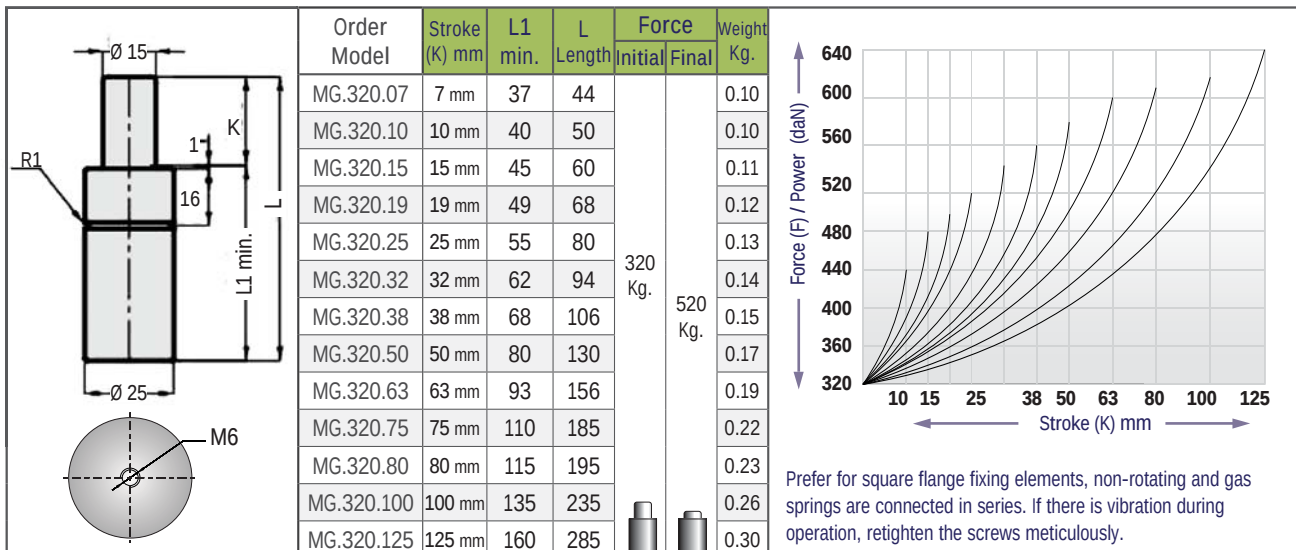
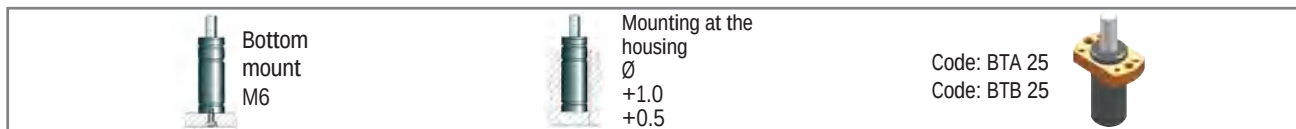
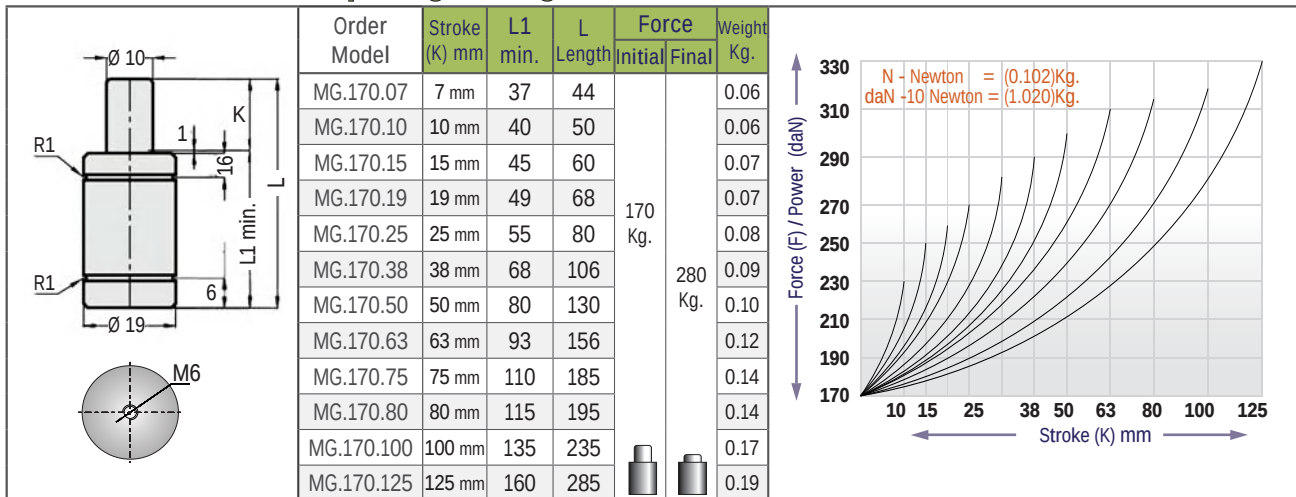
MG Series, Gas Spring - High Stroke Rates

High force - strong gas spring cylinders provide die cost reduction, wide stroke / stroke option adjustments with optimum bearing and the highest increased spring forces. Wide range of connections and accessories for all kinds of applications. When filling / charging the gas spring, the maximum pressure level recommended for each model should not be exceeded (150 bar). This standard series connection is recommended when supply tanks are used. In gas spring selection, a spring over the criteria must be selected. The usage criteria should be adjusted by assuming that the processed sheet metal quality may change.

Max. Pressure: 150 Bar - Max. Speed : 1.6 m/s - Max. Temp. : 0-80°C

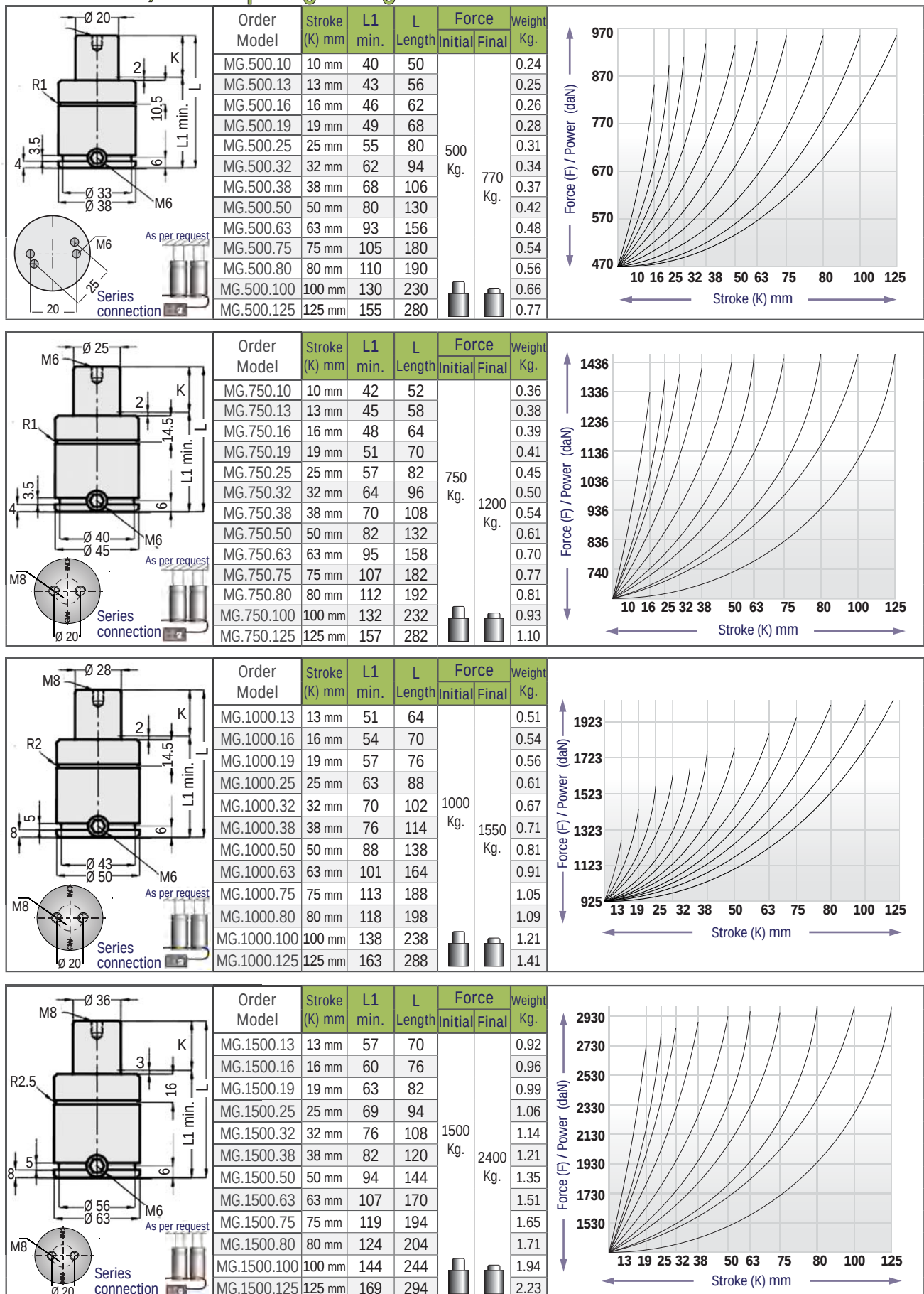


MG Series, Gas Spring - High Stroke Rates



All Die Gas Spring Cylinders: They are designed with a stroke reserve between 1 to 3 mm. Thus, the nominal value (stroke) can be totally implemented. However, it is recommended not to exceed 90% of the stroke value in order to avoid an extra stroke risk caused by the changes or errors in the system. Otherwise, it may cause irreparable damages to the cylinders and serious dangers for the personnel.

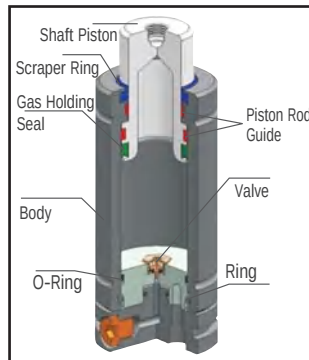
MG Series, Gas Spring - High Stroke Rates



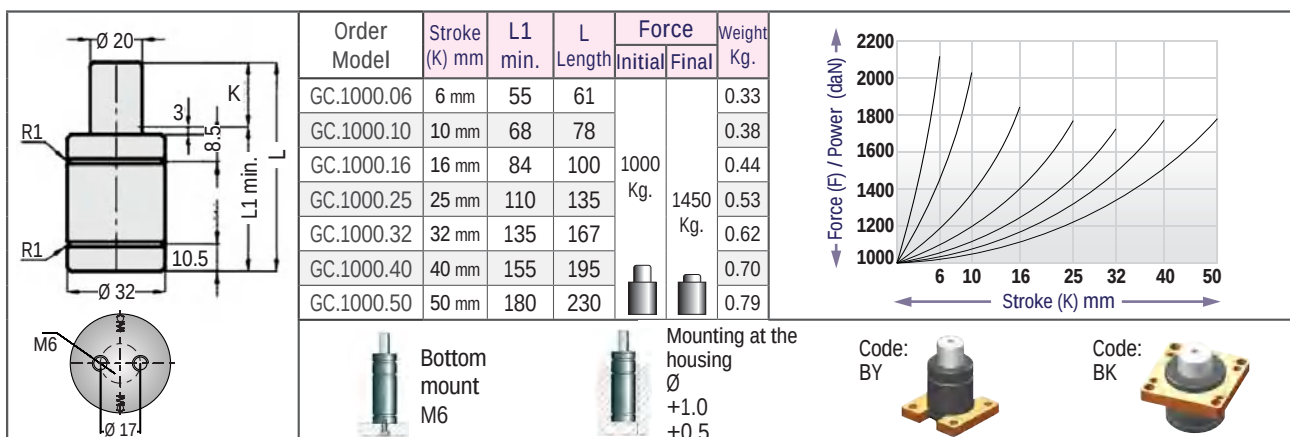
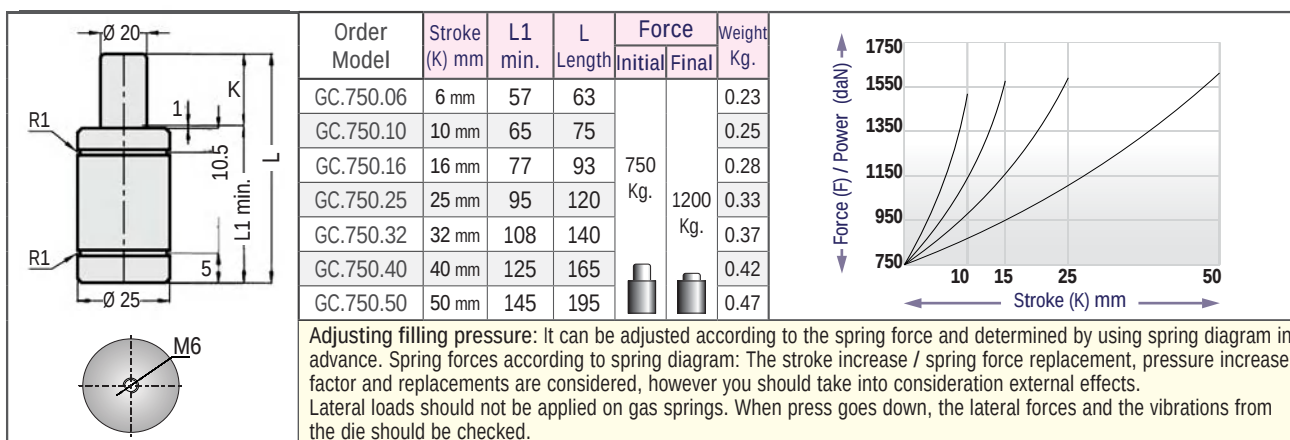
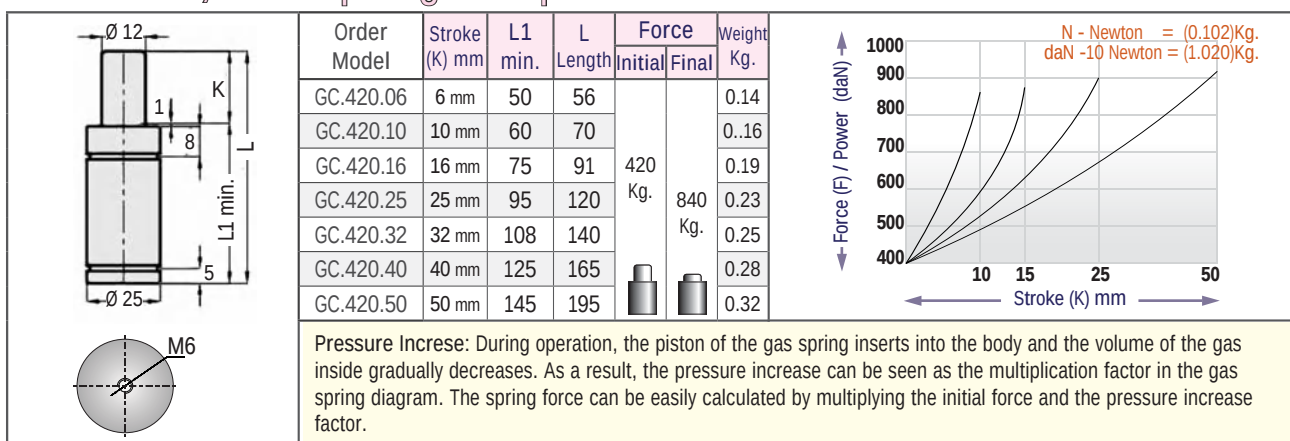
GC Series, Gas Spring - Super Pressure

Compact super pressure gas springs: The series which has piston sealing for maximum force has the highest forces, high pressure but shorter lifetime. It can be connected in series to the hoses. Wide connection range and accessories for all kinds of applications. When filling / charging the gas spring, the maximum pressure level recommended for each model should not be exceeded (150 bar). This standard series connection is recommended when supply tanks are used. In gas spring selection, a spring over the criteria must be selected. The usage criteria should be adjusted by assuming that the processed sheet metal quality may change.

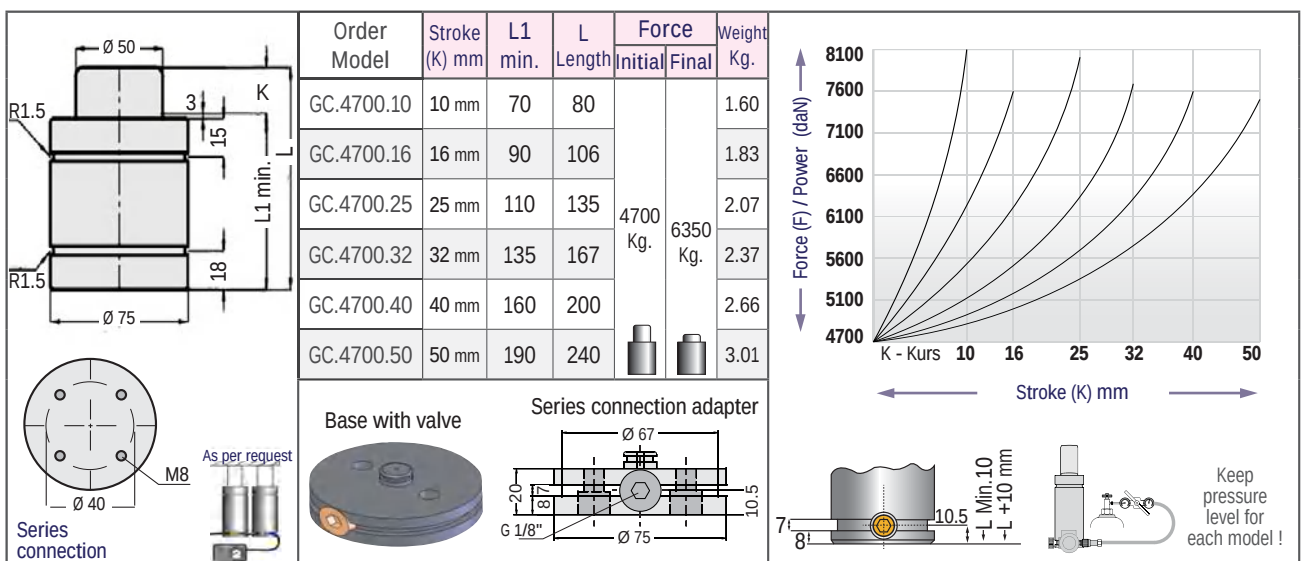
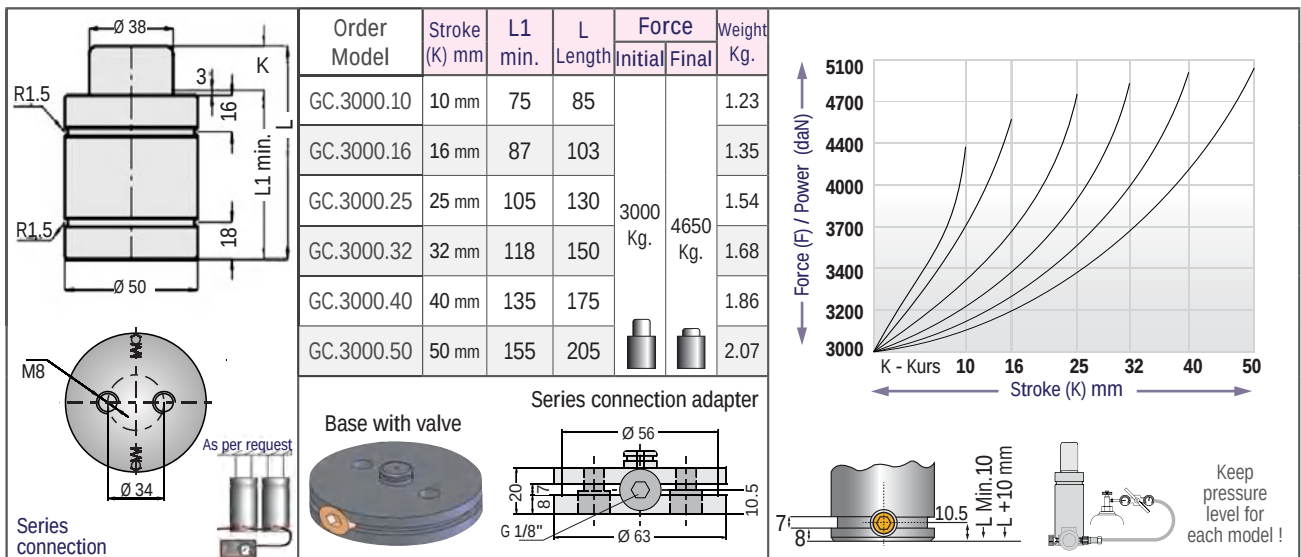
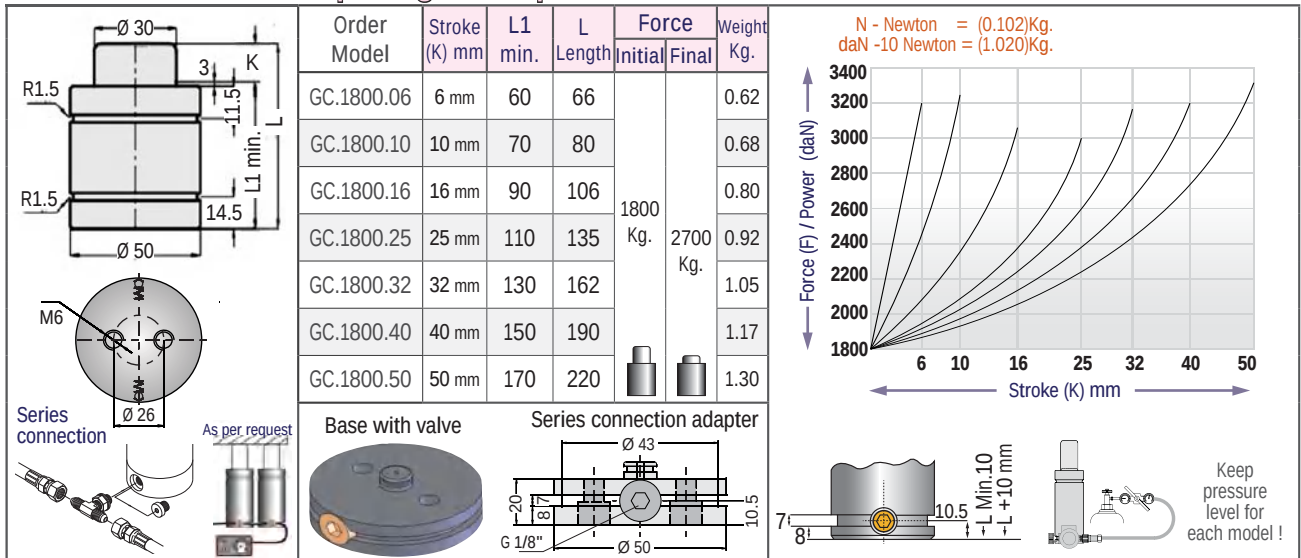
Max. Pressure: 150 Bar - Max. Speed : 0.5 m/s - Max. Temp. : 0-80°C



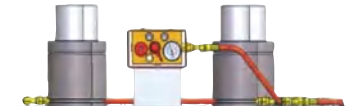
GC Series, Gas Spring - Super Pressure



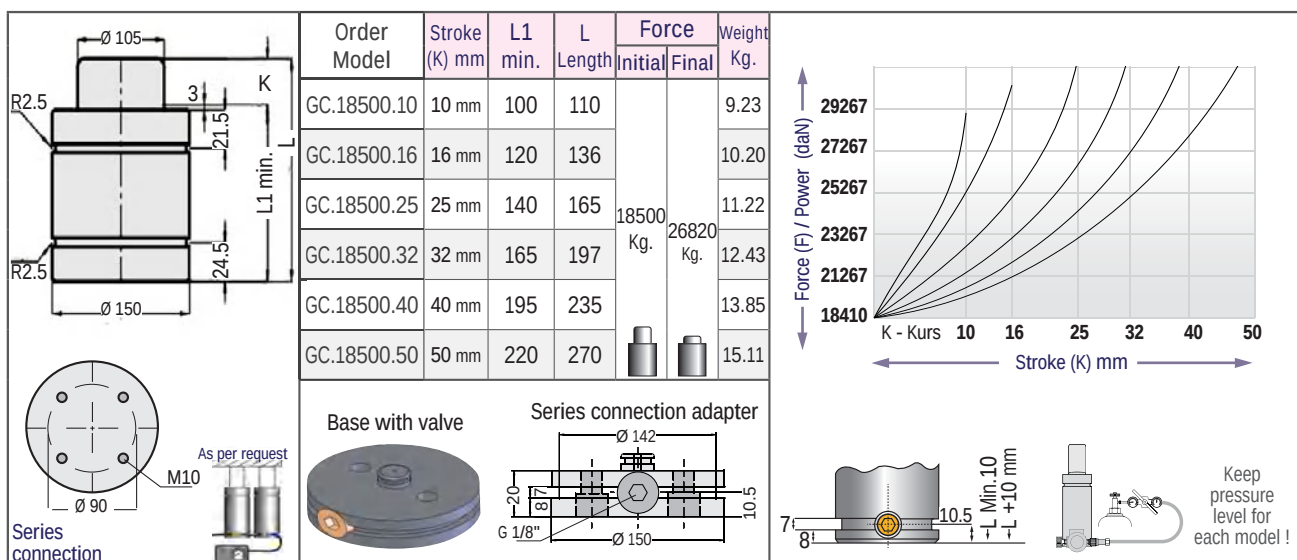
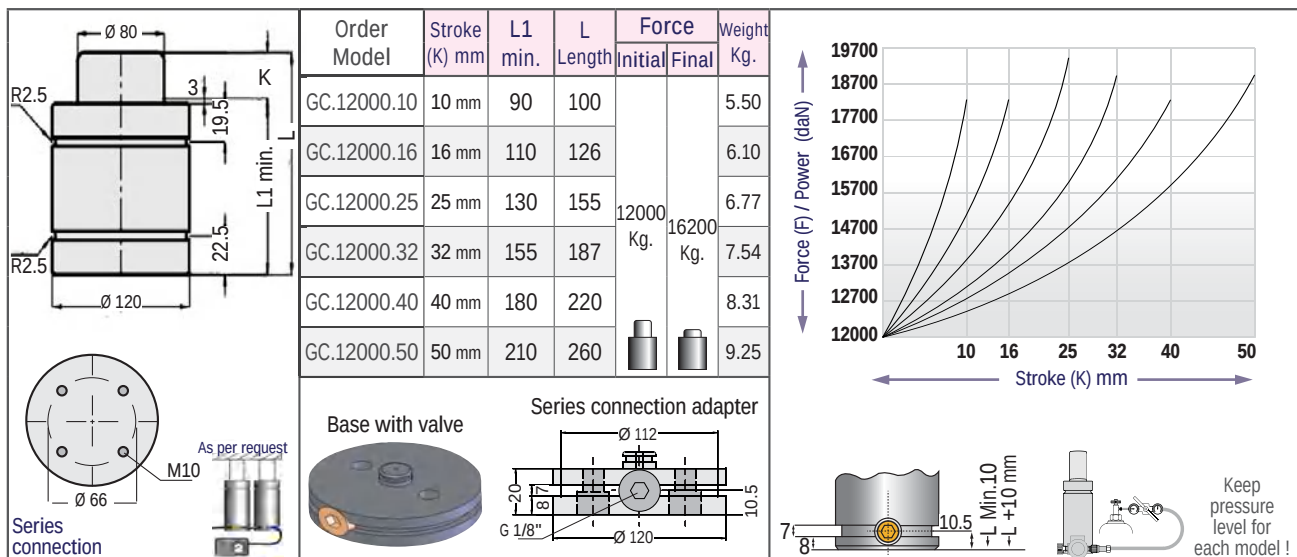
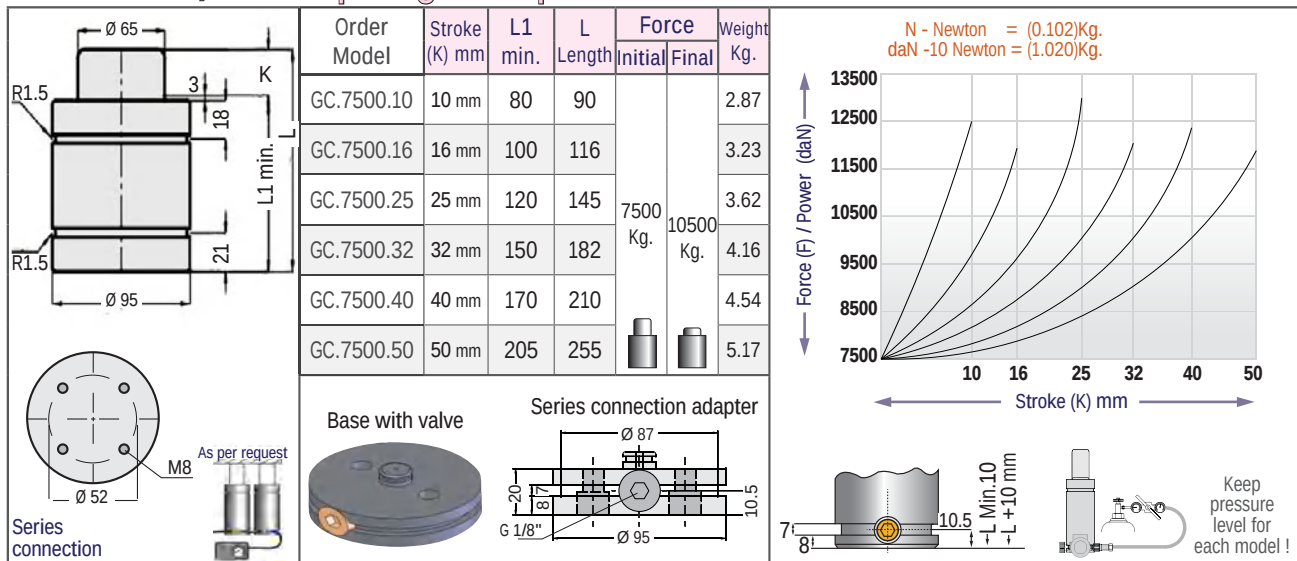
GC Series, Gas Spring - Super Pressure



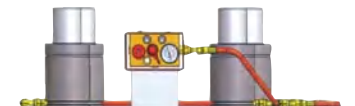
Valve inlets of the series connection cylinders;
Specify 1 or 2 valves when placing order!



GC Series, Gas Spring - Super Pressure



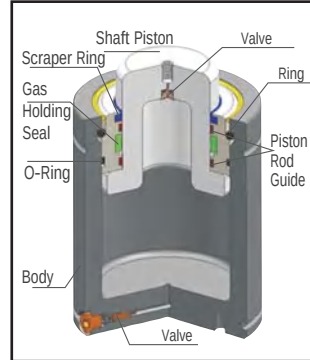
Valve inlets of the series connection cylinders;
Specify 1 or 2 valves when placing order!



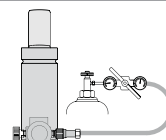
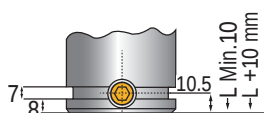
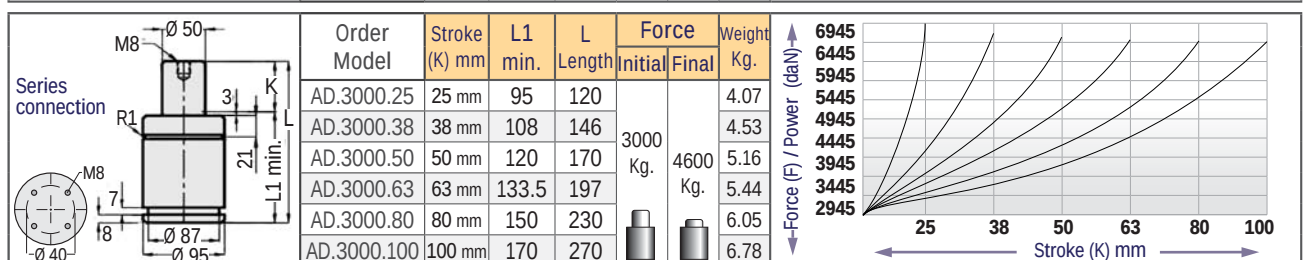
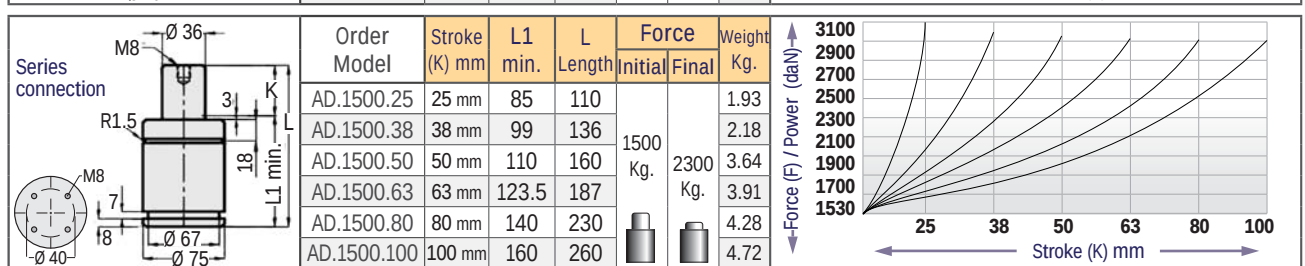
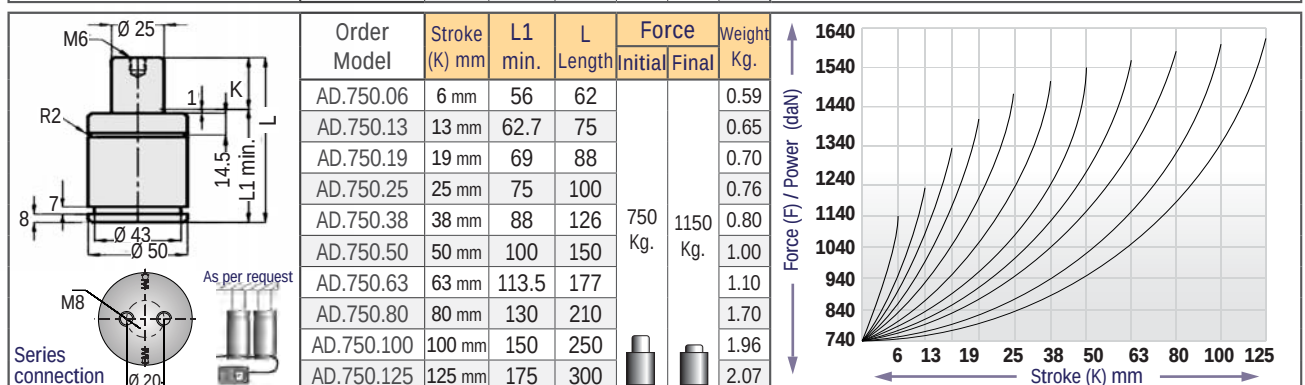
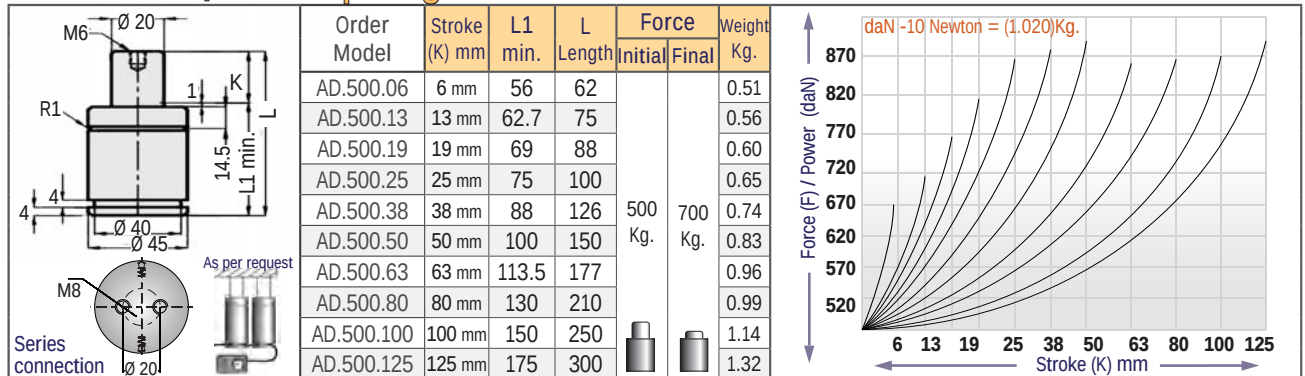
AD Series, Gas Spring - Low Profile

With its compact series features, requirement of protection from liquids, high stroke forces. 30% maximum pressure increase compared to the "Y Series" having similar sizes. Two layers of permanent lubrication. Ideal product for forming / shaping dies. It can be connected to the hose systems. Wide range of connection / fixing elements and accessories for all kinds of application. This standard series connection is recommended when supply tanks are used. In gas spring selection, a spring over the criteria must be selected. The usage criteria should be adjusted by assuming that the processed sheet metal quality may change. Do not repair the worn springs. The worn springs should be replaced.

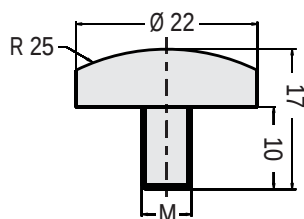
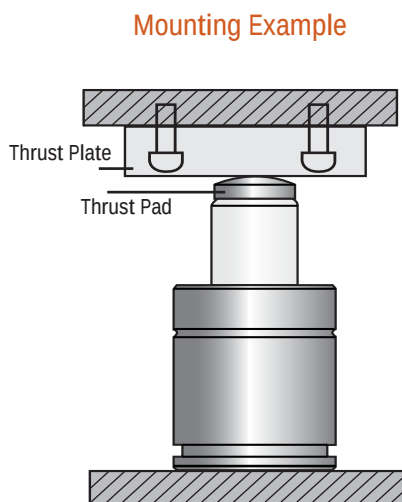
Max. Pressure: 150 Bar - Max. Speed : 0.5 m/s - Max. Temp. : 0-80°C



AD Series, Gas Spring - Low Profile



Keep pressure level for each model !



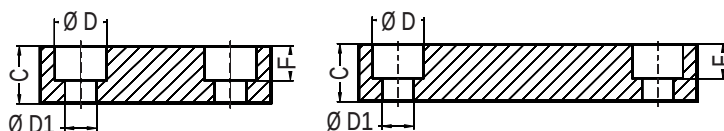
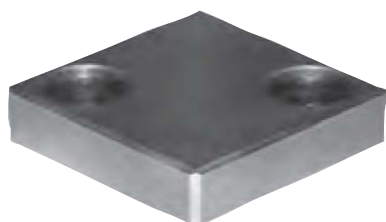
Thrust Pad for Gas Springs

Code: **HRM**

Piston protection head (balancing / straightening)

Order Code	M
HRM.6	M6 x 10
HRM.8	M8 x 10

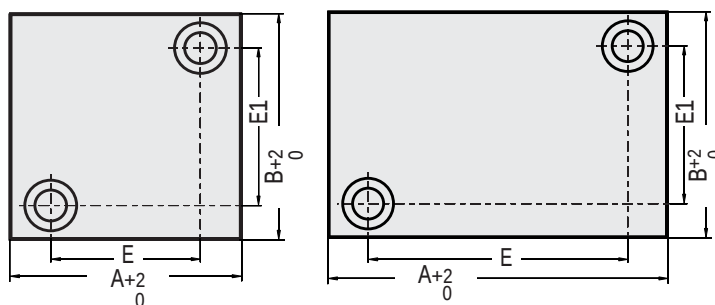
It is a useful product which protects piston head and absorbs vibrations in the die. The hardened thrust pad reduces lateral pressure in cases of declined pressure or laterally replacing parts. The lateral load resistance of the gas springs is increased by using the thrust pads and the thrust plates together. It does that by reducing friction. Even though no thrust pad is used, a thrust plate will be very useful for your system.



Thrust Plate for Gas Springs

Code: **EP**

It reduces lateral pressure in cases of declined pressure or laterally replacing parts. The lateral load resistance of the gas springs is increased by using the thrust pads and the thrust plates together. It does that by reducing friction. Even though no thrust pad is used, a thrust plate will be very useful for your system.



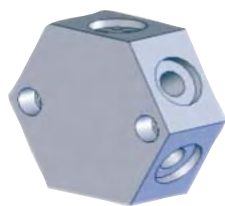
Order Code	A mm	B mm	C mm	Ø D	Ø D1	E	E1	F	Gas Spring Code
EP.40	40	40	15	15	9	21	21	10	SN:150-250-500 / Y:300-500 / YO:300-500 / G:40-75-100
EP.56	56	56	20	18	11	32	32	13	SN:750-1500 / Y:700-1000 / YO:700-1000-1500 / G:180
EP.71	71	71	20	18	11	48	48	13	SN:3000-5000 / Y:2400 / YO:2400-4200 / G:470-750
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: We recommend using the thrust pad and the thrust plate combination in gas springs with wide stroke capacity.

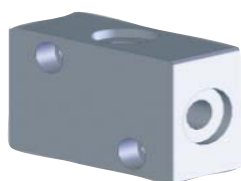
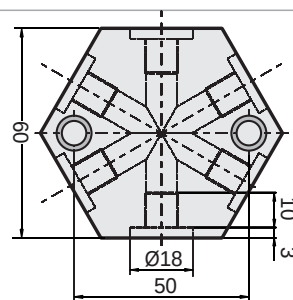
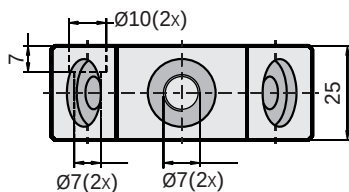
Material: CK45
Surface Hardened

Gas Spring Distribution Blocks

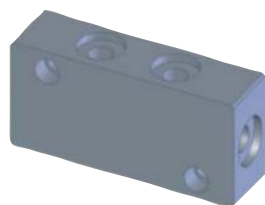
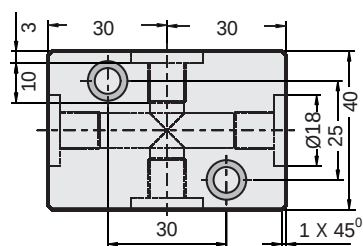
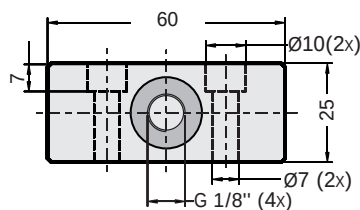
Code: DB



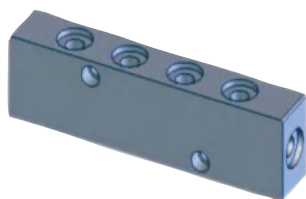
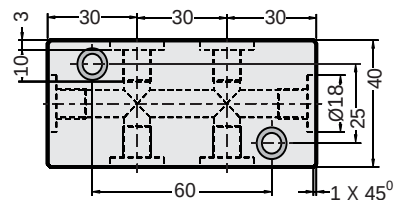
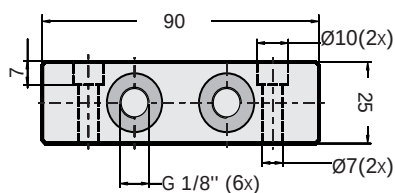
Order Code: DBC.6



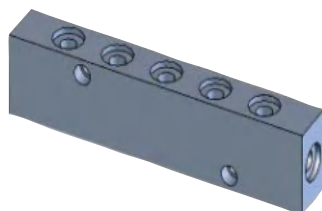
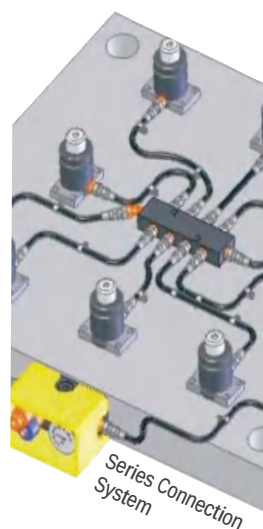
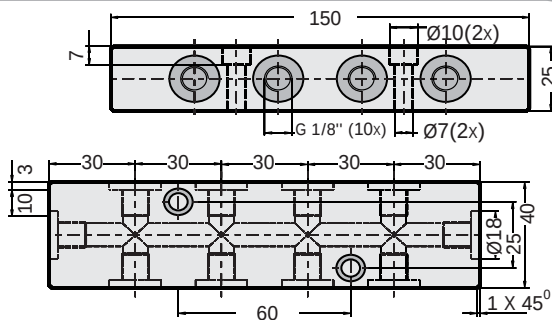
Order Code: DB.4



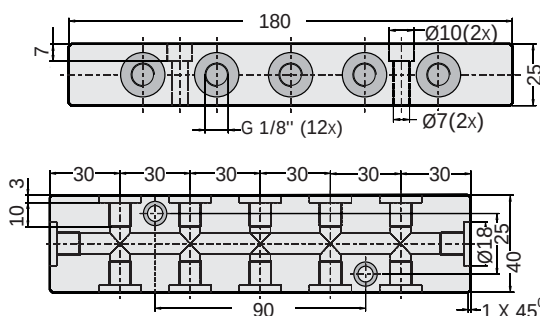
Order Code: DB.6



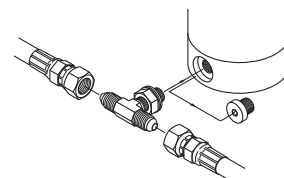
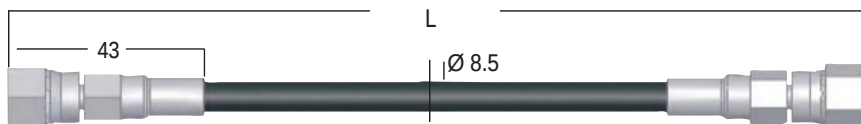
Order Code: DB.10



Order Code: DB.12



Material: CK 45 / Surface Hardened
"Custom-made production (material) as per request"

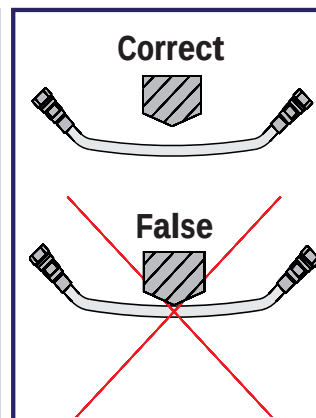
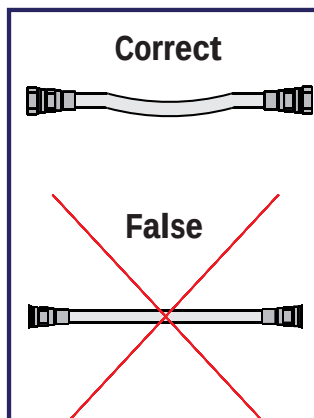
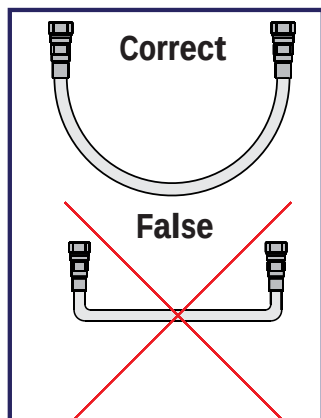


Hose for Gas Spring Distribution Blocks

Code: GHS

Order Code	L (Length) mm
GHS.180	180
GHS.200	200
GHS.300	300
GHS.400	400
GHS.500	500
GHS.630	630
GHS.800	800
GHS.1000	1000
GHS.1250	1250
GHS.1500	1500
GHS.2000	2000

Criteria for inserting hoses in a correct way:



System with hoses:

From SN.500 up to SN.1000

From Y.700 up to Y.6600

From YO.700 up to YO.11800

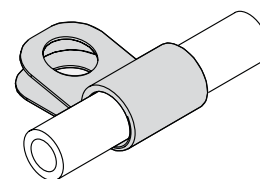
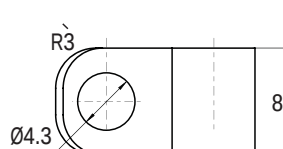
From G.180 up to G.1200

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 radius is 13 mm). Working temperature: + 80°C max.

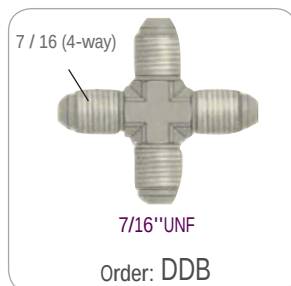
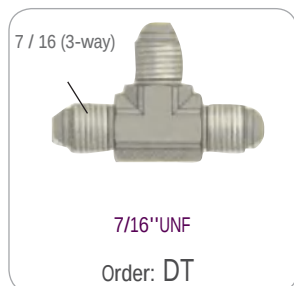
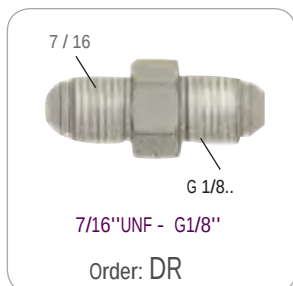
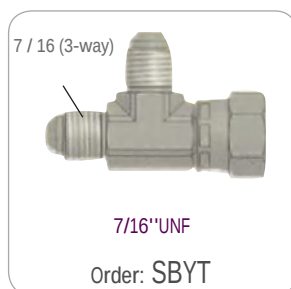
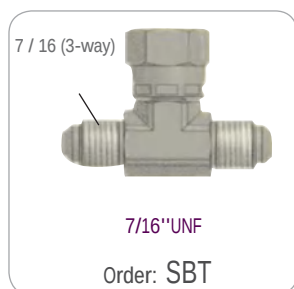
Hose Clamp

Order Code: HK



It is used as hose clamp in connection systems.

Gas Spring Fittings



Liquid Sealant with Teflon (PTFE)

Thread & pipe sealant are sealed threaded bolts against water, oil, gas and chemicals safely.

* High quality sealant.

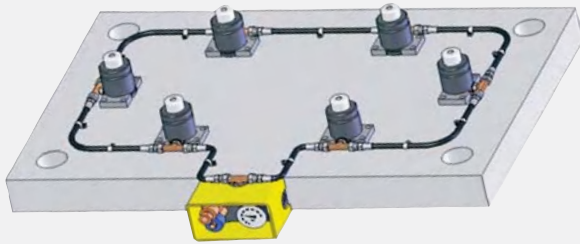
* -55°C / +150°C heat protection.

Order Code: W610511

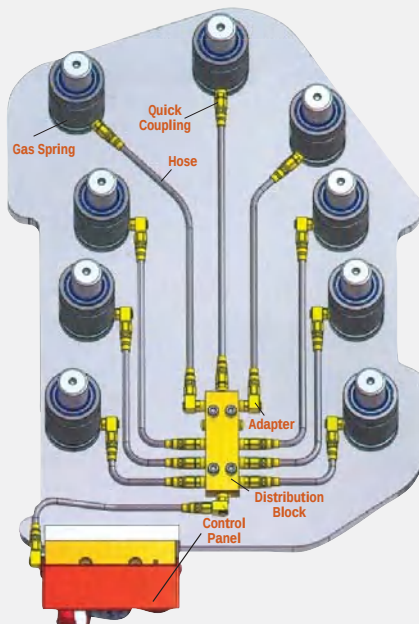
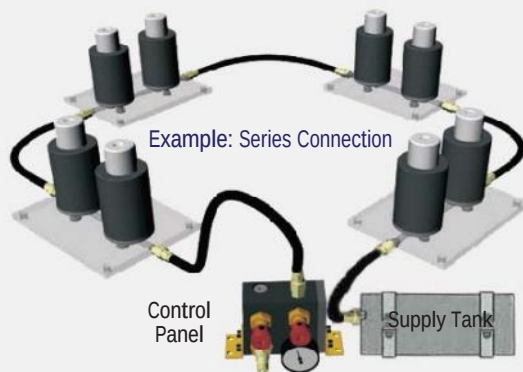
Package: 50 ml.

Serial Connection, Practical Examples

To make gas spring connection with a system, it enables to monitor gas spring pressure out of die and to adjust and correct it by increasing - reducing gas.



The springs are connected each other and there should be a control line to the distribution installation.



Each gas spring should have a direct connection to the distribution installation. The springs may be added to the installation by using a general pressure source. Hence, the gas filling / charging and discharging settings can be generally done. The springs in the series can be filled / charged and discharged individually.

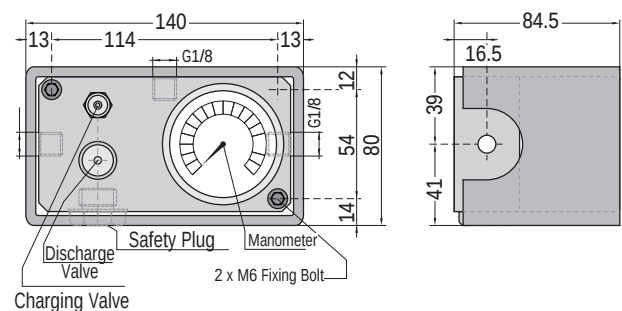


Control Panel for Gas Spring

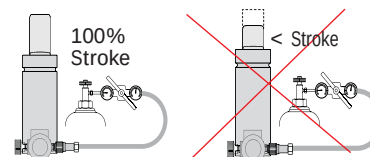
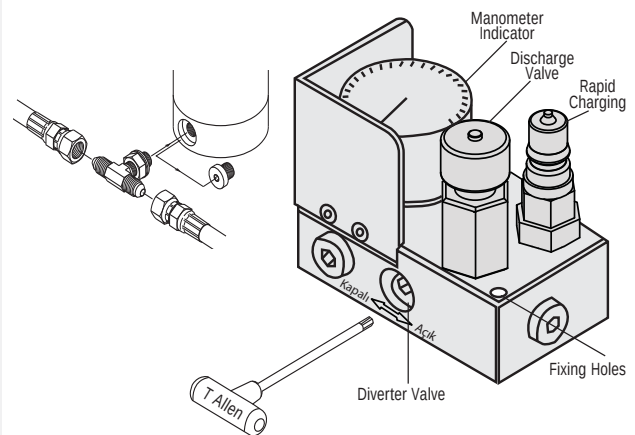
Order Code: KPA

(series connection systems, router unit)

These standard products with wide connection and accessory options are used for all kind of applications that supply tanks are used.

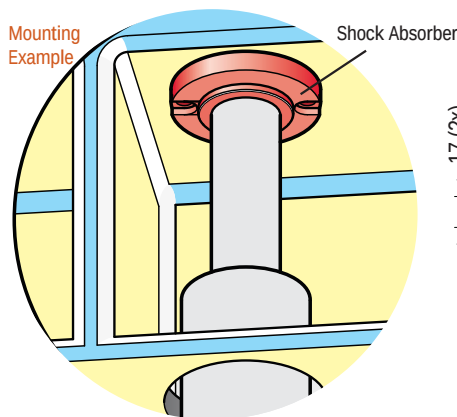


Standard control panel to change pressure, to adjust and to control connection system. It is consisted from manometer connected, steel plate, charging and discharge valves, 3 pieces outlet and steel casing that safety disc can be connected when desired.



While controlling gas springs, you must remove gas spring valve!

While filling / charging, ensure that piston arm is 100% removed. In cylinders not having threaded hole on rod, to remove arm completely, first fill up to 5 bar (75 psi), and then fill up to required level..



Code: **G113**

Shock Absorbing for Gas Spring

Order Code	Gas Spring Force F: (daN)	d	d1	d2
G113.58	750 - 1500	108	91	58
G113.92	> 1500 - 6600	143	126	92
G113.112	> 6600 - 10000	167	150	112

(daN) 1 Newton : 0.102 Kg.

Shock absorbing thrust plates are designed to minimize main problems of dies. Specially designed shock absorbing unit has been developed to reduce following the issues.

- Excessive impact.
- High costs in terms of press maintenance and corresponding units.
- High noise levels.
- Low quality production risk.

In case of using shock absorbing plates with gas springs:

- After maximum 3 mm shock absorbing stroke, gas spring shock absorbing pressure plate reaches its previous spring power.
- Shock absorbing thrust plate should be mounted between die plate and gas spring piston shaft.

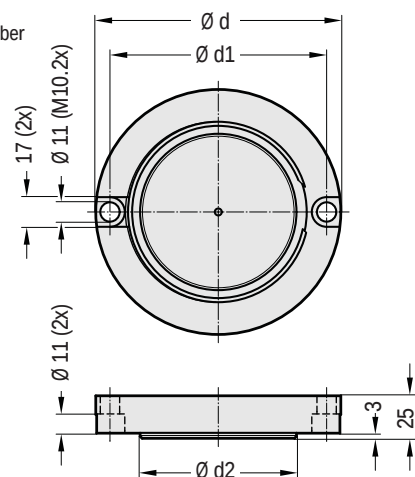
Working temperature: between 0° and 80°C.

Recommended stroke / minute: 20

Max. stroke speed: 1.6 m / s

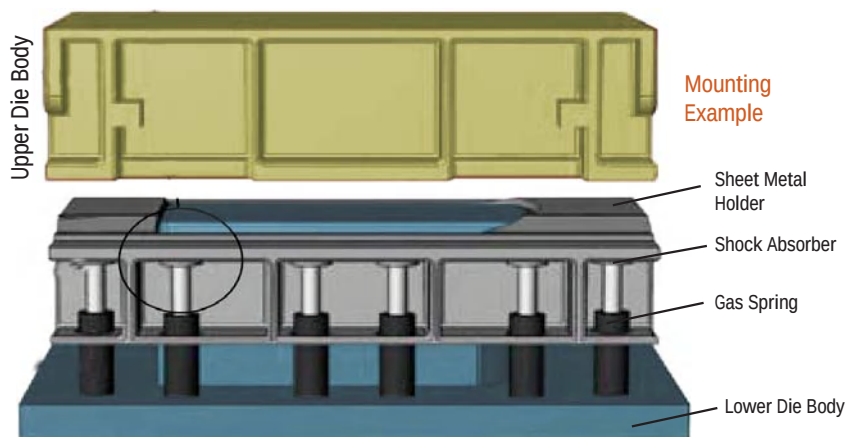
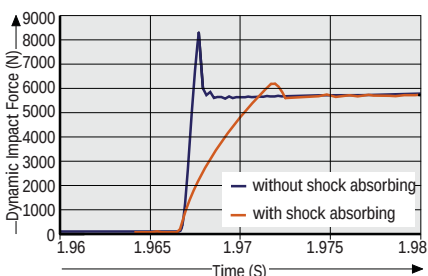
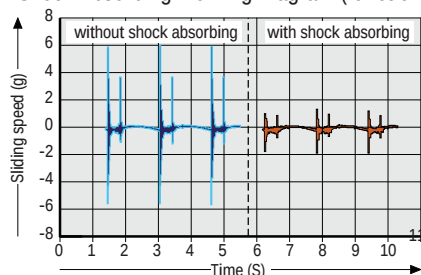
Max. shock absorbing stroke: 3 mm

Material: Polyurethane
Steel (nitrided)



(daN) 1 Newton : 0.102 Kg.

Shock Absorbing Working Diagram (function)



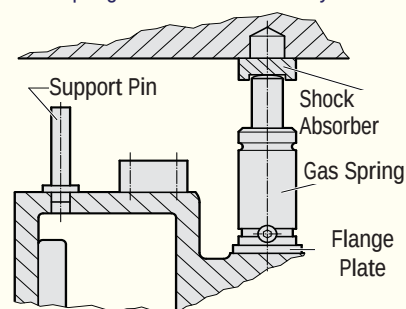
Application of Gas Springs

Using gas springs at large is becoming increasingly popular. Gas springs are mounted to both upper and lower body. The processes on the gas springs should be done after removing the die from the press. In application examples-1 & 2, special shock absorber is shown, these products placed to the place that gas spring will be pressed when die positioned in press and before stamping. During removing from press or storage period, upper die body stays on gas springs.

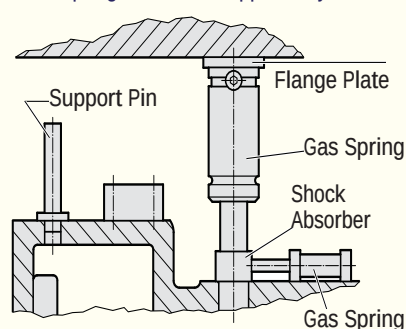
Support pins are for security after gas spring process. When dies are stacked, increased weight can cause crushing of springs, in this case, they are fitted on upper die support pins. When upper die is lifted, gas springs lift the upper body again. While preparing for production, springs enable reach various parts of dies. When die is mounted to press, support pins should be removed (before stamping).

In significant situations: Warning signs should be placed on the die. Gas springs within die may not be visible from the outside.

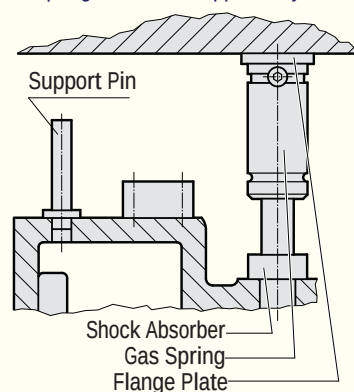
1 - Gas Spring Mounted to Lower Body



2 - Gas Spring Mounted to Upper Body



3 - Gas Spring Mounted to Upper Body

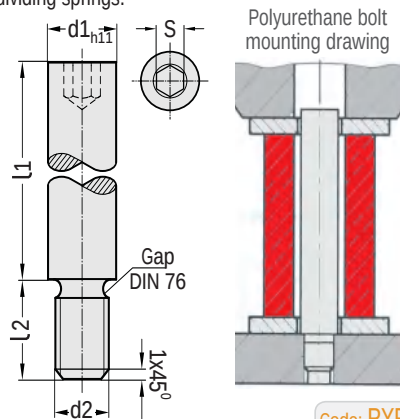




Code: PYP

Guide Bolt for Polyurethane Spring

During guiding of polyurethane springs, countersunk allen head metric thread connected guide bolts can be used as single spring as well as cluster by dividing springs.



Code: PYP

d1	L1	d2	L2	S	Spring Ø
Ø 6 mm	20	M4	6 mm	3	Ø 16 x 6.5
	25				
	32				
Ø 8 mm	25	M6	9 mm	4	Ø 20 x 8.5
	32				
	40				
Ø 10 mm	50	M8	15 mm	5	Ø 25 x 10.5
	63				
	80				
Ø 13 mm	95	M10	15 mm	6	Ø 32 / 40 x 13.5
	118				
	140				
Ø 16 mm	180	M12	18 mm	8	Ø 50 / 63 x 17
	200				
	220				
Ø 20 mm	250	M16	25 mm	10	Ø 80 / 100 x 21
	280				
	300				

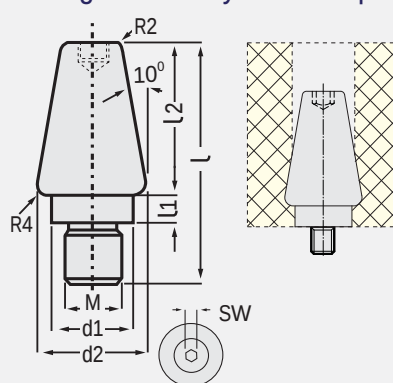
Order: PYP. d1 x L1

Material: CK45



Code: PSP

Locating Bolt for Polyurethane Spring



M	L	d1	d2	L1	L2	SW	Spring Ø
M12	56	19	28	8	30	6	63
M16	74	22	32	10	40	8	80-100
M20	100	28	38	15	55	10	125-140

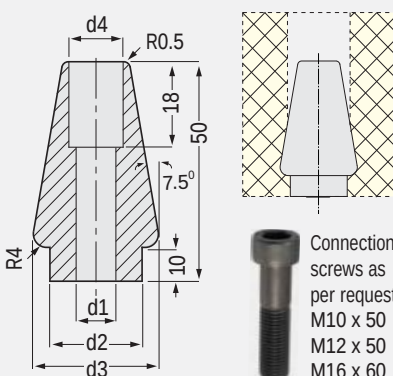
Order: PSP. M x L

Material: 1.7131 (16MnCr5)



Code: PMV

Locating Pin for Polyurethane Spring



Connection screws as per request:
M10 x 50
M12 x 50
M16 x 60

Upper screwed locating pins for polyurethane springs

M	d1	d2	d3	d4	Spring Ø
M10	11	18	28	17	63
M12	13.5	22	32	19	80-100
M16	17.5	28	38	25	125

Order: PMV. M

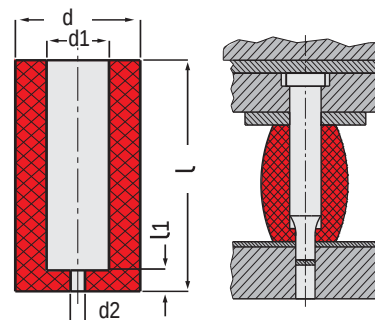
Material: 1.7131 (16MnCr5)



Code: PYB

Polyurethane Punch Stripper

Overspread on punch (shock absorber)



In dies that polyurethane punch stripper is used, there is no need to dismantle stripper plate to make repair whetting and modification on die components, there is not any effect on precise parts, it is excellent for all painted / anodized, plastic plated and polished parts. It is compatible to use with oil and grease.

It is overspread on punch. Placement is done according to the stripper hardness. There is no need for extra holder. Stepped-punch hole will be opened at the first stroke of press on stripper edge. Especially, in large dies requiring very wide stripper plate, this product is very compatible.

Code: PYB

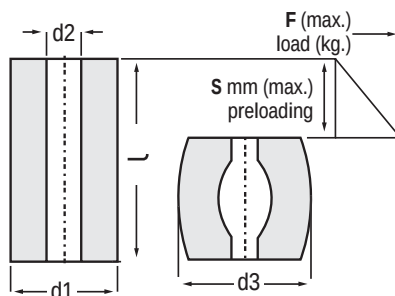
Order	d1 Ø	d Ø	d2 Ø	L1 mm	L mm	Punch Length
PYB.445	4.0	17	1.6	5.0	45	56 / 63
PYB.655	6.0	19				
PYB.855	8.0	21	3.0	5.0	55	63 71 80 90
PYB.1055	10	23				
PYB.1355	13	26				
PYB.1655	16	30	Punch Hole	5.0	55	100
PYB.2055	20	38				
PYB.2555	25	50				

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.

In S. max flexion, load coefficient data daN / Kg.

d mm	17	19	21	23	26	30	38	50
S daN	60	65	70	90	110	140	210	370
3 mm	daN	daN	daN	daN	daN	daN	daN	daN
S daN	115	120	130	160	190	230	360	650
6 mm	daN	daN	daN	daN	daN	daN	daN	daN
S daN	-	180	210	240	300	370	550	1020
9 mm	daN	daN	daN	daN	daN	daN	daN	daN

S max: Load coefficient daN = Kg. / (10 newton), while polyurethane bush S max in pressed, load data is advisory.



90 Shore / Red Springs

Code: PMK

80 Shore / Yellow Springs

Code: PMS

D = Solid / B = Hollow

Compression (Length)

Red / 90 Shore : % 25

Yellow / 80 Shore : % 35

Polyurethane Compression Spring

They do not create any problem at water / oil emulsions (resistance to thermal shock). They do not have any abrasion effects that can be distinguished with fixed and high load under normal temperature and environmental conditions at serial motion dies. Especially, they are efficient in ambient that do not require magnetization. Polyurethane springs can be machining with ordinary machine tools (such as lathe) as well as can be machining 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 centre, then metal thick washer is inserted, thus flexion is increased two times. Pin diameter of polyurethane compression springs should be less than the inner diameter of spring.

Ø d1 mm	l mm	Ø d2 mm	Ø d3 mm	% 25		% 35	
				90 Shore (red)		80 Shore (yellow)	
				Max. Force	Max. Force	Max. Force	Max. Force
				S mm	F Kg	S mm	F Kg
16	12	6.5	21	3.6	171	4.3	104
	16			4.8	169	5.6	100
	20			6.0	165	7.0	97
	25			7.5	161	8.7	96
20	16	8.5	26	4.8	265	5.6	156
	20			6.0	260	7.0	154
	25			7.5	258	8.7	153
	32			9.6	255	10.6	152
25	20	10.5	32	6.0	439	7.0	265
	25			7.5	428	8.7	260
	32			9.6	423	10.6	257
	40			12.0	420	14.0	255
32	32	13.5	42	9.6	653	10.6	398
	40			12.0	648	14.0	393
	50			15.0	643	17.5	390
	63			18.9	638	22.0	388
40	32	13.5	52	9.6	1122	10.6	683
	40			12.0	1112	14.0	673
	50			15.0	1101	17.5	668
	63			18.9	1097	22.0	663
50	32	17	65	9.6	1775	10.6	1102
	40			12.0	1765	14.0	1061
	50			15.0	1734	17.5	1041
	63			18.9	1698	22.0	1020
80	40	17	65	24.0	1683	28.0	1015
	50			30.0	1673	35.0	1010
	100			30.0	1673	35.0	1010

Order:

Code - D or B . d1 . l

Order Example:

PMS-B.25.40

Heat resistance: 70°C

Note: Under 18°C gradual increase in hardness.

In special forms are produced as per request!



Polyurethane Compression Spring

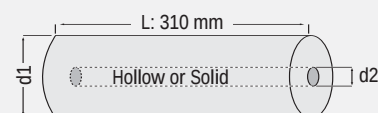
90 Shore / Red Springs

Code: PYK

80 Shore / Yellow Springs

Code: PYS

D = Solid / B = Hollow



Solid Type	d2 Hollow	d1	Solid Type	d2 Hollow	d1
90 Shore: Flexion %25 Loaded Spring	6.5	16	80 Shore: Flexion %35 Loaded Spring	6.5	16
	8.5	20		8.5	20
	10.5	25		10.5	25
	13.5	32		13.5	32
	13.5	40		13.5	40
	17.0	50		17.0	50
	17.0	63		17.0	63
	21.0	80		21.0	80
	21.0	100		21.0	100
	27.0	125		27.0	125

Length (L): 310 mm

Length (L): 310 mm

Order:
Code - D or B . d1

Order Example:
PYK-D.32

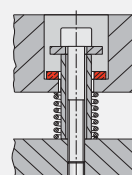
Polyurethane Shock Absorbing Washer



Code: PRPS



Code: PRPK



90 Shore - red / %25
80 Shore - yellow / %35

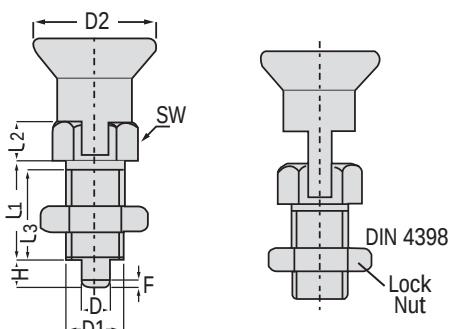
d2	d1	s	d2	d1	s
Ø 16	6.5	3 mm	Ø 40	13.5	5 mm
	11	4 mm		17	6 mm
Ø 20	8.5	3 mm		21	7 mm
	11	4 mm		32	8 mm
Ø 25	13	5 mm	Ø 50	17	6 mm
	10.5	3 mm		26	7 mm
	12	4 mm		32	8 mm
Ø 32	14	5 mm		37	10 mm
	13.5	3 mm	Ø 63	17	6 mm
	18	4 mm		32	10 mm
	21	5 mm		42	10 mm
Ø 32	23.5	6 mm	Ø 80	21	8 mm
	25	7 mm		42	10 mm
	25	7 mm	Ø 100	21	10 mm

Order: Code. d1 x d2 x s

Order Example: PRPS. 11 x 20 x 4

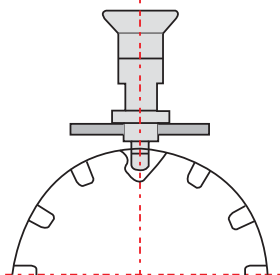


Indexing Plunger with Lock Nut
Movable Support Pin



Code: **MM102ST**

Material Structure : Coated steel material
(or stainless steel - 304)
Locking Pin : Hardened steel
(or stainless steel - 304)
Handle : Plastic (PA6) black
non-demountable head

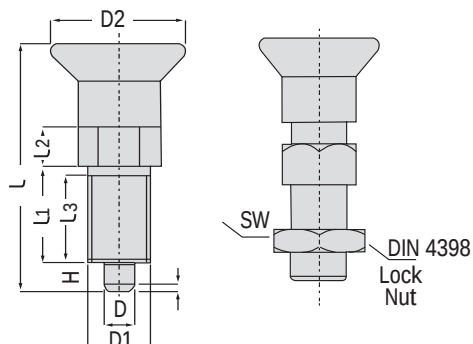


Code: **MM102ST**

Order Code	D -0.02 / -0.04	D1	D2	L	L1	L2	L3	H	SW
MM102ST05	5	M10 x 1.0	21	43.7	17	7	15	5	12
MM102ST06	6	M12 x 1.5	25	51.7	20	7	17	6	14
MM102ST08	8	M16 x 1.5	33	68.7	26	10	23	8	19
MM102ST10	10	M20 x 1.5	33	74	28	12	25	10	22
MM102ST12	12	M20 x 1.5	33	78	28	14	25	12	22



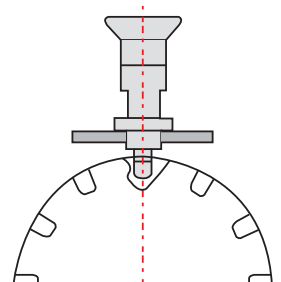
Indexing Plunger
Fixed Support Pin



Code: **MM101ST**

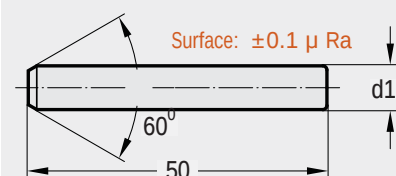
Order Code	D -0.02 / -0.04	D1	D2	L	L1	L2	L3	H	SW
MM101ST05	5	M10 x 1.0	21	43.7	17	7	15	5	12
MM101ST06	6	M12 x 1.5	25	51.7	20	7	17	6	14
MM101ST08	8	M16 x 1.5	33	68.7	26	10	23	8	19
MM101ST10	10	M20 x 1.5	33	74	28	12	25	10	22
MM101ST12	12	M20 x 1.5	33	78	28	14	25	12	22

Material Structure : Coated steel material
(or stainless steel - 304)
Locking Pin : Hardened steel
(or stainless steel - 304)
Handle : Plastic (PA6) black
non-demountable head



Precision Pin Gauge Kit Code: **PKMS**

DIN 2269 - Dia. tolerance: $\pm 0.001 / 2$

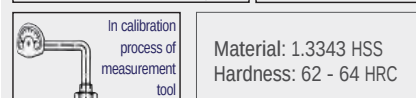
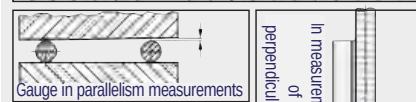
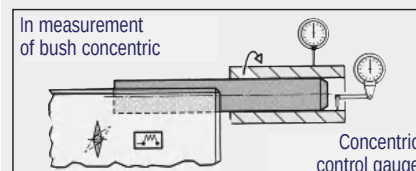
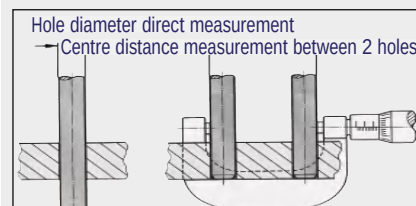


Small Set: 91 pieces measurement / control pin
between $\varnothing 1 - 10$ mm. in 0.1 mm stepped complete
wooden box.

Large Set: 273 pieces measurement / control pin
between $\varnothing 1 - 10$ mm. in 0.1 mm stepped complete
wooden box. For each pin, over 0.01 mm and under
0.01 mm pins are available.

In addition, pins are protected with plastic tube.

The measures of all measurement pins over
3 mm are stamped on them.



Material: 1.3343 HSS
Hardness: 62 - 64 HRC

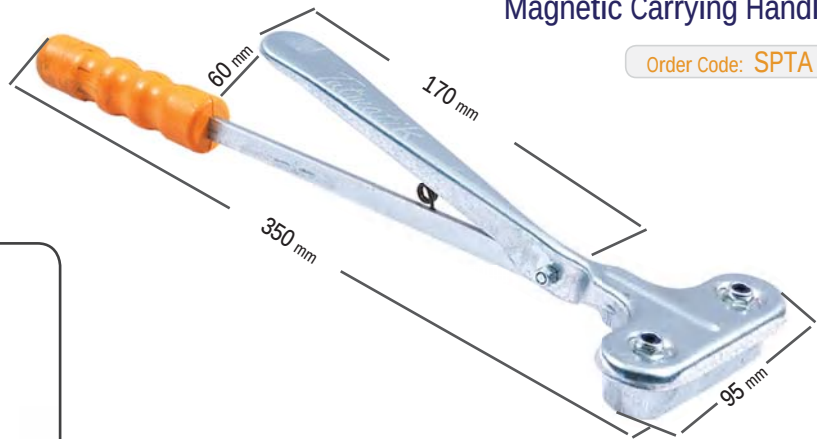
Order:
PKMS.1 (Small Set)
PKMS.2 (Large Set)

NEW



Magnetic Carrying Handle

Order Code: SPTA



Sheet Holding Tool for Dies

Modern dies are generally built with closed system and feeder machines. Most of the occupational accidents occur in eccentric press machines during operation of open position dies with traditional systems and obligatory workpiece designs. These accidents occur because of chopping or crushing of fingers in the dies when press is operating. There is a security gap in this matter or companies endeavour to take measures with their own means. So, this simply designed magnetic handle / sheet holding tool is created.



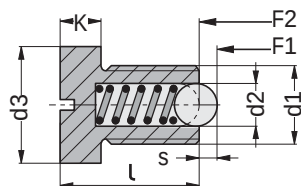
Product is lightweight (260 g.) and can be used with single hand. It does not require force as the spring tongs do. It can strongly hold the material via its magnetic jaw. Thus, hands are protected when eccentric press is lowered in open dies operating with functionally simple systems via magnetic carrier tool in the open die. So, the problems happened in the past will not be encountered again.



Code: **SBS**

Spring Plunger with Slotted Head

Mounting: Fixing with screwdriver.



It is for locking, compressing upwards and downwards. Fixable with screwdriver.
Heat Resistance Maximum: 250°C.

d1	l	s	d2	d3	K	F1(N)	F2(N)
M6	14	1	3.5	10	5	11	18
M8	16.5	1.5	4.5	13	5	18	31
M10	20	2	6	16	6	24	45
M12	22	2.5	8	18	7	24	49



Order:
SBS. d1

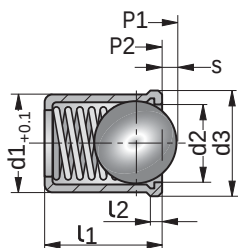
Material: Steel
quality 5.8



Code: **KBS**

Spring Plunger with Bushing

For systems such as elevator and sliding etc.



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. d1

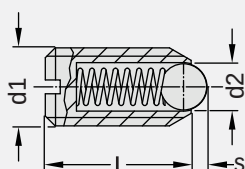
Material: Steel
quality 5.8



Code: **BSM**

Spring Plunger

Mounting: Fixing with screwdriver.



Usage Area:

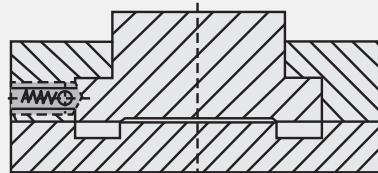
- Locating
- Pulling, pushing
- Extractor
- Clamping

It is used as core / slide lock etc. in injection mould.
As stamp extractor in die and also can be used for bushing of threaded shafts, limiting the torque tools and positioning of level adjuster.
Material structure; machinable steel bushing - hardened bearing steel ball - winding steel spring.
Heat Resistance Maximum: 250°C.

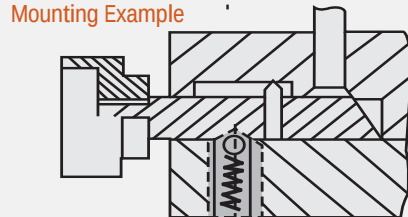
Code: **BSM**

d1 (thread)	l mm	s mm	d2 mm	Initial Force	Final Force
M4	9	0.8	2.5	6 Nw	12 Nw
M5	12	0.9	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

* Please don't exceed the force values.



Mounting Example



N - Newton = (0.102)Kg
daN -10 Newton = (1.020)Kg



Order:
BSM. d1

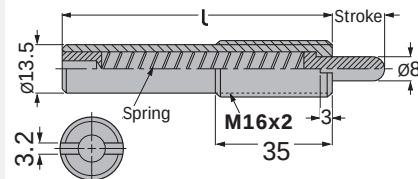
Material: Steel
quality 5.8



Code: **PSK**

Spring Plunger

Mounting: Fixing with "PMT" mounting kit.



Protective plating that prevents oxidation on the part surface is available. The ball is from steel material and is hardened and polished.

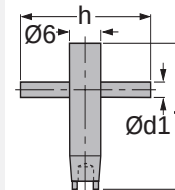
* Please don't exceed the force values.

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. Stroke

Material: Pin 1.1273
Hardness: 40 HRC



Code: **PMT**

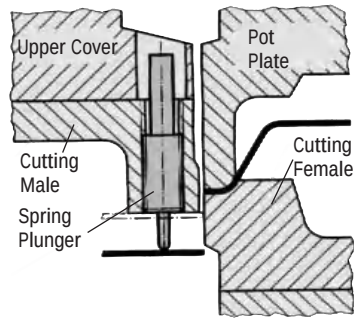
Mounting Kit for
Spring Plungers

Spring Plunger (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

Material: Steel 5.8
Hardness: 36 - 40 HRC



Spring Plunger

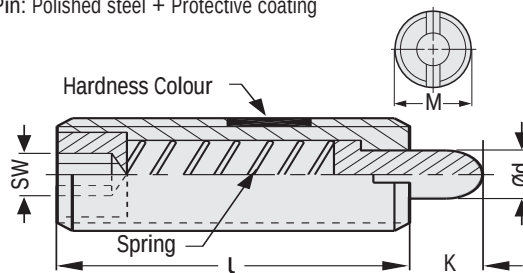
Code: **PS1**

Mounting: Fixing with "PMT" mounting kit.

It is for locking, compressing upwards and downwards. The lock prevents the reaching of liquids and oils to the pin.

Working Temperature: Between -30 C and +80 C

Pin: Polished steel + Protective coating



Code: **PS1**

Series	M Thread	k mm	l mm	d Ø	SW	Initial Force N (Kgf)	Final Force N (Kgf)
1	M3x0.5	1.5	10	1.0	0.8	0.4 (0.05)	2.9 (0.3)
2	M4x0.7	2.0	12	1.6	0.8	1.9 (0.2)	9.8 (1.0)
3	M5x0.8	3.0	20	2.0	1.5	3.9 (0.4)	19.6 (2.0)
4	M5x0.8	3.0	13	2.0	1.5	1.9 (0.2)	7.8 (0.8)
5	M5x0.8	3.0	20	2.0	1.5	1.9 (0.2)	9.8 (1.0)
6	M6x1.0	3.0	25	2.5	2.0	2.9 (0.3)	9.8 (1.0)
7	M6x1.0	3.0	25	2.5	2.0	7.8 (0.8)	29.4 (3.0)
8	M8x1.25	3.0	25	3.1	2.5	2.9 (0.3)	9.8 (1.0)
9	M8x1.25	3.0	25	3.1	2.5	7.8 (0.8)	29.4 (3.0)
10	M10x1.5	5.0	30	3.8	3.0	2.9 (0.3)	14.7 (1.5)
11	M10x1.5	5.0	30	3.8	3.0	9.8 (1.0)	49.0 (5.0)
12	M12x1.75	5.0	30	5.5	4.0	1.9 (0.2)	9.8 (1.0)
13	M12x1.75	5.0	30	5.5	4.0	9.8 (1.0)	49.0 (5.0)

* Blue products are medium force in the table.

Order: **PS1. Series**

Material: Case 1.7220
Pin: 1.1273 / HRC 36-40

Spring Plunger

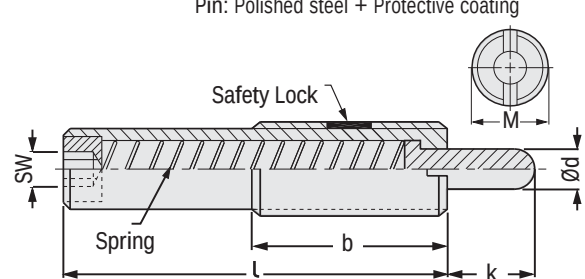
Code: **PS2**

Mounting: Fixing with "PMT" mounting kit.

It is for locking, compressing upwards and downwards. The lock prevents the reaching of liquids and oils to the pin.

Working Temperature: Between -30 C and +80 C

Pin: Polished steel + Protective coating



Code: **PS2**

Series	M Thread	k mm	l mm	b mm	d Ø	SW	Initial Force N (Kgf)	Final Force N (Kgf)
14	M12x1.75	10	43	35	5.5	4	3.9 (0.4)	19.6 (2)
15	M12x1.75	10	43	35	5.5	4	6.8 (0.7)	39.2 (4)
16	M16x2.0	10	50	35	8	5	9.8 (1)	49.0 (5)
17	M16x2.0	10	50	35	8	5	19.6 (2)	98.0 (10)
18	M16x2.0	10	60	35	8	5	12.7 (1.3)	39.2 (4)
19	M16x2.0	10	60	35	8	5	26.4 (2.7)	78.4 (8)
20	M16x2.0	15	60	35	8	5	9.8 (1)	39.2 (4)
21	M16x2.0	15	60	35	8	5	14.7 (1.5)	78.4 (8)
22	M16x2.0	20	60	35	8	5	12.7 (1.3)	39.2 (4)
23	M16x2.0	20	85	35	8	5	16.6 (1.7)	78.4 (8)
24	M16x2.0	30	125	35	8	5	17.6 (1.8)	39.2 (4)
25	M16x2.0	30	125	35	8	5	19.6 (2)	78.4 (8)
26	M16x2.0	50	155	35	8	8	19.6 (2)	49.0 (5)
27	M16x2.0	50	155	35	8	8	29.4 (3)	98.0 (10)
28	M24x3.0	15	60	45	10	8	19.6 (2)	98.0 (10)
29	M24x3.0	15	60	45	10	8	39.2 (4)	196.1 (20)
30	M30x3.5	20	70	45	15	12	29.4 (3)	147.0 (15)
31	M30x3.5	20	70	45	15	12	49.0 (5)	294.1 (30)

* Red products are high force in the table.

Order: **PS2. Series**

Order Example:
PS2.14

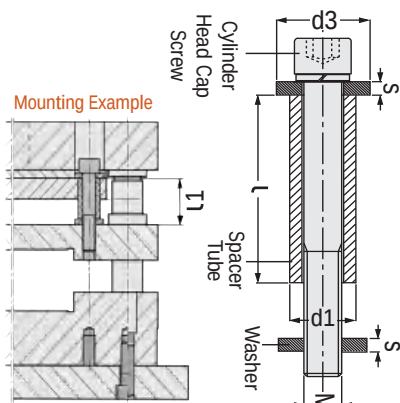


Spring and Spacer Unit Code: G71

Assembly of Spring and Spacer Unit:

Spring and Spacer Units are ground equally after mounted to punch retainer plate. When punches are ground due to abrasion, for loosening unit as 0.1 mm, the length of junction should adjust.

Note: This product is with o-ring and o-ring should be removed before mounting.

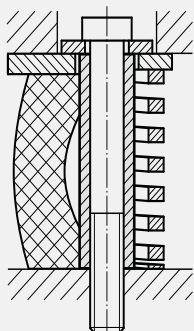


Code: G71

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

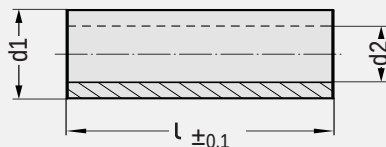
Order: G71. d1x l1

Material: 1.7131
Hardness: 58 ± 2 HRC

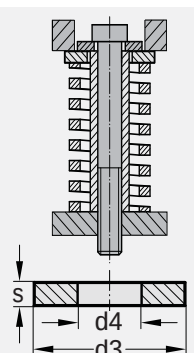


Spacer Tube

Code: G71B



Order Code	d1	l	d2
G71B.1329	13	29	8.2
G71B.1339		39	8.2
G71B.1349		49	8.2
G71B.1359		59	8.2
G71B.1369		69	8.2
G71B.1529	15	29	10.2
G71B.1539		39	10.2
G71B.1549		49	10.2
G71B.1559		59	10.2
G71B.1569		69	10.2



Washer

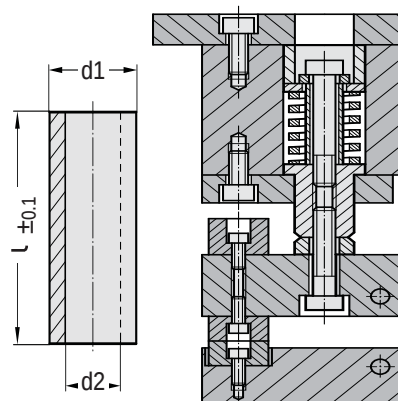
Code: G71P

Order Code	d3	d4	s
G71P.18	18	8.4	4
G71P.20	20	10.5	4



Spacer Tube

Code: G71Y



Code: G71Y

d1	l	d2
10	20	6.5
	25	
	30	
	32	
	40	
	50	
	63	
	80	
12	100	8.5
	125	
	140	
	160	
	200	
	250	
	300	
	350	
16	40	11
	50	
	63	
	80	
	100	
	125	
	140	
	160	

Order:
G71Y. d1x l

d1	l	d2
20	30	13
	40	
	50	
	63	
	80	
	100	
	125	
	140	
25	160	17
	200	
	250	
	300	
	350	
	400	
	450	
	500	
38	63	25
	80	
	100	
	125	
	140	
	160	
	200	
	250	

Material: 1.7131
Hardness: 58 ± 2 HRC

Code: G39

d	l1 (Js11)	M	d3	l2 (± 0.25)	k	SW
6	10	M5	d3: 10	L2: 9.5	k: 4.5	3
	12					
	16					
	20					
	25					
	30		g1 ±0.25 1.85	r1 ±0.2 0.4	t: 2.4	
	35					
	40					
	45					
	50					
55	g2 ±0.15 1.80	r2 ±0.15 0.5	dg1 ±0.1 5.52			
60						
8	10	M6	d3: 13	L2: 11	k: 5.5	4
	12					
	16					
	20					
	25					
	30		g1 ±0.25 1.85	r1 ±0.2 0.6	t: 3.3	
	35					
	40					
	45					
	50					
	55		g2 ±0.15 2.3	r2 ±0.15 0.6	dg1 ±0.1 7.52	
	60					
	65					
	70					
	80					
90						
100						
10	16	M8	d3: 16	L2: 13	k: 7	5
	20					
	25					
	30					
	35					
	40		g1 ±0.25 1.85	r1 ±0.2 0.6	t: 4.2	
	45					
	50					
	55					
	60		g2 ±0.15 2.6	r2 ±0.15 0.7	dg1 ±0.1 9.52	
	65					
	70					
	80					
	90					
	100					

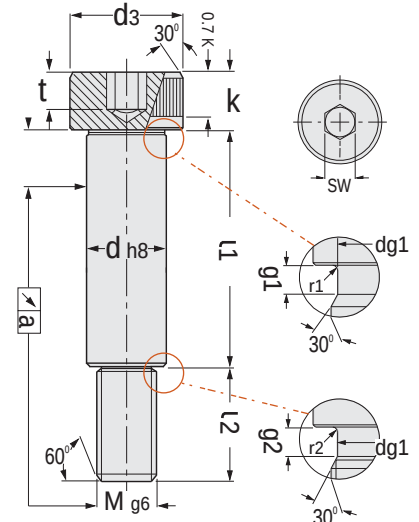
d	l1 (Js11)	M	d3	l2 (± 0.25)	k	SW			
12	16	M10	d3: 18	L2: 16	k: 9	6			
	20								
	25								
	30								
	35								
	40								
	45		g1 ±0.25 1.85	r1 ±0.2 0.8	t: 4.9				
	50								
	55								
	60								
	65								
	70								
80	g2 ±0.15 2.80	r2 ±0.15 0.9	dg1 ±0.1 11.5						
90									
100									
120									
16				30	M12	d3: 24	L2: 18	k: 11	8
				35					
	40								
	45								
	50								
	55								
	60	g1 ±0.25 1.85	r1 ±0.2 0.8	t: 6.3					
	65								
	70								
	80								
	90								
	100								
120	g2 ±0.15 3.8	r2 ±0.15 1.0	dg1 ±0.1 15.5						
20				40	M16	d3: 30	L2: 22	k: 14	10
				45					
				50					
				55					
				60					
	65								
	70	g1 ±0.25 2.65	r1 ±0.2 1.0	t: 8.8					
	80								
	90								
	100								
	120					g2 ±0.15 4.6	r2 ±0.15 1.1	dg1 ±0.1 19.5	
	24								
55									
60									
65									
70									
80									
90		g1 ±0.25 2.65	r1 ±0.2 1.0	t: 10					
100									
120					g2 ±0.15 5.4	r2 ±0.15 1.3	dg1 ±0.1 23.5		



Shoulder Screw

ISO 7379 / Class: 12.9

Code: G39



In Spring Use (steel / polyurethane spring):

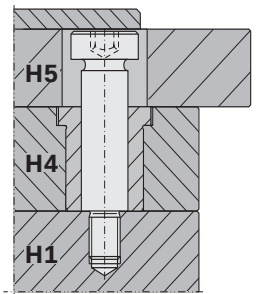
For precise and secure placement in spring use, also suitable to setting position in injection mould plates. Our production is available in desired dimensions materials and lengths.

Spring working area: h8

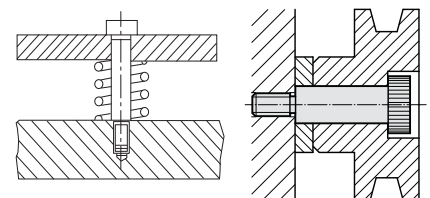
Yield stress: Rp = 1080 N / mm²

Class: 12.9

- * Heat treated
- * High strength steel
- * HRC 39 - 44
- * Knurled head

Impact test:
KCU 15 J Min.Elasticity:
A = 8% Min.Tensile stress:
Rm = 1200 N / mm²

Mounting Example



Order: G39. M x d x l1

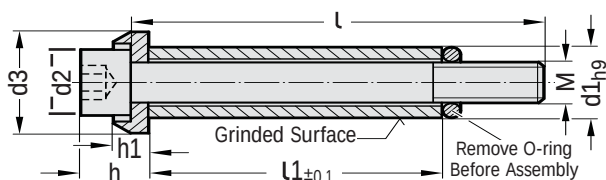
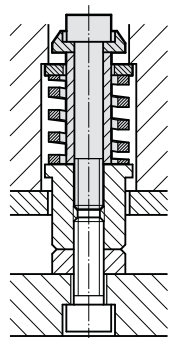
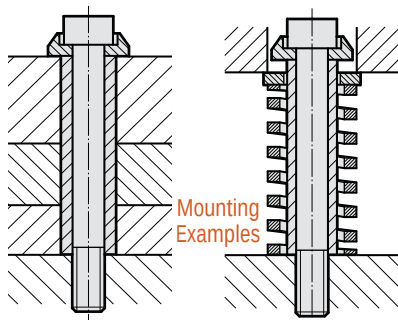
Order Example:

G39. M10 x 12 x 50



Code: G146

Spring and Spacer Unit



Spring and Spacer Unit: Since it is ground, it provides very precision length setting that can be adjusted. Different usage types can be created (reference: mounting examples).
External diameter is ground at h9 tolerance. It is with cylinder head cap screw.
O-ring should be removed before mounting.
Tensile Force: 1200 -1300 n / mm²

Code: G146

d1 Ø	M (g6)	l1 mm	l mm	d3 Ø	h mm	h1 mm
10	M6	20	35	15	10	5.5
		25	40			
		30	45			
		35	50			
		40	55			
		45	60			
		50	65			
		55	70			
		60	80			
		70	90			
		80	100			
		90	110			
12.5	M8	30	45	19	13	6.5
		35	50			
		40	55			
		45	60			
		50	65			
		55	70			
		60	80			
		70	90			
		80	100			
		90	110			
		100	120			
15	M10	30	50	23	15	7.5
		35	55			
		40	60			
		45	65			
		50	70			
		55	75			
		60	80			
		60	80			

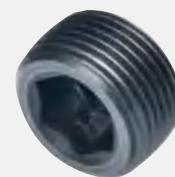
d1 Ø	M (g6)	l1 mm	l mm	d3 Ø	h mm	h1 mm
15	M10	70	90	23	15	7.5
		80	100			
		90	110			
		100	120			
		120	140			
		d2: 16				
17.5	M12	40	60	27	18	9
		45	65			
		50	70			
		55	80			
		60	90			
		70	100			
		80	110			
		90	120			
		100	130			
		120	150			
23	M16	140	180	34	24	11
		50	80			
		60	90			
		70	100			
		80	110			
		90	120			
		100	130			
		110	140			
		120	150			
		140	180			
		150	180			
		160	200			
		d2: 24				



Order:
G146. M x d1 x l1

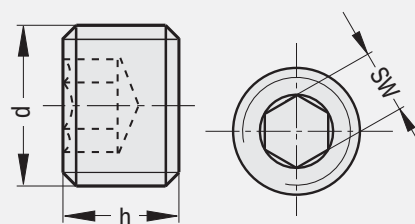
Order Example:
G146. M10 x 15 x 80

Material: Cyl.Head Cap Screw
Tube: 1.7131 (58 HRC)

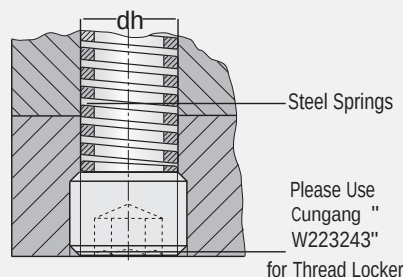


Code: G145

Compression Spring Set Screw



These products can be used as adjustable spring stoppers.
Spring tension can be adjusted from bottom plug (set screw) with allen without doing any dismantles process. Steel springs can be changed from bottom plug (set screw) slot without dismantling die / mould.
Open hole should be created instead of blind hole to place spring.



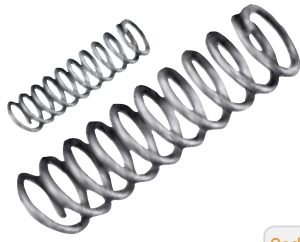
Code: G145

d (thread)	Spring Dia.	dh (slot)	h	SW
M12 x 1.5	10	10.5	10	6
M14 x 1.5	12.5	12.5	10	6
M18 x 1.5	16	16.5	10	8
M22 x 1.5	20	20.5	10	8
M28 x 1.5	25	26.5	12	10
M35 x 1.5	32	33.5	12	10
M42 x 1.5	40	40.5	12	10



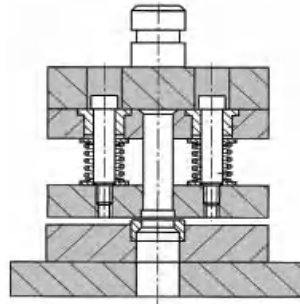
Order:
G145. d

Material:
1.0503 (C45)



Code: YYH

Round Wire Compression Spring Light Duty & High Stroke

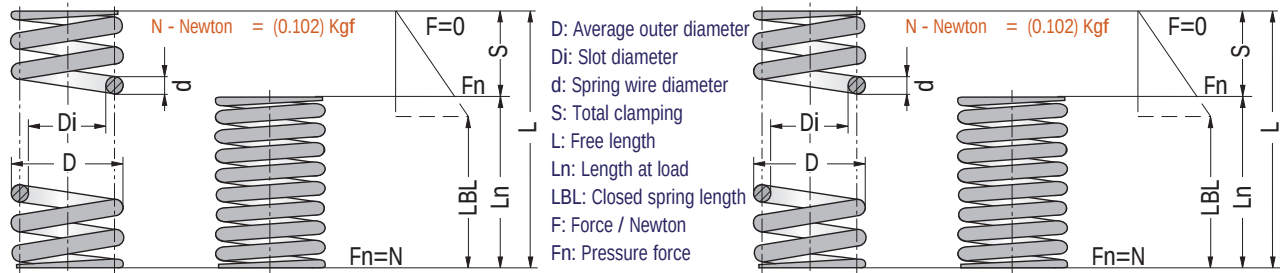


Pre-loading force and deviation should be determined by the designer.
Initially, 5 mm pre-loading should be applied.



Code: YYS

Round Wire Compression Spring Standard Performance



These springs from spring steel as winding / with high tension heat treated are used in table data standards DIN 2095 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. All these springs can be produced in the desired lengths and diameters. Maximum working temperature: 200°C.

Code: YYH

D	L	Di	d	S	Fn	Ln	LBL
10	40	7.00	1.50	18.9	148	21.1	18.0
12	55	9.00	1.50	30.0	103	25.0	22.0
14	40	10.0	2.00	19.1	243	20.9	18.0
14	50	10.0	2.00	24.0	228	26.0	23.0
15	40	11.0	2.00	19.5	221	20.5	16.0
15	100	11.0	2.00	58.5	245	41.5	39.0
17	85	12.5	2.25	41.0	265	44.0	32.0
17.5	45	11.5	3.00	13.0	422	32.0	30.0
17.5	50	11.5	3.00	15.0	434	35.0	33.0
18	83	10.0	4.00	18.0	1198	65.0	62.0
19	35	11.0	4.00	5.0	697	30.0	28.0
19	90	10.0	4.50	17.0	1669	73.0	70.0
19.5	35	14.5	2.50	14.0	186	21.0	19.0
19.5	40	13.5	3.00	14.0	398	36.0	24.0
20.5	95	15.5	2.50	54.0	262	41.0	39.0
21	40	13.0	4.00	11.0	1148	29.0	27.0
21.5	45	15.5	3.00	20.0	436	25.0	23.0
21.5	50	13.5	4.00	15.0	1099	35.0	32.0
22	45	16.0	3.00	21.7	387	23.3	19.5
22	70	16.0	3.00	29.4	387	40.6	28.5
22	100	16.0	3.00	38.7	387	61.3	40.5
23	130	16.0	3.50	43.4	579	86.6	59.5
23	160	16.0	3.50	54.6	579	105.4	73.3
23	190	16.0	3.50	64.8	579	125.2	86.0
24	220	16.0	4.00	62.4	765	157.6	112.0
24	250	16.0	4.00	71.6	765	178.4	128.0
25	24	17.0	4.00	7.00	790	17.0	16.0
27.8	70	13.8	7.00	8.00	3014	62.0	62.0
30	70	22.0	4.00	32.5	739	37.5	32.0
30	150	17.0	6.50	34.0	3142	116.0	107.0

Code: YYS

D	L	Di	d	S	Fn	Ln	LBL
13	55	10.0	1.50	25.2	112	25.3	12.0
15	50	11.0	2.00	21.2	250	25.0	9.50
16	40	12.0	2.00	17.0	220	20.0	7.00
18	85	13.4	2.30	37.4	260	41.0	14.0
19	50	13.0	3.00	13.6	480	34.0	8.50
20.5	90	11.5	4.50	15.0	1714	72.4	4.00
21	40	15.0	3.00	11.9	450	26.0	5.50
22	95	17.0	2.50	41.5	200	46.2	17.0
23	50	15.0	4.00	13.3	1160	34.4	6.50
26.5	24	18.5	4.00	6.10	960	16.8	2.00
30	70	16.0	7.00	9.30	3750	59.0	8.00
32	70	24.0	4.00	28.9	822	36.0	6.00
34	125	22.0	6.00	27.2	2150	93.0	11.5
44	130	28.0	8.00	30.6	3895	94.0	10.0
48	67	28.0	10.0	7.60	5760	58.0	3.50
49	50	32.0	8.50	9.30	3707	39.0	2.50
58	50	42.0	8.00	11.9	2117	36.0	2.50
63	180	41.0	11.0	36.6	5203	137	10.0



Order: YYH. D x L

Material: Spring Steel, Hardened.

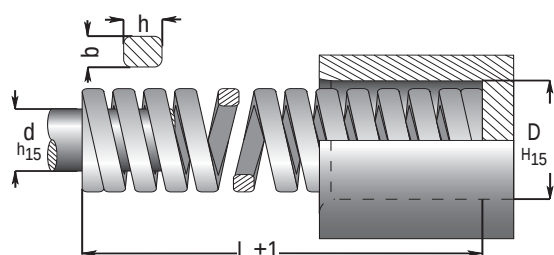


Order: YYS. D x L



Wire Die & Mould Springs

ISO 10243 / Rectangular Section
Round Section



Technical Specifications and Production Characteristics

Research & Development ongoing in parallel of quality assurance procedures in compliance with ISO 9001, ensure high sensitivity, durability and reliability criteria. Continuous improvement in our springs performance is monitored directly in the factory through comparative and destructive tests. The excellences of these products are verified with the increasing number of the customers selecting our springs in their dies and moulds.

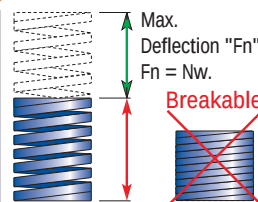
The following main characteristics show the superiority of our springs:

- * Special profile / section usage to increase steel characteristics.
- * Usage of special spring winding machine.
- * Usage of special heat treatment developed by especially spring production.
- * Maximum care showing grinding and closing of spring ends in order to warranty optimum vertical and parallel acceleration.
- * All springs are coil shaped in order to warranty significant decrease of load losses in working conditions.
- * Special remoulding stroke methods in order to increase resistance against metal abrasion.
- * Special pretreatment and powder coating applications of our springs in order to ensure the best protection, preservation and completion.
- * Intensive control performed during production and final stage in order to warranty dimensional compliance and precision.
- * Spring load coefficient tolerances - nominal rate at all springs is +10%.

Values & Descriptions of the Table on the Spring Pages

N - Newton = (0.102) Kg f daN -10 Newton = (1.020) Kg f

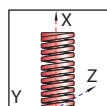
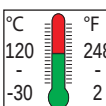
Spring Dimensions		Length	Load	Spring Capacity / Recommended Deflection - Criteria			
D	d	L	LOAD COEFFICIENT R (±10 %) Required load for 1.0 mm deflection	%..A Long spring life 3.000.000	%..B Minimum deflection 1.500.000	%..C Maximum deflection	%..D Full deflection
b x h							
mm	mm	mm	N / mm	mm x N	mm x N	mm x N	mm x N



Code	Colour Series	Wire Section	Colour	Load	Max. Deflection
AYY			Light Green	Extra Light	at 50 % length
YY	ISO 10243		Green	Light	at 40 % length
MY	ISO 10243		Blue	Medium	at 37.5 % length
KY	ISO 10243		Red	Heavy	at 30 % length
SY	ISO 10243		Yellow	Extra Heavy	at 25 % length
GY			Silver	Ultra Heavy	at 15 % length
TVY			Green	Light	at 40 % length
TBM			Blue	Medium	at 37.5 % length
TRK			Red	Heavy	at 30 % length

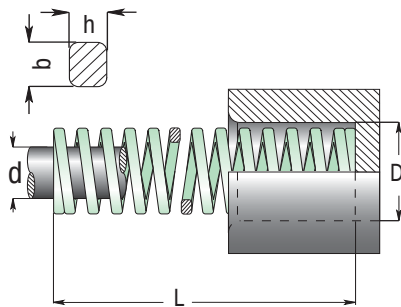
Force = Deflection (A.B.C) x Load Coefficient (R): Load x Newton / Kg.

- * Please select springs carefully during the design period.
- * The bigger the guide the longer the lifetime. It is essential to always use guide pin for all springs with a free length / diameter ratio exceeding x3.5.
- * Ensure support and perpendicularity of springs to the compression area.
- * If possible, use long springs at lower loadings (preloading should be increased properly).
- * Please apply minimum preloading of 5% of the free length.
- * Never apply pressure to the springs over maximum stroke.
- * Tool maintenance can vary the original working deflection of the springs. Always check and re-set the original working stroke. High risk of early failures or damages of the die / mould.
- * Please protect springs from abrasive activities.
- * In the temperature range of 120 ÷ 250°C consider a loss between 1 to 2% of the load every 40°C.
- * Please 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.
- * Any alteration on the surface of the springs (cutting, grinding, scratches, etc.) may significantly reduce the lifetime. Always replace the damaged springs with new ones.
- * Shoulder screw (Cungang code: G39) should be used in usage of precision mechanical spring.





Extra Light Load Spring Code: **AYY**
Colour: Light Green



Especially suitable to injection mould systems.

Long Life Usage of Wire Springs:
It depends on the quality of spring material, working conditions and design conditions that are used. 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.

For long life usage, shear stress on the basis of oscillation should be maximum 800 N/mm². 400 N/mm² of this value will be used by the stress variation on the basis of spring oscillation.

By multiplying spring coefficient (R) with compression / load rate (mm) simply, spring force value is reached.
Example: R x (A.B.C)

Nw - Newton = (0.102) Kgf



Order: **AYY**. D x L

Usage: It is compatible with injection mould systems and equipment designs.

Extra Light Load Spring Code: **AYY**

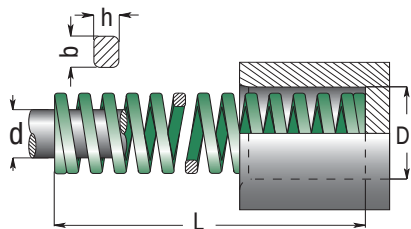
D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 30	B Min. Deflect. % 40	C Max. Deflect. % 50	D Full Deflect. Breakable
b x h		mm	Nw.	mm	mm	mm	mm
10	5.0	25	8.5	7.5	10.0	12.5	14.1
		32	6.5	9.6	12.8	16.0	18.5
		38	5.5	11.4	15.2	19.0	22.5
		44	4.8	13.2	17.6	22.0	23.2
		51	4.2	15.3	20.4	25.5	27.5
		64	3.3	19.2	25.6	32.0	34.0
		76	2.7	22.8	30.4	38.0	40.4
1.65x1.0		305	0.65	91.5	122	152	172
13	6.3	25	16	7.5	10.0	12.5	13.6
		32	12.2	9.6	12.8	16.0	17.9
		38	10.3	11.4	15.2	19.0	21.9
		44	8.7	13.2	17.6	22.0	26.4
		51	7.5	15.3	20.4	25.5	29.6
		64	5.8	19.2	25.6	32.0	37.1
		76	4.7	22.8	30.4	38.0	44.9
		89	4.1	26.7	35.6	44.5	53.2
2.3x1.3		305	1.25	91.5	122	152	186
16	8	25	20.2	7.5	10	12.5	14.0
		32	16	9.6	12.8	16.0	18.7
		38	12.3	11.4	15.2	19.0	22.0
		44	10.6	13.2	17.6	22.0	26.1
		51	8.9	15.3	20.4	25.5	30.4
		64	7	19.2	25.6	32.0	38.8
		76	5.8	22.8	30.4	38.0	46.4
		89	4.8	26.7	35.6	44.5	54.2
		102	4.1	30.6	40.8	51.0	62.4
3.05x1.5		305	1.5	91.5	122	152	190
20	10	25	29.4	7.50	10.0	12.5	13.9
		32	22.6	9.60	12.8	16.0	18.2
		38	18.6	11.4	15.2	19.0	22.0
		44	15.7	13.2	17.6	22.0	25.8
		51	13.7	15.3	20.4	25.5	30.3
		64	11.3	19.2	25.6	32.0	38.9
		76	9.80	22.8	30.4	38.0	47.0
		89	8.30	26.7	35.6	44.5	55.7
		102	7.40	30.6	40.8	51.0	64.2
		115	6.40	34.5	46.0	57.5	72.9
		127	5.90	38.1	50.8	63.5	80.7
		139	5.40	41.7	55.6	69.5	88.4
		152	4.90	45.6	60.8	76.0	96.7
4.3x1.7		305	2.50	91.5	122	153	196
25	12.5	25	53.9	7.50	10.0	12.5	12.9
		32	42.2	9.60	12.8	16.0	17.2
		38	35.8	11.4	15.2	19.0	20.7
		44	31.4	13.2	17.6	22.0	24.4
		51	27.0	15.3	20.4	25.5	28.5
		64	21.6	19.2	25.6	32.0	36.5
		76	18.1	22.8	30.4	38.0	43.9
5.4x2.2		89	15.2	26.7	35.6	44.5	51.4



Light Load Spring

ISO 10243 / Colour: Green

Code: YY



By multiplying spring coefficient (R) with compression / load rate (mm) simply, spring force value is reached.

Example: $R \times (A.B.C)$

Nw - Newton = (0.102) Kgf

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 25	B Min. Deflect. % 30	C Max. Deflect. % 40	D Full Deflect. Breakable
b x h		mm	Nw.	mm	mm	mm	mm
10	5	25	10.0	6.30	7.50	10.0	13.5
		32	8.50	8.00	9.60	12.8	17.5
		38	6.80	9.50	11.4	15.2	20.8
		44	6.00	11.0	13.2	17.6	23.9
		51	5.00	12.8	15.3	20.4	28.9
		64	4.30	16.0	19.2	25.6	36.1
		76	3.20	19.0	22.8	30.4	43.2
1.7x1.1		305	1.10	76.3	91.5	122	178
13	6.3	25	17.9	6.30	7.50	10.0	13.2
		32	16.4	8.00	9.60	12.8	18.0
		38	13.6	9.50	11.4	15.2	21.0
		44	12.1	11.0	13.2	17.6	24.0
		51	11.4	12.8	15.3	20.4	28.7
		64	9.30	16.0	19.2	25.6	35.8
		76	7.10	19.0	22.8	30.4	42.7
		89	5.40	22.3	26.7	35.6	50.4
		102	4.10	25.5	30.6	40.8	58.4
2.4x1.4		305	1.40	76.3	91.5	122	172



Order: YY. D x L

Usage: It is compatible with injection mould systems and equipment designs.

Light Load Spring

Code: YY

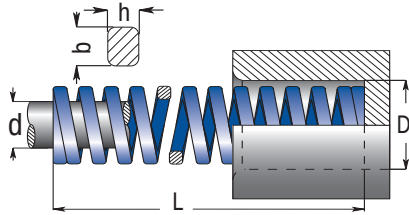
D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 25	B Min. Deflect. % 30	C Max. Deflect. % 40	D Full Deflect. Breakable
b x h	mm	Nw.	mm	mm	mm	mm	mm
32	16	76	44.0	19.0	22.8	30.4	38.6
		89	37.2	22.3	26.7	35.6	46.5
		102	32.0	25.5	30.6	40.8	53.2
		115	29.0	28.8	34.5	46.0	60.0
		127	25.0	31.8	38.1	50.8	66.7
		139	23.0	35.0	42.0	56.0	71.8
		152	21.5	38.0	45.6	60.8	78.5
		178	18.2	44.5	53.4	71.2	94.4
40	20	203	15.8	50.8	60.9	81.2	107
		254	12.5	63.5	76.2	102.0	136
		305	10.3	76.3	91.5	122.0	163
		51	92.0	12.8	15.3	20.4	25.5
		64	73.0	16.0	19.2	25.6	31.4
		76	63.0	19.0	22.8	30.4	37.8
		89	51.0	22.3	26.7	35.6	44.3
		102	43.0	25.5	30.6	40.8	50.7
50	25	115	39.6	28.8	34.5	46.0	58.1
		127	37.0	31.8	38.1	50.8	64.6
		139	32.0	35.0	42.0	56.0	70.1
		152	28.0	38.0	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	17.0	63.5	76.2	102.0	129
		305	14.8	76.3	91.5	122.0	156
63	38	64	156.0	16.0	19.2	25.6	31.0
		76	125.0	19.0	22.8	30.4	37.2
		89	109.0	22.3	26.7	35.6	43.6
		102	94.0	25.5	30.6	40.8	50.3
		115	81.0	28.8	34.5	46.0	58.1
		127	71.0	31.8	38.1	50.8	63.7
		139	66.5	35.0	42.0	56.0	69.5
		152	60.0	38.0	45.6	60.8	76.5
76	44	178	52.0	44.5	53.4	71.2	91.9
		203	44.0	50.8	60.9	81.2	105
		254	35.0	63.5	76.2	102	131
		305	28.5	76.3	91.5	122	155
		76	189.0	19.0	22.8	30.4	36.5
		89	158.0	22.3	26.7	35.6	43.4
		102	131.0	25.5	30.6	40.8	49.7
		115	116.0	28.8	34.5	46.0	55.6
89	51	127	103.0	31.8	38.1	50.8	62.7
		152	84.3	38.0	45.6	60.8	77.1
		178	71.5	44.5	53.4	71.2	92.2
		203	61.7	50.8	60.9	81.2	103
		254	47.0	63.5	76.2	102	130
		305	38.2	76.3	91.5	122	157
		38	94.0	9.5	11.4	15.2	18.3
		44	79.5	11.0	13.2	17.6	21.5
102	59	51	67.0	12.8	15.3	20.4	25.5
		64	53.0	16.0	19.2	25.6	31.9



Medium Load Spring

ISO 10243 / Colour: Blue

Code: MY



By multiplying spring coefficient (R) with compression / load rate (mm) simply, spring force value is reached.
Example: $R \times (A.B.C)$

Nw - Newton = (0.102) Kgf

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 25	B Min. Deflect. % 30	C Max. Deflect. % 37.5	D Full Deflect. % 40
b x h		mm	Nw.	mm	mm	mm	mm
10	5	25	16.0	6.30	7.50	9.40	10.2
		32	13.0	8.00	9.60	12.0	14.2
		38	11.9	9.50	11.4	14.3	16.8
		44	10.3	11.0	13.2	16.5	19.4
		51	8.90	12.8	15.3	19.1	23.4
		64	7.50	16.0	19.2	24.0	28.2
		76	5.30	19.0	22.8	28.5	34.2
1.9X1.3		305	1.60	76.3	91.5	114	134
13	6.3	25	30.0	6.30	7.50	9.40	11.9
		32	24.8	8.00	9.60	12.0	16.2
		38	21.4	9.50	11.4	14.3	18.7
		44	18.5	11.0	13.2	16.5	21.3
		51	15.5	12.8	15.3	19.1	25.6
		64	12.1	16.0	19.2	24.0	32.4
		76	10.2	19.0	22.8	28.5	39
		89	8.40	22.3	26.7	33.4	45.9
2.5X1.5		305	2.10	76.3	91.5	114	153
16	8	25	49.4	6.30	7.50	9.40	10.5
		32	37.1	8.00	9.60	12.0	13.2
		38	33.9	9.50	11.4	14.3	17.2
		44	30.0	11.0	13.2	16.5	19.4
		51	26.4	12.8	15.3	19.1	24.2
		64	20.5	16.0	19.2	24.0	29.2
3.2x2.0		76	17.8	19.0	22.8	28.5	36.3

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 25	B Min. Deflect. % 30	C Max. Deflect. % 37.5	D Full Deflect. % 37.5
b x h		mm	Nw.	mm	mm	mm	mm
16	8	89	15.2	22.3	26.7	33.4	41.7
		102	13.5	25.5	30.6	38.3	48.9
		115	11.8	28.8	34.5	43.1	53.1
3.2x2.0		305	4.8	76.3	91.5	114	142
20	10	25	98.0	6.30	7.50	9.40	10.5
		32	72.6	8.00	9.60	12.0	13.9
		38	56.0	9.50	11.4	14.3	16.6
		44	47.5	11.0	13.2	16.5	18.8
		51	41.7	12.8	15.3	19.1	23.1
		64	32.3	16.0	19.2	24.0	27.5
		76	25.1	19.0	22.8	28.5	33.8
		89	22.0	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	35.0	42.0	52.5	62.1
4.1x2.4		305	6.1	76.3	91.5	114	143
25	12.5	25	147	6.30	7.50	9.4	10.2
		32	118	8.00	9.60	12.0	13.7
		38	93.0	9.50	11.4	14.3	15.7
		44	80.8	11.0	13.2	16.5	18.2
		51	68.6	12.8	15.3	19.1	21.7
		64	53.0	16.0	19.2	24.0	26.0
		76	43.2	19.0	22.8	28.5	32.3
		89	38.2	22.3	26.7	33.4	38.0
		102	33.0	25.5	30.6	38.3	43.0
		115	28.0	28.8	34.5	43.1	48.6
		127	25.9	31.8	38.1	47.6	53.7
		139	23.2	35.0	42.0	52.5	59.4
		152	20.8	38.0	45.6	57.0	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	135
32	16	38	185	9.50	11.4	14.3	16.3
		44	158	11.0	13.2	16.5	18.9
		51	134	12.8	15.3	19.1	23.1
		64	99.0	16.0	19.2	24.0	28.5
		76	80.5	19.0	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	48.0
		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

Medium Load Spring

Code: MY

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 25	B Min. Deflect. % 30	C Max. Deflect. % 37.5	D Full Deflect. <i>Breakable</i>
b x h		mm	Nw.	mm	mm	mm	mm
32	16	139	42.3	35.0	42.0	52.5	65.3
		152	37.8	38.0	45.6	57.0	73.0
		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	121
6.8x4.0		305	18.3	76.3	91.5	114	147
40	20	51	182	12.8	15.3	19.1	21.4
		64	140	16.0	19.2	24.0	26.8
		76	108	19.0	22.8	28.5	32.7
		89	90.7	22.3	26.7	33.4	39.0
		102	81.0	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	35.0	42.0	52.5	61.8
		152	51.6	38.0	45.6	57.0	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	113
8.2X4.7		305	24.6	76.3	91.5	114	138
50	25	64	209	16.0	19.2	24.0	28.2
		76	168	19.0	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	97.0	31.8	38.1	47.6	59.8
		139	87.0	35.0	42.0	52.5	65.1
		152	80.0	38.0	45.6	57.0	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	122
11x5.8		305	38.6	76.3	91.5	114	147
63	38	76	312	19.0	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	38.0	45.6	57.0	65.7
		178	114	44.5	53.4	66.8	76.5
		203	100	50.8	60.9	76.1	88.0
		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. D x L

Usage: It is compatible with injection mould / die systems and equipment designs.

Order Example:

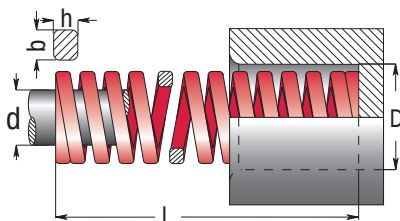
MY. 40 x 89



Heavy Load Spring

ISO 10243 / Colour: Red

Code: KY



By multiplying spring coefficient (R) with compression / load rate (mm) simply, spring force value is reached.

Example: $R \times (A.B.C)$

Nw - Newton = (0.102) Kgf

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 20	B Min. Deflect. % 25	C Max. Deflect. % 30	D Full Deflect. Breakable
b x h		mm	Nw.	mm	mm	mm	mm
10	5	25	22.1	5.00	6.30	7.50	9.20
		32	17.5	6.40	8.00	9.60	12.1
		38	17.1	7.60	9.50	11.4	13.2
		44	15.0	8.80	11.0	13.2	15.1
		51	12.8	10.2	12.8	15.3	19.5
		64	10.7	12.8	16.0	19.2	21.8
		76	7.5	15.2	19.0	22.8	27.9
1.9x1.5		305	2.1	61.0	76.3	91.5	127
13	6.3	25	42.1	5.00	6.30	7.50	9.80
		32	33.2	6.40	8.0	9.60	13.6
		38	29.3	7.60	9.50	11.4	14.6
		44	24.6	8.80	11.0	13.2	18.1
		51	19.6	10.2	12.8	15.3	22.3
		64	15.0	12.8	16.0	19.2	27.3
		76	13.2	15.2	19.0	22.8	33.1
		89	11.4	17.8	22.3	26.7	38.9
		102	8.40	20.4	25.5	30.6	43.8
2.4x1.9		305	2.80	61.0	76.3	91.5	140



Order: KY. D x L

Usage: It is compatible with die systems and machine equipment designs.

Heavy Load Spring

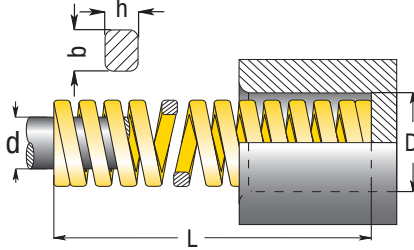
Code: KY

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 20	B Min. Deflect. % 25	C Max. Deflect. % 30	D Full Deflect. Breakable mm
b x h		mm	Nw.	mm	mm	mm	mm
16	8	25	75.7	5.00	6.30	7.50	8.40
		32	52.8	6.40	8.00	9.60	10.5
		38	48.5	7.60	9.50	11.4	13.6
		44	42.8	8.80	11.0	13.2	15.9
		51	37.1	10.2	12.8	15.3	18.9
		64	30.3	12.8	16.0	19.2	24.9
		76	25.7	15.2	19.0	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	23.0	28.8	34.5	44.0
3.1x2.5		305	7.10	61.0	76.3	91.5	104
20	10	25	216	5.00	6.30	7.50	8.30
		32	168	6.40	8.00	9.60	10.9
		38	129	7.60	9.50	11.4	12.5
		44	112	8.80	11.0	13.2	15.0
		51	94.0	10.2	12.8	15.3	17.6
		64	72.1	12.8	16.0	19.2	22.6
		76	59.7	15.2	19.0	22.8	27.5
		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	23.0	28.8	34.5	42.6
		127	34.1	25.4	31.8	38.1	45.5
		139	31.0	28.0	35.0	42.0	50.1
		152	28.2	30.4	38.0	45.6	55.8
4 x 3.3		305	15.0	61.0	76.3	91.5	114
25	12.5	25	375	5.00	6.30	7.50	8.5
		32	297	6.40	8.00	9.60	11.0
		38	219	7.60	9.50	11.4	12.6
		44	187	8.80	11.0	13.2	14.8
		51	156	10.2	12.8	15.3	17.9
		64	123	12.8	16.0	19.2	23.1
		76	99.0	15.2	19.0	22.8	26.3
		89	84.0	17.8	22.3	26.7	30.5
		102	73.0	20.4	25.5	30.6	37.3
		115	65.0	23.0	28.8	34.5	41.9
		127	57.7	25.4	31.8	38.1	46.2
		139	52.7	28.0	35.0	42.0	49.3
		152	47.8	30.4	38.0	45.6	55.7
		178	41.0	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	61.0	76.3	91.5	110
32	16	38	388	7.60	9.5	11.4	12.5
		44	324	8.80	11.0	13.2	14.9
		51	272	10.2	12.8	15.3	17.8
7.1x5.4		64	212	12.8	16.0	19.2	22.4

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 20	B Min. Deflect. % 25	C Max. Deflect. % 30	D Full Deflect. Breakable
b x h		mm	Nw.	mm	mm	mm	mm
32	16	76	172	15.2	19.0	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	23.0	28.8	34.5	41.4
		127	93.0	25.4	31.8	38.1	44.4
		139	86.0	28.0	35.0	42.0	48.5
		152	78.0	30.4	38.0	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	38.0	61.0	76.3	91.5	112
40	20	51	350	10.2	12.8	15.3	17.0
		64	269	12.8	16.0	19.2	21.9
		76	219	15.2	19.0	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	23.0	28.8	34.5	41.0
		127	128	25.4	31.8	38.1	46.5
		139	115	28.0	35.0	42.0	53.1
		152	105	30.4	38.0	45.6	56.1
		178	89.0	35.6	44.5	53.4	67.4
203	77.0	40.6	50.8	60.9	76.2		
254	61.0	50.8	63.5	76.2	96.2		
8.4x6.2		305	51.0	61.0	76.3	91.5	115
50	25	64	413	12.8	16.0	19.2	22.4
		76	339	15.2	19.0	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	23.0	28.8	34.5	42.7
		127	192	25.4	31.8	38.1	47.5
		139	168	28.0	35.0	42.0	51.8
		152	154	30.4	38.0	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	89.0	50.8	63.5	76.2	97.9		
11x7.6		305	73.0	61.0	76.3	91.5	121
63	38	76	618	15.2	19.0	22.8	24.7
		89	515	17.8	22.3	26.7	30.0
		102	438	20.4	25.5	30.6	35.1
		115	370	23.0	28.8	34.5	37.5
		127	333	25.4	31.8	38.1	45.9
		152	269	30.4	38.0	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	61.0	76.3	91.5	122



Extra Heavy Load Spring Code: SY
ISO 10243 / Colour: Yellow



By multiplying spring coefficient (R) with compression / load rate (mm) simply, spring force value is reached.
Example: R x (A.B.C)

Nw - Newton = (0.102) Kg

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 17	B Min. Deflect. % 20	C Max. Deflect. % 25	D Full Deflect. Breakable
b x h	mm	Nw.	mm	mm	mm	mm	mm
10	5	25	36.8	4.30	5.00	6.30	7.70
		32	27.9	5.40	6.40	8.00	10.6
		38	23.7	6.50	7.60	9.50	12.6
		44	19.2	7.50	8.80	11.0	13.8
		51	16.5	8.70	10.2	12.8	16.2
		64	13.2	10.9	12.8	16.0	20.4
		76	10.9	12.9	15.2	19.0	25.2
1.9X1.6		305	2.60	51.9	61.0	76.3	111
13	6.3	25	58.5	4.30	5.00	6.30	8.10
		32	43.9	5.40	6.40	8.00	9.90
		38	36.0	6.50	7.60	9.50	12.9
		44	30.3	7.50	8.80	11.0	14.1
		51	26.2	8.70	10.2	12.8	17.4
		64	21.2	10.9	12.8	16.0	21.0
		76	17.1	12.9	15.2	19.0	26.4
		89	14.5	15.1	17.8	22.3	31.5
		102	12.7	17.3	20.4	25.5	36.0
2.6X2.0		305	4.30	51.9	61.0	76.3	111
16	8	25	118	4.30	5.00	6.30	8.50
		32	89.0	5.40	6.40	8.00	11.0
		38	72.1	6.50	7.60	9.50	13.2
		44	60.9	7.50	8.80	11.0	14.7
		51	52.3	8.70	10.2	12.8	17.7
		64	41.2	10.9	12.8	16.0	21.9
		76	34.1	12.9	15.2	19.0	27.8
3.2X2.9		305	34.1	12.9	15.2	19.0	27.8

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 17	B Min. Deflect. % 20	C Max. Deflect. % 25	D Full Deflect. Breakable
b x h	mm	Nw.	mm	mm	mm	mm	mm
16	8	89	29.5	15.1	17.8	22.3	31.2
		102	25.6	17.3	20.4	25.5	37.9
		115	22.4	19.6	23.0	28.8	44.5
3.2X2.9		305	8.4	51.9	61.0	76.3	113
20	10	25	293	4.30	5.00	6.30	6.90
		32	224	5.40	6.40	8.00	9.40
		38	177	6.50	7.60	9.50	12.0
		44	149	7.50	8.80	11.0	13.5
		51	128	8.70	10.2	12.8	16.2
		64	99.0	10.9	12.8	16.0	21.2
		76	81.7	12.9	15.2	19.0	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	23.0	28.8	39.0
		127	47.5	21.6	25.4	31.8	43.0
		139	43.0	23.8	28.0	35.0	45.3
		152	39.0	25.8	30.4	38.0	50.4
		305	21.2	51.9	61.0	76.3	103
4.1X3.8		25	459	4.30	5.00	6.30	7.30
25	12.5	32	374	5.40	6.40	8.00	10.7
		38	300	6.50	7.60	9.50	12.0
		44	244	7.50	8.80	11.0	14.4
		51	208	8.70	10.2	12.8	17.4
		64	161	10.9	12.8	16.0	21.4
		76	131	12.9	15.2	19.0	26.9
		89	111	15.1	17.8	22.3	30.9
		102	96.3	17.3	20.4	25.5	36.7
		115	85.7	19.6	23.0	28.8	40.3
		127	76.3	21.6	25.4	31.8	45.1
		139	66	23.8	28.0	35.0	47.6
		152	63.5	25.8	30.4	38.0	53.5
		178	53.9	30.3	35.6	44.5	63.9
		203	47.0	34.5	40.6	50.8	70.2
5.4X4.6		305	30.9	51.9	61.0	76.3	110
32	16	38	480	6.50	7.60	9.50	11.4
		44	390	7.50	8.80	11.0	13.7
		51	320	8.70	10.2	12.8	15.6
		64	269	10.9	12.8	16.0	20.0
		76	219	12.9	15.2	19.0	24.4
		89	180	15.1	17.8	22.3	29.7
		102	155	17.3	20.4	25.5	35.1
		115	140	19.6	23.0	28.8	39.0
7.3X5.9		127	124	21.6	25.4	31.8	42.8

Extra Heavy Load Spring Code: SY

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 17	B Min. Deflect. % 20	C Max. Deflect. % 25	D Full Deflect. Breakable
b x h	mm	Nw.	mm	mm	mm	mm	mm
32	16	139	112	23.8	28.0	35.0	48.6
		152	102	25.8	30.4	38.0	52.4
		178	88.2	30.3	35.6	44.5	60.9
		203	76	34.5	40.6	50.8	69.2
		254	60.8	43.2	50.8	63.5	88.1
7.3X5.9		305	49	51.9	61.0	76.3	104
40	20	51	628	8.7	10.2	12.8	15.0
		64	487	10.9	12.8	16.0	19.5
		76	379	12.9	15.2	19.0	23.3
		89	321	15.1	17.8	22.3	26.7
		102	281	17.3	20.4	25.5	33.8
		115	245	19.6	23.0	28.8	36.2
		127	221	21.6	25.4	31.8	40.7
		139	195	23.8	28.0	35.0	44.5
		152	168	25.8	30.4	38.0	49.6
		178	150	30.3	35.6	44.5	59.9
		203	132	34.5	40.6	50.8	67.1
		254	107	43.2	50.8	63.5	86.3
8.4X7.5		305	87.8	51.9	61.0	76.3	104
50	25	64	709	10.9	12.8	16.0	19.3
		76	572	12.9	15.2	19.0	24.2
		89	475	15.1	17.8	22.3	28.0
		102	405	17.3	20.4	25.5	33.5
		115	352	19.6	23.0	28.8	38.6
		127	316	21.6	25.4	31.8	41.4
		139	289	23.8	28.0	35.0	47.3
		152	239	25.8	30.4	38.0	50.2
		178	215	30.3	35.6	44.5	61.1
		203	187	34.5	40.6	50.8	67.7
		254	153	43.2	50.8	63.5	87.0
11X9.0		305	127	51.9	61.0	76.3	104
63	38	76	952	12.9	15.2	-	15.5
		89	819	15.1	17.8	-	20.0
		102	700	17.3	20.4	25.5	30.7
		115	620	19.6	23	28.8	34.9
		127	565	21.6	25.4	31.8	38.0
		152	458	25.8	30.4	38.0	47.2
		178	384	30.3	35.6	44.5	55.8
		203	337	34.5	40.6	50.8	64.8
		254	263	43.2	50.8	63.5	86.7
11.6X14.9		305	218	51.9	61.0	76.3	106



Order: SY. D x L

Usage: It is compatible with
die systems and machine equipment designs.

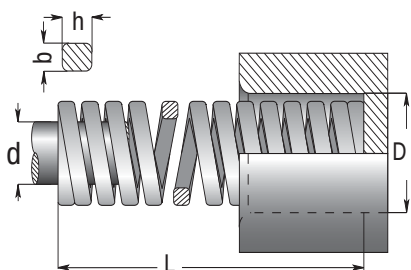
Order Example:
SY. 50 x 127



Ultra Heavy Load Spring

Code: GY

Colour: Silver



By multiplying spring coefficient (R) with compression / load rate (mm) simply, spring force value is reached.
Example: $R \times (A.B.C)$

Nw - Newton = (0.102) Kgf

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 / deflection values assists in terms of better spring life.



Order: GY. D x L

Usage: It is compatible with die systems and machine equipment designs.

Ultra Heavy Load Spring

Code: GY

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 10	B Min. Deflect. % 12	C Max. Deflect. % 15	D Full Deflect. Breakable
b x h		mm	Nw.	mm	mm	mm	mm
25	12.5	64	644	6.40	7.70	9.60	13.0
		76	556	7.60	9.10	11.4	16.0
		89	462	8.90	10.7	13.4	20.0
		102	390	10.2	12.2	15.3	23.0
		115	360	11.5	13.8	17.3	26.0
		127	326	12.7	15.2	19.1	28.0
		152	255	15.2	18.2	22.8	34.0
		178	230	17.8	21.4	26.7	39.0
		203	202	20.3	24.4	30.5	45.0
5.6x7.5		305	136	30.5	36.6	45.8	63.0
32	16	64	1077	6.40	7.70	9.60	13.0
		76	874	7.60	9.10	11.4	16.0
		89	721	8.90	11.0	13.3	20.0
		102	620	10.0	12.0	15.3	23.0
		115	560	12.0	14.0	17.2	26.0
		127	496	13.0	15.0	19	28.0
		152	408	15.0	18.0	22.8	34.0
		178	353	18.0	21.0	26.7	39.0
		203	304	20.0	24.0	30.4	45.0
		254	243	25.0	30.0	38.1	62.0
7.5X9.2		305	196	31.0	37.0	45.7	75.0

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 10	B Min. Deflect. % 12	C Max. Deflect. % 15	D Full Deflect. Breakable
b x h		mm	Nw.	mm	mm	mm	mm
40	20	89	880	8.90	10.7	13.4	20.0
		102	762	10.2	12.2	15.3	23.0
		115	679	11.5	13.8	17.3	26.0
		127	622	12.7	15.2	19.1	28.0
		152	509	22.8	18.2	22.8	36.0
		178	429	17.8	21.4	26.7	43.0
		203	374	20.3	24.4	30.5	49.0
		254	296	25.4	30.5	38.1	62.0
8.5x11		305	246	30.5	36.6	45.8	75.0
50	25	89	1410	8.90	10.7	13.4	19.0
		102	1215	10.2	12.2	15.3	22.0
		115	1076	11.5	13.8	17.3	25.0
		127	968	12.7	15.2	19.1	28.0
		152	806	15.2	18.2	22.8	34.0
		178	698	17.8	21.4	26.7	40.0
		203	612	20.3	24.4	30.5	45.0
		254	472	25.4	30.5	38.1	58.0
11.8x13.5		305	388	30.5	36.6	45.8	70.0

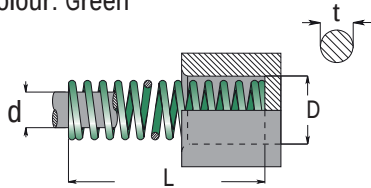


NEW



Code: TVY

Round Wire, Light Load Spring
Colour: Green



By multiplying spring coefficient (R) with compression / load rate (mm) simply, spring force value is reached.
Example: $R \times (A.B.C)$

Nw - Newton = (0.102) Kgf

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 25	B Min. Deflect. % 30	C Max. Deflect. % 40	D Full Deflect. Breakable
t		mm	Nw.	mm	mm	mm	mm
10	5	25	4.4	6.3	7.5	10.0	13.2
		32	3.4	8.0	9.6	12.8	16.5
		38	2.8	9.5	11.4	15.2	19.8
		44	2.4	11.0	13.2	17.6	23.1
		51	2.1	12.8	15.3	20.4	26.9
		64	1.6	16.0	19.2	25.6	33.3
		76	1.3	19.0	22.8	30.4	39.6
1.1		305	0.3	76.3	91.5	122.0	157
13	6.3	25	8.5	6.3	7.5	10.0	13.5
		32	6.5	8.0	9.6	12.8	16.8
		38	5.3	9.5	11.4	15.2	20.3
		44	4.4	11.0	13.2	17.6	23.9
		51	3.8	12.8	15.3	20.4	26.9
		64	2.9	16.0	19.2	25.6	33.3
		76	2.5	19.0	22.8	30.4	41.1
		89	2.1	22.3	26.7	35.6	48.3
1.5		305	0.6	76.3	91.5	122.0	163
16	8	25	17.9	6.3	7.5	10.0	14.7
		32	13.5	8.0	9.6	12.8	18.5
		38	10.5	9.5	11.4	15.2	22.4
		44	8.8	11.0	13.2	17.6	25.9
		51	7.6	12.8	15.3	20.4	30.0
		64	5.9	16.0	19.2	25.6	37.8
		76	4.8	19.0	22.8	30.4	45.2
		89	4.0	22.3	26.7	35.6	52.8
		102	3.5	25.5	30.6	40.8	60.7
2.0		305	1.1	76.3	91.5	122.0	184

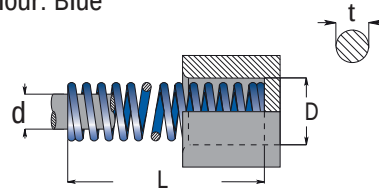


Order: TVY. D x L



Code: TBM

Round Wire, Medium Load Spring
Colour: Blue



By multiplying spring coefficient (R) with compression / load rate (mm) simply, spring force value is reached.
Example: $R \times (A.B.C)$

Nw - Newton = (0.102) Kgf

D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 25	B Min. Deflect. % 30	C Max. Deflect. % 37.5	D Full Deflect. % 40
t		mm	Nw.	mm	mm	mm	mm
10	5	25	12.3	6.3	7.5	9.4	10.4
		32	9.5	8.0	9.6	12.0	13.2
		38	7.8	9.5	11.4	14.3	16.0
		44	6.5	11.0	13.2	16.5	18.5
		51	5.6	12.8	15.3	19.1	21.1
		64	4.5	16.0	19.2	24.0	26.4
		76	3.7	19.0	22.8	28.5	31.8
1.5		305	0.9	76.3	91.5	114	129
13	6.3	25	21.7	6.3	7.5	9.4	11.2
		32	16.8	8.0	9.6	12.0	14.0
		38	13.8	9.5	11.4	14.3	17.3
		44	11.6	11.0	13.2	16.5	19.8
		51	10.0	12.8	15.3	19.1	22.9
		64	7.8	16.0	19.2	24.0	28.4
		76	6.4	19.0	22.8	28.5	34.3
1.8		305	1.5	76.3	91.5	114	139
16	8	25	31.9	6.3	7.5	9.4	10.9
		32	24.0	8.0	9.6	12.0	13.7
		38	19.4	9.5	11.4	14.3	16.5
		44	16.1	11.0	13.2	16.5	19.3
		51	13.8	12.8	15.3	19.1	22.1
		64	10.7	16.0	19.2	24.0	27.4
		76	8.8	19.0	22.8	28.5	33.0
2.2		89	7.5	22.3	26.7	33.4	38.6
		102	6.5	25.5	30.6	38.3	44.5
2.2		305	2.1	76.3	91.5	114	134

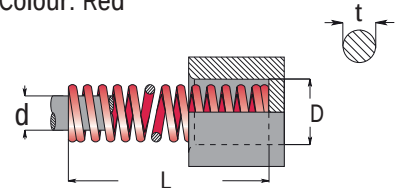


Order: TBM. D x L



Code: TRK

Round Wire, Heavy Load Spring
Colour: Red



By multiplying spring coefficient (R) with compression / load rate (mm) simply, spring force value is reached.
Example: $R \times (A.B.C)$

Nw - Newton = (0.102) Kgf

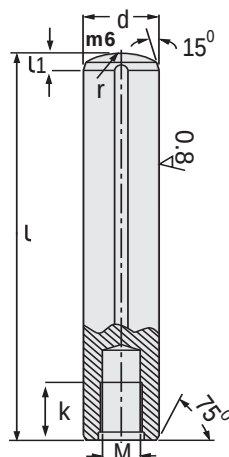
D Outer Dia.	d Rod Dia.	L Length	R Load Rate	A Long Life % 20	B Min. Deflect. % 25	C Max. Deflect. % 30	D Full Deflect. Breakable
t		mm	Nw.	mm	mm	mm	mm
10	5	25	20.7	5.0	6.3	7.5	8.6
		32	16.1	6.4	8.0	9.6	10.9
		38	13.0	7.6	9.5	11.4	13.2
		44	10.9	8.8	11.0	13.2	14.7
		51	9.6	10.2	12.8	15.3	17.8
		64	7.7	12.8	16.0	19.2	22.9
		76	6.3	15.2	19.0	22.8	26.9
1.6		305	1.5	61.0	76.3	91.5	110
13	6.3	25	37.5	5.0	6.3	7.5	8.9
		32	28.9	6.4	8.0	9.6	11.2
		38	23.5	7.6	9.5	11.4	13.7
		44	19.6	8.8	11.0	13.2	15.7
		51	17.3	10.2	12.8	15.3	18.8
		64	13.5	12.8	16.0	19.2	23.6
		76	11.2	15.2	19.0	22.8	28.4
2.2		305	2.7	61.0	76.3	91.5	114
16	8	25	81.6	5.0	6.3	7.5	9.1
		32	61.3	6.4	8.0	9.6	11.4
		38	49.9	7.6	9.5	11.4	14.2
		44	40.8	8.8	11.0	13.2	16.3
		51	35.6	10.2	12.8	15.3	18.8
		64	27.8	12.8	16.0	19.2	23.9
		76	22.8	15.2	19.0	22.8	29.0
2.8		89	19.6	17.8	22.3	26.7	34.3
		102	17.0	20.4	25.5	30.6	39.4
		305	5.4	61.0	76.3	91.5	119



Order: TRK. D x L



Tolerance
h7



Tolerance
m6



Dowel Pin with Internal Thread with Air Channel - DIN 7979 / ISO 8735

Code: **CTPh7**

d	l	l1	k	M	r
Ø 6 mm	20				
	24				
	30				
	36				
	40				
	45				
	50	2.1 mm	6 mm	M4	6
	55				
	60				
	70				
	80				
	90				
Ø 8 mm	100				
	20				
	24				
	30				
	36				
	40				
	45				
	50	2.6 mm	8 mm	M5	8
	55				
	60				
	70				
	80				
Ø 10 mm	90				
	100				
	120				
	20				
	24				
	30				
	36				
	40				
	45				
	50	3 mm	10 mm	M6	10
	55				
	60				

Material: 1.7131 (16MnCr 5)
Hardness: 60 - 62 HRC (Depth 0.8)



Order: CTPh7. d x l

d	l	l1	k	M	r
Ø 12 mm	20				
	24				
	30				
	36				
	40				
	45				
	50	3.8 mm	10 mm	M6	12
	55				
	60				
	70				
	80				
	90				
Ø 14 mm	100				
	120				
	30				
	36				
	40				
	45				
	50				
	60	4 mm	12 mm	M8	14
	70				
	80				
	90				
	100				
Ø 16 mm	120				
	140				
	30				
	36				
	40				
	45				
	50				
	60	4.7 mm	12 mm	M8	16
	70				
	80				
	90				
	100				
Ø 20 mm	120				
	150				
	30				
	36				
	40				
	50				
	60	6 mm	16 mm	M10	20
	70				
	80				
	90				
	100				
	120				

Order Example:
CTPh7. 8 x 40

Dowel Pin with Internal Thread with Air Channel - DIN 7979 / ISO 8735

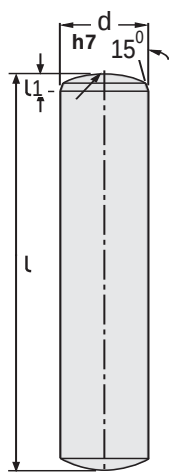
Code: **CTPm6**

d	l	l1	k	M	r
Ø 5 mm	20				
	24				
	30				
	36				
	40				
	45				
	50	1.7 mm	6 mm	M3	5
	55				
	60				
	70				
	80				
	90				
Ø 6 mm	100				
	20				
	24				
	30				
	36				
	40				
	45				
	50	2.1 mm	6 mm	M4	6
	55				
	60				
	70				
	80				
Ø 8 mm	90				
	100				
	20				
	24				
	30				
	36				
	40				
	45				
	50	2.6 mm	8 mm	M5	8
	55				
	60				
	70				
Ø 10 mm	80				
	90				
	100				
	120				
	20				
	24				
	30				
	36				
	40				
	45				
	50	3 mm	10 mm	M6	10
	55				
	60				

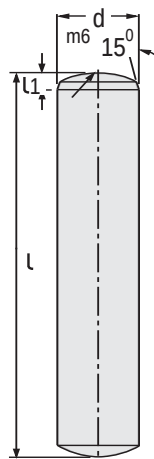
d	l	l1	k	M	r
Ø 12 mm	20				
	24				
	30				
	36				
	40				
	45				
	50	3.8 mm	10 mm	M6	12
	55				
	60				
	70				
	80				
	90				
Ø 14 mm	100				
	120				
	30				
	36				
	40				
	45				
	50				
	60	4 mm	12 mm	M8	14
	70				
	80				
	90				
	100				
Ø 16 mm	120				
	140				
	30				
	36				
	40				
	45				
	50				
	60	4.7 mm	12 mm	M8	16
	70				
	80				
	90				
	100				
Ø 20 mm	120				
	150				
	30				
	36				
	40				
	50				
	60	6 mm	16 mm	M10	20
	70				
	80				
	90				
	100				
	120				



Order: CTPm6. d x l



Tolerance
h7



Tolerance
m6



Dowel Pin

Straight - DIN 6325 / ISO 9734

Code: **DTPPh7**

d	l	l1	r	d	l	l1	r	d	l	l1	r
Ø 5 mm	10	1.2 mm	5	Ø 8 mm	40	2.0 mm	8	Ø 14 mm	30	3.5 mm	14
	16				45				36		
	20				50				40		
	24				55				45		
	30				60				50		
	36				70				60		
	40				80				70		
	45				90				80		
	50				100				90		
	55				120				100		
Ø 6 mm	10	1.5 mm	6	Ø 10 mm	20	2.5 mm	10	Ø 16 mm	30	4.0 mm	16
	16				24				36		
	20				30				40		
	24				36				45		
	30				40				50		
	36				45				55		
	40				50				60		
	45				60				70		
	50				70				80		
	55				80				90		
Ø 8 mm	10	2.0 mm	8	Ø 12 mm	20	3.0 mm	12	Ø 20 mm	30	5.0 mm	20
	16				24				36		
	20				30				40		
	24				36				45		
	30				40				50		
	36				45				55		
	40				50				60		
	45				55				70		
	50				60				80		
	55				70				90		



Order: DTPPh7. d x l

Material: 1.7131 (16MnCr 5)
Hardness: 60 - 62 HRC (Depth 0.8)

Dowel Pin

Straight - DIN 6325 / ISO 9734

Code: **DTPm6**

d	l	l1	r	d	l	l1	r	d	l	l1	r
Ø 3 mm	10	0.8 mm	3	Ø 8 mm	40	2.0 mm	8	Ø 14 mm	30	3.5 mm	14
	16				45				36		
	20				50				40		
	24				55				45		
	30				60				50		
	36				70				60		
	40				80				70		
	45				90				80		
	50				100				90		
	55				120				100		
Ø 4 mm	10	1.0 mm	4	Ø 10 mm	20	2.5 mm	10	Ø 16 mm	30	4.0 mm	16
	16				24				36		
	20				30				40		
	24				36				45		
	30				40				50		
	36				45				55		
	40				50				60		
	45				60				70		
	50				70				80		
	55				80				90		
Ø 5 mm	10	1.2 mm	5	Ø 12 mm	20	3.0 mm	12	Ø 20 mm	30	5.0 mm	20
	16				24				36		
	20				30				40		
	24				36				45		
	30				40				50		
	36				45				55		
	40				50				60		
	45				55				70		
	50				60				80		
	55				70				90		
Ø 6 mm	10	1.5 mm	6	Ø 14 mm	40	2.0 mm	14	Ø 20 mm	30	5.0 mm	20
	16				45				36		
	20				50				40		
	24				55				45		
	30				60				50		
	36				70				55		
	40				80				60		
	45				90				70		
	50				100				80		
	55				120				90		

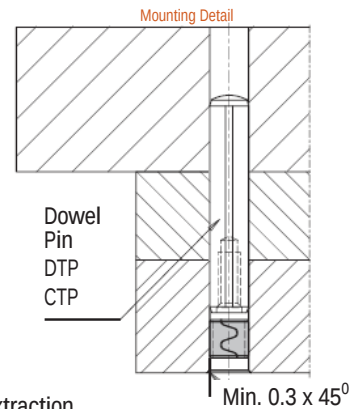
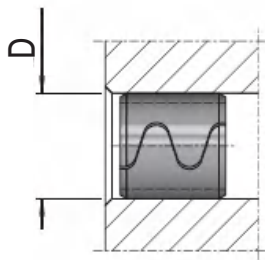


Order: DTPm6. d x l

Order Example:

DTPm6. 10 x 30

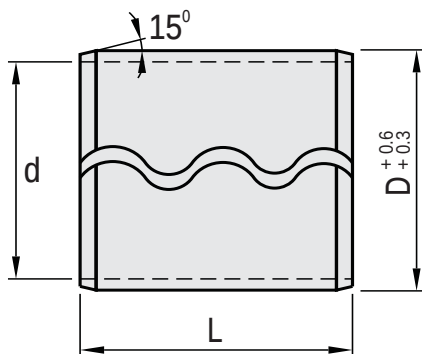
NEW



Dowel Pin Retaining Sleeve

Code: **TPS**

Used for positioning of dowel pins in hole at the desired level or as a dowel pin stopper preventing extraction.



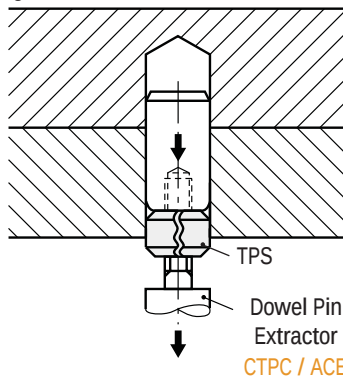
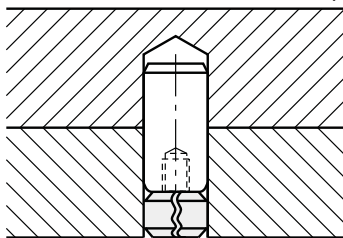
Parts are centered with dowel pins in dies & moulds. After inserting / removing processes, these dowel pins creates gaps and they can be easily inserted / removed. This situation may cause the pin be removed and fall into the die / mould and damage to die / mould parts. In order to avoid such situations, after inserting dowel pin in mounting place, the dowel pin retaining sleeve is attached. It provides safety against falling of pin. It is used as ring in the hole for dowel pins.

Pull-out Strength: Pull-out strength is the average value of 10 time repeated pull-outs from a H7 hole. Pull-out strength will vary depending on factors and these factors include "D" measurement tolerance of retaining sleeve, surface roughness and press-fit tolerances.

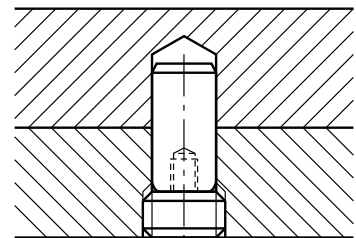
Order Code	Ø D	Ø d	L	Pull-out Strength
	mm	mm	mm	Newton (Kgf)
TPS06	6	4.4	6	392 N (40 kgf)
TPS08	8	5.6	8	1373 N (140 kgf)
TPS10	10	6.4	12	2354 N (240 kgf)
TPS12	12	8.0		1765 N (180 kgf)
TPS16	16	11.0		1422 N (145 kgf)

Used for positioning of dowel pins in hole at the desired level or as a dowel pin stopper preventing extraction.

When "dowel pin retaining sleeve" is used:



When "hex-socket set screw" is used:



The advantage of "TPS" product when compared with usage of hex-socket set screw:

- * Tapping is not necessary.
- * It is possible to extract the dowel pins directly when required.



Bush for Dowel Pin, with Bonding

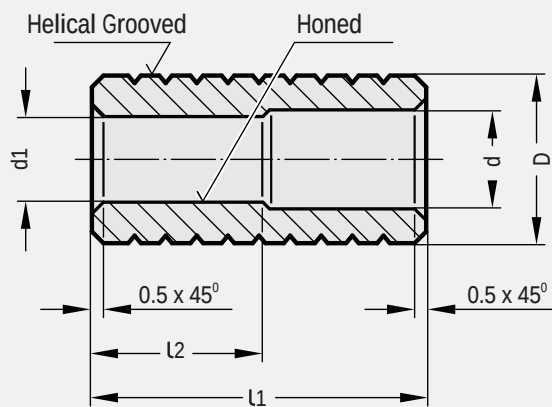
Code: YTB

* YTB products are suitable for "m6 tolerance dowel pins".

Hardened liner bushes solves friction problems in soft / unhardened parts which are frequently removed and changed. They are aligned in a mutual axis with close pin fixture and bonded (with Superglue) to cutting gaps roughly opened and inserted. Liner bushes for dowel pins in hardened parts helps eliminating failure caused by heat-treatment.

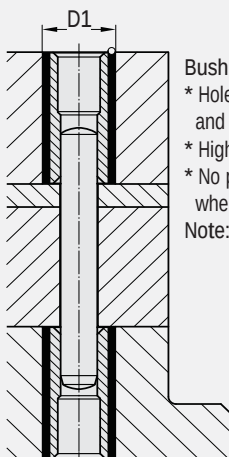
Retainer holes for liner dowel pin bushes should be 2 mm larger in diameter than the bush outer diameter, a rough finish is desired.

Following exact positioning, a superglue is used for bonding and bush mounting is completed.



Code: YTB

d1	d	D	D1	l1	l2
6	7	10	12	25	12
8	9	12	14	30	16
10	11	16	18	36	20



Bush for Dowel Pin, with Bonding:

* Hole tolerance "D" gives extraction fit of bush place and provides best bush retaining.

* High precision and hardness.

* No problem is encountered for finding positions when replacing bushes.

Note: We do not recommend press-fit for bushes.



Order: YTB. d1 x l1

Material: 1.7131 (16 MnCr 5)
Hardness: 54 - 58 HRC



Bush for Dowel Pin, with Push Fit

Code: CTB

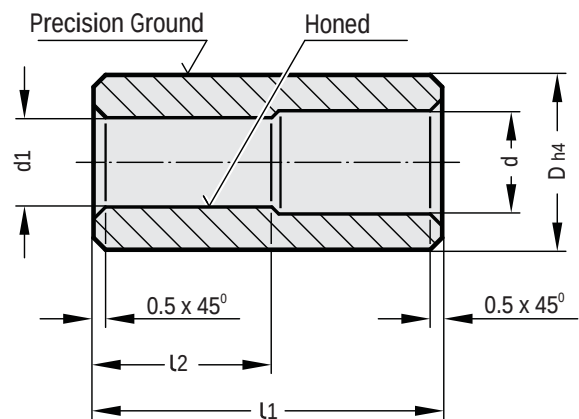
* CTB products are suitable for "m6 tolerance dowel pins".

Bush position is given by push fit hole tolerance H6, thus high precision is provided.

* High precision and hardness.

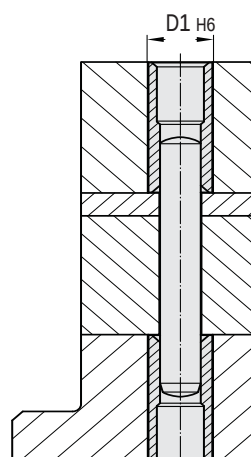
* No problem is encountered for finding positions when replacing bushes.

Note: We do not recommend press-fit for bushes.



Code: CTB

d1	d	D	D1 H6	l1	l2
6	7	10	10	25	12
8	9	12	12	30	16
10	11	16	16	36	20



Order: CTB. d1 x l1

Material: 1.7131 (16 MnCr 5)
Hardness: 54 - 58 HRC

NEW

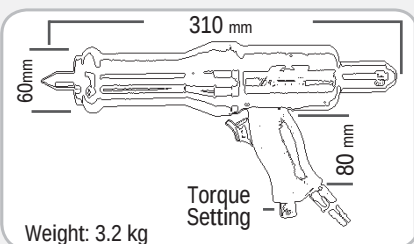


Order Code:
ACE016

It is designed to solve problems encountered during pulling and extracting dowel pins.

Dowel Pin Extractor - Puller Kit

- * Dowel pins may trip and not be removed. Since the hook system is inserted type, it is not necessary to replace hooks at every pin extracting process.
- * Hammering is not necessary. You only need to pull the trigger. It extracts inner threaded dowel pin easily and fastly.
- * The extraction process is less dangerous, more precise, faster and more reliable in comparison to manual product in terms of occupational safety. It is used in machine assembly process.
- * Its size is reduced in half in comparison to manual extraction.
- * It can be use to extract dowel pins even under press machine.
- * Thanks to torque setting, it prevents excessive fitting of dowel pins, it provides rigid assembly.



Weight: 3.2 kg

Ergonomical and small design



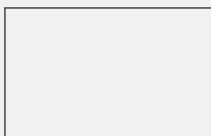
Special plastic bag packaging

Pneumatic: Please use pneumatic system with compressor and lubricating system in dry/non-humid air.

Fitting: Process is operated with 6 bar air power and with the forward-backward motion of the external body. When the fitting end is located on the dowel pin and the trigger is pulled, the mechanism moving forward-back helps the pin be fitted or extracted.

Extraction: Process is operated with 6 bar air and with the motion of forward-back of the outer case.

A screw (threaded bolt) is inserted in the fitted pin. The extraction end is inserted in the screw over the dowel pin and the trigger is pulled and when it is pulled back, the mechanism moving forward-back helps the pin extracted. This process is pretty practical.

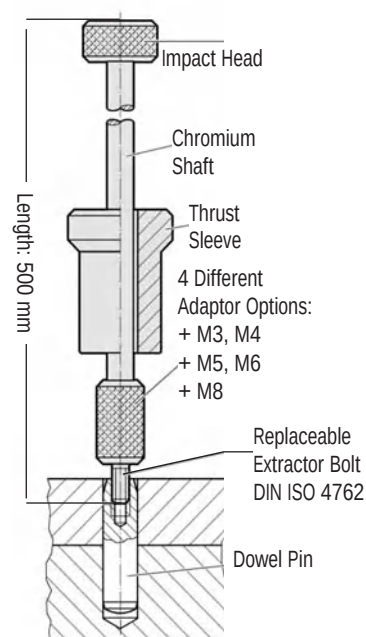


Dowel Pin Extractor - Puller Kit

Manual Type

Order Code: CTPC

DIN EN ISO 8735 - ISO 8735



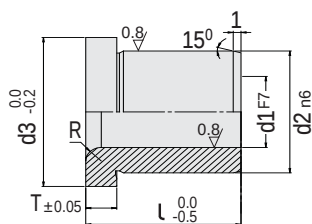
This product is designed to dismantle threaded dowel pins quickly and safely. In addition, it can be used on other threaded machine components. This extractor tool is supplied in plastic bag with adaptors between M3-M8.





Code: **G163**

Drill Bush - Headed DIN 172, Form A



Material: 1.0718
Hardness: 60 HRC

d1 mm	l mm	d2 mm	d3 mm	T mm	R mm
0.5	6	3	6	2	1
1.0	6 9	3	6	2	1
1.1	6 9				
1.2	6 9				
1.3	6 9				
1.4	6 9				
1.5	6 9	4	7	2	1
1.6	6 9				
1.7	6 9				
1.8	6 9				
1.9	6 9	5	8	2	1
2.0	6 9				

d1 mm	l mm	d2 mm	d3 mm	T mm	R mm
2.1	6 9				
2.2	6 9				
2.3	6 9				
2.4	6 9	5	8	2	1
2.5	6 9				
2.6	6 9				
2.7	8 12				
2.8	8 12				
2.9	8 12				
3.0	8 12 16	6	9	2.5	1
3.1	8 12 16				
3.2	8 12 16				
3.3	8 12 16				
3.4	8 12 16				
3.5	8 12 16				
3.6	8 12				
3.7	8 12	7	10	2.5	1
3.8	8 12				
3.9	8 12				
4.0	8 12 16				
4.1	8 12				
4.2	8 12	8	11	2.5	1
4.3	8 12				

d1 mm	l mm	d2 mm	d3 mm	T mm	R mm
4.4	8 12				
4.5	8 12				
4.6	8 12				
4.7	8 12	8	11	2.5	1
4.8	8 12				
5.0	8 12 16				
5.1	10 16				
5.2	10 16				
5.3	10 16				
5.4	10 16				
5.5	10 16 20	10	13	3	1.5
5.6	10 16				
5.7	10 16				
5.8	10 16				
5.9	10 16				
6.0	10 16 20				
6.1	10 16 20				
6.2	10 16 20				
6.3	10 16 20				
6.4	10 16 20	12	15	3	1.5
6.5	10 16 20				
7.0	10 16 20				
7.5	10 16 20				

DIN 172, Form A

d1 mm	l mm	d2 mm	d3 mm	T mm	R mm
8.0	10 16 20	12	15	3	1.5
8.5	12 20 25				
9.0	12 20 25	15	18	3	2
9.5	12 20 25				
10.0	12 20 25				
10.2	12 20 25				
10.5	12 20 25	18	22	4	2
11.0	12 20 25				
12.0	12 20 25				
13.0	16 28 36				
14.0	16 28 36	22	26	4	2
15.0	16 28 36				
16.0	16 28 36				
17.0	16 28 36	26	30	4	2
18.0	16 28 36				
19.0	20 36 45				
20.0	20 36 45	30	34	5	3
22.0	20 36 45				
25.0	20 36 45	35	39	5	3

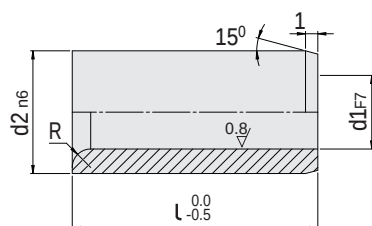


Order:
G163. d1 x l



Code: **G164**

Drill Bush - Plain DIN 179, Form A



Material: 1.0718 Hardness: 60 HRC

d1 mm	l mm	d2 mm	R mm
0.5	6	3	1
0.6			
0.7			
0.8			
0.9			
1.0	6 9	3	1
1.1	6 9		
1.2	6 9	4	1
1.3	6 9		
1.4	6 9		
1.5	6 9		
1.6	6 9		
1.7	6 9		
1.8	6 9		
1.9	6 9		
2.0	6 9		

d1 mm	l mm	d2 mm	R mm
2.1	6 9	5	1
2.2	6 9		
2.3	6 9		
2.4	6 9		
2.5	6 9		
2.6	6 9		
2.7	8 12	6	1
2.8	8 12		
2.9	8 12		
3.0	8 12 16		
3.1	8 12 16		
3.2	8 12 16		
3.3	8 12 16	7	1
3.4	8 12 16		
3.5	8 12 16		
3.6	8 12		
3.7	8 12		
3.8	8 12		
3.9	8 12	8	1
4.0	8 12 16		
4.1	8 12		
4.2	8 12		
4.3	8 12		

d1 mm	l mm	d2 mm	R mm
4.4	8 12	8	1
4.5	8 12		
4.6	8 12		
4.7	8 12		
4.8	8 12		
5.0	8 12 16		
5.1	10 16	10	1.5
5.2	10 16		
5.3	10 16		
5.4	10 16		
5.5	10 16 20		
5.6	10 16		
5.7	10 16		
5.8	10 16		
5.9	10 16		
6.0	10 16 20		
6.1	10 16 20	12	1.5
6.2	10 16 20		
6.3	10 16 20		
6.4	10 16 20		
6.5	10 16 20		
7.0	10 16 20		
7.5	10 16 20		

DIN 179, Form A

d1 mm	l mm	d2 mm	R mm
8.0	10 16 20	12	1.5
8.5	12 20 25		
9.0	12 20 25		
9.5	12 20 25		
10.0	12 20 25		
10.2	12 20 25	15	2
10.5	12 20 25		
11.0	12 20 25		
12.0	12 20 25		
13.0	16 28 36	18	2
14.0	16 28 36		
15.0	16 28 36		
16.0	16 28 36		
17.0	16 28 36		
18.0	16 28 36	22	2
19.0	20 36 45		
20.0	20 36 45		
22.0	20 36 45		
25.0	20 36 45		

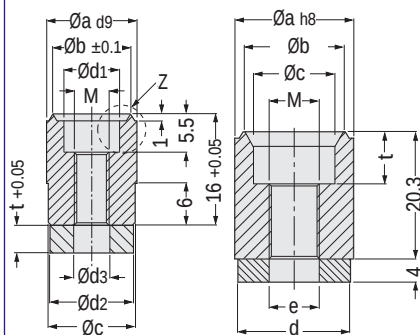


Order:
G164. d1 x l



Locating Punch Code: KZ2 - KZG

Reference: FCA / STQ 40007



Code: KZ2

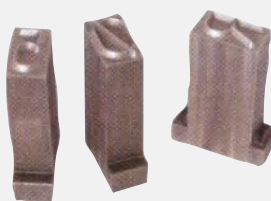
Code: KZG

Order: KZ2 x a

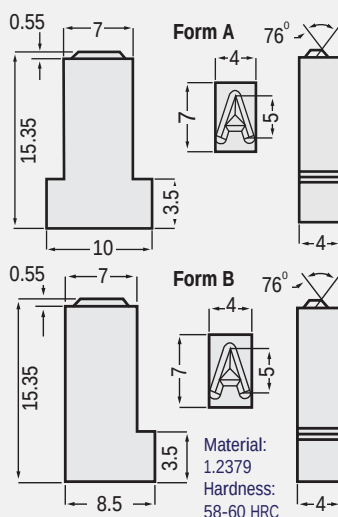
a	b	d1	M	c	d2	d3	t
10	8	6	M4	9.9	9.5	4.2	4
13	11.2	8	M5	12.5	12	5.2	4

Order: KZG x a

a	b	c	M	t	d	e
19	16	13	M8	8	18	8
25	18	16	M10	12	24	9



Marking Stamp Code: MZG



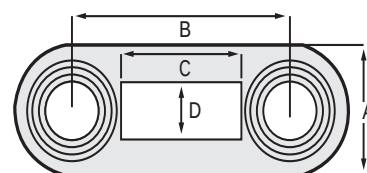
Marking Stamps: Symbol and dimensions can be machined as per request.



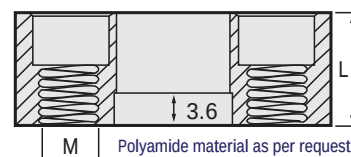
Order: MZG. Form x Symbol



Stamp Retainer Code: MTU



Material: CK45 Hardness: without heat-treatment

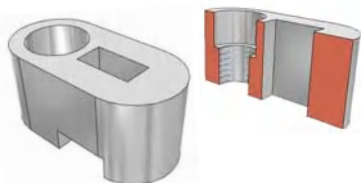


Polyamide material as per request

A	B	L	C	D	Pcs.	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	

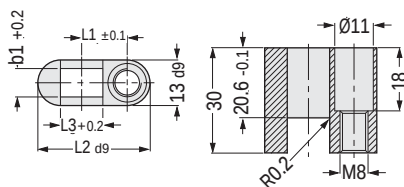


Order: MTU. A x B



Stamp Retainer Code: MTG

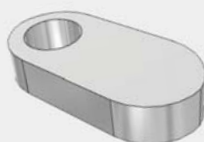
Reference: FORD / WDX20-66



L1	L2	L3	b1
9	24	4.1	8.1
11	28	8.1	
13	32	12.1	
9	24	4.1	6.1
11	28	8.1	
13	32	12.1	



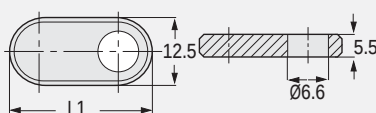
Order: MTG. b1 x L1



Code: MEG

Backing Plate for Stamp Retainer

Reference: FORD



L1	Figure Size
23.5	3.5
27.5	3.5
31.5	3.5
23.5	2.0
27.5	2.0
31.5	2.0

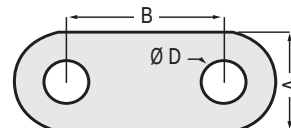


Order: MEG. L1 x Figure Size

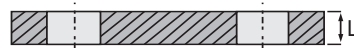


Code: MEU

Backing Plate for Stamp Retainer



Material: 1.2080 Hardness: 54 - 56 HRC



A	B	L	D
15	28	5	6.7
	32		
	36		
	44		
	52		



Order: MEU. A x B



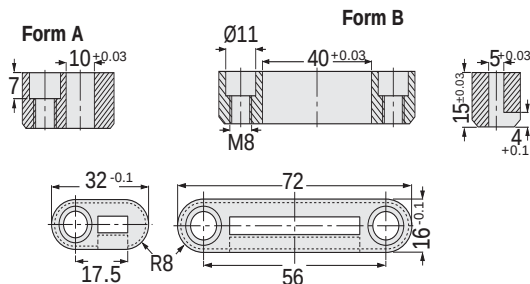
As per request:
Polyamide material

Stamp Retainer

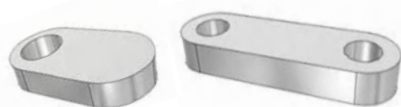
Code: ZTF

Reference: FORD / WDX20-70

Material: 1.2379 Hardness: 60 - 62 HRC



Order: ZTF. Form

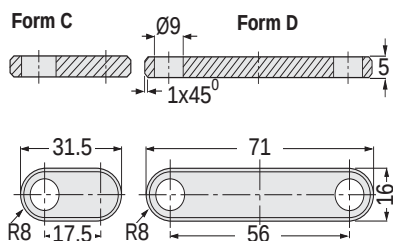


Backing Plate for Stamp Retainer

Code: MD2

Reference: FORD / WDX20-70

Material: 1.0503 Hardness: 60 - 62 HRC



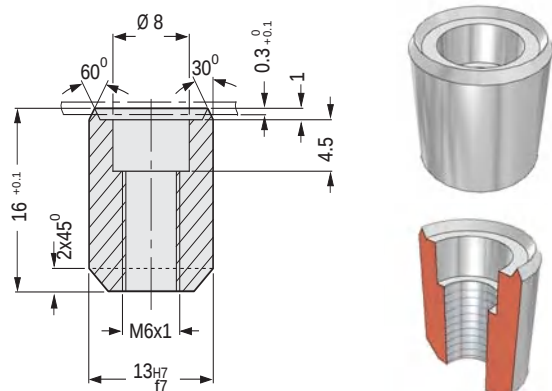
Order: MD2. Form

Locating Punch

Order Code: KZF

Reference: FORD / WDX20-70-0101

Material: 1.2080 Hardness: 60 - 64 HRC

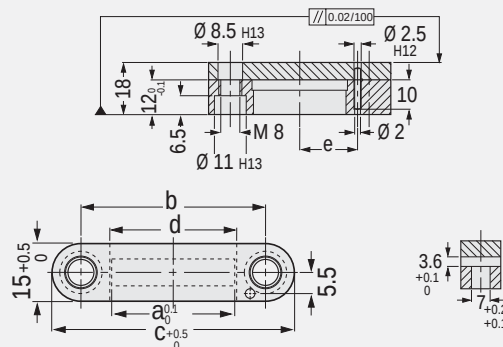


As per request:
Polyamide material

Stamp Retainer

Code: ZTP

Reference: PSA E24.64.100.G



Punch pcs.	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



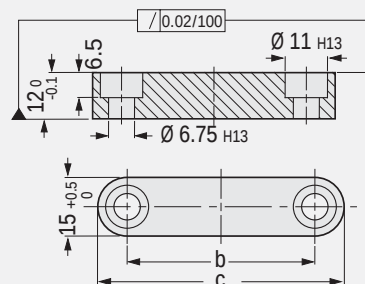
Order: ZTP. c



Backing Plate

Code: ZDP

Reference: PSA E24.64.100.G



Punch pcs.	b	c
4	32	47
6	40	56
8	48	63
10	56	71



Order: ZDP. c

NEW



Embossing Date Stamp

for sheet metal

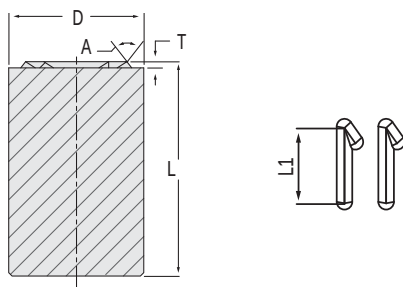
Code: GCM09

It is suitable to be used in all die systems. The product specifies 12 months and 1 year.

* Please provide the desired "year" for your GCM09 orders.

The insert (inner hub) of GCM09 is a replaceable type. When you need to change the year of insert (inner hub), you can order it separately.

Material: 1.2379 Hardness: 58 - 60 HRC



Order Code	ØD	L mm	T mm	L1 mm	A mm
GCM09.08S	8	12.35	0.35	1.20	76°
GCM09.08L		19.05		1.20	
GCM09.10S	10	12.35	0.35	1.60	
GCM09.10L		19.05		1.60	
GCM09.12S	12	12.45	0.45	2.00	
GCM09.12L		19.05		2.00	
GCM09.16S	16	12.55	0.55	2.50	
GCM09.16L		19.05		2.50	
GCM09.20SA	20	12.55		3.00	
GCM09.20SB		12.55		3.50	
GCM09.20LA		19.05		3.00	
GCM09.20LB	20	19.05		3.50	
GCM09.24	24	24.00	0.65	4.00	
GCM09.32A	32	32.00		5.00	
GCM09.32B		32.00		6.00	

* Please provide the desired "year" for your GCM09 orders.

Order Example:

GCM09.10S = "2020"



Die Spare Parts

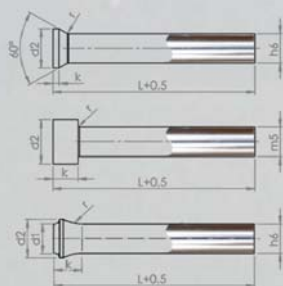
Precision machining / Custom-made

Die systems, sheet metal cutting / spinning - bending form dies, complicate dies and progressive dies. In addition, we produce your custom-made parts belonging to other die systems within technical drawing details, as precision heat treated and in desired materials with complete ground operations. Centering pins, compression and clutch plates, balancing blocks, backing and shim plates, special wedges, matrix holders, special guide shaft coupling nut, separator - holder and adjustor parts, conical centering components, special washers and inserts etc.





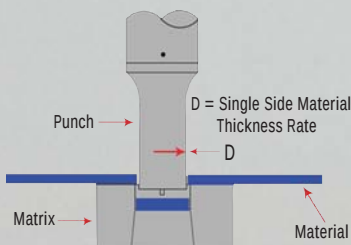
- Conical Head Punch
DIN 9861 / ISO 6752
- Cylinder Head Punch ISO 8020
- Bottle-neck Punch



Standard punches in
DIN / ISO norms
available in our stocks
as 1.3343 (M2) material.

Heat-treatment: 62-64 HRC
Head Hardness: 52 $\pm$ 3 HRC

High Performance Special Material Selection



According to applications
to be performed out of
standards, we obtain
better results by
providing special
solutions with the
contribution of our
engineers.

1.3343 - M2

It is suitable to apply as coated in soft sheet metals.
Surface wear resistance is high in hard sheet metals.
Suitable for sheet metal thickness less than 5 mm.
This material should not be preferred in operation
involving heavy impacts.

1.3243 - M35

It is suitable to use in stainless, siliceous and spring
steel and etc., bolt dies, deep drilling and forming.

ASP30 / PS - Powder Metal

Surface wear resistance is in maximum level.
It is highly compatible with PVD coating.
Correct material choice is important because there are
different processes in powder metal products.

Precision Grinding / Measurement Completeness

You can have special punch, matrix, retainer and die
accessories produced by using our experience and
machine line. Please ask offer for custom-made part
with the technical drawing.

Coating Technologies



As the production methods develop, the
coating technology improves each passing
day in order to obtain the highest
performance from the available materials.
You can try our coating types in order to get
more efficiency from your punches.

Cungang "XKH" Coating (TiCN)

It can be used in punches which high hardness is
desired. It is grey-blue. It provides high resistance to
cracks in punches. It is suitable to use in high speeds.
It provides longer punch life. It is the most efficient
standard coating type of Cungang punch production

Cungang "XKP" Coating (AlTiN)

It is ideal for dies and punches working in high
temperatures. It is black-purple. It requires less
dressing and maintenance thanks to its high speed
working and heat conductivity.
It provides longer punch life.

Cungang "XKT" Coating (TiN - PVD TiN)

It is a general purpose coating type. It is golden yellow.
It prevents heat occurring as a result of friction of two
metal, it increases lubricity, it reduces problems such as
adhesion, winding. Since its heat conductivity is low, it
increases punch life by preventing heat transfer.

Note: There are many other coating types than
traditional coating types. In case that you give
information about field of application and its function,
our engineers will help you for choosing coating.



Screw Form Punch & Die Button Unit

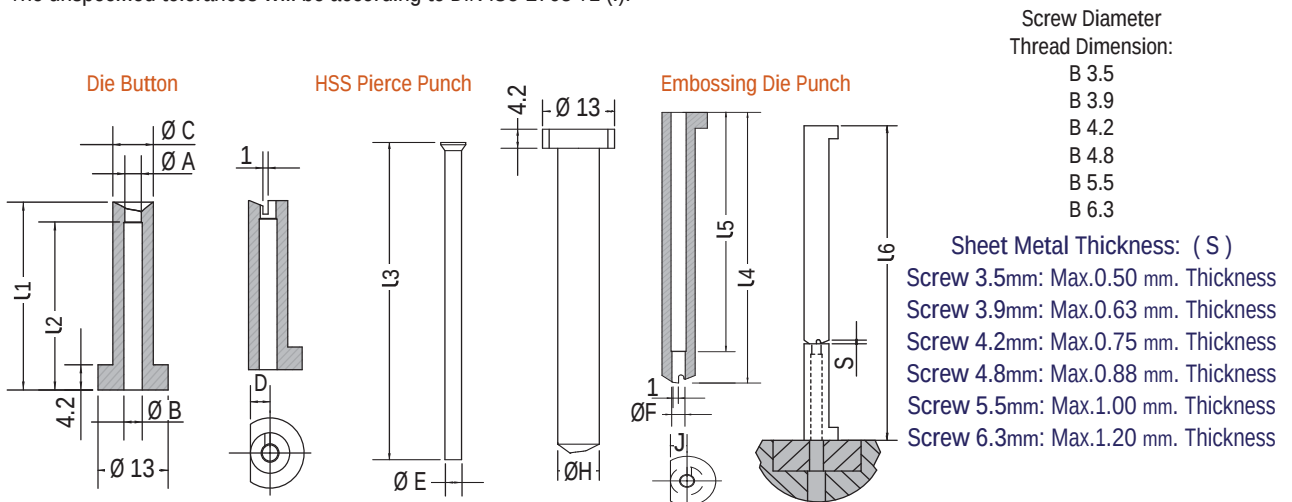
Code: VYZ

Consists of 3 basic parts. 1- Hss pierce punch 2- Embossing die punch 3- Die button.

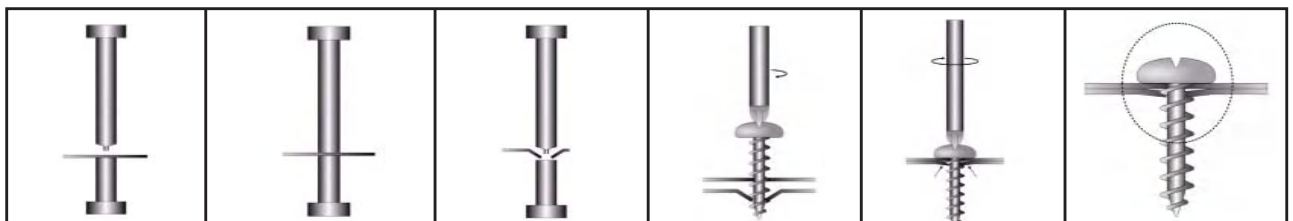
In terms of working systematics; in all cutting and forming dies, it creates screw forms with the purpose of connecting two sheet metal strips.

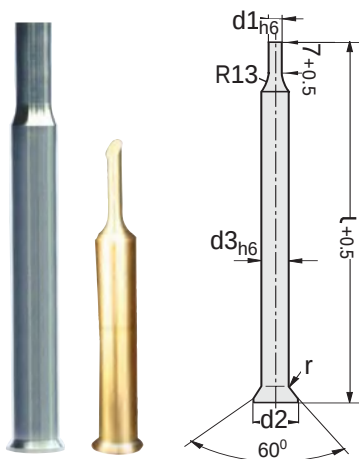
Usage: Hss pierce punch is brought to press operation by inserting in die button. While the embossing on the end of the die button bends and embosses, the hss pierce punch forms hole. The sheet metals are prepared to be screwed. The unit forms a hole in screw thread dimension tolerance and helical thread grooves with embossing for screwing and tightening (putting together).

The unspecified tolerances will be according to DIN ISO 2768 T1 (f).



Order Code	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	L6 Length	S Sheet
VYZB35	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	101.72	0.5
VYZB39	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	101.85	0.63
VYZB42	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	101.97	0.75
VYZB48	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	102.10	0.88
VYZB55	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	102.22	1.00
VYZB63	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	102.42	1.20





Conical Head Punches - Stepped

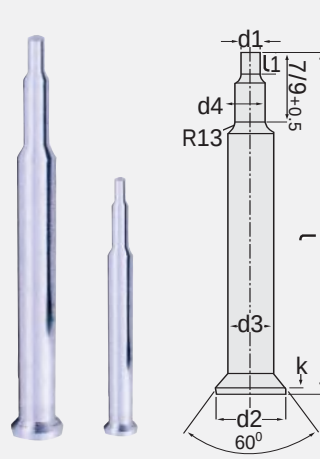
DIN 9861 Form C

Code: HKZ

According to DIN 9861 norm, there is limitation for body and cutting diameter. In this norm, while body diameter for conical head stepped punch is max. 3 mm, cutting diameter can be max. 2.95 mm.

Material: 1.3343 (M2) Hardness: 62 - 64 HRC

d1	l	d3	d2	r
0.8	71 80	2 mm	3 mm	0.4
1.0	71 80			
1.2	71 80			
1.5	71 80			
1.6	71 80			
1.8	71 80			
1.0	71 80	3 mm	4.5 mm	0.6
1.5	71 80			
1.8	71 80			
2.2	71 80			
2.3	71 80			
2.6	71 80			
2.8	71 80			



Conical Head Punches - Stepped

DIN 9861 Form E

Code: H2K

It is preferred for thin work pieces and light duty works. As per request, our punch production is available in the desired material and dimensions and also in shapes.

Material: 1.3343 (M2) Hardness: 62 - 64 HRC

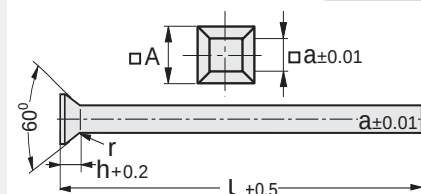
d1	d4	d3	d2	l	l1
1.0	1.4	Ø 3.0	4.5 mm	71	2 mm
1.2	1.6			80	
1.5	1.8			100	
1.7	2.1				
2.2	2.6				
2.5	2.8				
1.6	2.2	Ø 4.0	5.5 mm	71	2.5 mm
1.8	2.3			80	
2.3	2.8			100	
2.6	3.0				
3.0	3.5				
3.2	3.7				
2.4	3.0	Ø 5.0	6.5 mm	71	3 mm
2.8	3.5			80	
3.2	4.0			100	
3.6	4.2				
4.2	4.6				
4.5	4.8				
2.5	3.2	Ø 6.0	8 mm	71	3 mm
3.0	3.8			80	
3.5	4.2			100	
4.0	4.8				
4.5	5.3				
5.0	5.5				
5.5	5.8				



Square Head Punch, Slot - Shaped

Slot - Form DA (forged head)

Code: HFK



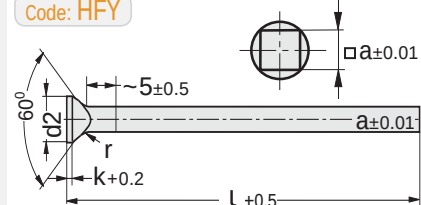
a	l	a±0.01	h
1.0	71	1.8	1.2
2.0		3.0	1.4
3.0		4.5	1.8
4.0		5.5	1.8
5.0		6.5	1.8
6.0		8.0	2.2
7.0	71	9.0	2.8
8.0		10.0	2.8
9.0		11.0	2.8
10.0		12.0	2.8
12.0		14.0	2.8

Order:
HFK. a x l

Material: 1.3343 (M2)
Hardness: 62 - 64 HRC

Conical Head Punch - Shaped

Code: HFY



a	l	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	
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 punches as per request are available.

Order:
HFY. a x l

Material: 1.3343 (M2)
Hardness: 62 - 64 HRC



Order: HKZ. d3 x d1 x l



Order:
H2K. d1 x d4 x d3 x l x l1

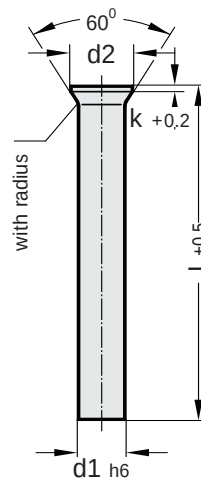
Code: HBZ

DIN 9861 / ISO 6752

d1	l	d2	k
10	71	12	1.0
	80		
	100		
	125		
	160		
10.5	71	13	1.0
	80		
	100		
	125		
	160		
11	71	13	1.0
	80		
	100		
	125		
	160		
11.5	71	14	1.0
	80		
	100		
	125		
	160		
12	71	14	1.0
	80		
	100		
	125		
	160		
12.5	71	15	1.0
	80		
	100		
	125		
	160		
13	71	15	1.0
	80		
	100		
	125		
	160		
13.5	71	16	1.5
	80		
	100		
	125		
	160		
14	71	16	1.5
	80		
	100		
	125		
	160		
14.5	71	17	1.5
	80		
	100		
	125		
	160		
15	71	17	1.5
	80		
	100		
	125		
	160		
16	71	18	1.5
	80		
	100		
	125		
	160		
17	71	19	1.5
	80		
	100		
	125		
	160		
18	71	20	1.5
	80		
	100		
	125		
	160		
19	71	21	1.5
	80		
	100		
	125		
	160		
20	71	22	1.5
	80		
	100		
	125		
	160		

d1	l	d2	k
6.6	71	9.0	1.0
	80		
	100		
6.7	71	9.0	1.0
	80		
	100		
6.8	71	9.0	1.0
	80		
	100		
6.9	71	9.0	1.0
	80		
	100		
7.0	71	9.0	1.0
	80		
	100		
	125		
	160		
7.1	71	9.0	1.0
	80		
	100		
7.2	71	9.0	1.0
	80		
	100		
7.3	71	9.0	1.0
	80		
	100		
	125		
	160		
7.4	71	10	1.0
	80		
	100		
	125		
	160		
7.5	71	10	1.0
	80		
	100		
	125		
	160		
7.6	71	10	1.0
	80		
	100		
7.7	71	10	1.0
	80		
	100		
7.8	71	10	1.0
	80		
	100		
7.9	71	10	1.0
	80		
	100		
8.0	71	10	1.0
	80		
	100		
	125		
	160		
8.1	71	10	1.0
	80		
	100		
8.2	71	10	1.0
	80		
	100		
8.3	71	10	1.0
	80		
	100		
8.4	71	10	1.0
	80		
	100		
8.5	71	11	1.0
	80		
	100		
	125		
	160		
8.6	71	11	1.0
	80		
	100		
8.7	71	11	1.0
	80		
	100		
8.8	71	11	1.0
	80		
	100		
8.9	71	11	1.0
	80		
	100		
9.0	71	11	1.0
	80		
	100		
	125		
	160		
9.5	71	12	1.0
	80		
	100		
	125		
	160		

d1	l	d2	k
4.1	71	5.5	0.5
	80		
	100		
4.2	71	5.5	0.5
	80		
	100		
4.3	71	5.5	0.5
	80		
	100		
4.4	71	5.5	0.5
	80		
	100		
4.5	71	6.0	0.5
	80		
	100		
	125		
	160		
4.6	71	6.0	0.5
	80		
	100		
4.7	71	6.0	0.5
	80		
	100		
4.8	71	6.0	0.5
	80		
	100		
	125		
	160		
4.9	71	6.0	0.5
	80		
	100		
	125		
	160		
5.0	71	6.5	0.5
	80		
	100		
	125		
	160		
5.1	71	6.5	0.5
	80		
	100		
5.2	71	6.5	0.5
	80		
	100		
5.3	71	6.5	0.5
	80		
	100		
5.4	71	6.5	0.5
	80		
	100		
5.5	71	7.0	0.5
	80		
	100		
	125		
	160		
5.6	71	7.0	0.5
	80		
	100		
5.7	71	7.0	0.5
	80		
	100		
5.8	71	7.0	0.5
	80		
	100		
5.9	71	7.0	0.5
	80		
	100		
6.0	71	8.0	0.5
	80		
	100		
	125		
	160		
6.1	71	8.0	0.5
	80		
	100		
6.2	71	8.0	0.5
	80		
	100		
6.3	71	8.0	0.5
	80		
	100		
6.4	71	8.0	0.5
	80		
	100		
6.5	71	9.0	1.0
	80		
	100		
	125		
	160		

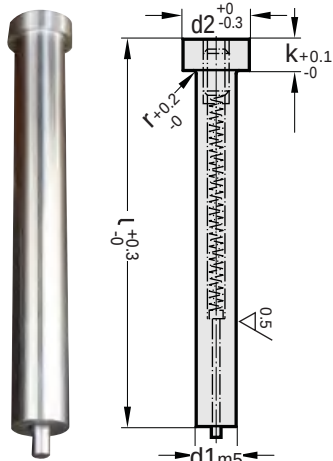
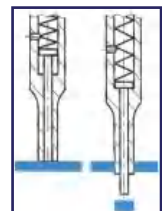


Punch as per request:



Code: HBZ

Coating as per request



Cylinder Head Punch with Ejector

Code: SFZ

(Blank type)

ISO 8020

Material: 1.3343 (M2) completely ground

Heat Treated: 62 - 64 HRC

Head Hardness: 52 ± 3 HRC

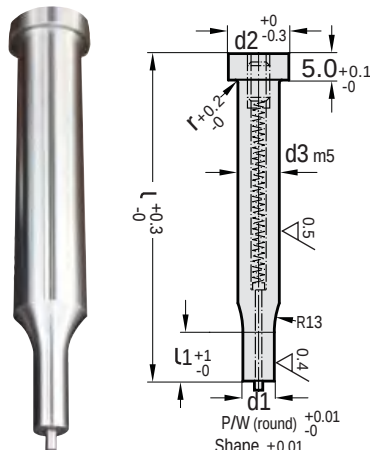
Surface: ≥ 950 HV 0.3

d1	l	d2	k	r
5.0	63 71 80 100 125 160	8	5 mm	0.3
6.0		9		
8.0		11		
10		13		
13		16		
16		19		
20		23		
25		28		
32		35		



Order: SFZ. d1 x l

Material: 1.3343 (M2)
Hardness: 62 - 64 HRC



Cylinder Head Stepped Punch with Ejector

Order Codes: SFY - SF0 - SFK - SFD - SFA - SFM - SFX - SFP

Please refer to the table on the right side

Order d3	Head d2	d1 / Shape		Standard l1	Alternative l1		l mm
		(SFY) Round P	Other Shapes W G/P		Min.	Max.	
SF..05	8	1.6 ~ 4.99	1.6 - 5.0	13	10	-	63
SF..06	9	2.5 ~ 5.99	2.5 - 6.0	13	10	-	71
SF..08	11	3.2 ~ 7.99	3.2 - 8.0	19	13	19	80
SF..10	13	4.5 ~ 9.99	4.5 - 10	19	13	25	90
SF..13	16	6.0 ~ 12.99	6.0 - 13	19	13	25	100
SF..16	19	8.0 ~ 15.99	7.5 - 16	19	13	25	125
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	

How to order:

Shape

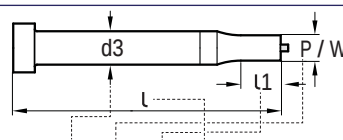
d3

P/W

l1

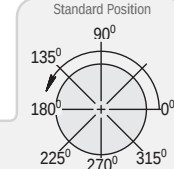
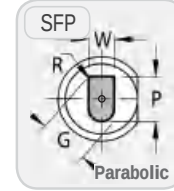
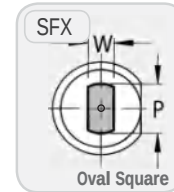
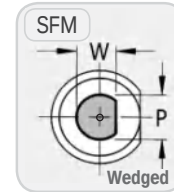
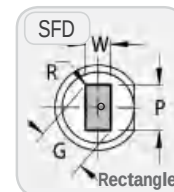
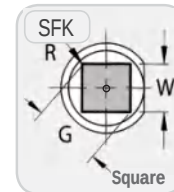
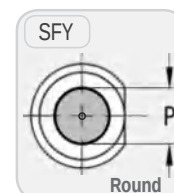
l

Material



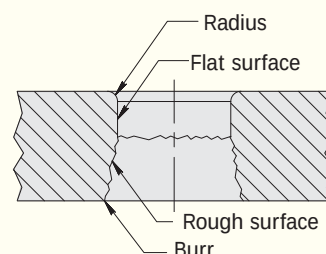
SFY x 10 x P7.0 x 13 x 80 - M2
SF0 x 10 x P8.2 x W5.2 x 25 x 100 - M2

Shapes



Definition of Gap Between Punch and Die

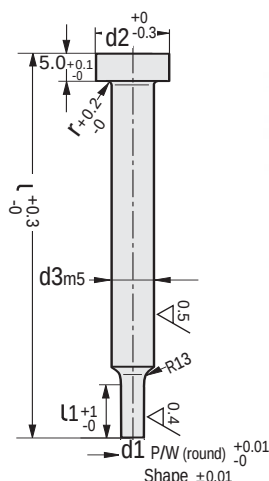
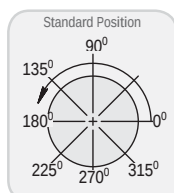
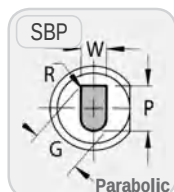
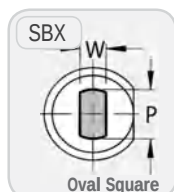
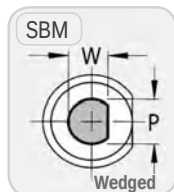
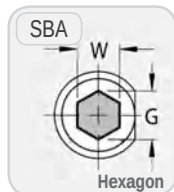
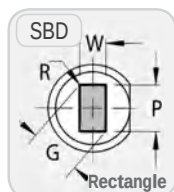
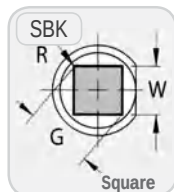
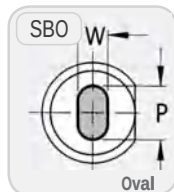
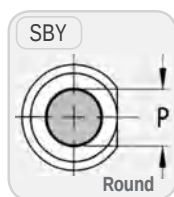
Gap between punch and die depends on material type of stamped work pieces, material thickness, finish requirement of hole and desired tool life. This is indicated as total percentage of stamped material thickness. It should be remembered that hole diameter of punch specifies the dimension of part to be processed. Generally, ideal gap provides serial, clear and smooth punching process with minimum tool force. When insufficient gap is left, minimum radius and burrs are obtained. However, depending on high tool forces, it shortens tool life. As a result of excessive gap, wide radius creates deformation, but tool life is increased. Some general values are presented for different materials in the following table (it is an advisory). Expressed values are total die gap recommended for non-ejector punch holes. Increasing gap to 2 times by using ejector punch, will significantly increase estimated tool life. Abrasion occurring in the most of the punches occurs by scraper forces when the punch is pulled back. Increasing gap with using ejector punches will hold abrasion on tool surface in minimum. Punches used in dies should be mounted in perpendicular position as 90° completely.



Material	Soft	Hard
Aluminum	% 10	% 12
Brass / Copper	% 6	% 8
Low Carbon Steel	% 10	% 12
High Carbon Steel	% 18	% 20

The standard location of key flats is at 0°. Alternate locations of 90°, 180° or 270° can be specified.

Shapes



ISO 8020

Cylinder Head Stepped Punch

Code: SB..

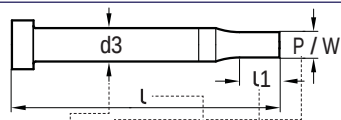
Order Codes: SBY - SBO - SBK - SBD - SBA - SBM - SBX - SBP

Please refer to the table on the left side

Order d3	Head d2	d1 / Shape		Standard l	Alternative l1		l mm
		(SBY) Round P	Other Shapes W G/P		Min.	Max.	
SB..04	6	1.6 ~ 3.99	1.6 - 4.0	8	10	-	50
SB..05	8	1.6 ~ 4.99	1.6 - 5.0	13	10	-	63
SB..06	9	1.6 ~ 5.99	1.6 - 6.0	13	10	-	71
SB..08	11	2.5 ~ 7.99	2.5 - 8.0	19	13	-	80
SB..10	13	3.2 ~ 9.99	3.2 - 10	19	13	25	90
SB..13	16	5.0 ~ 12.99	4.5 - 13	19	13	25	100
SB..16	19	8.0 ~ 15.99	6.0 - 16	19	13	25	125
SB..20	23	10 ~ 19.99	8.0 - 20	19	13	25	63
SB..25	28	12 ~ 24.99	9.0 - 25	19	13	25	71
SB..32	35	16 ~ 31.99	10 - 32	25	19	30	80
SB..40	43	30 ~ 39.99	14 - 40	25	19	30	90
							100
							125

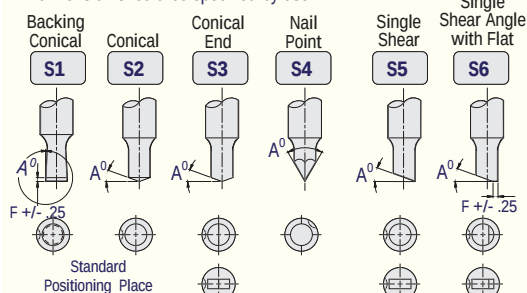
How to order:

Shape
d3
P/W
l1
Material



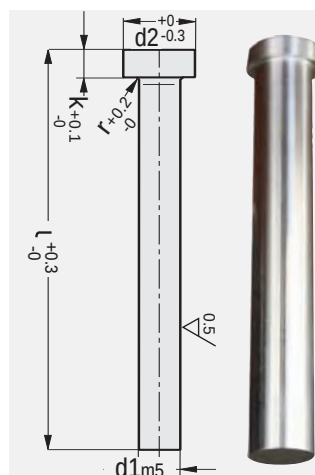
SBY x 10 x P7.0 x 13 x 80 - M2
SBO x 10 x P8.2 x W5.2 x 25 x 100 - M2

Cutting Angles (special tools): In case of demand, "A" angle and "F" dimension should be specified by user.

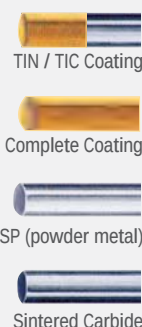


Note: Parts are viewed in die position looking from above the die.
Punches are viewed looking through the body.
Matrixes are viewed through top face.

The standard location of key flats is at 0°.
Alternate locations of 90°, 180° or 270° can be specified.



Punch as per request:



Cylinder Head Punch - ISO 8020

Code: SBZ

Mounting of cylinder head type punch to the holder plate during usage is planned, guiding process is provided by the stripper plate.

By mounting punches in this style, the elimination of axial errors that resulted from incorrect mounting of die set or press is more easier. The use of this mounting method provided the alteration between the transmission of punching power and bearing.

Material: 1.3343 (M2) completely ground
Heat Treated: 62 - 64 HRC
Head Hardness: 52 ± 3 HRC
Surface: ≥ 950 HV 0.3

Also, full or partial coating can be preferred upon request, by providing resistance against heat and friction on external layer, it solves problems such as winding and cold welding. For harder work pieces, ASP / PS (powder metal) and for very hard and abrasive work pieces, sintered carbide punches are preferred.

Code: SBZ

d1	l	d2	k	r
2.0	71	5.0	3	0.2
	80			
2.5	100			
	71	6.0	3	
80				
100				
3.0	71	7.0	5	0.3
	80			
3.5	100			
	71	7.5	5	
80				
100				
4.0	71	8.0	5	
	80			
4.5	100			
	71	9.0	5	
80				
100				
5	71	11	5	
	80			
	100			
6.0	71	11	5	
	80			
	100			
	125			
8.0	71	11	5	
	80			
	100			
	125			

d1	l	d2	k	r
10	71	13	5	0.3
	80			
	100			
	125			
13	71	16	5	
	80			
	100			
	125			
16	71	19	5	
	80			
	100			
	125			
20	80	23	5	
	100			
	125			
	160			
25	80	28	5	
	100			
	125			
	160			
32	80	35	5	
	100			
	125			
	160			

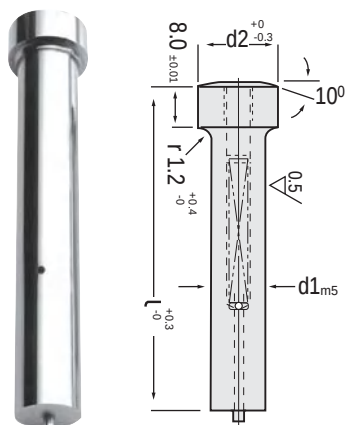
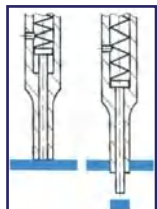
Order: SBZ. d1 x l

Order Example:

SBZ. 10 x 100

NEW

Coating as per request



Heavy Duty Headed Punch with Ejector

Code: SFZF

* Larger-headed

(Blank type)

d1	l	d2
8	70	13
10		15
12		17
13		18
16		21
20	100	25
25		30

Material:

1.3343 (M2) completely ground

Heat Treated:

60 - 63 HRC

Head Hardness:

40 - 55 HRC



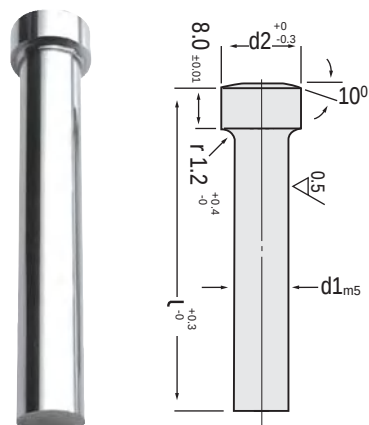
Order:

SFZF. d1 x l

Order Example:

SFZF. 20 x 100

NEW



Heavy Duty Headed Punch

Code: SBZF

* Larger-headed

(Blank type)

d1	l	d2
6	70	11
8		13
10		15
12		17
13		18
16	100	21
20		25
25		30

Material:

1.3343 (M2) completely ground

Heat Treated:

60 - 63 HRC

Head Hardness:

40 - 55 HRC



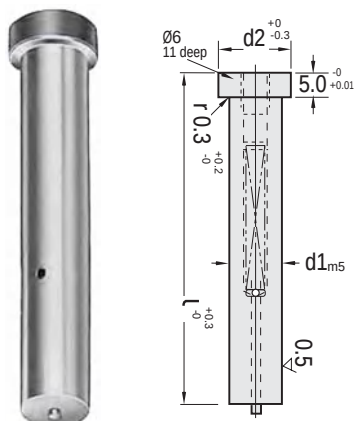
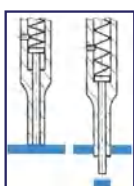
Order:

SBZF. d1 x l

Order Example:

SBZF. 8 x 80

NEW



Center Dowel Headed Punch with Ejector

Code: DFZ

(Blank type)

ISO 8020, with center dowel

d1	l	d2
10	71	13
13		16
16	80	19
20	90	23
25	100	28
32		35

Material:

1.3343 (M2) completely ground

Heat Treated:

60 - 63 HRC

Head Hardness:

40 - 55 HRC

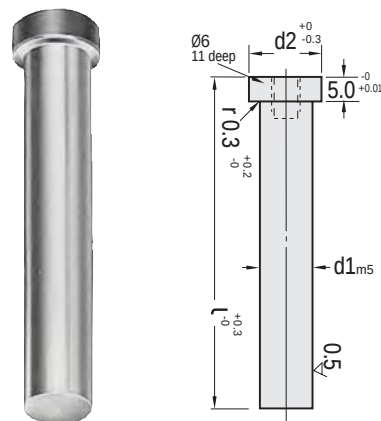


Order: DFZ. d1 x l

Order Example:

DFZ. 13 x 100

NEW



Center Dowel Headed Punch

Code: DSZ

(Blank type)

ISO 8020, with center dowel

d1	l	d2
10	71	13
13		16
16	80	19
20	90	23
25	100	28
32		35

Material:

1.3343 (M2) completely ground

Heat Treated:

60 - 63 HRC

Head Hardness:

40 - 55 HRC

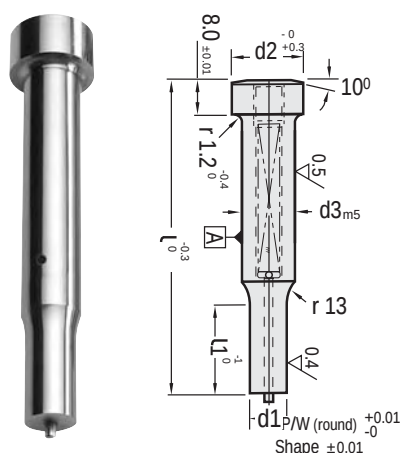


Order: DSZ. d1 x l

Order Example:

DSZ. 10 x 71





Heavy Duty Stepped Punch with Ejector

Code: **SF..F**

* Larger-headed

Order Codes:

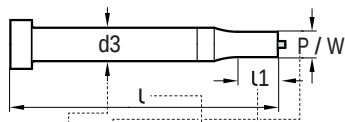
SFYF - SFOF - SFKF - SFDF - SFAF - SFMF - SFXF - SFPF

Please refer to the table on the right side

Order d3	Head d2	d1 / Shape		Standard L1	Alternative L1		L mm
		(SFYF) Round P	Other Shapes W G/P		Min.	Max.	
SF..F08	13	4.0 ~ 7.99	4.0 - 8	13	13	25	60
SF..F10	15	5.0 ~ 9.99	5.0 - 10	13	13	25	
SF..F13	18	6.0 ~ 12.99	6.0 - 13	13	13	25	70
SF..F16	21	10 ~ 15.99	6.0 - 16	19	13	25	80
SF..F20	25	13 ~ 19.99	6.0 - 20	19	13	25	90
SF..F25	30	18 ~ 24.99	6.0 - 25	19	13	25	100

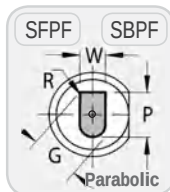
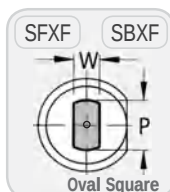
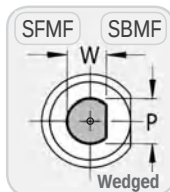
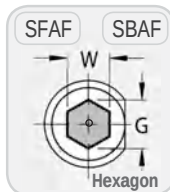
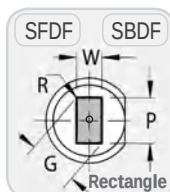
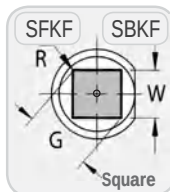
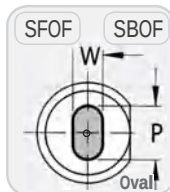
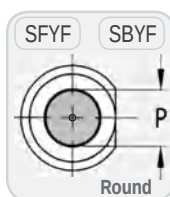
How to order:

Shape
d3
P/W
L1
L
Material

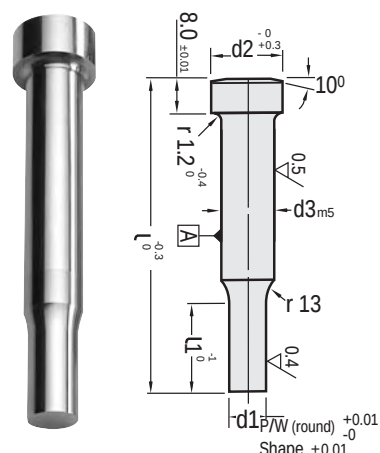
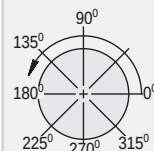


SFYF x 10 x P7.0 x 13 x 80 - M2
SFOF x 10 x P8.2 x W5.2 x 25 x 100 - M2

Shapes



Standard Position



Heavy Duty Stepped Punch

Code: **SB..F**

* Larger-headed

Order Codes:

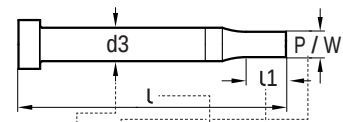
SBYF - SBOF - SBKF - SBDF - SBAF - SBMF - SBXF - SBPF

Please refer to the table on the left side

Order d3	Head d2	d1 / Shape		Standard L1	Alternative L1		L mm
		(SBYF) Round P	Other Shapes W G/P		Min.	Max.	
SB..F08	13	3.0 ~ 7.99	3.0 - 8	13	13	25	60
SB..F10	15	3.0 ~ 9.99	3.0 - 10	13	13	25	
SB..F13	18	6.0 ~ 12.99	3.0 - 13	13	13	25	70
SB..F16	21	10 ~ 15.99	4.0 - 16	19	13	25	80
SB..F20	25	13 ~ 19.99	5.0 - 20	19	13	25	90
SB..F25	30	18 ~ 24.99	6.0 - 25	19	13	25	100

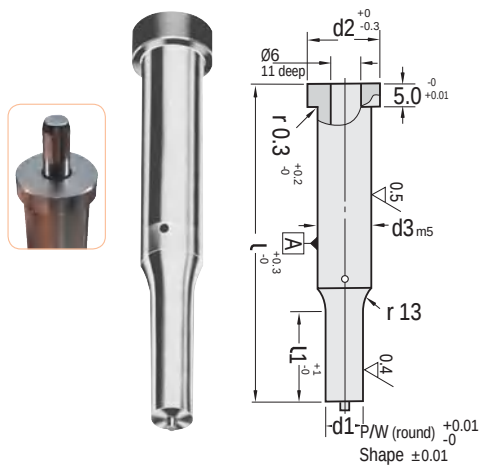
How to order:

Shape
d3
P/W
L1
L
Material



SBYF x 10 x P7.0 x 13 x 80 - M2
SBOF x 10 x P8.2 x W5.2 x 25 x 100 - M2

The standard location of key flats is at 0°. Alternate locations of 90°, 180° or 270° can be specified.



Code: DF..

Center Dowel Stepped Punch with Ejector

Order Codes: DFY - DFO - DFK - DFD - DFA - DFM - DFX - DFP

Please refer to the table on the right side →

Order d3	Head d2	d1 / Shape		Standard L1	Alternative L1		l mm
		(DFY) Round P	Other Shapes W G/P		Min.	Max.	
DF..10	13	4.5 ~ 9.99	4.5 - 10	19	13	25	63
DF..13	16	6.0 ~ 12.99	6.0 - 13	19	13	25	
DF..16	19	8.0 ~ 15.99	7.2 - 16	19	13	25	71
DF..20	23	10 ~ 19.99	8.0 - 20	19	13	25	80
DF..25	28	12 ~ 24.99	9.0 - 25	19	13	25	90
DF..32	35	16 ~ 31.99	10.0 - 32	25	19	30	100

How to order:

Shape

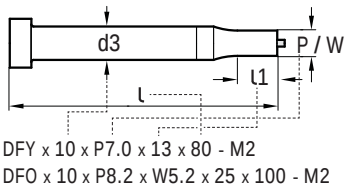
d3

P/W

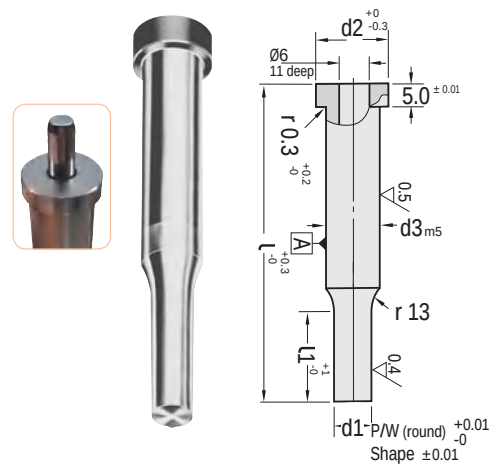
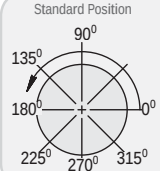
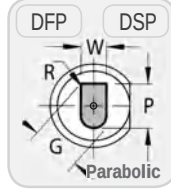
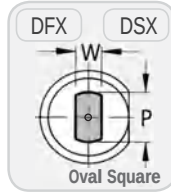
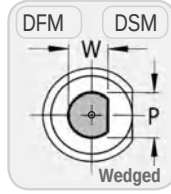
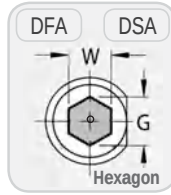
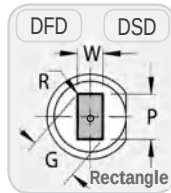
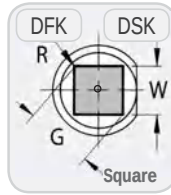
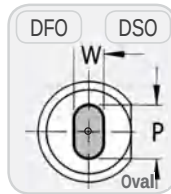
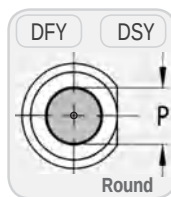
L1

l

Material



Shapes



Code: DS..

Center Dowel Stepped Punch

Order Codes: DSY - DSO - DSK - DSD - DSA - DSM - DSX - DSP

← Please refer to the table on the left side

Order d3	Head d2	d1 / Shape		Standard L1	Alternative L1		l mm
		(DSY) Round P	Other Shapes W G/P		Min.	Max.	
DS..10	13	4.5 ~ 9.99	4.5 - 10	19	13	25	63
DS..13	16	6.0 ~ 12.99	6.0 - 13	19	13	25	
DS..16	19	8.0 ~ 15.99	7.2 - 16	19	13	25	71
DS..20	23	10 ~ 19.99	8.0 - 20	19	13	25	80
DS..25	28	12 ~ 24.99	9.0 - 25	19	13	25	90
DS..32	35	16 ~ 31.99	10.0 - 32	25	19	30	100

How to order:

Shape

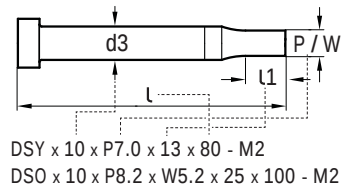
d3

P/W

L1

l

Material



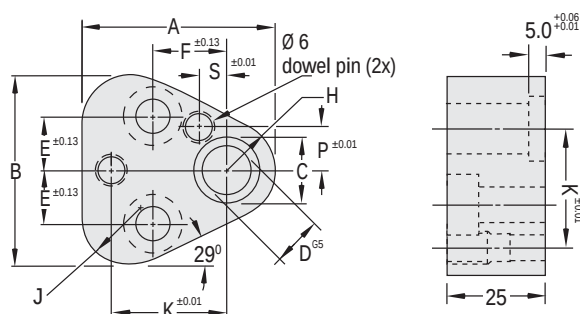
The standard location of key flats is at 0°. Alternate locations of 90°, 180° or 270° can be specified.



Punch Retainer

For round punches / ISO 8020

- Centre of pin holes are reference points for punch hole position.
- Shim and backing plate should be supplied separately.
- Retainer includes 2 dowel pins + 2 screws.



Code: GPR

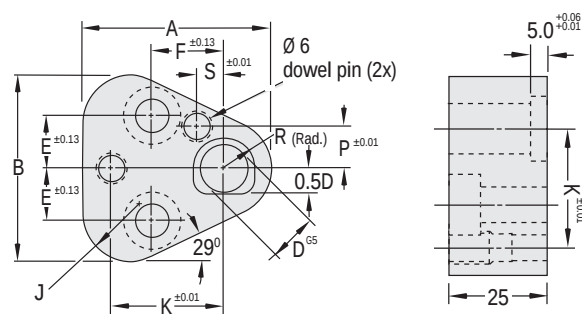
Order	GPR. 10	GPR. 13	GPR. 16	GPR. 20	GPR. 25	GPR. 32
D (punch)	10	13	16	20	25	32
A	44.5	50.8	54.0	60.3	69.9	69.9
B	43.7	50.0	53.2	59.5	69.1	69.1
C	14.0	17.0	20.0	24.0	29.0	36.0
E	11.1	14.3	15.9	17.5	19.8	19.8
F	19.0	19.0	19.0	19.0	23.8	23.8
H	9.5	12.7	14.3	17.5	22.2	22.2
J	12.0	15.2	16.8	20.0	24.7	24.7
K	26.925	29.970	31.750	33.530	40.640	40.640
P	9.0	12.0	13.5	16.5	22.0	22.0
S	7.5	6.5	6.0	5.0	7.0	7.0
Screw	M8	M8	M8	M10	M12	M12



Punch Retainer

For shaped punches / ISO 8020

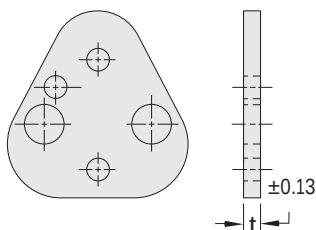
- Centre of pin holes are reference points for punch hole position.
- Shim and backing plate should be supplied separately.
- Retainer includes 2 dowel pins + 2 screws.



Code: GPRS

Order	GPRS. 10	GPRS. 13	GPRS. 16	GPRS. 20	GPRS. 25	GPRS. 32
D (punch)	10	13	16	20	25	32
A	44.5	50.8	54.0	60.3	69.9	69.9
B	43.7	50.0	53.2	59.5	69.1	69.1
E	11.1	14.3	15.9	17.5	19.8	19.8
F	19.0	19.0	19.0	19.0	23.8	23.8
R	7.0	8.5	10.0	12.0	14.5	18.0
H	9.5	12.7	14.3	17.5	22.2	22.2
J	12.0	15.2	16.8	20.0	24.7	24.7
K	26.925	29.970	31.750	33.530	40.640	40.640
P	9.0	12.0	13.5	16.5	22.0	22.0
S	7.5	6.5	6.0	5.0	7.0	7.0
Screw	M8	M8	M8	M10	M12	M12

Shim & Backing Plate for Punch Retainer



Shim Plate
t = 1.8 (soft)

Code: PRSP

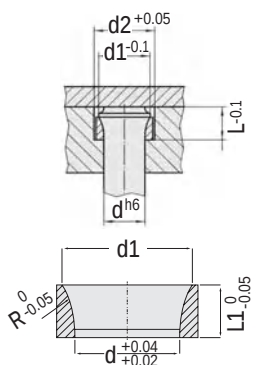
Order Code	Compatible Retainer	D	t
PRSP.1018	GPR / GPRS	10	1.8
PRSP.1318	GPR / GPRS	13	1.8
PRSP.1618	GPR / GPRS	16	1.8
PRSP.2018	GPR / GPRS	20	1.8
PRSP.2518	GPR / GPRS	25	1.8
PRSP.3218	GPR / GPRS	32	1.8

Backing Plate
t = 4.8 (55 HRC)

Code: PRBP

Order Code	Compatible Retainer	D	t
PRBP.1048	GPR / GPRS	10	4.8
PRBP.1348	GPR / GPRS	13	4.8
PRBP.1648	GPR / GPRS	16	4.8
PRBP.2048	GPR / GPRS	20	4.8
PRBP.2548	GPR / GPRS	25	4.8
PRBP.3248	GPR / GPRS	32	4.8

NEW



Mounting Ring for Bottle-neck Punch Code: G162

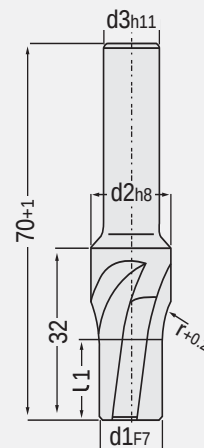
"G162" is used for more practical mounting of Bottle-neck Punches on the retainer plate.

Advantages:

- * Cylindrical counter bore in the retainer plate is sufficient.
- * Tempered Mounting Ring reduces the shrinking in the untempered retainer plate.
- * You can take advantage of the positive features of Bottle-neck Punches without complex installation.

Material: Tempered Steel

Order Code	d mm	d1 mm	d2 mm	L mm	L1 mm	R mm
G162.30	3.0	4.5	6	7	4	6.5
G162.35	3.5	5.0	7	7	4	8
G162.40	4.0	5.5	7	8	4	8
G162.50	5.0	7.0	9	11	7	10
G162.51	5.1	7.0	9	11	7	10
G162.55	5.5	8.0	10	11	7	10
G162.60	6.0	9.0	11	11	7	10
G162.65	6.5	10.0	12	11	7	12
G162.70	7.0	10.0	12	11	7	12
G162.75	7.5	11.0	13	11	7	12
G162.80	8.0	11.0	13	12	8	12
G162.85	8.5	13.0	15	12	8	15
G162.90	9.0	13.0	15	12	8	15
G162.95	9.5	14.0	16	12	8	15
G162.100	10.0	14.0	16	13	9	15
G162.110	11.0	15.0	17	13	9	15
G162.120	12.0	16.0	18	13	9	15
G162.130	13.0	17.0	19	13	9	15
G162.140	14.0	18.0	20	13	9	15
G162.150	15.0	19.0	21	13	9	15
G162.160	16.0	20.0	22	13	9	15
G162.170	17.0	21.0	23	13	9	15
G162.180	18.0	22.0	24	13	9	15
G162.190	19.0	23.0	25	13	9	15
G162.200	20.0	25.0	27	14	10	15



Piloted Counterbore Punch Code: UFT

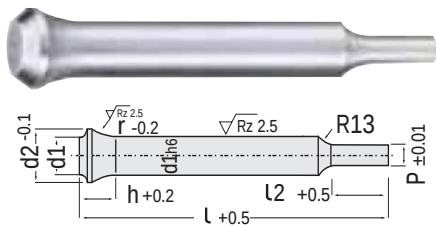
(for tapered head)

d1	d2	d3	r	l1	x (d1)
2.0	3.3	3.3	3.5	5	01
2.1 ~ 2.2	3.5	3.5	5.0		
2.3 ~ 2.5	3.8	3.8			
2.6 ~ 2.9	4.3	4.3	6.0	7	
3.0 ~ 3.4	4.9	4.9			
3.5 ~ 3.9	5.4	5.4	8.0		
4.0 ~ 4.4	5.9	5.9			
4.5 ~ 4.9	6.4	6.4			
5.0 ~ 5.4	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				
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: 1.3343 (M2)
Hardness: 62 - 66 HRC



Bottle-neck Punch, Stepped

Code: UKZ

(Trambone type, form D)

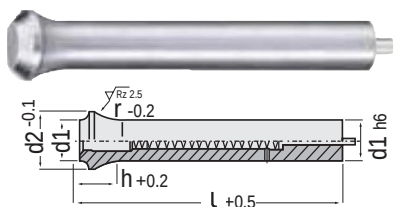
Material: 1.3343 (M2) Hardness: 62 - 66 HRC

Head Hardness: 45 - 55 HRC

P	l	d1	l2	d2	r	h
0.8 ~ 2.9	71	3	10	4.5	6.5	6.03
1.0 ~ 3.9		4		5.5	8	7.38
1.2 ~ 4.9		5		7.0	10	8.36
1.6 ~ 5.9		6		9.0	10	9.27
2.5 ~ 7.9	80	8	13	11	12	9.81
4.0 ~ 9.9		10	17	14	15	11.48
5.0 ~ 12.9		13	17	17	15	11.48
8.0 ~ 15.9		16	17	20	15	11.48
12 ~ 19.9	100	20	17	25	15	12.29

Note: Special dimensions on request.

Order: UKZ. d1 x P x l2 x l



Bottle-neck Punch with Ejector

Code: UFZ

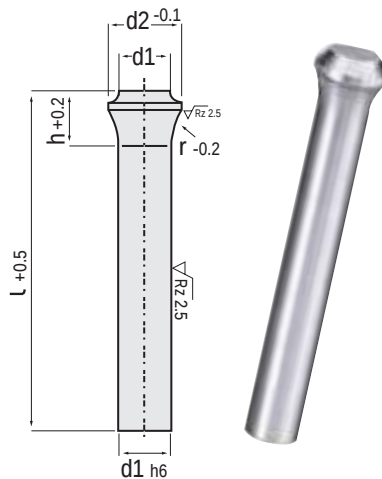
(Blank type)

Material: 1.3343 (M2) Hardness: 62 - 66 HRC

Head Hardness: 45 - 55 HRC

d1	l	d2	h	r
5.0	80	7	8.36	10
	100			
6.0	80	9	9.27	10
	100			
7.0	80	10	9.81	12
	100			
8.0	80	11	9.81	12
	100			
9.0	100	13	11.48	15

Order: UFZ. d1 x l



Bottle-neck Punch

Code: UBZ

(Trambone type, form D)

(Blank type)

Material: 1.3343 (M2) Hardness: 62 - 66 HRC

Head Hardness: 45 - 55 HRC

d1	l	d2	h	r
2.0	80	3	4.80	3.5
	100			
2.1	100	3.2	5.28	5
2.2	100	3.2	5.18	5
2.3	100	3.5	5.37	5
2.4	100	3.5	5.28	5
2.5	80	3.5	5.18	5
	100			
2.6	100	4	5.93	6.5
2.7	100	4	5.83	6.5
2.8	100	4	5.73	6.5
2.9	100	4	5.62	6.5
3.0	80	4.5	6.03	6.5
	100			
3.1	100	4.5	5.93	6.5
3.2	100	4.5	5.83	6.5
3.3	100	4.5	5.73	6.5
3.4	100	4.5	5.62	6.5
3.5	80	5	6.38	8
	100			
3.6	100	5	6.27	8
3.7	100	5	6.16	8
3.8	100	5	6.04	8
3.9	100	5	5.92	8
4.0	80	5.5	7.38	8
	100			
4.1	100	5.5	7.27	8
4.2	100	5.5	7.16	8
4.3	100	5.5	7.04	8

Order: UBZ. d1 x l

Code: UBZ

d1	l	d2	h	r
4.4	100	5.5	6.92	8
4.5	80	6	7.38	8
	100			
4.6	100	6	7.27	8
4.7	100	6	7.16	8
4.8	100	6	7.04	8
4.9	100	6	6.92	8
5.0	80	7	8.36	10
	100			
5.1	100	7	8.25	10
5.2	100	7	8.15	10
5.3	100	7	8.03	10
5.4	100	7	7.92	10
5.5	80	8	8.84	10
	100			
5.6	100	8	8.75	10
5.7	100	8	8.66	10
5.8	100	8	8.56	10
5.9	100	8	8.46	10
6.0	80	9	9.27	10
	100			
6.1	100	9	9.19	10
6.2	100	9	9.10	10
6.3	100	9	9.02	10
6.4	100	9	8.93	10
6.5	100	10	10.24	12
7.0	100	10	9.81	12
7.5	100	11	10.24	12
8.0	80	11	9.81	12
	100			
8.5	100	13	11.90	15
9.0	100	13	11.48	15
9.5	100	14	11.90	15
10.0	100	14	11.48	15
10.5	100	15	11.90	15
11.0	100	15	11.48	15
11.5	100	16	11.90	15
12.0	100	16	11.48	15
12.5	100	17	11.90	15
13.0	100	17	11.48	15
13.5	100	18	11.90	15
14.0	100	18	11.48	15
15.0	100	19	11.48	15
16.0	100	20	11.48	15
17.0	100	21	11.48	15
18.0	100	22	11.48	15
19.0	100	23	11.48	15
20.0	100	25	12.29	15

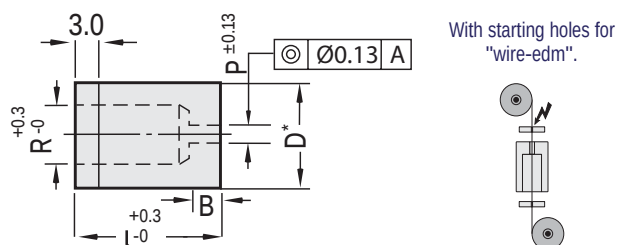


Matrix with Counter-bore Relief

Code: **MKB**

Blank type & with starting holes for wire-edm ISO 8977

Material: 1.3343 (M2) Hardness: 60 - 62 HRC



* = n5 (Ø8.0 ~ 30.0) / j6 (Ø32.0 ~ 40.0)

D mm	P mm	B point length		R mm	l mm
		S (standard)	A (optional)		
8.0	0.8	-	-	-	20
10.0	0.8	4	8	6.0	
13.0	1.6	5	8	8.0	22
16.0	1.6	5	8	9.5	25
20.0	1.6	5	12	12.0	28
22.0	1.6	6	12	15.0	30
25.0	1.6	6	12	17.5	32
28.0	1.6	6	12	17.5	35
30.0	1.6	6	12	17.5	40
32.0	1.6	6	12	21.0	60
35.0	1.6	6	12	21.0	
38.0	1.6	8	12	27.0	Selection as per request
40.0	1.6	8	12	27.0	
45.0	3.2	8	12	36.0	Selection as per request
50.0	3.2	8	12	41.0	



Order: **MKB**. D x l - B

Order Example:

MKB. 20 x 32 - S

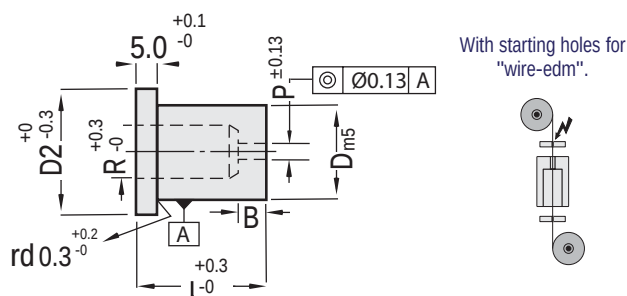


Headed Matrix with Counter-bore Relief

Code: **MLB**

Blank type & with starting holes for wire-edm ISO 8977

Material: 1.3343 (M2) Hardness: 60 - 62 HRC



D mm	D2 mm	P mm	B point length		R mm	l mm
			S (standard)	A (optional)		
8.0	11	0.8	-	-	-	20
10.0	13	0.8	4	8	6.0	
13.0	16	1.6	5	8	8.0	22
16.0	19	1.6	5	8	9.5	25
20.0	23	1.6	5	12	12.0	28
22.0	25	1.6	6	12	15.0	30
25.0	28	1.6	6	12	17.5	32
28.0	31	1.6	6	12	17.5	35
30.0	33	1.6	6	12	17.5	40
32.0	35	1.6	6	12	21.0	Selection as per request
35.0	38	1.6	6	12	21.0	
38.0	41	1.6	8	12	27.0	Selection as per request
40.0	43	1.6	8	12	27.0	



Order: **MLB**. D x l - B

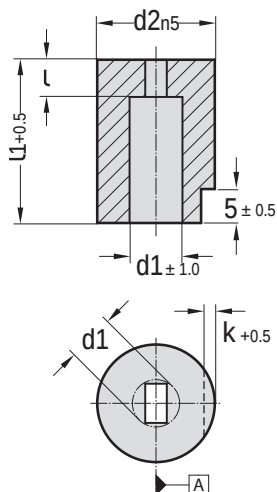
Order Example:

MLB. 25 x 30 - S



Matrix - Straight ISO 8977

Code: MK...



Specification: Diameter d1, d2 and lead-in radius ground.
Material: 1.3343 (M2) Hardness: 60 - 62 HRC
* d1: Size on corners "key flat" (F size) should be specified as per request.

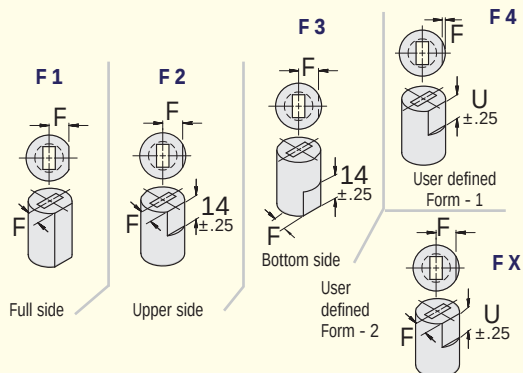
Types: MKY - MKO - MKK - MKD - MKA - MKM - MKX - MKP



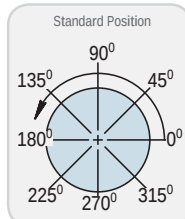
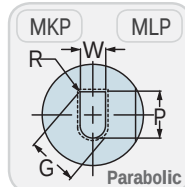
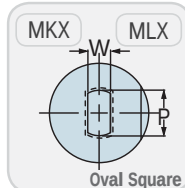
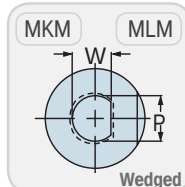
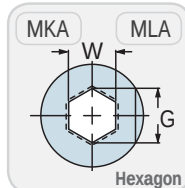
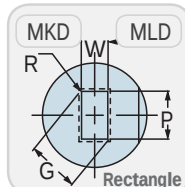
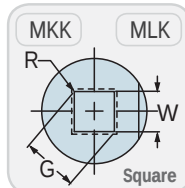
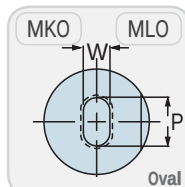
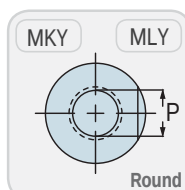
Order: MK(type). d2 x l1 x shape (P/W/R/G)

d1 = shape	d2	k	l	l1
1.8 ~ 3.2	8	1	3	20
2 ~ 5	10	1	3	22
3 ~ 7	13	1.5	3	25
5 ~ 8	16	1.5	5	28
7 ~ 11	20	1.5	5	30
11 ~ 16	25	2.5	5	32
16 ~ 19	32	2.5	7	35
19 ~ 28	40	2.5	7	40

Positioning for "key flat" matrices:

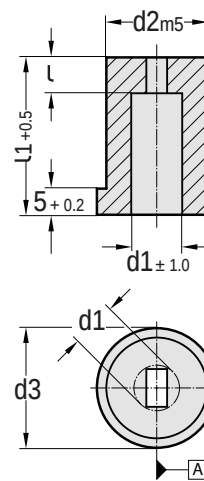


Shapes



Matrix - Headed ISO 8977

Code: ML...



Specification: Diameter d1, d2 and lead-in radius ground.
Material: 1.3343 (M2) Hardness: 60 - 62 HRC
* d1: Size on corners "key flat" (F size) should be specified as per request.

Types: MLY - MLO - MLK - MLD - MLA - MLM - MLX - MLP



Order: ML(type). d2 x l1 x shape (P/W/R/G)

d1 = shape	d2	d3	k	l	l1
1.8 ~ 3.2	8	11	1	3	20
2 ~ 5	10	13	1	3	22
3 ~ 7	13	16	1.5	3	25
5 ~ 8	16	19	1.5	5	28
7 ~ 11	20	23	1.5	5	30
11 ~ 16	25	28	2.5	5	32
16 ~ 19	32	35	2.5	7	35
19 ~ 28	40	43	2.5	7	40

Information for positioning:

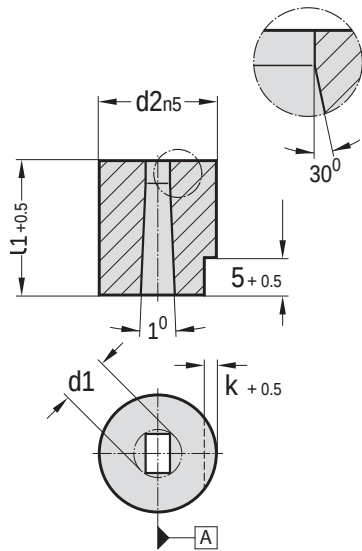
Key flat matrices: "F" size used for "F1 - F2 - F3" has been specified in drawings on the left. "FX" size is defined by the user and while ordering, "key flat" dimension "F" and "U" should be specified.

Body Diameter	"F" +0.2	Body Diameter	"F" +0.2	Body Diameter	"F" +0.2
10	4.0	32	14	63	29.5
13	5.5	38	17	71	33.5
16	7.0	40	18	76	35.5
20	8.5	45	20.5	85	40
22	9.5	50	23	90	42.5
25	11	56	26	100	47.5



Matrix, Straight - Tapered

Code: **MP..**



Specification: Diameter d1, d2 and lead-in radius ground.

Material: 1.3343 (M2) Hardness: 60 - 62 HRC

* d1: Size on corners "key flat" (F size) should be specified as per request.

Types: **MPY - MPO - MPK - MPD - MPA - MPM - MPX - MPP**



Order: **MP**(type). d1 x d2 x L1 x shape (P/W/R/G)

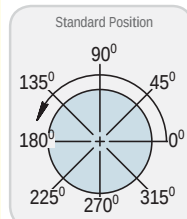
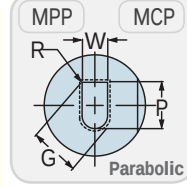
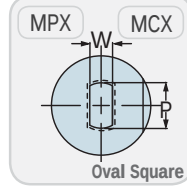
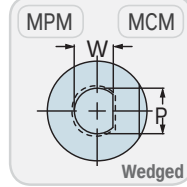
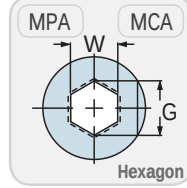
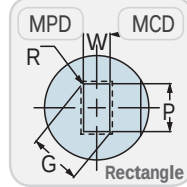
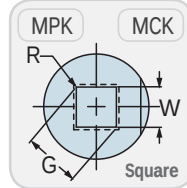
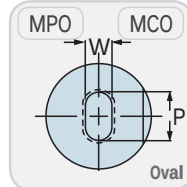
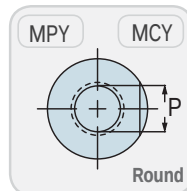
d1 = shape	d2	k	L1
1.6 ~ 3.2	8	1	16
2 ~ 5	10	1	19
3 ~ 7	13	1.5	22
5 ~ 8	16	1.5	25
7 ~ 11	20	1.5	28
11 ~ 16	25	2.5	32
16 ~ 19	32	2.5	
19 ~ 28	40	2.5	

Information for positioning:

Key flat matrixes: "F" size used for "F1 - F2 - F3" has been specified in drawings on the left. "FX" size is defined by the user and while ordering, "key flat" dimension "F" and "U" should be specified.

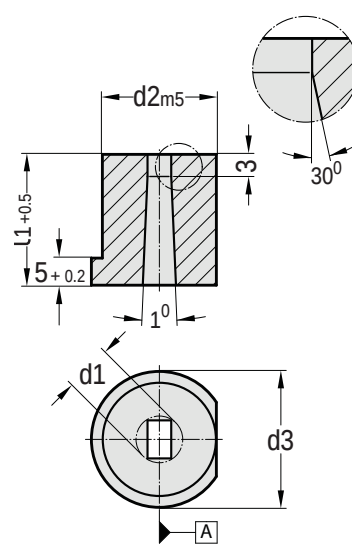
Body Diameter	"F" +0.2	Body Diameter	"F" +0.2	Body Diameter	"F" +0.2
10	4.0	32	14	63	29.5
13	5.5	38	17	71	33.5
16	7.0	40	18	76	35.5
20	8.5	45	20.5	85	40
22	9.5	50	23	90	42.5
25	11	56	26	100	47.5

Shapes



Matrix, Headed - Tapered

Code: **MC..**



Specification: Diameter d1, d2 and lead-in radius ground.

Material: 1.3343 (M2) Hardness: 60 - 62 HRC

* d1: Size on corners "key flat" (F size) should be specified as per request.

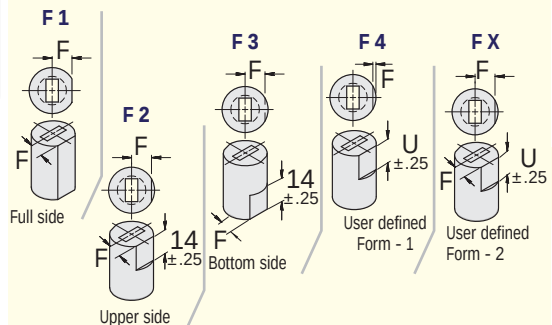
Types: **MCY - MCO - MCK - MCD - MCA - MCM - MCX - MCP**

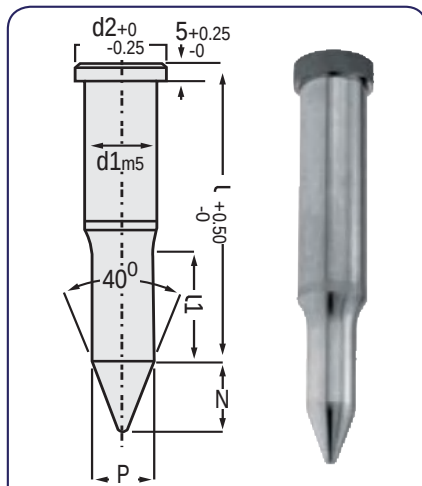


Order: **MC**(type). d1 x d2 x d3 x L1 x shape (P/W/R/G)

d1 = shape	d2	d3	k	L1
1.6 ~ 3.2	8	11	1	16
2 ~ 5	10	13	1	19
3 ~ 7	13	16	1.5	22
5 ~ 8	16	19	1.5	25
7 ~ 11	20	23	1.5	28
11 ~ 16	25	28	2.5	32
16 ~ 19	32	35	2.5	
19 ~ 28	40	43	2.5	

Positioning for "key flat" matrixes:





Pilot with Taper End Code: **SPK**

Standard Tolerances

Round / P ⁺⁰¹ ₋₀₀		,01	From P to d1
---	--	-----	--------------

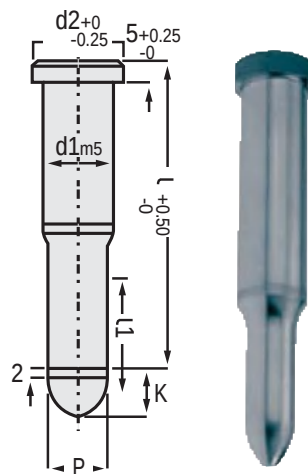
When P = d1, shank / body tolerances apply.

Material: 1.3343 (M2) Hardness: 62 - 64 HRC

Ø d1	Ø d2	Taper Ø P	N mm	Ref. P	l1 mm	l mm
10	13	4.85 ~ 10	8	5.6	Standard Alternative 19 25	71
13	16	6.30 ~ 13	10	7.1		80
16	19	9.95 ~ 16	15	10.8		100
20	23	13.6 ~ 20	20	14.4		125
25	28	17.3 ~ 25	25	18		140
32	35	20.9 ~ 32	30	21.7		140



Order: **SPK**. d1 x P x l1 x l



Pilot - Spherical

Code: **SPX**

Standard Tolerances

Round / P ⁺⁰¹ ₋₀₀		,01	From P To d1
---	--	-----	--------------

When P = d1, shank / body tolerances apply.

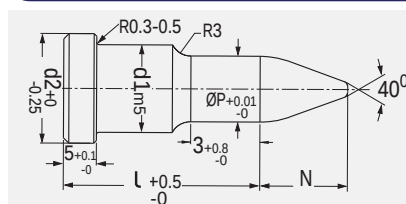
Ø d1	Ø d2	K mm	Taper Ø P	Standard l1	Alternative l1 min. max	l mm
4	7	4	1.55 ~ 4	8	10 -	50
5	8		1.55 ~ 5	13	10 -	
6	9		1.55 ~ 6	13	10 -	
8	11		2.45 ~ 8	19	13 -	
10	13	10	3.15 ~ 10	19	13 25	60
13	16		4.95 ~ 13	19	13 25	71
16	19		7.95 ~ 16	19	13 25	80
20	23		9.95 ~ 20	19	13 25	100
25	28		11.95 ~ 25	19	13 25	
32	35		15.95 ~ 32	25	19 30	



Order: **SPX**. d1 x P x l1 x l



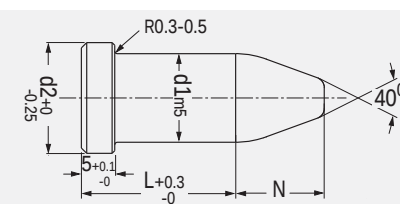
Order: **SPP**. d1 x P x l1 x l



Pilot - Compact Type

Code: **SMK**

d1	P	N	d2	l Length
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	



Pilot - Compact & Spherical

Code: **SMX**

d1	N	d2	l Length
3.01 ~ 4.0	4	7	20
4.01 ~ 5.0	5	8	22
5.01 ~ 6.0	6	9	
6.01 ~ 8.0	7	11	25
8.01 ~ 10	8	13	
10.01 ~ 13	10	16	28
13.01 ~ 16	15	19	
16.01 ~ 20	20	23	35

Compact Pilots



Code: **SMK**
Pointed End



Code: **SMX**
Spherical End

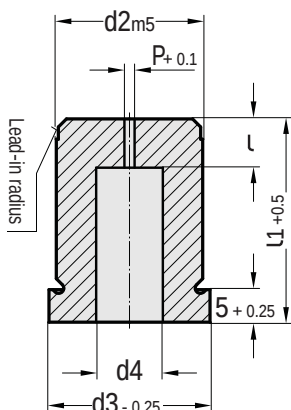
Order:
SMK. d1 x P x N x L

Order:
SMX. d1 x N x L



Matrix with Locking Device
ISO 8977

Code: MF..



Specification: Diameter d1, d2 and lead-in radius ground.
Material: 1.3343 (M2)
Hardness: 60 - 62 HRC
* d1: Size on corners
"key flat" (F size) should be specified as per request.

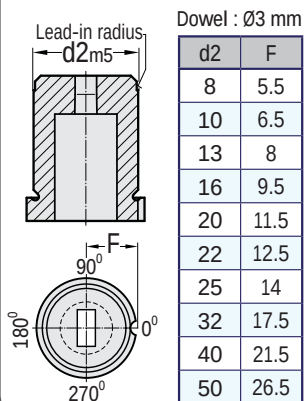
d2	d3	d4	P	L	L1
5	8	2.8	0.8	2	16
6	9	3.5	1	3	20
8	11	4.0	1	4	22
10	13	5.8	1.2	4-8	25
13	16	8.0	1.2	5-8	28
16	19	9.5	1.5	8-12	30
20	23	12	1.5	8-12	32
22	25	15	1.5	8-12	35
25	28	17.3	1.5	8-12	as per request
32	35	20.7	1.5	8-12	as per request
40	43	27.7	1.5	8-12	as per request
50	53	37	1.5	8-12	as per request

L length: with 2 alternatives
L1 length: to be selected as per request.

Order: MF(type).

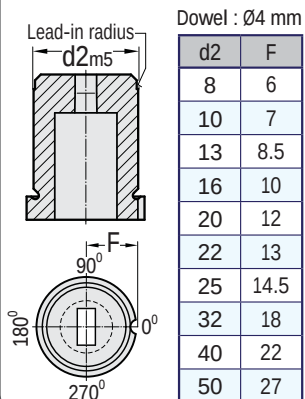
d2 x L x L1 x shape (P/W/R/G)

Locking Device



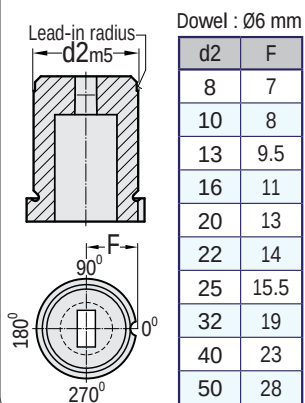
d2	F
8	5.5
10	6.5
13	8
16	9.5
20	11.5
22	12.5
25	14
32	17.5
40	21.5
50	26.5

Locking Device



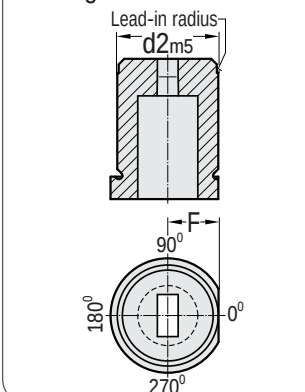
d2	F
8	6
10	7
13	8.5
16	10
20	12
22	13
25	14.5
32	18
40	22
50	27

Locking Device

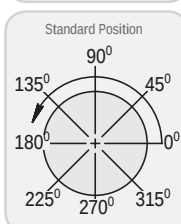
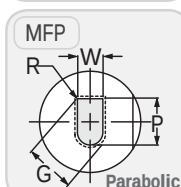
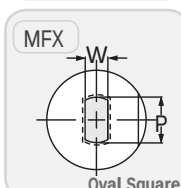
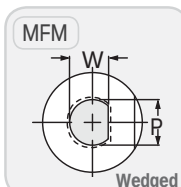
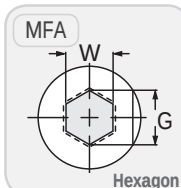
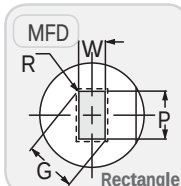
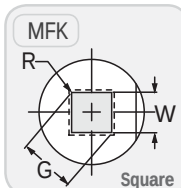
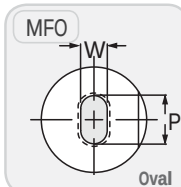
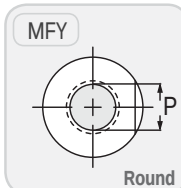


d2	F
8	7
10	8
13	9.5
16	11
20	13
22	14
25	15.5
32	19
40	23
50	28

Locking Device



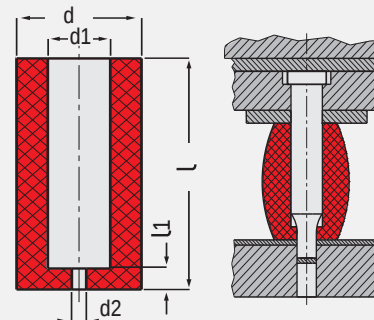
Shapes



Code: PYB

Polyurethane Punch Stripper

Overspread on punch (shock absorber)



In dies that polyurethane punch stripper is used, there is no need to dismantle stripper plate to make repair whetting and modification on die components, there is not any effect on precise parts, it is excellent for all painted / anodized, plastic plated and polished parts. It is compatible to use with oil and grease. It is overspread on punch. Placement is done according to the stripper hardness. There is no need for extra holder. Stepped-punch hole will be opened at the first stroke of press on stripper edge. Especially, in large dies requiring very wide stripper plate, this product is very compatible.

Code: PYB

Order	d1 Ø	d Ø	d2 Ø	L1 mm	L mm	Punch Length
PYB.445	4.0	17	1.6	45	56 / 63	
PYB.655	6.0	19	1.6	55	63 / 71 / 80 / 90	
PYB.855	8.0	21	3.0	55	100	
PYB.1055	10	23	3.0	55	100	
PYB.1355	13	26	3.0	55	100	
PYB.1655	16	30	3.0	55	100	
PYB.2055	20	38	3.0	55	100	
PYB.2555	25	50	3.0	55	100	

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.

In S. max flexion, load coefficient data daN / Kg.

d mm	17	19	21	23	26	30	38	50
S daN	60	65	70	90	110	140	210	370
3 mm	daN	daN	daN	daN	daN	daN	daN	daN
S daN	115	120	130	160	190	230	360	650
6 mm	daN	daN	daN	daN	daN	daN	daN	daN
S daN	-	180	210	240	300	370	550	1020
9 mm	daN	daN	daN	daN	daN	daN	daN	daN

S max: Load coefficient daN = Kg. / (10 newton), while polyurethane bush S max in pressed, load data is advisory.



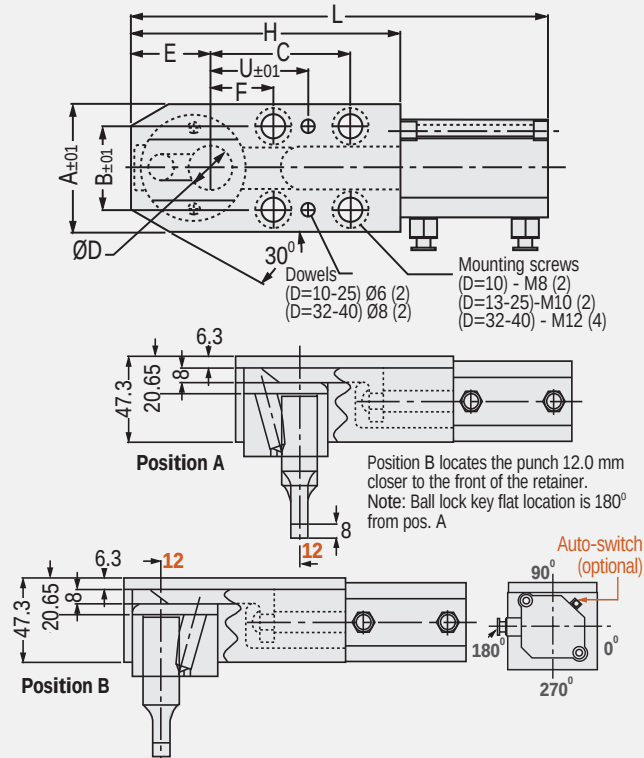
LIGHT DUTY

HEAVY DUTY

Ball Lock Retainer with Air Cylinder

Code: **MRA**

Dual-position advantage



Thanks to its powerful block structure, there is no need for extra security.

"MRA - Ball Lock Retainer" do not create additional tooling cost and it provides to add or remove hole without interrupting production. It is compatible with NAAMS standards and leading automotive standards. Position B enables the punch to get closer to the front end of the retainer (edge) 12 mm.

D	L	A	B	C	E	F
Order	Pos.A	Pos.B	Pos.A	Pos.B	Pos.A	Pos.B
MRA.10	161	46	30	-	-	28 16 21 33
MRA.13	172.5	50	30	-	-	28 16 25 37
MRA.16	177	50	30	-	-	31 19 25 37
MRA.20	191.5	58	38	-	-	32.5 20.5 29 41
MRA.25	206.5	58	38	-	-	35 23 29 41
MRA.32	260	80	56	100	112	38 26 38 50
MRA.40	264	80	56	100	112	42 30 38 50

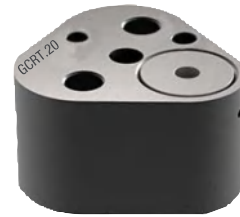
Air Fitting: 10 - 25 M5 x 0.8 (2) 32 - 40 1/8 NPT (2)

Min. Pressure : 45 PSI

Recommended Air Pressure: 4.60 - 5.3 Kg / cm² (65 - 75 PSI) Max. Pressure: 145 PSI

D	H	U		Screw
Order		Pos.A	Pos.B	
MRA.10	93.5	37	49	M8
MRA.13	100	41	53	M10
MRA.16	104.5	41	53	M10
MRA.20	113.5	45	57	M10
MRA.25	123.5	45	57	M10
MRA.32	152	60	72	M12
MRA.40	156	60	72	M12

Note: Necessary screws, dowel pins and air cylinder are given with the product. Air connection tubes and auto-switch are not given with the product. They should be ordered separately. Ask information for additional accessories.

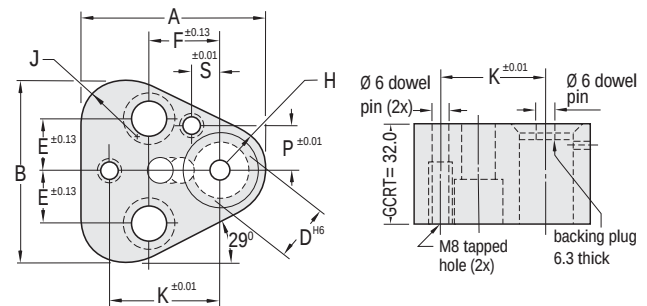


LIGHT DUTY

Ball Lock Punch Retainer - Light Duty

Code: **GCRT**

- Centre of pin holes are reference points for punch hole position.
- Shim and backing plate should be supplied separately.
- Shaped punches use the secondary dowel for precise alignment; round punches need only one.
- The precision-ground ball hole assures perfect alignment of any punch shape – even if you replace the retainer.
- Retainer includes; 2 dowel pins + 2 screws + 1 ball + 1 spring + 1 ball release screw.

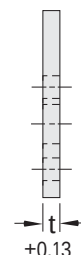
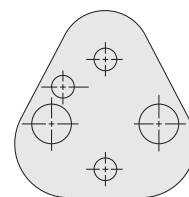


Code: **GCRT**

Order	GCRT. 10	GCRT. 13	GCRT. 16	GCRT. 20	GCRT. 25
D (punch)	10	13	16	20	25
A	44.5	50.8	54.0	60.3	69.9
B	43.7	50.0	53.2	59.5	69.1
E	11.1	14.3	15.9	17.5	19.8
F	19.0	19.0	19.0	19.0	23.8
H	9.5	12.7	14.3	17.5	22.2
J	12.0	15.2	16.8	20.0	24.7
K	26.925	29.970	31.750	33.530	40.640
P	9.0	12.0	13.5	16.5	22.0
S	7.5	6.5	6.0	5.0	7.0
Screw	M8	M8	M8	M10	M12

Shim & Backing Plate for Punch Retainer

Please check Code: **PRSP** and **PRBP** for shim and backing plates.

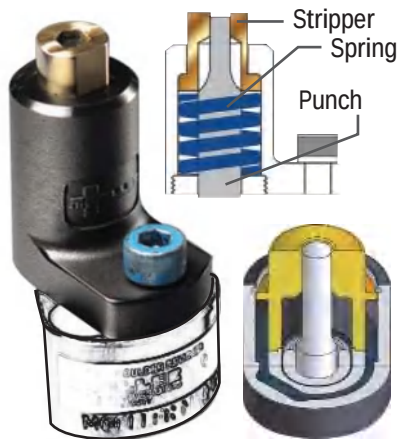


Shim Plate t = 1.8 (soft)

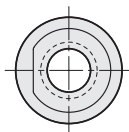
Code: **PRSP**

Backing Plate t = 4.8 (55 HRC)

Code: **PRBP**

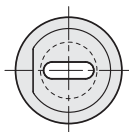


Code: **MTX**



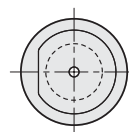
ROUND
for stepped
round type
punches

Code: **MTW**

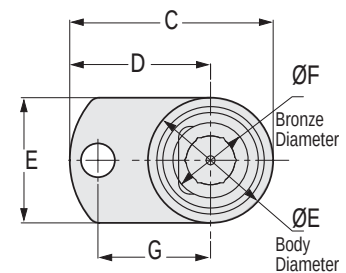


SHAPE
for stepped
form / shape
type punches

Code: **MTV**



BLANK
for standard
blank punches
and light duty
ball lock

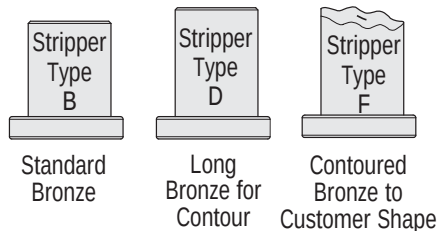


Ball Lock Stripper Retainer **LIGHT DUTY**

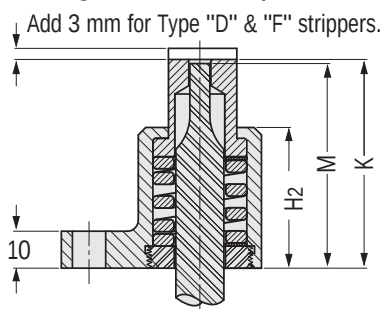
If retainer and punch are required, please purchase as additional line items at time of order.

Note: Only available in 80 mm & 90 mm punch lengths.

Stripper Types:

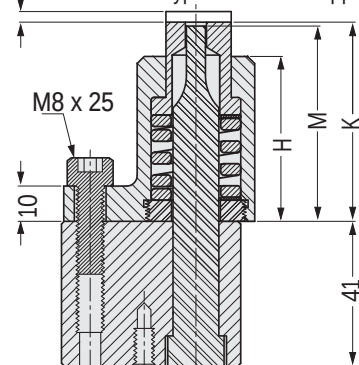


Long Reach / Compact Unit



Standard Unit

Add 3 mm for Type "D" & "F" strippers.



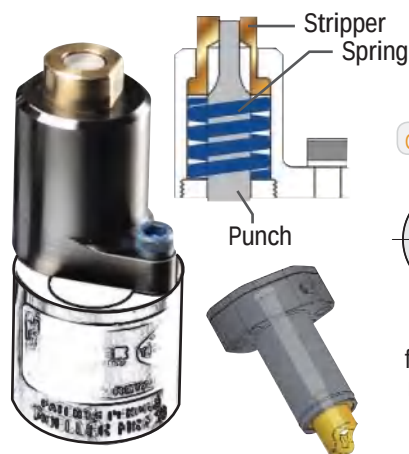
Order	C	D	E	F	G	H	H2	K	M	Stroke	Long Reach / Compact Max. Stroke	HEX Tool Length
MTV13 - 71/S	54.1	37.5	33.3	20	30	37.74	-	46.5	46	6.5	-	1/2"
MTV13 - 80/S	54.1	37.5	33.3	20	30	46.74	37.74	55.5	55	6.5	6.5	1/2"
MTV13 - 90/S	54.1	37.5	33.3	20	30	54.52	37.74	65.5	65	8.5	6.5	1/2"
MTV16 - 71/S	58.7	38.7	40	27	31.8	37.74	-	46.5	46	7.9	-	5/8"
MTV16 - 80/S	58.7	38.7	40	27	31.8	46.74	37.74	55.5	55	7.9	7.9	5/8"
MTV16 - 90/S	58.7	38.7	40	27	31.8	54.52	37.74	65.5	65	9.5	7.9	5/8"
MTV20 - 71/S	65.4	42.4	46.1	33	33.5	37.74	-	46.5	46	7.3	-	3/4"
MTV20 - 80/S	65.4	42.4	46.1	33	33.5	46.74	37.74	55.5	55	7.3	7.3	3/4"
MTV20 - 90/S	65.4	42.4	46.1	33	33.5	54.52	37.74	65.5	65	8.1	7.3	3/4"
MTV25 - 71/S	74.9	47.1	55.6	42.5	40.6	37.74	-	46.5	46	8.5	-	24 mm
MTV25 - 80/S	74.9	47.1	55.6	42.5	40.6	46.74	37.74	55.5	55	8.5	8.5	24 mm
MTV25 - 90/S	74.9	47.1	55.6	42.5	40.6	54.52	37.74	65.5	65	9.3	8.5	24 mm
MTV32 - 71/S	78.9	47.1	63.5	50.6	40.6	37.74	-	46.5	46	7.7	-	1 - 1/4"
MTV32 - 80/S	78.9	47.1	63.5	50.6	40.6	46.74	37.74	55.5	55	7.7	7.7	1 - 1/4"
MTV32 - 90/S	78.9	47.1	63.5	50.6	40.6	54.52	37.74	65.5	65	7.7	7.7	1 - 1/4"

Order Example:

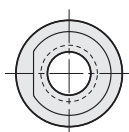
Specify dimensions of ends of punches to be used in "MT retainers" during ordering.

Size	Punch			Punch Body Diameter	Punch Length			Punch Stripper			Long Reach
Metric	Shoulder Style				71	80	90	B	D	F	LR
	Round	Shape	Blank								
M	X	W	V								

MTV 10 - 71 / SB / LR

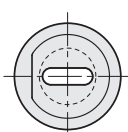


Code: MTJ



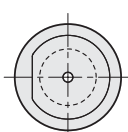
ROUND
for stepped
round type
punches

Code: MTK

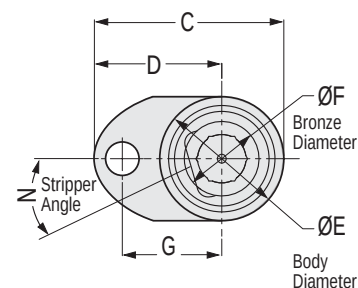


SHAPE
for stepped
form / shape
type punches

Code: MTL



BLANK
for standard
blank punches
and light duty
ball lock



Ball Lock Stripper Retainer

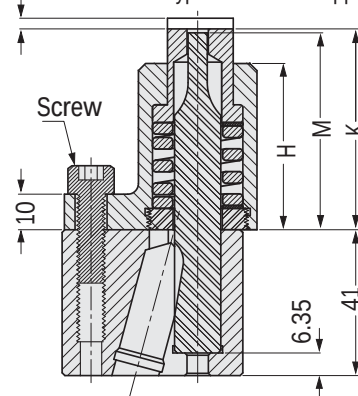
HEAVY DUTY

If retainer and punch are required, please purchase as additional line items at time of order.

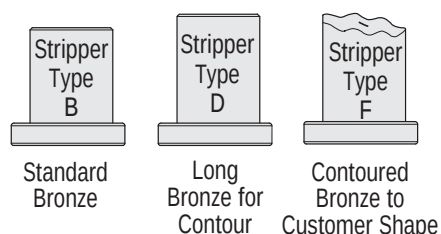
Note: Only available in 90 mm & 100 mm punch lengths.

Standard Unit

Add 3 mm for Type "D" & "F" strippers.

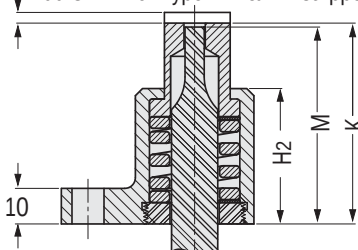


Stripper Types:



Long Reach / Compact Unit

Add 3 mm for Type "D" & "F" strippers.

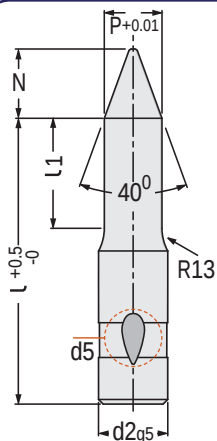


Order	C	D	E	F	G	H	H2	K	M	Stroke	Long Reach / Compact Max. Stroke	Screw	HEX Tool Length
MTL13 - 80/S	46.1	29.4	33.3	20	23.9	37.74	-	46.46	45.35	6.5	-	M6x25	1/2"
MTL13 - 90/S	46.1	29.4	33.3	20	23.9	46.74	37.74	56.46	55.35	6.5	6.5	M6x25	1/2"
MTL13 - 100/S	46.1	29.4	33.3	20	23.9	54.52	37.74	66.46	65.36	8.5	6.5	M6x25	1/2"
MTL16 - 80/S	50	30	40	27	24.5	37.74	-	46.85	45.35	7.9	-	M6x25	5/8"
MTL16 - 90/S	50	30	40	27	24.5	46.74	37.74	56.85	55.35	7.9	7.9	M6x25	5/8"
MTL16 - 100/S	50	30	40	27	24.5	54.52	37.74	67.95	65.36	9.5	7.9	M6x25	5/8"
MTL20 - 80/S	59	36	46.1	33	29	37.74	-	46.85	45.35	7.3	-	M8x25	3/4"
MTL20 - 90/S	59	36	46.1	33	29	46.74	37.74	56.85	55.35	7.3	7.3	M8x25	3/4"
MTL20 - 100/S	59	36	46.1	33	29	54.52	37.74	66.86	65.36	8.1	7.3	M8x25	3/4"
MTL25 - 80/S	68.3	40.5	55.6	42.5	33.5	37.74	-	46.85	45.35	8.5	-	M8x25	24 mm
MTL25 - 90/S	68.3	40.5	55.6	42.5	33.5	46.74	37.74	56.85	55.35	8.5	8.5	M8x25	24 mm
MTL25 - 100/S	68.3	40.5	55.6	42.5	33.5	54.52	37.74	66.86	65.36	9.3	8.5	M8x25	24 mm
MTL32 - 80/S	79.4	47.6	63.5	50.6	40.6	37.74	-	46.85	45.35	7.7	-	M8x25	1 - 1/4"
MTL32 - 90/S	79.4	47.6	63.5	50.6	40.6	46.74	37.74	56.85	55.35	7.7	7.7	M8x25	1 - 1/4"
MTL32 - 100/S	79.4	47.6	63.5	50.6	40.6	54.52	37.74	66.86	65.36	7.7	7.7	M8x25	1 - 1/4"
MTL40 - 80/S	87.2	51	72.5	59.7	44	37.74	-	46.85	45.35	7.6	-	M8x25	1 - 1/2"
MTL40 - 90/S	87.2	51	72.5	59.7	44	46.74	37.74	56.85	55.35	7.6	7.6	M8x25	1 - 1/2"
MTL40 - 100/S	87.2	51	72.5	59.7	44	54.52	37.74	66.86	65.36	7.6	7.6	M8x25	1 - 1/2"

Size	Punch			Punch Body Diameter	Punch Length			Punch Stripper			Long Reach
Metric	Ball Lock				80	90	100	B	D	F	LR
	Round	Shape	Blank								
M	J	K	L								

Specify dimensions of ends of punches to be used in "MT retainers" during ordering.

MTL 10 - 80 / SB / LR



LIGHT DUTY

Ball Lock Pilot - Conical Code: BPK

"N" becomes = 1.2 x "P" minimum when "P" is below (see table).

Standard Tolerances

Round / P ⁺⁰¹ ₋₀₀		,01	From P to d2
---	--	-----	--------------

When P = d2, shank / body tolerances apply.

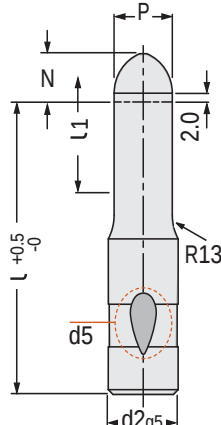
Material: 1.3343 (M2) Hardness: 60 - 62 HRC

d2	d5	P	L1	N	L
10	8 mm	5.9 ~ 9.9	19	8	71
13		9.9 ~ 12.9	19	10	80
16		12.9 ~ 15.9	25	15	100
20		15.9 ~ 19.9	25	20	71
25		19.9 ~ 24.9	25	25	80
32		24.9 ~ 31.9	25	30	100
38		31.9 ~ 37.9	30	35	140

Note: P / L selection as per request.
- Special dimensions on request.



Order: BPK. d2 x P x L



LIGHT DUTY

Ball Lock Pilot - Spherical Code: BPX

- It is length of "L" pilot except end.
- 2 mm length is guided to punch before punch contacting sheet metal.

	P	N
	≤ 10 mm	8 mm
10.1 mm	- 15 mm	12 mm
	> 15 mm	15 mm

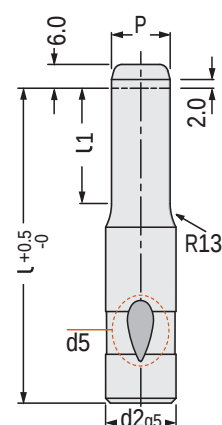
Material: 1.3343 (M2) Hardness: 60 - 62 HRC

d2	d5	P	L1	N	L
6	6	2.9 ~ 5.9	13	-	63
10	8 mm	5.9 ~ 9.9	19	8	
13		9.9 ~ 12.9	19	10	
16		12.9 ~ 15.9	25	15	
20		15.9 ~ 19.9	25	15	
25		19.9 ~ 24.9	25	20	
32		24.9 ~ 31.9	25	25	

Note: P / L selection as per request.
- Special dimensions on request.



Order: BPX. d2 x P x L



LIGHT DUTY

Ball Lock Pilot - Parabolic Code: BPP

Standard Tolerances

Round / P ⁺⁰¹ ₋₀₀		,01	From P to d2
---	--	-----	--------------

When P = d2, shank / body tolerances apply.

Material: 1.3343 (M2) Hardness: 60 - 62 HRC

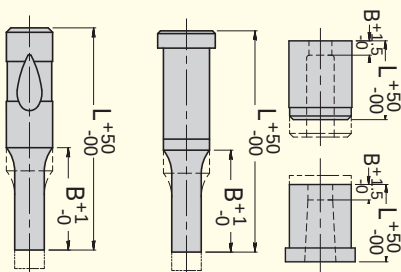
d2	d5	P	L1	L
6	6	2.2 ~ 6.0	13	63
10	8 mm	2.5 ~ 10	19	
13		5.0 ~ 13	19	
16		8.0 ~ 16	19	
20		12 ~ 20	19	
25		16 ~ 15	19	

Note: P / L selection as per request.
- Special dimensions on request.



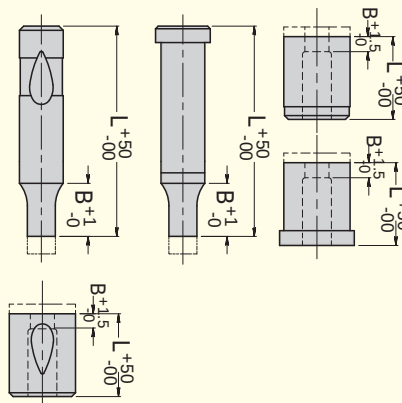
Order: BPP. d2 x P x L

Alternative Selection Information: Gaps Except Punch Centre



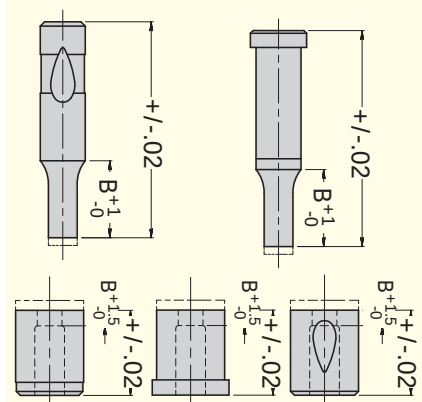
X1 B: Main Dimension

Shortening punch or matrix length maintaining "B" point or land length. Not available in counter bore style on headed or ball lock matrixes.



X2 B: Shortened Dimension

Shortening punch or matrix length but also decreases "B" dimension or land length.

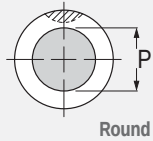


X3

Provides a precision overall length of ± 0.2
Note: 5 maximum stock removal

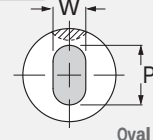
Shapes

BHY



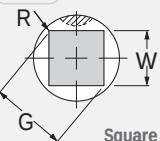
Round

BHO



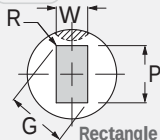
Oval

BHK



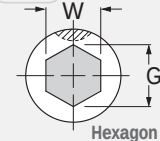
Square

BHD



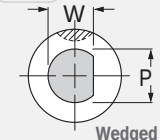
Rectangle

BHA



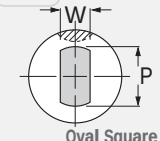
Hexagon

BHM



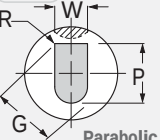
Wedged

BHX



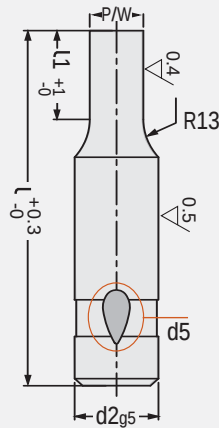
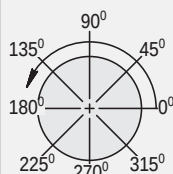
Oval Square

BHP



Parabolic

Standard Position



LIGHT DUTY



Ball Lock Stepped Punch - Light Duty

Code: BH..

Material: 1.3343 (M2) - Hardness: 60 - 62 HRC

- When P = d2 shank / body tolerances apply.
- Standard ball socket location is at 90°.

Order d2	Ball Socket d5	Shape		Standard L1	Alternative L1 Min. Max.		l mm
		(BHY) Round P	Other Shapes W G/P				
BH..06	6	2.2 ~ 5.9	2.2 - 5.9	13	10	-	63
BH..10	8 mm	2.5 ~ 9.9	2.5 - 9.9	19	10	19	71
BH..13		5.0 ~ 12.9	4.5 - 12.9	19	13	25	80
BH..16		8.0 ~ 15.9	6.0 - 15.9	19	13	25	90
BH..20		12 ~ 19.9	8.0 - 19.9	19	13	25	100
BH..25		16 ~ 24.9	10 - 24.9	19	13	25	125
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
							125

Order Codes: BHY - BHO - BHK - BHD - BHA - BHM - BHX - BHP

← Please refer to the table on the left side

How to order:

Shape

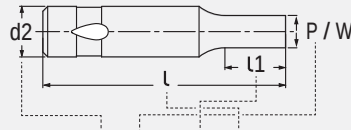
d2

P/W

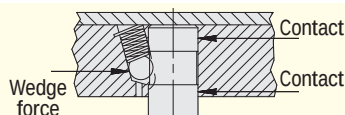
L1

l

Material



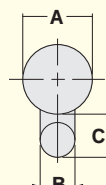
BHY x 10 x P8.2 x 19 x 90 - M2
BHO x 13 x P8.2 x W5.2 x 25 x 100 - M2



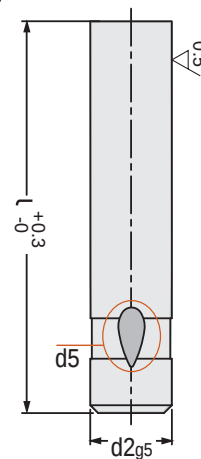
Connecting Punch to Retainer with Ball Socket

Requirements of Ball Locking Place

Punch Dia. A	Ball Dia. B	Clearance C
6.0	6.0	10
10	8	11
13		
16		
20		
25		
32		
38		



for precise retainers, please add 1.7 to "C" dimension



LIGHT DUTY



Ball Lock Punch - Light Duty

Code: BHZ

ISO 10071

(Blank type)

Body and cutting edge are precision ground.
Also, full or partial coating can be preferred upon request, by providing resistance against heat and friction on external layer, it solves problems such as winding and cold welding.

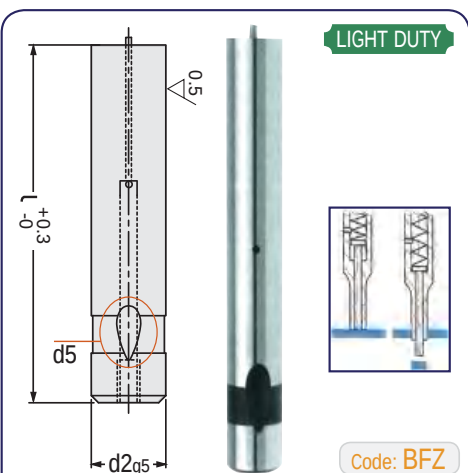
d2	d5	l	d2	d5	l
Ø 6 mm	6 mm	63	Ø 20 mm	8 mm	63
		71			71
		80			80
		90			90
		100			100
		125			125
Ø 10 mm	8 mm	63	Ø 25 mm	8 mm	63
		71			71
		80			80
		90			90
		125			125
Ø 13 mm	8 mm	63	Ø 32 mm	8 mm	71
		71			80
		80			90
		90			100
		125			125
Ø 16 mm	8 mm	63	Ø 38 mm	8 mm	80
		71			90
		80			100
		90			125
		125			125



Order:
BHZ. d2 x l

Material: 1.3343 (M2)
Hardness: 60 - 62 HRC

Note: Special dimensions on request.



Ball Lock Punch with Ejector - Light Duty ISO 10071 (Blank type)

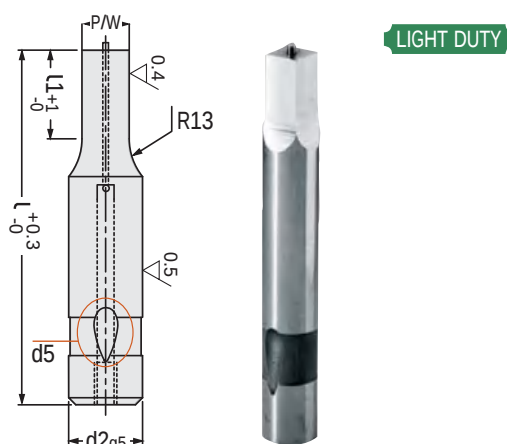
Body and cutting edge are precision ground.
Also, full or partial coating can be preferred upon request, by providing resistance against heat and friction on external layer, it solves problems such as winding and cold welding.

d2	d5	L	d2	d5	L
Ø 6 mm	6 mm	63	Ø 20 mm	8 mm	63
		71			71
		80			80
		90			90
		100			100
Ø 10 mm	8 mm	125			125
		63	Ø 25 mm	8 mm	63
		71			71
		80			80
		90			90
Ø 13 mm	8 mm	100			100
		125			125
		63	Ø 32 mm	8 mm	71
		71			80
		80			90
Ø 16 mm	8 mm	125			100
		63	Ø 38 mm	8 mm	125
		71			80
		80			90
		90			100
		125			125

Order:
BFZ. d2 x L

Material: 1.3343 (M2)
Hardness: 60 - 62 HRC

Note: Special dimensions on request.



Ball Lock Stepped Punch with Ejector Light Duty

Material: 1.3343 (M2) - Hardness: 60 - 62 HRC

- When P = d2 shank / body tolerances apply.
- Standard ball socket location is at 90°.

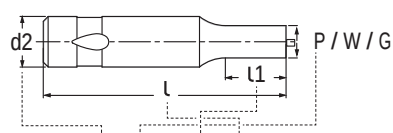
Order d2	Ball Socket d5	Shape		Standard L1	Alternative l1		L mm
		(BFY) Round P	Other Shapes W G/P		Min.	Max.	
BF..06	6	2.2 ~5.9	2.2 -5.9	13	10	-	63 71 80 90 100 125
BF..10	8 mm	2.5 ~9.9	2.5 -9.9	19	10	19	
BF..13		5.0 ~12.9	4.5 -12.9	19	13	25	
BF..16		8.0 ~15.9	6.0 -15.9	19	13	25	
BF..20		12 ~19.9	8.0 -19.9	19	13	25	
BF..25		16 ~24.9	10 -24.9	19	13	25	
BF..32		24 ~31.9	12.5 -31.9	25	25	30	
BF..38		30 ~37.9	14 -37.9	25	25	30	
							80 90 100 125

Order Codes: BFY - BF0 - BFK - BFD - BFA - BFM - BFX - BFP

Please refer to the table on the right side →

How to order:

Shape
d2
P/W
l1
L
Material



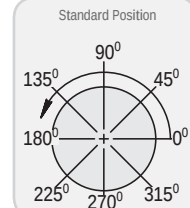
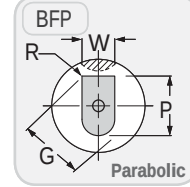
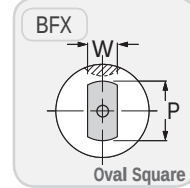
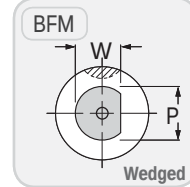
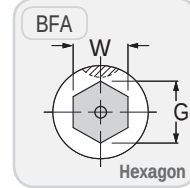
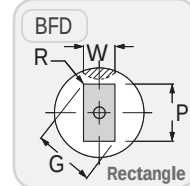
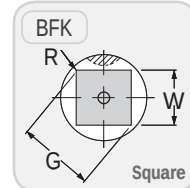
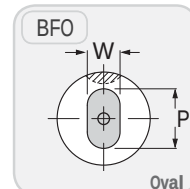
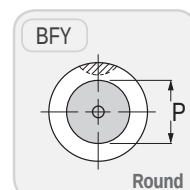
BFY x 10 x P8.2 x 19 x 100 - M2
BF0 x 13 x P8.2 x W5.2 x 25 x 100 - M2

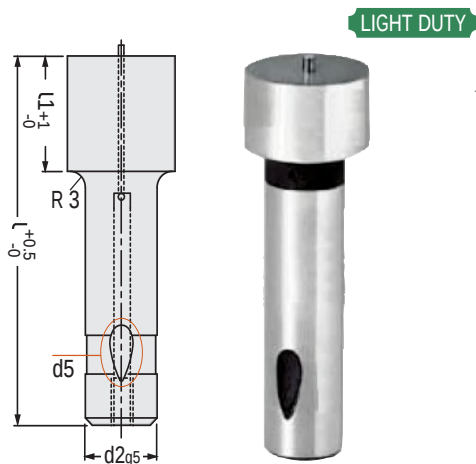
Standard Tolerances	
Round P +0.1 / -0.0	Ø 0.1 From P to d2
Shape P,W,G ± 0.1	Ø 0.2 From P to d2

Standard position of ball socket is 90°. It can be preferred as 0° - 180° - 270°.

Note: Parts are viewed in die position looking from above the die.
Punches are viewed looking through the body.
Matrixes are viewed through top face.

Shapes



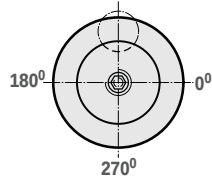


Larger Ball Lock Ejector Punch

Code: BG..

Body and outer dia. are precision ground.

Angle = 90° Standard



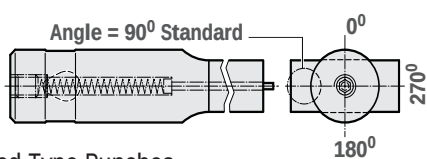
Round Type Punches

Order d2	Ball Socket d5	P (round) Min. Max.	L1 Min. Max.	L
BGY. 10	8 mm	10.1 ~ 25	16	80 90 100
BGY. 13		13.1 ~ 32	20	
BGY. 16		16.1 ~ 38	25	
BGY. 20		20.1 ~ 40	25	
BGY. 25		25.1 ~ 44	25	
BGY. 32		32.1 ~ 50	32	
BGY. 40		40.1 ~ 63	32	



Types: BGY - BGO - BGK - BGD - BGA - BGM - BGX - BGP

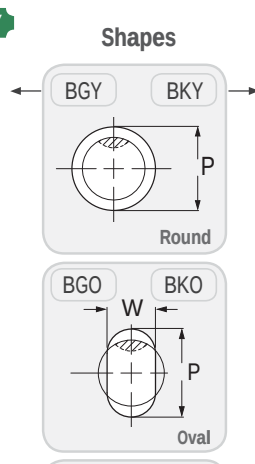
Please refer to the table on the right side



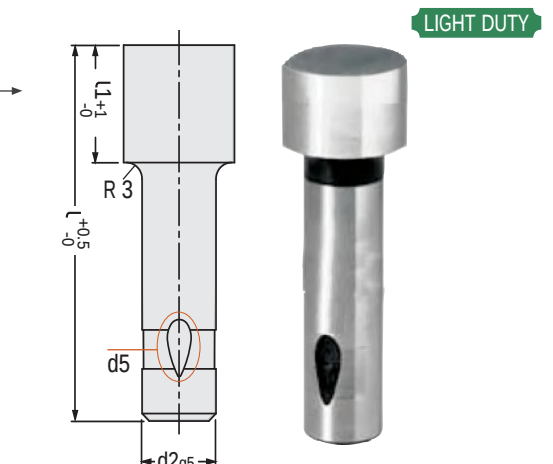
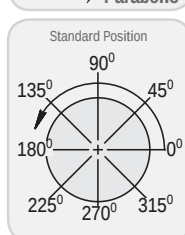
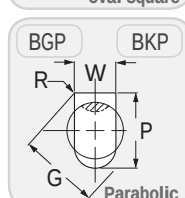
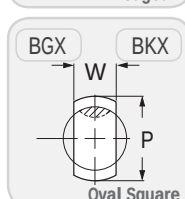
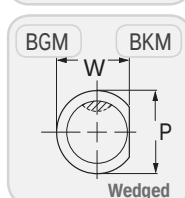
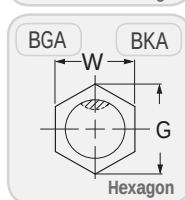
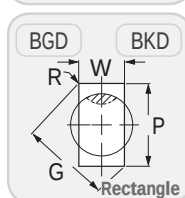
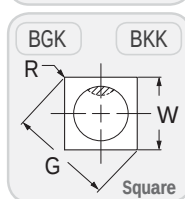
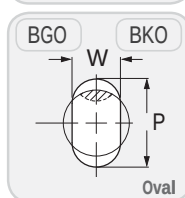
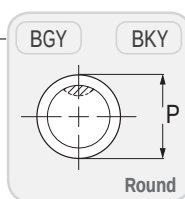
Shaped Type Punches

Order d2	Ball Socket d5	P/W/G (Shape) Min. Max.	L1 Min. Max.	L
BG.. 10	8 mm	3.0 ~ 25	16	80 90 100
BG.. 13		5.0 ~ 32	20	
BG.. 16		6.5 ~ 38	25	
BG.. 20		8.0 ~ 40	25	
BG.. 25		10 ~ 44	25	
BG.. 32		11.5 ~ 50	32	
BG.. 40		14 ~ 63	32	

Note: Special dimensions on request.



Shapes

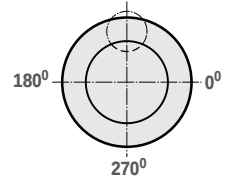


Larger Ball Lock Punch

Code: BK..

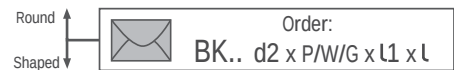
Body and outer dia. are precision ground.

Angle = 90° Standard



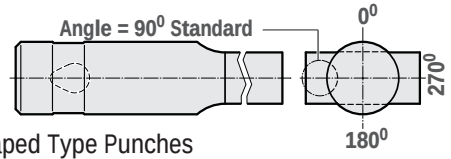
Round Type Punches

Order d2	Ball Socket d5	P (round) 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	



Types: BKY - BKO - BKK - BKD - BKA - BKM - BKX - BKP

Please refer to the table on the left side



Shaped Type Punches

Order d2	Ball Socket d5	P/W/G (Shape) 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	

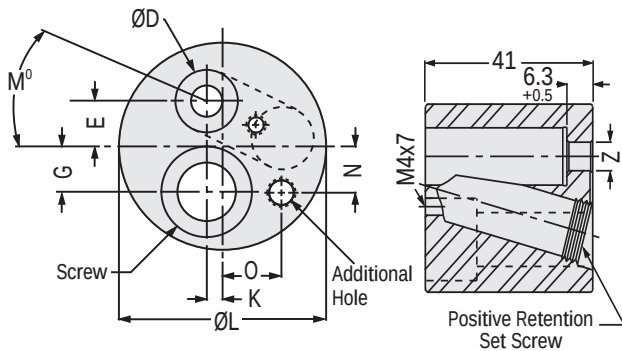


HEAVY DUTY

Ball Lock Punch Retainer - Round

Code: MRR

- Centre of pin holes are reference points for punch hole position.
- Shim and backing plate should be supplied separately.
- Economical: This type retainers are more economical than other ball lock retainers.



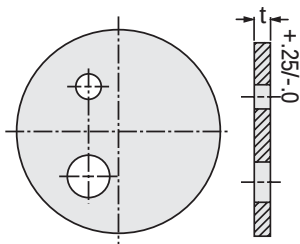
Round Type

Code: MRR

Order	MRR 10	MRR 13	MRR 16	MRR 20	MRR 25	MRR 32	MRR 40
D Punch	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
Add. Hole	M6 x 1.0	M6 x 1.0	M6 x 1.0	M8 x 1.25	M8 x 1.25	M8 x 1.25	M8 x 1.25
Screw	M12	M12	M12	M16	M16	M20	M20

Shim Plate for Round Retainers (MRR)

Code: MAY



Order	"MAY" Code	t
Order Example: MRR.. / MAY.018	018	1.80
	030	3.00
	031	3.18
	047	4.75
	060	6.00
	063	6.35
	100	10
	130	13

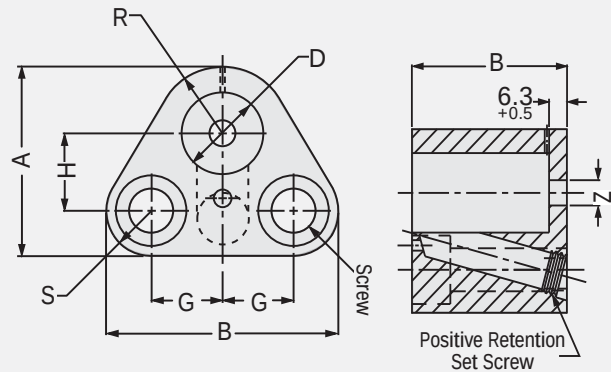


HEAVY DUTY

Ball Lock Punch Retainer - Mini

Code: MRM

- Centre of pin holes are reference points for punch hole position.
- Shim and backing plate should be supplied separately.
- Mini sized: This type of retainers are smaller than other retainers.



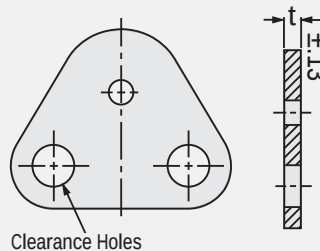
Mini Type

Code: MRM

Order	MRM 10	MRM 13	MRM 16	MRM 20	MRM 25	MRM 32	MRM 40
D Punch	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
Screw	M8	M8	M8	M10	M12	M12	M12

Shim Plate for Mini Retainers (MRM)

Code: MAM



Order	"MAM" Code	t
Order Example: MRM.. / MAM.030	030	3.00
	060	6.00
	100	10
	130	13

HEAVY DUTY

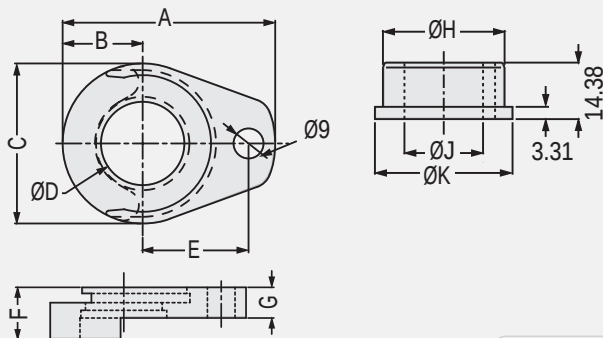


Larger Ball Lock Stripper Retainer

Code: MTB

It is used with "GBRT" heavy duty ball lock retainers

Innovative and integral designed, patented cost savings. Retaining feature at once. Exchangeable and compatible with NAAMS standards. Precision machined to assure perpendicularity resulting in prolonged urethane life.



Code: MTB

Order	MTB	MTB	MTB	MTB	MTB	MTB
Body	Ø 10	Ø 13	Ø 16	Ø 20	Ø 25	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 (Spring)	15.75	19.75	24.75	31.70	39.70	39.70
J (Punch)	10	13	16	20	25	32
K	19	23	28	34	44	44
Urethane	MTS 16	MTS 20	MTS 25	MTS 32	MTS 40	MTS 40
	Ur.Length	Ur.Length	Ur.Length	Ur.Length	Ur.Length	Ur.Length



Urethane Stripper

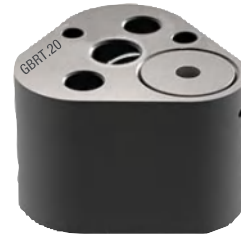
Code: MTS

for "MTB" Stripper Retainer

Exchangeable and compatible with NAAM standards.
Material: Polyurethane / 95 Shore-A

Order	Punch Length	Punch	l	D	d1	d2	b
MTS 10	80	10	43	15.75	31	28	6
MTS 13	100	13	43	19.75	36	33	7
MTS 16	80	16	43	24.75	43	40	7
MTS 20	100	20	43	31.75	55	50	7
MTS 25	80	25	43	39.75	65	60	8
MTB 32	100	32	43	39.75	65	60	8

HEAVY DUTY

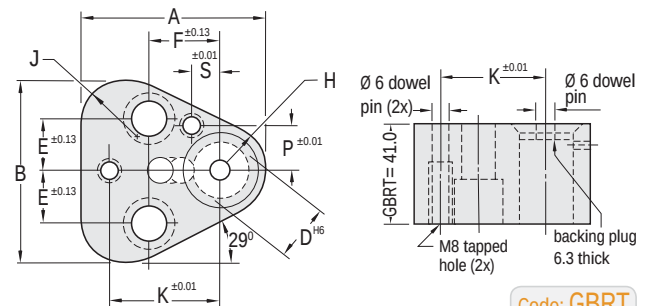


Ball Lock Punch Retainer - Heavy Duty

Code: GBRT

- Centre of pin holes are reference points for punch hole position.
- Shim and backing plate should be supplied separately.
- Shaped punches use the secondary dowel for precise alignment; round punches need only one.
- The precision-ground ball hole assures perfect alignment of any punch shape – even if you replace the retainer.
- Retainer includes;
2 dowel pins + 2 screws + 1 ball + 1 spring + 1 ball release screw.

* GBRT retainer is compatible to "NAAMS" standard for ball lock punch retainer.

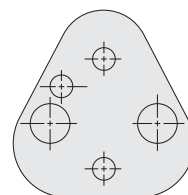


Code: GBRT

Order	GBRT. 10	GBRT. 13	GBRT. 16	GBRT. 20	GBRT. 25	GBRT. 32
D (punch)	10	13	16	20	25	32
A	44.5	50.8	54.0	60.3	69.9	69.9
B	43.7	50.0	53.2	59.5	69.1	69.1
E	11.1	14.3	15.9	17.5	19.8	19.8
F	19.0	19.0	19.0	19.0	23.8	23.8
H	9.5	12.7	14.3	17.5	22.2	22.2
J	12.0	15.2	16.8	20.0	24.7	24.7
K	26.925	29.970	31.750	33.530	40.640	40.640
P	9.0	12.0	13.5	16.5	22.0	22.0
S	7.5	6.5	6.0	5.0	7.0	7.0
Screw	M8	M8	M8	M10	M12	M12

Shim & Backing Plate for Punch Retainer

Please check Code: PRSP and PRBP for shim and backing plates.

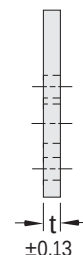


Shim Plate t = 1.8 (soft)

Code: PRSP

Backing Plate t = 4.8 (55 HRC)

Code: PRBP





LIGHT DUTY **HEAVY DUTY**

Stripper Retainers

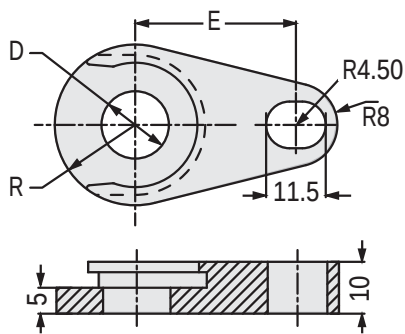
Codes: **MTR / MTM / MTP**

These stripper retainers are adaptable to special multi-hole retainers. Precision machined to assure perpendicularity resulting in prolonged urethane life. Innovative and integral designed, patented cost savings. Retaining feature at once. Exchangeable and compatible with NAAMS standards.

Stripper Retainer

Code: **MTR**

It is used with "GBRT" retainers

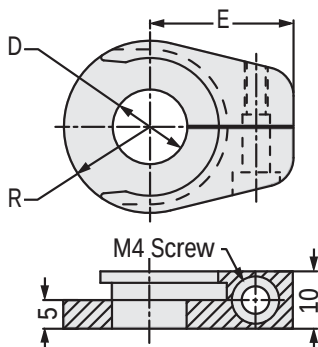


Order	D	R	E
MTR 10	10	13	28
MTR 13	13	15.5	31
MTR 16	16	18	32.9
MTR 20	20	20.5	34.8
MTR 25	25	24	39.8
MTR 32	32	31	41.3
MTR 40	40	36	45

Stripper Retainer

Code: **MTM**

It is used with "MRM" retainers

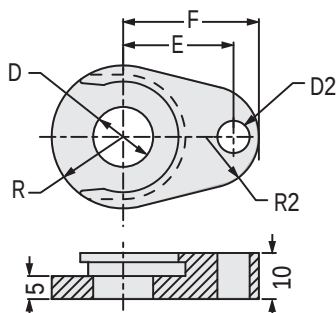


Order	D	R	E
MTM 10	10	13	22.5
MTM 13	13	15.5	25
MTM 16	16	18	27.5
MTM 20	20	20.5	30
MTM 25	25	24	35.5
MTM 32	32	31	37.5
MTM 40	40	36	42.3

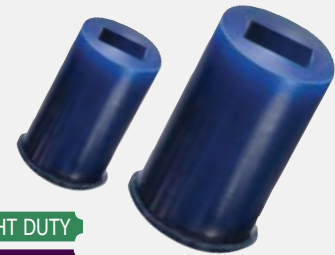
Stripper Retainer

Code: **MTP**

It is used with "MRR" retainers



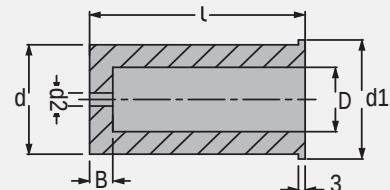
Order	D	R	E	F	D2	R2
MTP 10	10	13	21	26.5	7	10
MTP 13	13	15.5	23.9	29.4	7	11
MTP 16	16	18	24.5	30	7	12.8
MTP 20	20	20.5	29	36	9	11.8
MTP 25	25	24	33.5	40.5	9	12.9
MTP 32	32	31	40.6	49.3	9	8
MTP 40	40	36	44	53	9	8



LIGHT DUTY
HEAVY DUTY

Urethane Stripper

Code: **MTS**



Code: **MTS**

Punch Body	D	d	l	d1	d2	B
10	Ø 9.75	Ø 18	44	Ø 21	1.6	6 mm
			54			
			64			
			74			
13	Ø 12.75	Ø 23	44	Ø 26	3	6 mm
			54			
			64			
			74			
16	Ø 15.75	Ø 28	44	Ø 31	3	6 mm
			54			
			64			
			74			
20	Ø 19.75	Ø 33	44	Ø 36	3	7 mm
			54			
			64			
			74			
25	Ø 24.75	Ø 40	44	Ø 43	3	7 mm
			54			
			64			
			74			
32	Ø 31.70	Ø 50	44	Ø 55	3	7 mm
			54			
			64			
			74			
40	39.70	Ø 60	44	65	3	8 mm
			64			

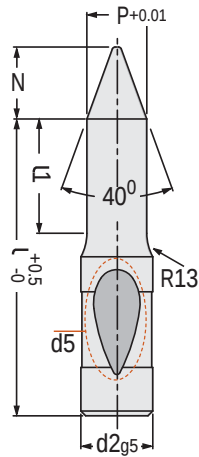


Order: **MTS. d x l**

Urethane Length for Strippers:

While ordering, please specify punch length.

Heavy Duty Ball Lock Punch Length	Light Duty Ball Lock Punch Length	Recommended Stripper Length "l"
80	71	43 (44)
90	80	52 (54)
100	90	63 (64)
110	100	72 (74)



HEAVY DUTY

Ball Lock Pilot - Conical Code: BAPK

"N" becomes = 1.2 x "P" minimum when "P" is below (see table).

Standard Tolerances

Round / P ⁺⁰¹ ₋₀₀		,01	From P to d2
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When P = d2, shank / body tolerances apply.

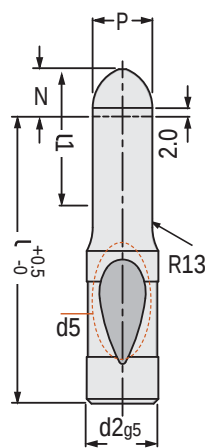
Material: 1.3343 (M2) Hardness: 60 - 62 HRC

d2	d5	P	L1	N	L
10	10	5.9 ~ 9.9	19	8	80
13		9.9 ~ 12.9	19	10	100
16		12.9 ~ 15.9	25	15	125
20	12	15.9 ~ 19.9	25	20	80
25	mm	19.9 ~ 24.9	25	25	100
32		24.9 ~ 31.9	25	30	125
40		31.9 ~ 39.9	30	40	150

Note: P / L selection as per request.
- Special dimensions on request.



Order: BAPK. d2 x P x L



HEAVY DUTY

Ball Lock Pilot - Spherical Code: BAPX

- It is length of "L" pilot except end.
- 2 mm length is guided to punch before punch contacting sheet metal.

	P	N
	≤ 10 mm	8 mm
10.1 mm	- 15 mm	12 mm
	> 15 mm	15 mm

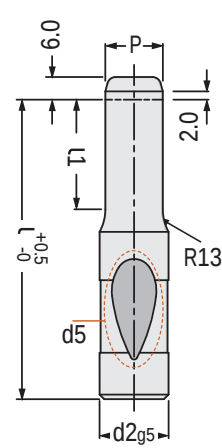
Material: 1.3343 (M2) Hardness: 60 - 62 HRC

d2	d5	P	L1	N	L
10	10	2.5 ~ 10	19	10	71
13		5 ~ 13	19	10	80
16		8 ~ 16	19	10	100
20	12	12 ~ 20	19	10	71
25	mm	16 ~ 25	19	10	80
32		24 ~ 32	19	10	100
40		30 ~ 40	25	10	125

Note: P / L selection as per request.
- Special dimensions on request.



Order: BAPX. d2 x P x L



HEAVY DUTY

Ball Lock Pilot - Parabolic Code: BAPP

"N" becomes = 1.2 x "P" minimum when "P" is below (see table).

Standard Tolerances

Round / P ⁺⁰¹ ₋₀₀		,01	From P to d2
---	--	-----	--------------

When P = d2, shank / body tolerances apply.

Material: 1.3343 (M2) Hardness: 60 - 62 HRC

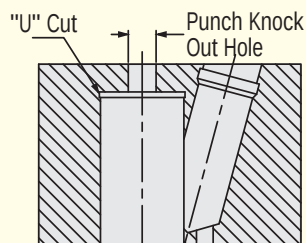
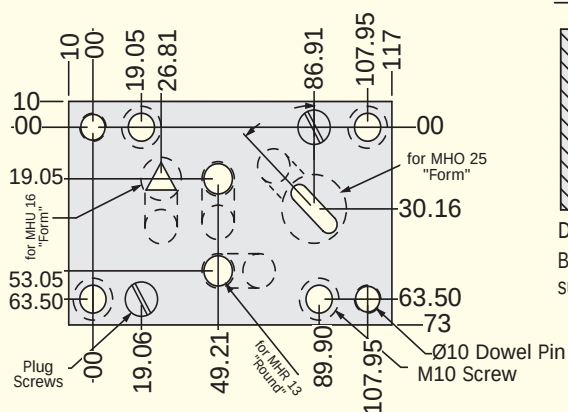
d2	d5	P	L1	L
10	10	2.5 ~ 10	19	71
13		5 ~ 13	19	80
16		8 ~ 16	19	100
20	12	12 ~ 20	19	71
25	mm	16 ~ 25	19	80
32		24 ~ 32	19	100
40		30 ~ 40	25	125

Note: P / L selection as per request.
- Special dimensions on request.



Order: BAPP. d2 x P x L

Multi Hole, Special Ball Lock Retainers

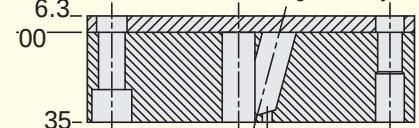


Detail View of Punch Hole
Ball - socket class "R" will be supplied unless otherwise specified.

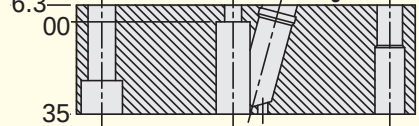
Class	Radial Tolerance
R	+ 5°
F	+ .05°

Technical Information !

Full Backing Plate Style:



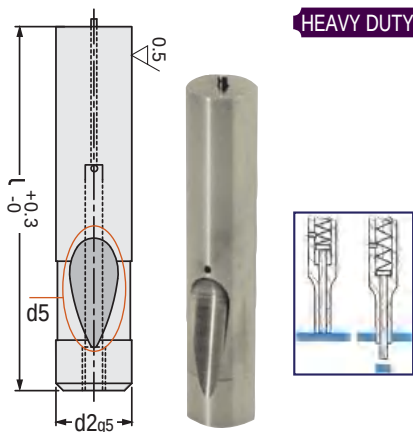
Single Piece:



Tolerances for All Types

Outside Edges	± .5
Dowel Hole Locations	± .01
Screw Hole Locations	± .1
Component Hole Locations	± .01

In technical drawings, the hardened backing plates of multi hole ball lock retainers are shown as two different examples as traditional and single piece retainer. Here, the retainer has been measured from the left upper corner and the zero point is considered as a punch or dowel pin hole and it is positioned correctly in die. This aids in CNC programming and ensures proper settling of the punch retainer and its matching die section or matrix retainer.



HEAVY DUTY

Ball Lock Punch with Ejector, Heavy Duty (Blank type) Code: BAFZ

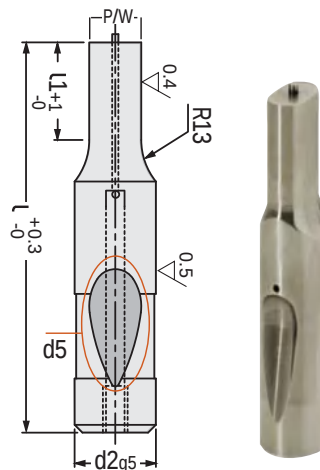
Body and cutting edge are precision ground. Also, full or partial coating can be preferred upon request, by providing resistance against heat and friction on external layer, it solves problems such as winding and cold welding.

d2	d5	L
Ø 10 mm	10 mm	71
		80
		90
		100
Ø 13 mm	12 mm	71
		80
		90
		100
		125
Ø 16 mm	12 mm	71
		80
		90
		100
		125
Ø 20 mm	12 mm	71
		80
		90
		100
		125
Ø 25 mm	12 mm	80
		90
		100
		110
		125
Ø 32 mm	12 mm	80
		90
		100
		110
Ø 40 mm	12 mm	80
		90
		100
		110
		125

Order: **BAFZ. d2 x L**

Material: 1.3343 (M2)
Hardness: 60 - 62 HRC

Note: Special dimensions on request.



HEAVY DUTY

Ball Lock Stepped Punch with Ejector, Heavy Duty Code: BAF..

Material: 1.3343 (M2) - Hardness: 60 - 62 HRC

- When P = d2 shank / body tolerances apply.
- Standard ball socket location is at 90°.
- BAF.. Punches conform to NAAMS standards.

Order d2	Ball Socket d5	Shape		Standard L1	Alternative L1 Min. Max.		L mm
		(BAFY) Round P	Other Shapes W G/P				
BAF..10	10	2.5 ~ 9.98	2.5 - 10	19	10	19	71
BAF..13	12 mm	5.0 ~ 12.98	4.5 - 13	19	13	25	
BAF..16		8.0 ~ 15.98	6.0 - 16	19	13	25	
BAF..20		12 ~ 19.98	8.0 - 20	19	13	25	
BAF..25		16 ~ 24.98	10 - 25	19	13	25	80
BAF..32		24 ~ 31.98	12 - 32	19	13	25	90
BAF..40		30 ~ 39.98	14 - 40	25	19	30	100
							110
							125

Order Codes: **BAFY - BAFO - BAFK - BAFD - BAFA - BAFM - BAFX - BAFP**

Please refer to the table on the right side

How to order:

Shape

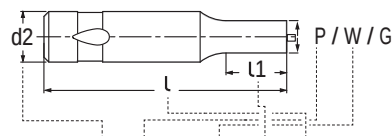
d2

P/W

L1

L

Material



BAFY x 10 x P7.3 x 19 x 100 - M2

BAFO x 13 x P8.2 x W6.1 x 19 x 100 - M2

Standard Tolerances

Round P +0.1 / -0.0 $\text{Ⓢ} \begin{smallmatrix} 0.1 \\ 0.2 \end{smallmatrix}$ From P to d2

Shape P,W,G ± 0.1 $\text{Ⓢ} \begin{smallmatrix} 0.1 \\ 0.2 \end{smallmatrix}$ From P to d2

Standard position of ball

socket is 90°.

It can be preferred as

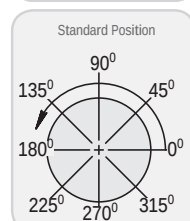
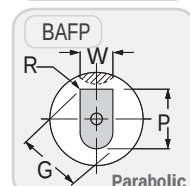
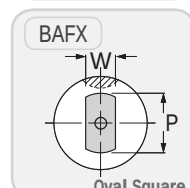
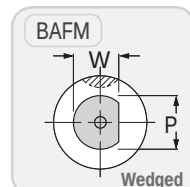
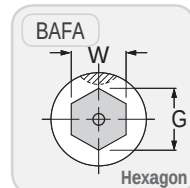
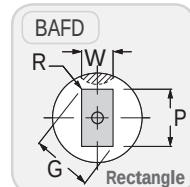
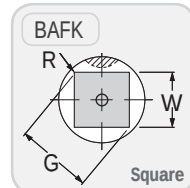
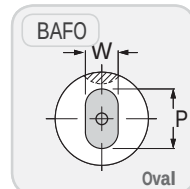
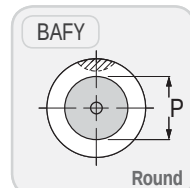
0°- 180°- 270°.

Note: Parts are viewed in die position looking from above the die.

Punches are viewed looking through the body.

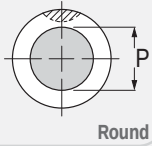
Matrixes are viewed through top face.

Shapes



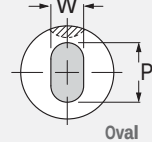
Shapes

BAY



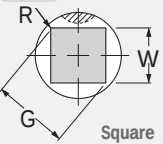
Round

BAO



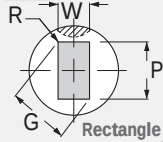
Oval

BAK



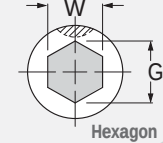
Square

BAD



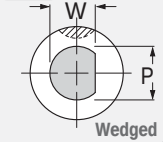
Rectangle

BAA



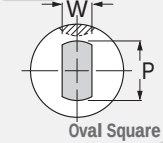
Hexagon

BAM



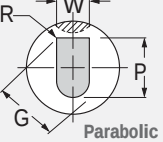
Wedged

BAX



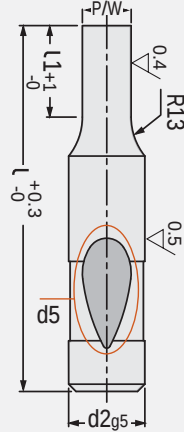
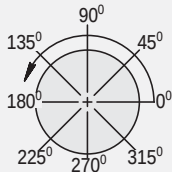
Oval Square

BAP



Parabolic

Standard Position



HEAVY DUTY



Ball Lock Stepped Punch - Heavy Duty

Code: BA..

Material: 1.3343 (M2) - Hardness: 60 - 62 HRC

- When P = d2 shank / body tolerances apply.
- Standard ball socket location is at 90°.
- BA.. Punches conform to NAAMS standards.

Order d2	Ball Socket d5	Shape		Standard L1	Alternative L1 Min. Max.		L mm
		(BAY) Round P	Other Shapes W G/P				
BA..10	10	2.5 ~ 9.98	2.5 - 10	19	10	19	71
BA..13	12 mm	5 ~ 12.98	4.5 - 13	19	13	25	80
BA..16		8 ~ 15.98	6 - 16	19	13	25	90
BA..20		12 ~ 19.98	8 - 20	19	13	25	100
BA..25		16 ~ 24.98	10 - 25	19	13	25	110
BA..32		24 ~ 31.98	12 - 32	19	13	25	125
BA..40		30 ~ 39.98	14 - 40	25	19	30	

Order Codes: BAY - BAO - BAK - BAD - BAA - BAM - BAX - BAP

Please refer to the table on the left side

How to order:

Shape

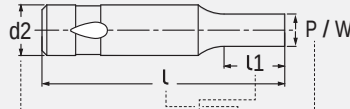
d2

P/W

L1

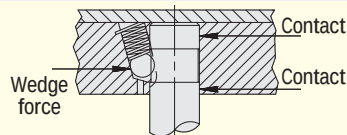
L

Material



BAY x 10 x P5.5 x 19 x 90 - M2

BAO x 13 x P8.2 x W6.1 x 19 x 100 - M2

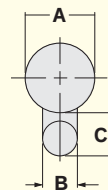


Connecting Punch to Retainer with Ball Socket

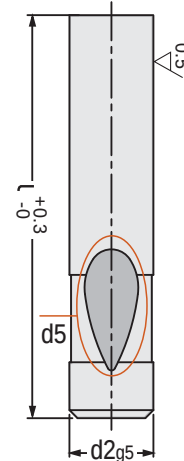
Requirements of Ball Locking Place

Punch Dia. A	Ball Dia. B	Clearance C
10	10	13
13		
16		
20		
25	12	15
32		
40		

Heavy Duty Punch



for precise retainers, please add 1.7 to "C" dimension



HEAVY DUTY



Ball Lock Punch - Heavy Duty

Code: BAZ

(Blank type)

Body and cutting edge are precision ground.

Also, full or partial coating can be preferred upon request, by providing resistance against heat and friction on external layer, it solves problems such as winding and cold welding.

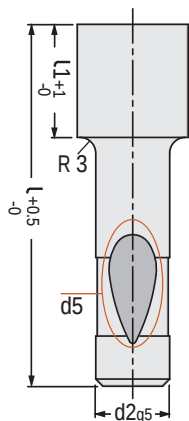
d2	d5	L	d2	d5	L
Ø 10 mm	10 mm	71	Ø 25 mm	12 mm	80
		80			90
		90			100
		100			110
Ø 13 mm	12 mm	71	Ø 32 mm	12 mm	80
		80			90
		90			100
		100			110
Ø 16 mm	12 mm	71	Ø 40 mm	12 mm	80
		80			90
		90			100
		100			110
Ø 20 mm	12 mm	71			125
		80			
		90			
		100			



Order: BAZ. d2 x L

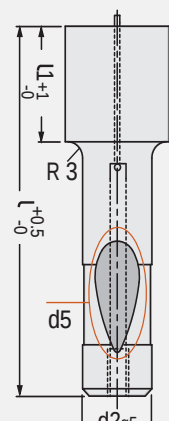
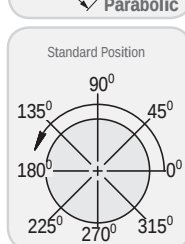
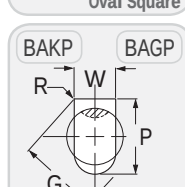
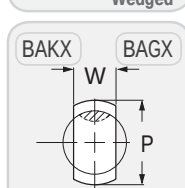
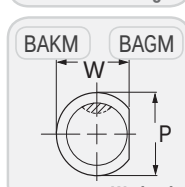
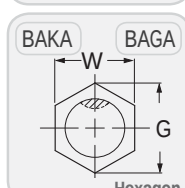
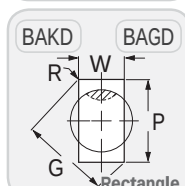
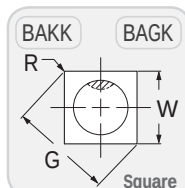
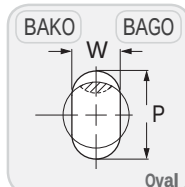
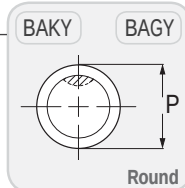
Material: 1.3343 (M2)
Hardness: 60 - 62 HRC

Note: Special dimensions on request.



HEAVY DUTY

Shapes



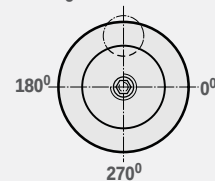
HEAVY DUTY

Larger Ball Lock Ejector Punch

Code: BAG..

Body and outer dia. are precision ground.

Angle = 90° Standard



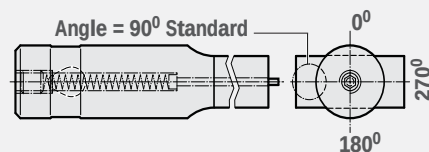
Round Type Punches

Order d2	Ball Socket d5	P (round) Min. Max.	l1 Min. Max.	l
BAGY.. 10	10	10.1 ~ 25	16	80
BAGY.. 13	12 mm	13.1 ~ 32	20	
BAGY.. 16		16.1 ~ 38	25	
BAGY.. 20		20.1 ~ 40	25	
BAGY.. 25	12 mm	25.1 ~ 47	25	100
BAGY.. 32		32.1 ~ 63	32	
BAGY.. 40		40.1 ~ 63	32	



Types: BAGY - BAGO - BAKG - BAGD - BAGA - BAGM - BAGX - BAGP

Please refer to the table on the left side

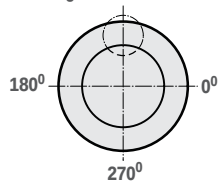


Larger Ball Lock Punch

Code: BAK..

Body and outer dia. are precision ground.

Angle = 90° Standard



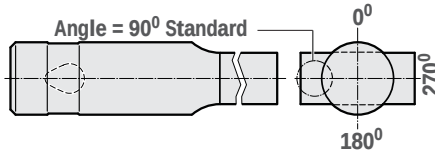
Round Type Punches

Order d2	Ball Socket d5	P (round) Min. Max.	l1 Min. Max.	l
BAKY.. 10	10	10.1 ~ 25	16	80
BAKY.. 13	12 mm	13.1 ~ 32	20	
BAKY.. 16		16.1 ~ 38	25	
BAKY.. 20		20.1 ~ 40	25	
BAKY.. 25	12 mm	25.1 ~ 47	25	100
BAKY.. 32		32.1 ~ 63	32	
BAKY.. 40		40.1 ~ 63	32	



Types: BAKY - BAKO - BAKK - BAKD - BAKA - BAKM - BAKX - BAKP

Please refer to the table on the right side



Shaped Type Punches

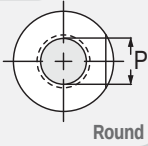
Order d2	Ball Socket d5	P/W/G (Shape) Min. Max.	l1 Min. Max.	l
BAK..10	10	3.0 ~ 25	16	80
BAK..13	12 mm	5.0 ~ 32	20	
BAK..16		6.0 ~ 38	25	
BAK..20		8.0 ~ 40	25	
BAK..25	12 mm	10 ~ 47	25	100
BAK..32		11.5 ~ 63	32	
BAK..40		14 ~ 63	32	

Shaped Type Punches

Order d2	Ball Socket d5	P/W/G (Shape) Min. Max.	l1 Min. Max.	l
BAG.. 10	10	3.0 ~ 25	16	80
BAG.. 13	12 mm	5.0 ~ 32	20	
BAG.. 16		6.0 ~ 38	25	
BAG.. 20		8.0 ~ 40	25	
BAG.. 25	12 mm	10 ~ 47	25	100
BAG.. 32		11.5 ~ 63	32	
BAG.. 40		14 ~ 63	32	

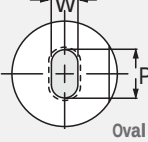
Shapes

MBY



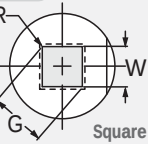
Round

MBO



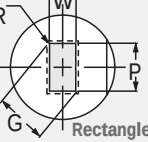
Oval

MBK



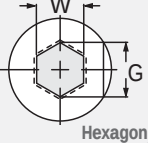
Square

MBD



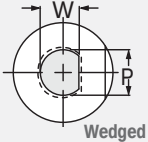
Rectangle

MBA



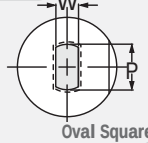
Hexagon

MBM



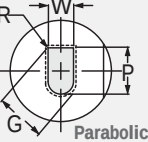
Wedged

MBX



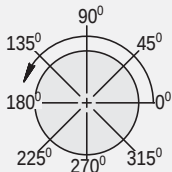
Oval Square

MBP



Parabolic

Standard Position



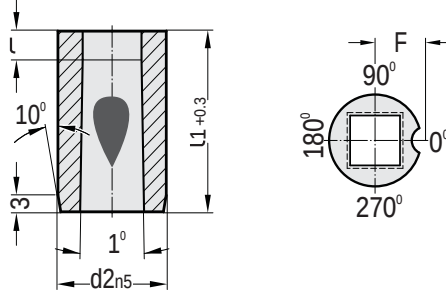
Ball Lock Matrix - Straight

Automotive Standard / Shaped Types

- Inner hole conical type.

- "d2" and lead-in radius ground.

Material: 1.3343 (M2) Hardness: 60 - 62 HRC



Some Shape & Dim. Details

Shape: Square

$$\text{MBK } G = \sqrt{2} \times P$$

Shape: Rectangle

$$\text{MBD } G = \sqrt{P^2 \times W^2}$$

Shape: Rectangle with radius R 0.5 ± 0.01

$$\text{MBD } G = \sqrt{(P-1.0)^2 + (W-1.0)^2} + 1$$

Shape: Oval

$$\text{MBO } G = P$$

d2	F	Shape		l	l1 + 0.3 (matrix length)										
		W	G		13	16	20	22	25	28	30	32	35	40	
10	7	1.3	6.8	3- 4-5	•	•	•	•	•	•	•	•	•		
13	8.2	1.9	8.8	3- 5-8	•	•	•	•	•	•	•	•	•		
16	9	1.9	10	3- 5-8		•	•	•	•	•	•	•	•		
20	11	1.9	13	3-6-10		•	•	•	•	•	•	•	•		
22	12	1.9	15	3-6-10		•	•	•	•	•	•	•	•		
25	13.5	1.9	17	3-6-10		•	•	•	•	•	•	•	•		
32	16	1.9	22	3-6-10		•	•	•	•	•	•	•	•		
38	19	1.9	27	3-8-12		•	•	•	•	•	•	•	•		
40	20	2.4	27	3-8-12			•	•	•	•	•	•	•	•	
45	22.5	4.0	35	3-8-12			•	•	•	•	•	•	•	•	
50	25	4.0	40	3-8-12			•	•	•	•	•	•	•	•	
56	28	4.0	45	3-8-12			•	•	•	•	•	•	•	•	
63	31.5	4.0	50	3-8-12			•	•	•	•	•	•	•	•	
71	35.5	5.6	56	3-8-12			•	•	•	•	•	•	•	•	
76	38	5.6	60	3-8-12				•	•	•	•	•	•	•	
85	42.5	5.6	66	3-8-12				•	•	•	•	•	•	•	
90	45	5.6	70	3-8-12				•	•	•	•	•	•	•	
100	50	5.6	78	3-8-12				•	•	•	•	•	•	•	

Note: Special dimensions on request.



Order:

MB. (type) d2 x F x W/G (R) x l x l1



Code: MBE



Code: MBC

Ball Lock Matrix - Straight

(Blank type)

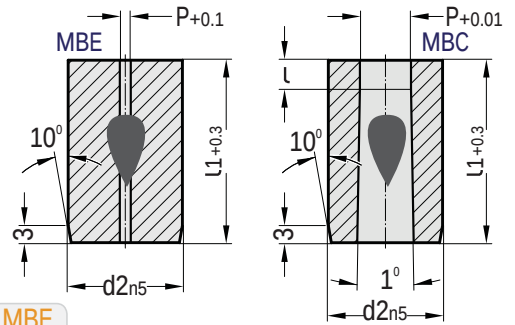
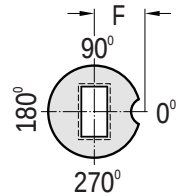
Specifications:

MBC: Inner hole conical type and lower surfaces ground.

MBE: With starting holes for "wire-edm".

Material: 1.3343 (M2)

Hardness: 60 - 62 HRC



MBE

d2	P	l1 + 0.3 ("MBE" matrix length)									
		13	16	20	22	25	28	30	32	35	40
10	0.8	•	•	•	•	•	•	•	•	•	•
13	0.8	•	•	•	•	•	•	•	•	•	•
16	1.5			•	•	•	•	•	•	•	•
20	2.4			•	•	•	•	•	•	•	•
25	3.0			•	•	•	•	•	•	•	•
32	3.0			•	•	•	•	•	•	•	•
40	3.0				•	•	•	•	•	•	•
50	3.0				•	•	•	•	•	•	•
63	3.0				•	•	•	•	•	•	•
71	3.0				•	•	•	•	•	•	•



Order: MBE. d2 x P x l x l1

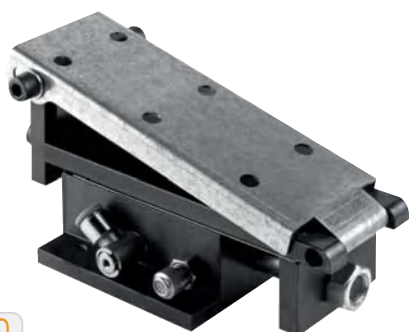
MBC

d2	P	l	l1 + 0.3 ("MBC" matrix length)									
			13	16	20	22	25	28	30	32	35	40
10	1.6 - 6.8	3-4-5	•	•	•	•	•	•	•	•	•	•
13	3 - 8.8	3-5-8	•	•	•	•	•	•	•	•	•	•
16	7.4 - 10.8	3-5-8			•	•	•	•	•	•	•	•
20	9.5 - 13.6	3-5-10			•	•	•	•	•	•	•	•
25	12 - 17	3-6-10			•	•	•	•	•	•	•	•
32	16 - 22	3-6-12			•	•	•	•	•	•	•	•
40	18 - 27	3-8-12				•	•	•	•	•	•	•
50	18 - 40	3-8-12				•	•	•	•	•	•	•
63	18 - 50	3-8-12				•	•	•	•	•	•	•
71	18 - 56	3-8-12				•	•	•	•	•	•	•



Order: MBC. d2 x P x l x l1

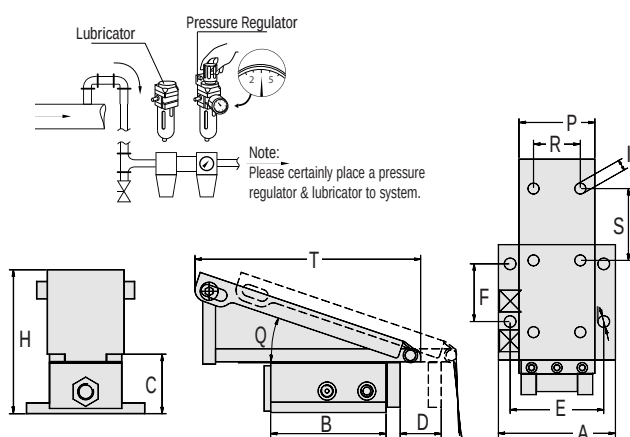
NEW



Code: GTH.ALO

Part & Scrap Carrier / Pneumatic Ejector

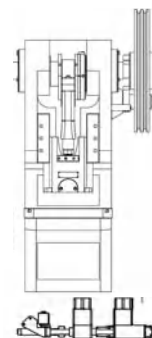
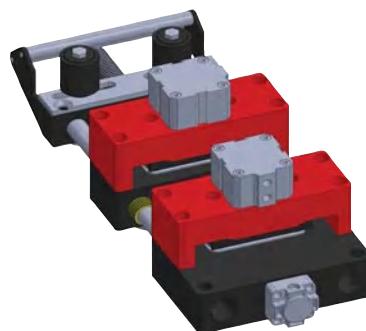
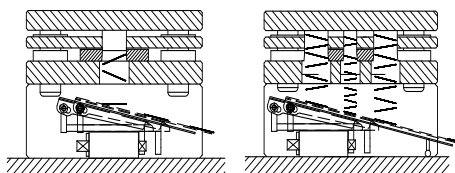
- Carriage with pneumatic vibration system in very small dimensions, allowing scrap or parts to be removed from the die/tool.
- This system is equipped with a regulator with a capacity of 2 - 5 bar pressure.
- Depending on application requirements, by mean of a slide, different sizes of plates can be applied, this slide is equipped with an adjustment sloping system.
- The operating speed can be adjusted from the brass valve directly inserted in the tool.
- Maximum positioning inclination 20°.



Order Code	Bar	A mm	B mm	C mm	D mm	E mm	F mm	H Max.
GTH.ALO-05	2/5	90	90	29	20	72	45	83
GTH.ALO-10	2/5	90	90	52	35	72	45	105
GTH.ALO-25	2/5	100	106	63	36	82	55	125
GTH.ALO-50	2/5	120	120	72	46	102	96	140

Order Code	I (Ø)	P mm	Q (angle)	R mm	S mm	T mm	Max. Load
GTH.ALO-05	8.5	58	Max.18° - Min. 7°	36	56	180	5 Kg.
GTH.ALO-10	9	60	Max.20° - Min. 4°	36	56	175	10 Kg.
GTH.ALO-25	9	70	Max.20° - Min. 4°	44	62	190	25 Kg.
GTH.ALO-50	9	96	Max.20° - Min. 4°	56	70	220	50 Kg.

Mounting Example:



Code: A.. / E..

Pneumatic Feeder

Heavy duty & economic types

- Material width capacity from 100 mm up to 500 mm.
- Material feeding capacity at thickness from 0.2 up to 1.0 / 2.0 / 3.0 mm.
- Feed length from 100 mm up to 300 mm.
- The feeder casings are produced from special aluminum alloy material.
- The bearing column are produced from hard chrome coated material (1080).
- Movable parts are produced from bronze material.
- Feed length set screw are produced from 4140 material.

Order Code	Max. Material Thickness Max. Material Width Feed Length
A1	1 x 100 x 100 (mm)
A2	1 x 100 x 200 (mm)
A3	1 x 100 x 300 (mm)
A11	1 x 150 x 100 (mm)
A12	1 x 150 x 200 (mm)
A13	1 x 150 x 300 (mm)
A21	1 x 200 x 100 (mm)
A22	1 x 200 x 200 (mm)
A23	1 x 200 x 300 (mm)
A31	1 x 300 x 100 (mm)
A32	1 x 300 x 200 (mm)
A33	1 x 300 x 300 (mm)
A41	1 x 400 x 100 (mm)
A42	1 x 400 x 200 (mm)
A43	1 x 400 x 300 (mm)
A51	1 x 500 x 100 (mm)
A52	1 x 500 x 200 (mm)
A53	1 x 500 x 300 (mm)

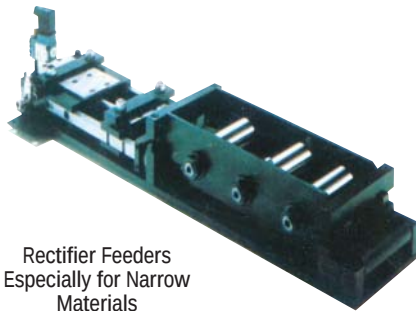
Order Code	Max. Material Thickness Max. Material Width Feed Length
E1	2 x 150 x 100 (mm)
E2	2 x 150 x 200 (mm)
E3	2 x 150 x 300 (mm)
E11	2 x 200 x 100 (mm)
E12	2 x 200 x 200 (mm)
E13	2 x 200 x 300 (mm)
E21	2 x 300 x 100 (mm)
E22	2 x 300 x 200 (mm)
E23	2 x 300 x 300 (mm)
E31	2 x 400 x 100 (mm)
E32	2 x 400 x 200 (mm)
E33	2 x 400 x 300 (mm)
E41	2 x 500 x 100 (mm)
E42	2 x 500 x 200 (mm)
E43	2 x 500 x 300 (mm)



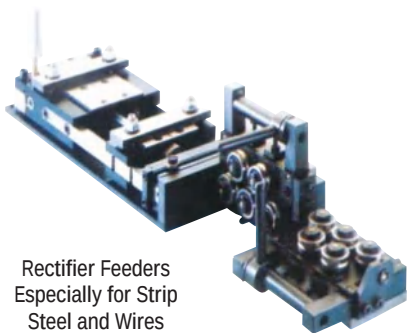
Made in Turkey

- + Cungan Service
- + Spare Parts
- + Periodic Maintenance Assurance

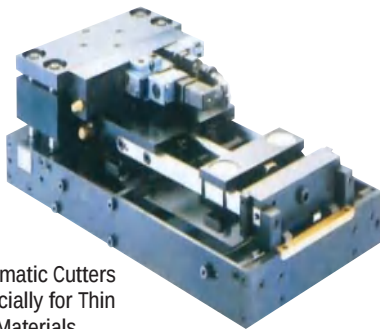
The Most Suitable and High Precision Feeder Types



Rectifier Feeders
Especially for Narrow
Materials



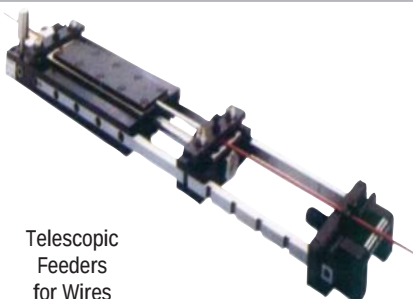
Rectifier Feeders
Especially for Strip
Steel and Wires



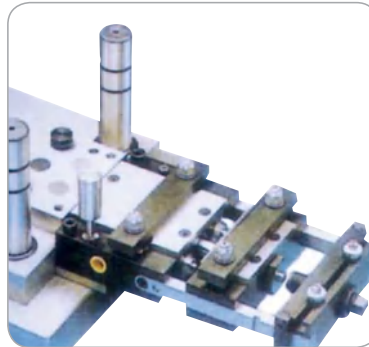
Pneumatic Cutters
Especially for Thin
Materials



Feeder with Guide
Rail Especially for
Extra Thin Materials



Telescopic
Feeders
for Wires



Pneumatic Feeder

High precision, rapid & efficient types

Since they have been made in modular system, it is quite easy to obtain different dimensions.

Normal type feeders are convenient especially for small materials, they can be mounted directly on the die / tool. Vertical motion of upper die gives command to the feeder; hence their mounting is so easy.

Heavy duty type feeders are very strong, they have three pulling cylinders. Major Structural Features; the quality of used material, all surfaces exposed to impacts or friction are hardened and solid chrome coated.

Valves and pistons are stainless steel in order to not to affect airborne water, cylinder liners are made from solid bronze.

Feeding Accuracy; powerful front and rear airbags ensure to work in 0.02mm accuracy. In very powerful feeders, there are 5 airbags at rear and 4 airbags at the front, hardness of airbags can be adjusted. Wide field sliding – bearing plates; Making bearing privately is possible for feeding of special profiles. Polyamide or especially hardened plates are applied for magnetic or high precision materials. Input Roller; friction on material can be decreased by inserting roller to feeder input. Slide Bearings; hardened and ground bearings are used at our feeders. Feed length setting is so easy, you can use slots at side edges in different stages.

Standard Accessories: O-Ring kit

Optional Accessories:

- * Remote control with electro valve (instead of standard mechanic valve)
- * Spring clamp (for pilot release)
- * Transparent top case (to avoid accidents)
- * Programmed counter to repeat feed length
- * Conditioner unit and hose systems to filter pressured air and to lubricate



Code: "A - B - C" Series

with Valve (normal types)

Series	Order Code	Max. Material Width	Feed Length	Max. Material Thickness
A Series	A50	50 mm	0 ~ 50	0 ~ 1.90
	A100		0 ~ 100	0 ~ 1.80
	A150		0 ~ 150	0 ~ 1.50
	A200		0 ~ 200	0 ~ 1.30
	A250		0 ~ 250	0 ~ 1.10
B Series	B50	75 mm	0 ~ 50	0 ~ 1.80
	B100		0 ~ 100	0 ~ 1.70
	B150		0 ~ 150	0 ~ 1.60
	B200		0 ~ 200	0 ~ 1.20
	B250		0 ~ 250	0 ~ 1.10
C Series	C50	100 mm	0 ~ 50	0 ~ 1.70
	C100		0 ~ 100	0 ~ 1.50
	C150		0 ~ 150	0 ~ 1.40
	C200		0 ~ 200	0 ~ 1.30
	C250		0 ~ 250	0 ~ 1.20

with Valve (heavy duty types)

Order Code	Max. Material Width	Feed Length	Max. Material 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

Decoilers for Steel Roll (precision series)



Model: Motorized Type

Code: **AGM500M**



Model: Brake System Type

Code: **AGM750M**



1500 Kg Capacity

Code: **AGM1500M**



2500 Kg Capacity

Code: **AGM2500M**

Order Code	Max. Material Width (mm)	Steel Roll Inside Diameter (mm)		Max. Steel Roll Outside Dia.(mm)	Steel Roll Weight Kg.	Motor Type	Brake Type	Snubber Bar
		Minimum	Maximum					
AGM500M	20 - 300	300	550	1300	500	★		Optional
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		★	

Our mechanical decoilers has threaded rod clamping and discharging system from center. Working capacity range is between 750 kg to 4.000 kg. Motorized, pneumatic snubber bar and brake models are available. Mechanical decoilers take up less space and have minimum operating cost for companies.



Code: EEM-400

Servo Roll Feeder - 400



Code: EEM-200

Servo Roll Feeder - 200



Code: EEM-100

Servo Roll Feeder - 100

"Servo Roll Feeders providing ideal solutions up to 1.5mm material thickness"

Cungang Servo Roll Feeders that can be mounted almost to every press.

Advantages; space-saving, easily mounted, provide working opportunities at high stroke press and increase high efficiency thanks to price / performance.

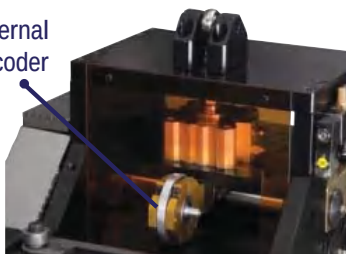
Standard Features:

- * Steel and "aluminum 7075" casing design.
- * HRC 64 cylinders produced from 2379 Sverker material and inertia taken (relieved).
- * Roller structure embedded with high speed bearings.
- * Antiskating dual drive roller.
- * Material setting rollers on the inlet and outlet.
- * Unique measurement scale.
- * Piston leaving material to pilot during piloting.
- * PLC controlled lubricating system.
- * Die / tool protection system from 4 or 6 points.
- * Easy fitting plates to press (without drilling extra hole to press).
- * Precision setting system taken press crank with encoder.
- * Mechanical roller lifting system.
- * Colorful LCD touch screen - 7.0".
- * English menu.
- * Automatic - Manual button & Emergency stop button.

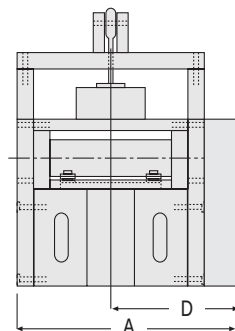
Optional Features:

- * Roll unloader / Rectifier and feeder-press synchrony movement external encoder.
- * Collapsible front rollers (preferred after 300 cycles).
- * Guards between feeder and die.

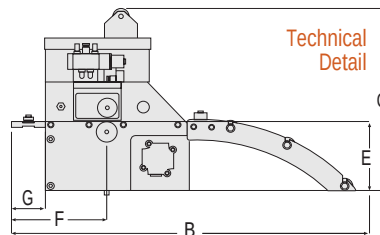
External Encoder



Measurement Scale



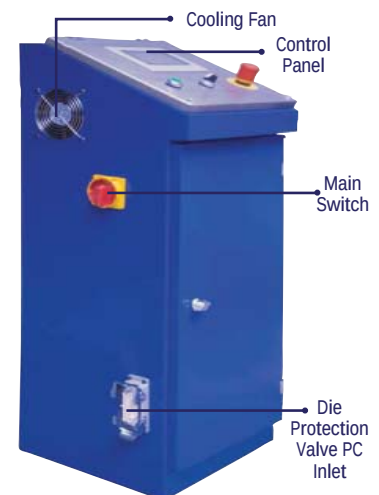
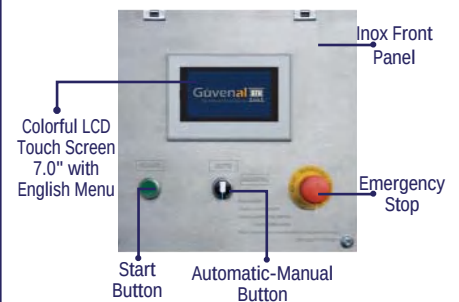
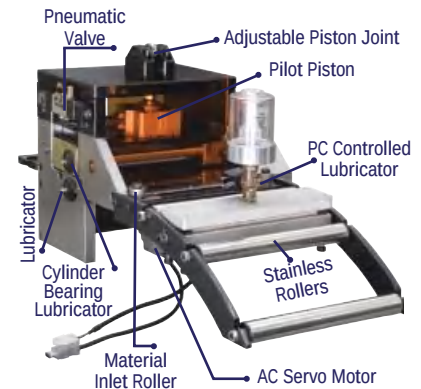
Unit View



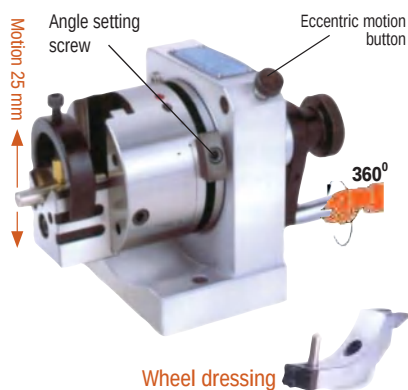
Technical Detail

Order Code	Max. Material Width (mm)	Max. Material Thickness (mm)	Roller Diameter Ø	Max. Material Speed m/min.
EEM100	104	1.5	42	140
EEM200	204		42	
EEM400	404		63	

Order Code	A	B	C	D	E	F	G
EEM100	210	555	320	135	130	158	58
EEM200	300	555	320	180	130	158	58
EEM400	515	780	480	410	230	158	58



Automation systems which direct and accelerate steel.



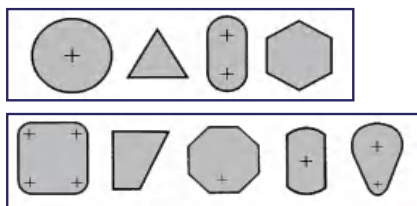
Punch Former Tool

Code: V-PB

(Pin bearing length: 22 mm)

Specifications: It creates the shapes / forms of die punches or mould ejector pins or it enables to create the desired formed shapes as equipment manually in shaped forming processing grinding machine manually. Motion is provided in two ways with equipment, it is provided 360° angular return motion and eccentric (up / down) motions processing practicality.

Punch end shape, some forms



d1: Pin clamping diameter = $\varnothing 4 - \varnothing 30$ mm

L: Pin clamping length = min. 22 mm

"V" Bearing: Up / down motion = 25 mm

"V" Bearing: One way motion = 12.5 mm

"V" Bearing: Total motion = 25 mm

Equipment surface and angle / scale hardness: 63 HRC

Chuck dividing head angle:

24 Pcs. $15^\circ \pm 5^\circ$

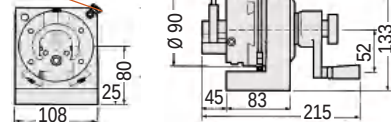
Total weight: 10 Kg.

Wheel diameter: 200 mm

Chuck dividing head angle:

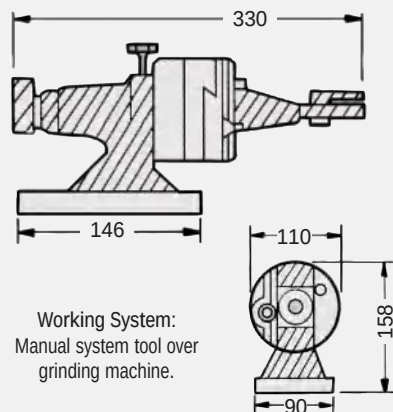
24 Pcs. $15^\circ \pm 5^\circ$

Eccentric rotation setting



Wheel Dresser Tool

Code: VTDB



Working System:
Manual system tool over
grinding machine.

Convex dressing radius = $0.8 R - 40 R$

Concave dressing radius = $0 - 40 R$

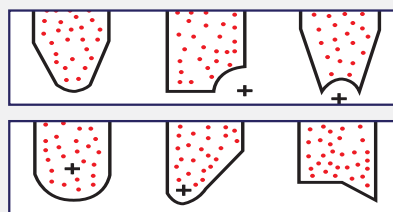
Max. grinding wheel diameter = $\varnothing 250$ mm

Rotation angle = $4 \times 90^\circ = 360^\circ$

Precision dividing head angle = 6°

- * Precision centre height is obtained with positive cutting angle diamond dressers.
- * Thanks to precision ground dovetail slides, absolute distance shifts are prevented in the desired distance.
- * By providing control from one point, convex and concave dressing forms are provided precisely and quickly.
- * All working surfaces and measuring scale is 60 HRC.

Wheel dressing applications



Code: VPGA

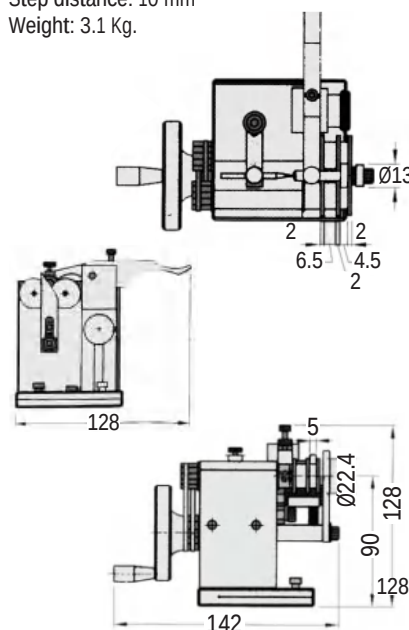
Mini Pin & Punch Former Tool

It is suitable to be used at machining and grinding of small diameters and short pins serially.

Pin diameter capacity: From 0.5 to 6 mm

Step distance: 10 mm

Weight: 3.1 Kg.

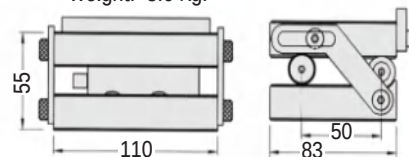


Sine Plate for Punch Former Tools

Code: VPS-S



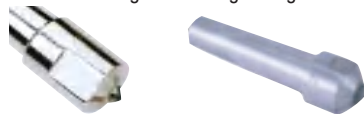
Weight: 3.6 Kg.



Diamond Wheel Dresser

Code: TDE

It is for dressing wheels in grinding machines.



Order	Type / Carat	Order	Type / Carat
TDE.030	0.30	TDE.150	1.5
TDE.050	0.50	TDE.200	2.0
TDE.075	0.75	TDE.250	2.5
TDE.100	1.0	TDE.300	3.0



Pin Cutting & Face Grinding Machine

Ø 1 - 24 mm cylindrical part, for length adjusting

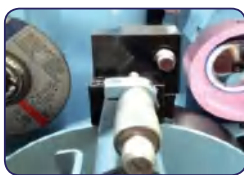


Order Code: PKM1



Video

Length Tolerance:	1mm - 24mmØ x 325mm
Shortness Tol.:	1mm - 24mmØ x 60 mm
Cutting Disc:	115 - 185mm x 1,0 x 22mm
Grinding Wheel:	100mm x 50mm x 20mm (60 grit)
Motor:	380V 50Hz 0.75Kw 1500 Rpm
Cycle:	3650 Rpm
Angularity:	Ø1 - 24mm x 90/±0,02
Machine Weight:	80Kg
Dimensions:	500mm x 425mm x 355mm



Quick Clamping Mechanism



Plexiglass Cover Safety



Thrust System



Wheel and Measurement Adjustment System

It guarantees precision degree but also it provides significant saving on time with best usage options in longitude cuttings. We recommend you to avoid unqualified and imitation products without "CE Certificate" in the market.



Code: VCF600

Handheld Chamfering Machine

Hand type, mobile, light and usable. The product is used in chamfering operation of die / mould plates and in machine production.

Adjustable Radius Selection



Slide Bearing
Length 100 mm

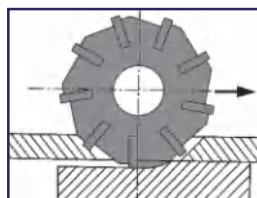
Order Code	Machine Dim.	Motor Voltage	Speed R.P.M	Corner Radius	Chamfer Capacity	Weight
VCF600	380 x 130 mm	220 V 0.62 KW	12000	45°	0 - 3 mm	3.7 Kg



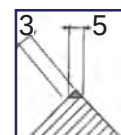
Code: VCF700

Handheld Chamfering Machine

For heavier and wider work pieces. The product is used in chamfering operation of die / mould plates and in machine production.

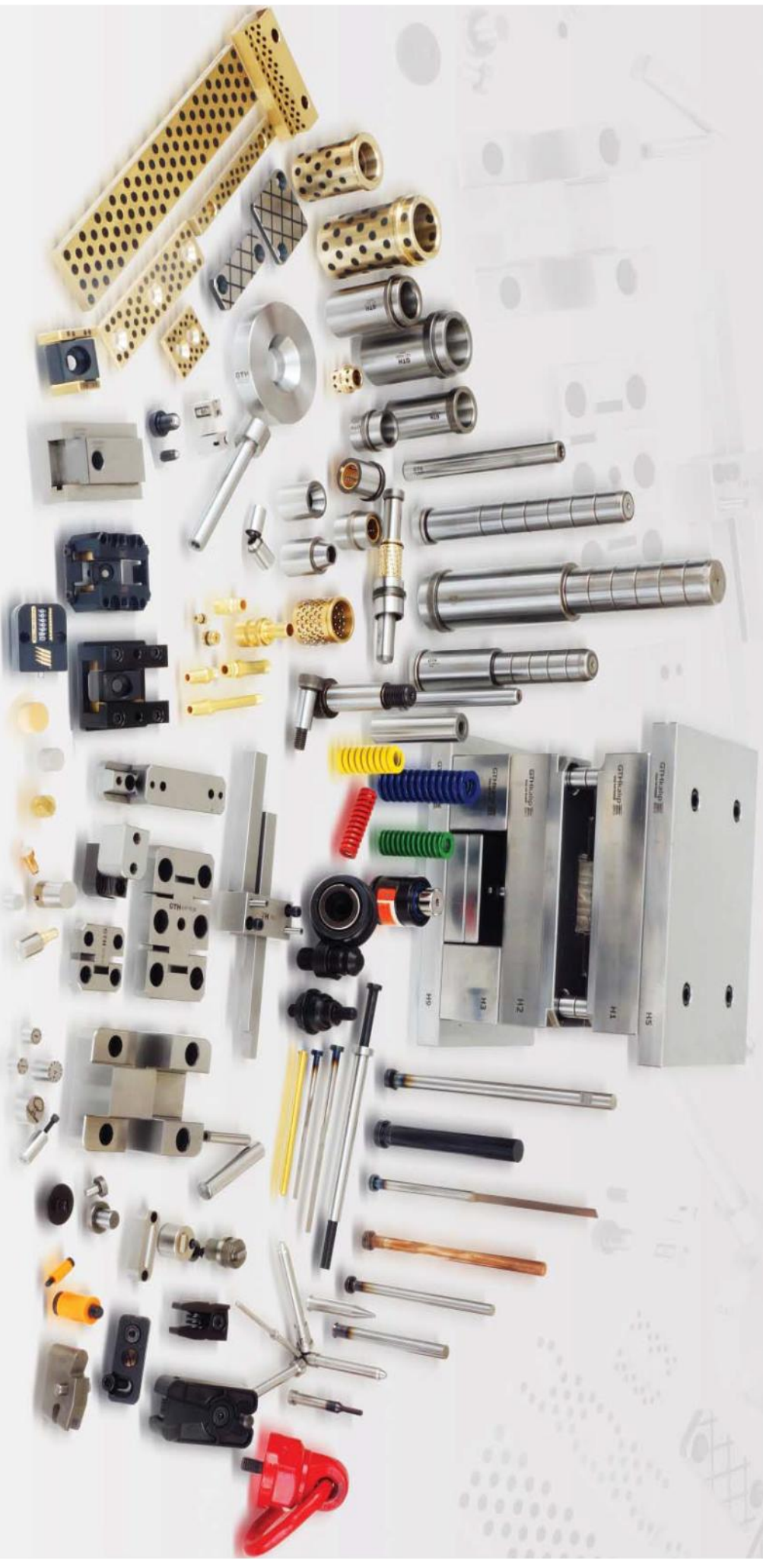


Slide Bearing
Length 200 mm



Order Code	Machine Dim.	Motor Voltage	Speed R.P.M	Corner Radius	Chamfer Capacity	Weight
VCF700	360 x 200 mm	220 V 0.37 KW	3500	15° - 45°	0 - 7 mm	14 Kg

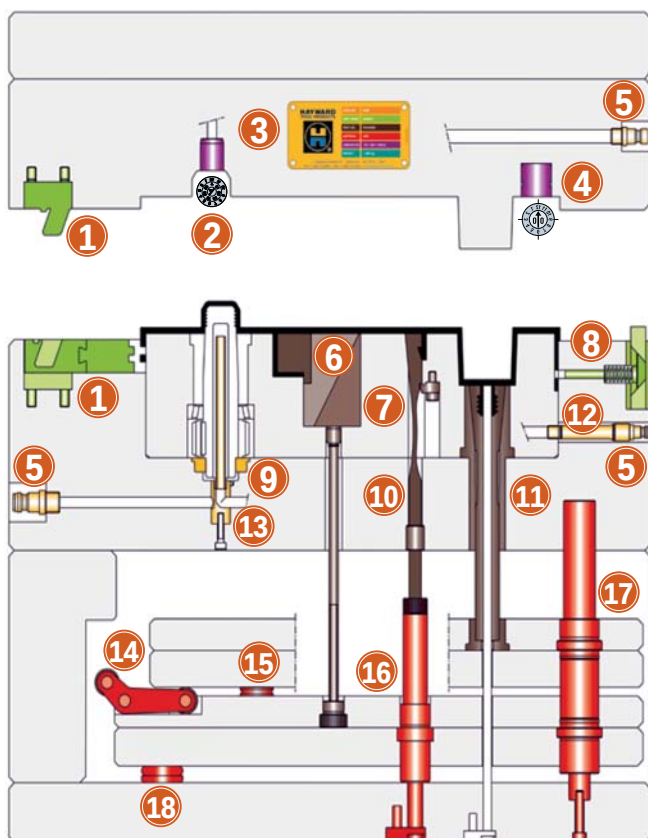
STANDARD MOULD COMPONENTS



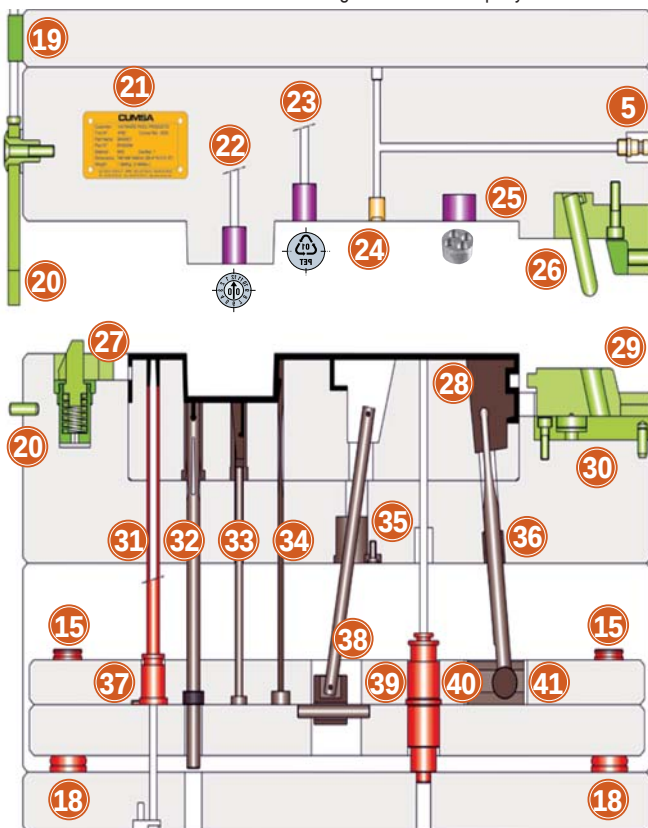
CLINGANG Group

CLINGANG
Die & Mould Components

Standard Injection Mould Systems / Innovative Solutions for Your Moulds



For products not available in our catalogue, please request technical information or catalogue from our company.



19 Code: **AB** Strap Extender

1 Code: **SU** Slide Unit

2 Code: **FD** Double Date Stamp

3 Code: **CP** Color Plate

4 Code: **FP** Date Stamp Plus

5 Code: **BR** Hex Key Connector Plug

6 Code: **ID** Optional Insert for Undercuts

7 Code: **DHO** Outer Undercut Lifter

8 Code: **UA** Compact Coring Unit

9 Code: **SB** Seal Bearing

10 Code: **PX** Xtra Sprung Core

11 Code: **PE** Expandable Core

12 Code: **TH** Hex Key Extension Tube

13 Code: **TB** Seal Bearing Tube

14 Code: **EP** Ejector Plate Accelerator

15 Code: **TM** Magnetic Safety Stopper

16 Code: **LR** Threaded Limiter

17 Code: **DX** Superior Double Ejector

18 Code: **TA** Shock Absorber Disc

20 Code: **BS** Safety Strap

21 Code: **PI** Identification Plate

22 Code: **FP** Date Stamp Plus

23 Code: **IR** Recycle Insert

24 Code: **VA** Air Poppet Valve

25 Code: **BM** Block Base Insert

26 Code: **CG** Adjustable Wedge Assembly

27 Code: **UC** Core Cam

28 Code: **IF** Lifter Head

29 Code: **CA** Adjusted Slide

39 Code: **AE** Accelerated Ejector

30 Code: **BC** Slide Base

31 Code: **TE** Headless Ejector Pin

32 Code: **EE** Tulip Ejector

33 Code: **PS** Standard Lifter

34 Code: **PF** Flexible Sprung Core

35 Code: **CI** Angled Guide Bush

36 Code: **VI** Lifter Shaft

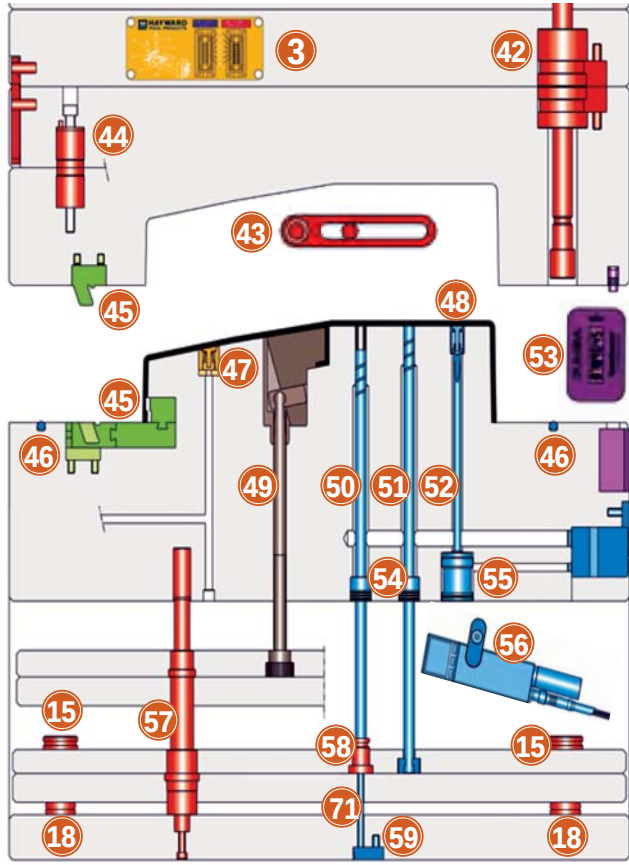
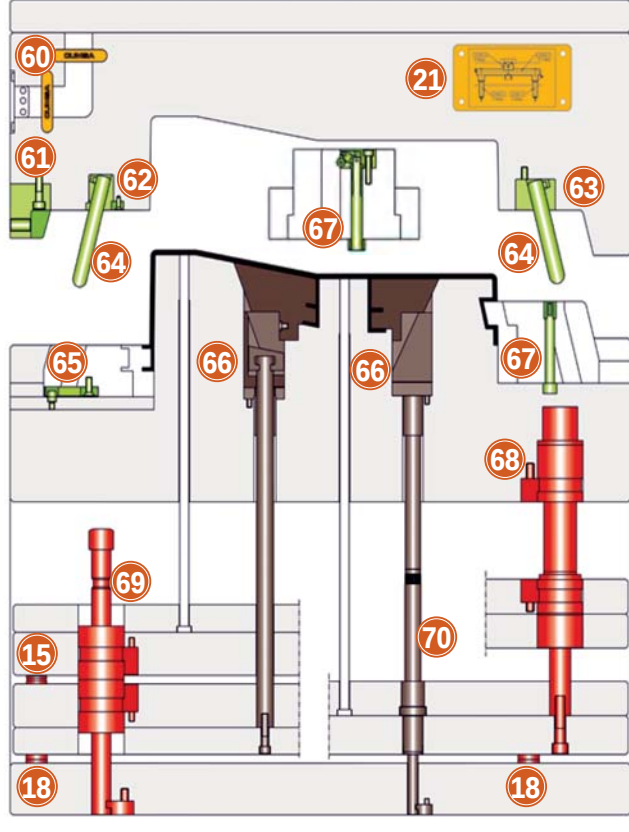
37 Code: **BA** Ejector Pin Base

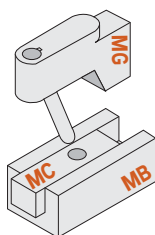
38 Code: **SD** Undercut Base Unit

39 Code: **BD** Horizontal Base

40 Code: **DF** Fixed Lifter Base

Standard Injection Mould Systems / Innovative Solutions for Your Moulds

 18 Code: TA Shock Absorber Disc	 51 Code: VP Spiral Ejector	
 42 Code: MX Internal Latch Lock	 52 Code: VT Vacuumjet Valve Tube	
 43 Code: SL Stroke Limiter	 54 Code: CV Vacuumjet Plug	
 44 Code: PR Plate Retainer	 55 Code: PT Pneumatic Piston	
 45 Code: UU Undercut Unit	 56 Code: VK Automatic Vacuumjet System	
 46 Code: JV Vacuumjet Seal	 57 Code: DY Rear Double Ejector	
 47 Code: VH Air Valve for High Pressure	 58 Code: BT Ejector Pin Base	
 49 Code: DH Special Angular Undercut	 59 Code: NP No - rotating head for	
 50 Code: VS Spiral Sleeve	 71 Code: PH Ejector	
 48 Code: VV Vacuumjet Valve	 53 Code: CC High Speed Cycle Counter	
 60 Code: SC Cable Retainer	 66 Code: DB Dog Lifter Limiter	
 61 Code: CR Adjustable Wedge	 67 Code: RA Automatic Retainer	
 62 Code: GR Angle Pin Housing	 68 Code: SY Compact Double Ejection	
 63 Code: BG Square Angle Pin Housing	 69 Code: DX Superior Double Ejector	
 64 Code: GI Angle Pin	 70 Code: LD Dog Lifter Limiter	
 65 Code: RCM Slide Retainer	 15 Code: TM Magnetic Safety Stopper	



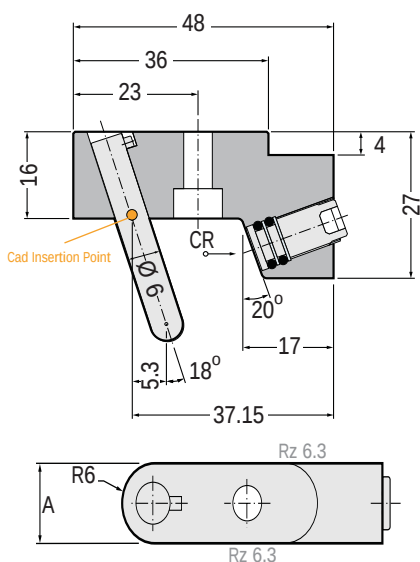
Mini Guide

Code: **MG**

It is consisted of angular pin and locking thrust wedge. While mould is closed, it can be easily adjusted with allen key. All machining is made 90° to the parting line. Parts can be replaced from the parting line.

Material: 1.2312
≈ 1.080 N/mm².
Patented System

Attention! Standard stroke of 4mm.



Order	A mm	CR (N)
MG.121648	12	50.000
MG.201648	20	90.000

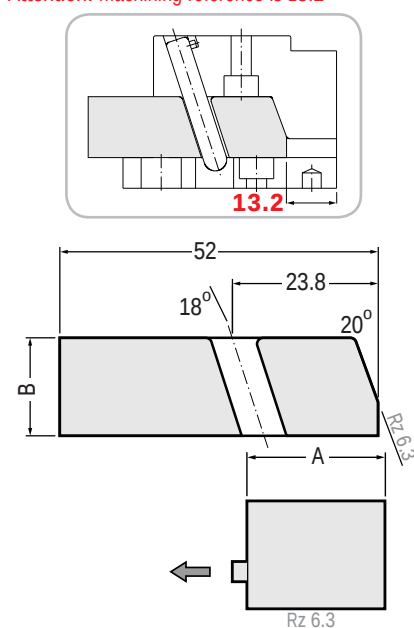
Mini Slide

Code: **MC**

It is ready for machining, it comes with adjustment tolerances. It is only necessary to machine the cavity area.

Material: 1.2344
Hardness: 44 ± 2 HRC
Patented System

Attention! Machining reference is 13.2



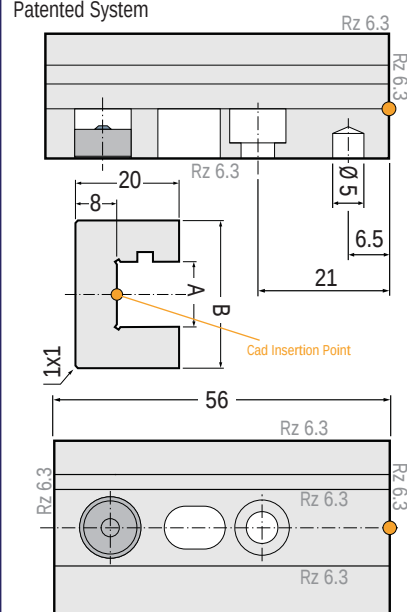
Order	A mm	B mm
MC.121252	12.5	12
MC.121652	12.5	16
MC.201252	20.5	12
MC.201652	20.5	16

Mini Base

Code: **MB**

An unique unit hardened and ground with the adjustment tolerances. Has various assembly possibilities and it is also easy to change, with magnetic retainer. Minimum space required for installation.

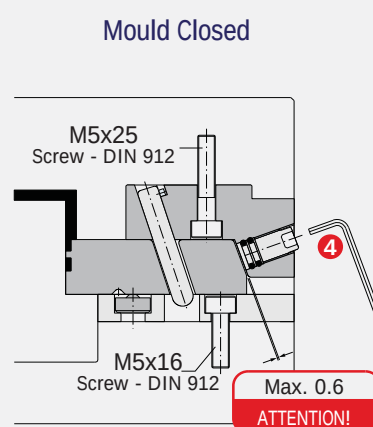
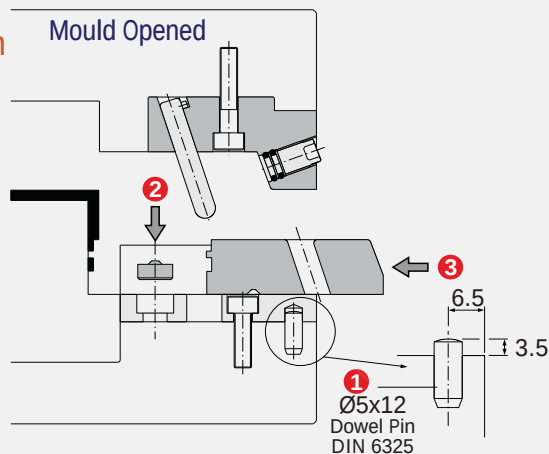
Material: 1.2510
Hardness: 54 ± 2 HRC
Patented System



Order	A mm	B mm
MB.122056	12.5	28
MB.202056	20.5	36

Installation & Operation Examples

- 1- Determine the position of MB (mini base) and mount it.
- 2- Place the magnetic retainer into hole.
- 3- Insert MC (mini slide).
- 4- While mould is closed, please adjust MC (mini slide) up to 0.6mm maximum.





Slide Unit

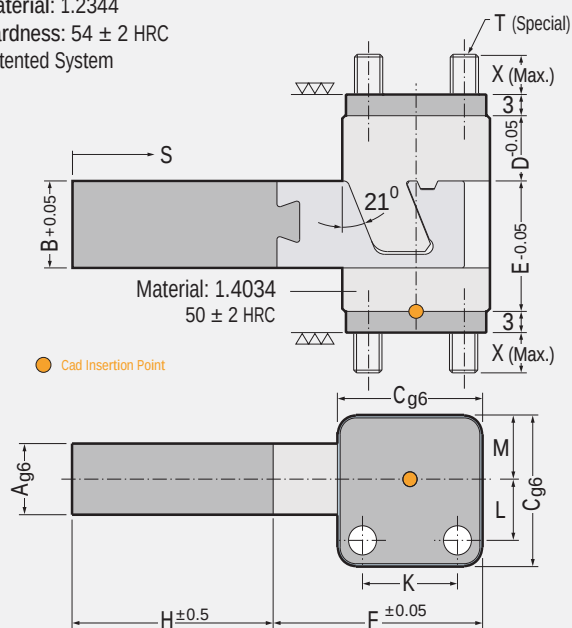
Code: SU

Ideal to de-mold external details. Compact unit with strokes up to 5mm. Slider is made from two different inserts, allowing flexibility regarding the molding feature. All machining can be made 90° to parting line. Easy to change molding inserts due to fixing method. Incorporates a slide retainer and an angle pin.

Material: 1.2344

Hardness: 54 ± 2 HRC

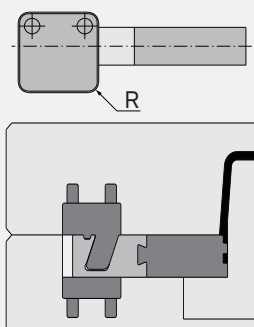
Patented System



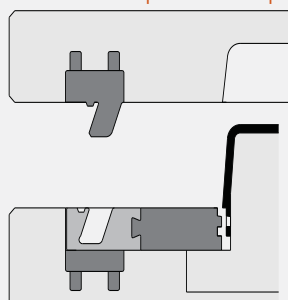
Code: SU

Order	A	B	C	D	E	F	H
SU.081220	8.2	12	20	10	18	28	32
SU.121626	12.2	16	26	12	24	37.5	36
SU.162032	16.2	20	32	16	30	46.5	40

K	L	M	R	S	T	X
12.5	8.25	8	3.75	3	M4	6.2
17	10.5	11	4.5	4	M5	7.2
22	13	14	5	5	M6	9.2



Installation & Operation Example



Undercut Unit

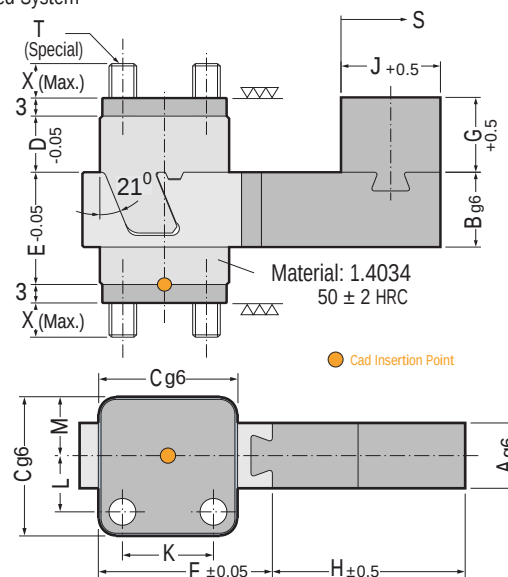
Code: UU

Inverse movement regarding normal units, ideal for de-moulding internal detail. Compact unit with strokes up to 5mm. Slider is made from two different inserts, allowing flexibility regarding the molding feature. All machining can be made 90° to parting line. Incorporates a slide retainer and an angle pin.

Material: 1.2344

Hardness: 54 ± 2 HRC

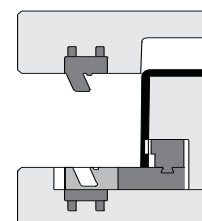
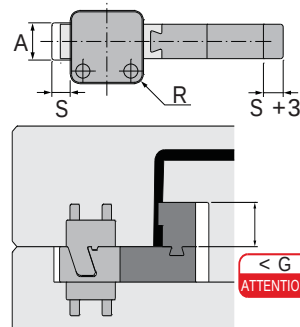
Patented System



Code: UU

Order	A	B	C	D	E	F	G
UU.081220	8.2	12	20	10	18	24.5	12
UU.121626	12.2	16	26	12	24	32.5	16
UU.162032	16.2	20	32	16	30	41	20

H	J	K	L	M	S	R	T	X
32	16	12.5	8.25	8	3	3.75	M4	6.2
36	20	17	10.5	11	4	4.5	M5	7.2
50	25	22	13	14	5	5	M6	9.2





Adjustable Wedge Assembly

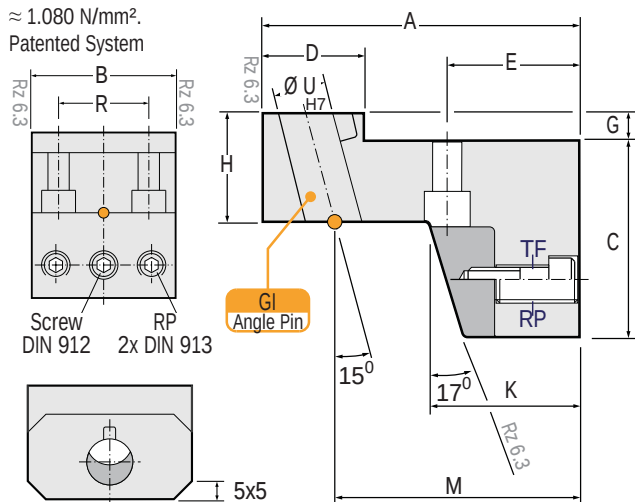
(Heel Unit)

It is unit of core / slide system starting motion. Adjustable with the mold closed. All machining is made 90° to the parting line. Parts can be replaced from the Parting Line. Hardened steel pre-adjusted for immediate use. Hardened wear plate. Two outer screws force the heel against the slide forming the shut off, while the central screw locks it into position. Minimum space required for installation

Material: 1.2312

≈ 1.080 N/mm².

Patented System

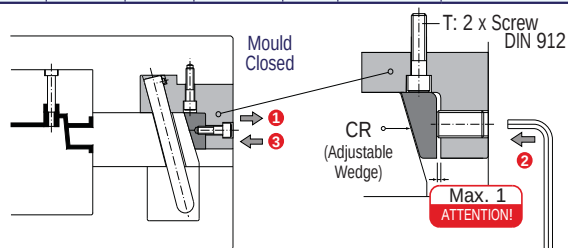


Code: CG

Order	A	B	C	D	E	G	H
CG.603035	60	30	35	25	23	6	23
CG.604035	60	40	35	25	23	6	23
CG.754049	75	40	49	30	32	7	27
CG.864857	86	48	57	35	36	8	32

Code: CG

K	M	R	TF	U	RP	CR (N)
29	43.7	17	M6x25	10	081015	180.000
29	43.7	22	M6x25	10	101015	320.000
39	58	22	M8x30	12	101020	320.000
44	65	28	M8x35	16	121025	480.000



Setting Process:

- 1- Unbolt "TF" (screw)
- 2- Tighten "RP" (screw)
- 3- Lock "TF"



Adjustable Wedge

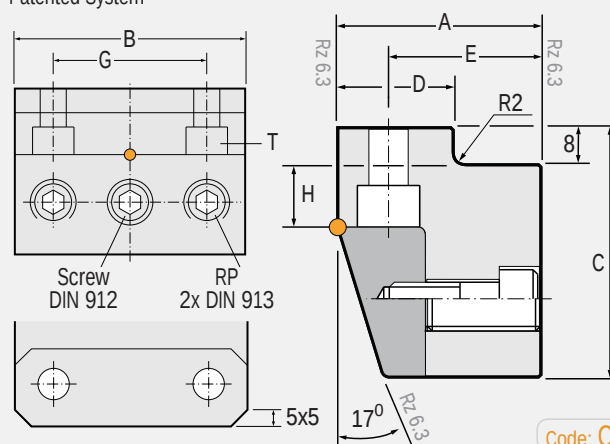
(Heel Unit)

Adjustable with the mold closed. All machining is made 90° to the parting line. Parts can be replaced from the Parting Line. Hardened steel pre-adjusted for immediate use. Hardened wear plate. Interchangeable parts. Allows the slide to be adjusted with the mold closed. Two outer screws force the heel against the slide forming the shut off, while the central screw locks it into position. Minimum space required for installation

Material: 1.2312

≈ 1.080 N/mm².

Patented System

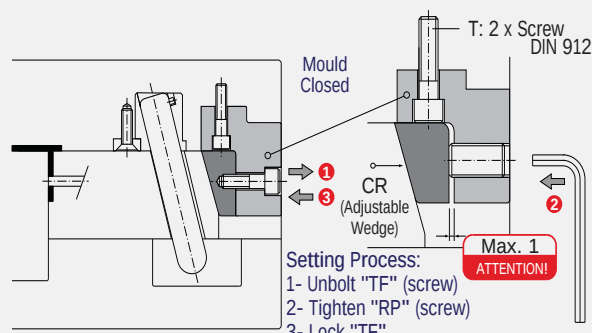


Code: CR

Order	A	B	C	D
CR.403840	40	38	40	25
CR.454849	45	48	49	28
CR.526052	52	60	52	32
CR. 526852	52	68	52	32
CR.527556	52	75	56	32

Code: CR

E	G	H	T	RP	CR (N)
30	22	12	M8x30	101020	320.000
35	28	16	M10x35	121025	480.000
40	35	16	M10x35	141030	750.000
40	45	16	M10x35	141030	750.000
40	50	16	M10x35	141030	750.000



Setting Process:

- 1- Unbolt "TF" (screw)
- 2- Tighten "RP" (screw)
- 3- Lock "TF"



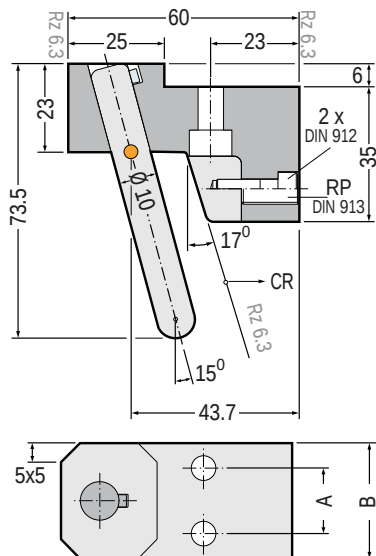
Code: CG

Adjustable Wedge Assembly (Heel Unit & Including Pin)

It is consisted of angular pin and locking thrust wedge. While mould is closed, it can be easily adjusted with allen key. All machining is made 90° to the parting line. Parts can be replaced from the parting line. Angle pin included in CG - SET. Hardened steel pre-adjusted for immediate use. Hardened wear plate.

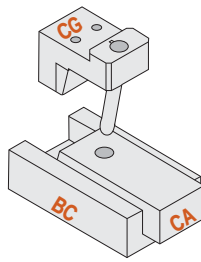
Material: 1.2312
≈ 1.080 N/mm².
Patented System

Attention!
Standard stroke
of 12mm.



Order	A	B
CG.603075	17	30
CG.604075	22	40

CR (N)	RP (Screw)	Angle Pin
180.000	081015	GI.010075
320.000	101015	GI.010075



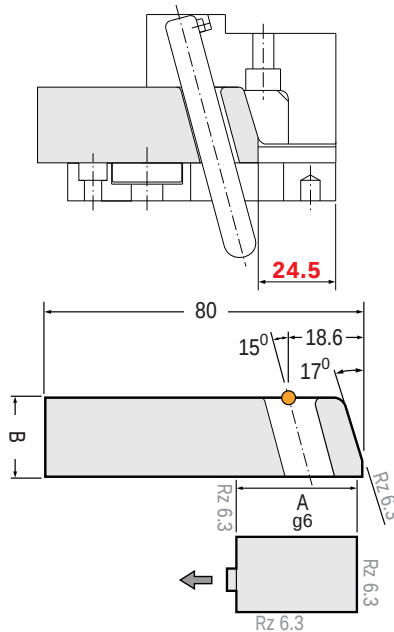
Adjusted Slide

Code: CA

Interchangeable and completely adjusted, only requires the part detail to be machined. Its rectangular shape simplifies machining. Angular hole is drilled on slide.

Material: 1.2344
Hardness: 42 ± 2 HRC
Patented System

Attention! Machining reference is 24.5



Order	A	B
CA.322080	32	20
CA.322480	32	24
CA.422080	42	20
CA.422480	42	24

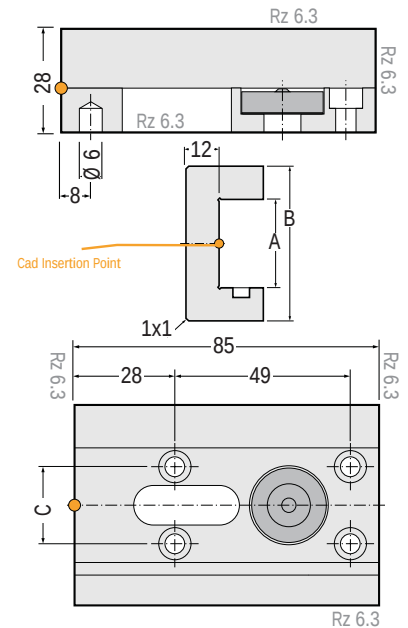


Slide Base

Code: BC

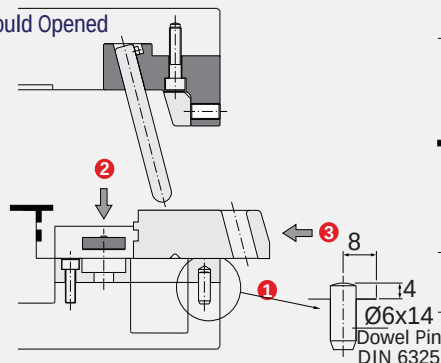
The slide retainer is built into the set. Different hardness and materials between CA and BC to guarantees smooth movements. Interchangeable parts. Parts can be replaced from the Parting Line. Hardened and ground, with the correct adjusting tolerances. Incorporates a magnetic Retainer (RM) which must be installed after the slide adjustment and allows fixing the slide movement where needed. Minimum space required for installation.

Material: 1.2510
Hardness: 54 ± 2 HRC
Patented System

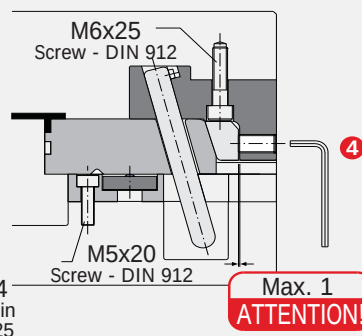


Order	A	B	C
BC.322885	32	56	21.5
BC.422885	42	66	26.5

Mould Opened



Mould Closed



**Max. 1
ATTENTION!**

Installation

- 1- Determine the position of BC (slide base) and mount it.
- 2- Place the magnetic retainer into hole.
- 3- Determine the position of CA (adjusted slide).
- 4- While mould is closed, please adjust CA (adjusted slide) up to 1 mm maximum.



Angle Pin

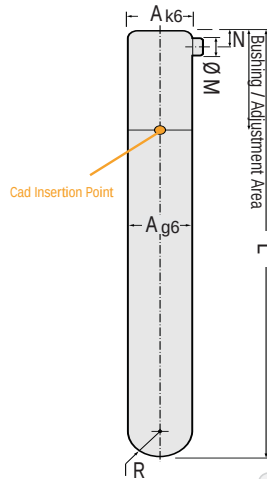
Code: GI

This item can be fitted to any of the corresponding sets (CG, GR & BG). Several diameters and lengths of angle pins.

Attention! When ordering, indicate the desired "L" dimension after the order reference code.

Material: 1.7242

Hardness: 60 ± 2 HRC



Code: GI



Code: BG

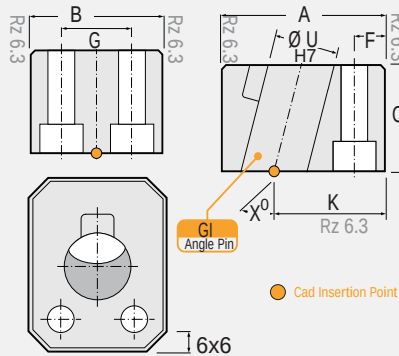
Square Angle Pin Housing

This is similar to the round Angle Pin Housing (GR) but allows the fitting of angle pins from 15° or 20°. This unit is bigger than the GR to allow for the greater angles and it requires a square pocket to be machined in the mould base. All machining is made 90° to the parting line. Parts can be replaced from the Parting Line. Minimum space required for installation.

Material: 1.2312

≈ 1.080 N/mm².

Patented System



Code: BG



Code: GR

Angle Pin Housing

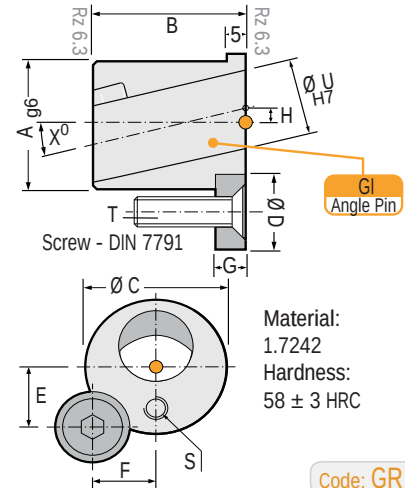
This unit incorporates a predrilled hole for the angle pin which eliminates the need to angularly drill the mould base. The mould base only needs to be drilled from the front to accept this unit. The unit comes in either 10° or 15°.

All drilling is made 90° to the parting line.

Parts can be replaced from the Parting Line.

Minimum space required for installation.

Several diameters and lengths of angle pins.



Material:
1.7242
Hardness:
58 ± 3 HRC

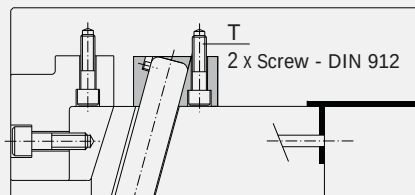
Code: GR

Order	A	Bushing / Adjustment Area
GI.010.. L	10	≈ 25
GI.012.. L	12	≈ 30
GI.016.. L	16	≈ 35
GI.020.. L	20	≈ 40
GI.024.. L	24	≈ 45
GI.028.. L	28	≈ 50

M	N	L (Length)			R
4	4	075	090	105	5
4	4	095	110	130	6
4	4	115	135	160	8
6	6	140	165	190	10
6	6	170	195	220	12
6	6	200	225	250	14

Order	A	B	C	F
BG.423016-15	42	30	30	7.5
BG.504020-15	50	40	36	9
BG.554024-15	55	40	40	9
BG.655028-15	65	50	45	12
BG.423016-20	42	30	30	7.5
BG.504020-20	50	40	36	9
BG.554024-20	55	40	40	9
BG.655028-20	65	50	45	12

G	K	T	U	X
15	28	M6x35	Ø 16	15°
22	34	M8x40	Ø 20	
22	38	M8x45	Ø 24	
26	45	M10x50	Ø 28	20°
15	28	M6x35	Ø 16	
22	34	M8x40	Ø 20	
22	38	M8x45	Ø 24	
26	45	M10x50	Ø 28	



Order	A	B	C	D	E
GR.182622-10	18	26	22	12	10.8
GR.222826-10	22	28	26	16	11
GR.283432-10	28	34	32	16	13
GR.344038-10	34	40	38	20	17
GR.424546-10	42	45	46	20	19.5
GR.465050-10	46	50	50	20	21
GR.182622-15	18	26	22	12	10.8
GR.222826-15	22	28	26	16	11
GR.283432-15	28	34	32	16	13
GR.344038-15	34	40	38	20	17
GR.424546-15	42	45	46	20	19.5
GR.465050-15	46	50	50	20	21

F	G	H	S	T	U	X°
7.5	6	3.8	M5x5	M5x16	10	10°
11		4	M6x6	M6x16	12	
13		5			16	
17	8	5.5	M8x6	M8x20	20	
19.5		6			24	15°
21		7			28	
7.5	6	3.8	M5x5	M5x16	10	
11		4	M6x6	M6x16	12	
13		5			16	
17	8	5.5	M8x6	M8x20	20	
19.5		6			24	
21		7			28	



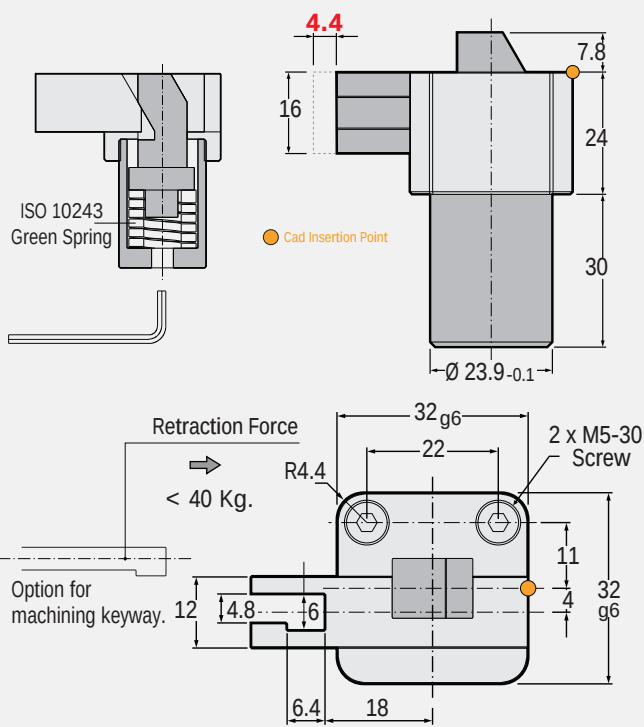
Core Cam (for lateral holes)

Code: UC

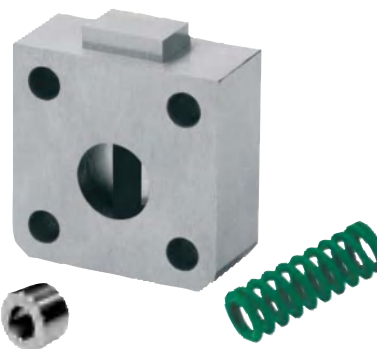
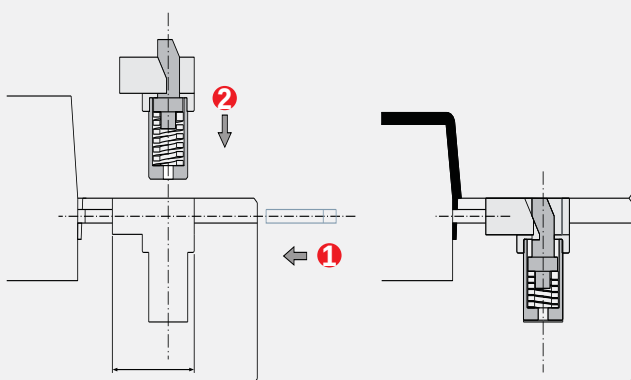
Mechanism to make lateral holes, automatic retention for the core insert. Requires very small area for installation. Reduces costs in machining and fitting. Reduces mould production time. Machining for installation is easier due to always being at 90° to parting line. Offers a standard solution to the mould makers.

Material: 1.2344
Hardness: 52 - 54 HRC
Max. working temperature: 150°.

Attention! Standard stroke of 4.4mm.



Order: UC.325445



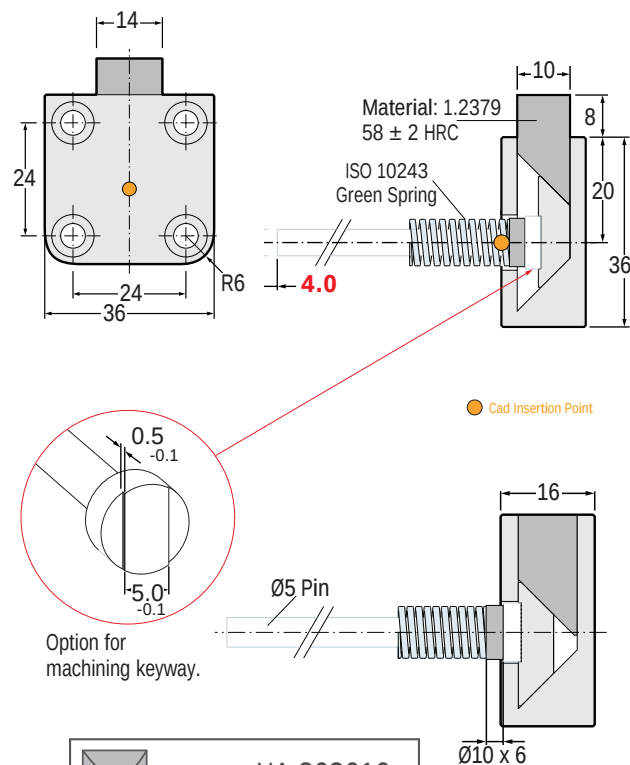
Compact Coring Unit (for lateral holes)

Code: UA

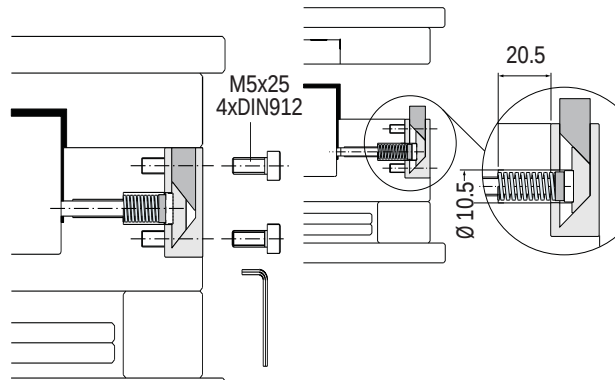
This unit uses the open and close movement of the mould to make lateral holes in wall sections of plastic parts. Easy to assemble and remove from the mould. Reduces costs in machining and fitting. Reduces mould production time. Machining for installation is easier due to always being at 90° to parting line. Offers a standard solution to the mould makers. Requires very small area for installation.

Material: 1.2344
Hardness: 52 - 54 HRC
Max. working temperature: 150°.

Attention! Standard stroke of 4.0mm.



Order: UA.363616



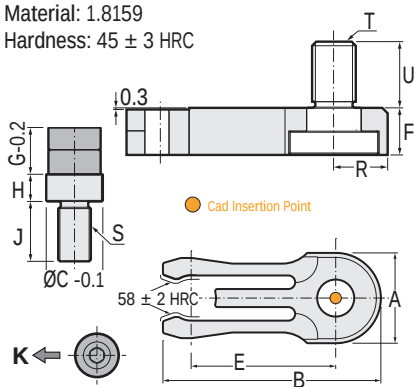


Slide Retainer

Code: RCM

Incorporates a mechanical stopper.
The fixing pin has rollers to avoid wear on friction surfaces. Less machining for installation compared to similar products on the market. Minimum space required for installation.

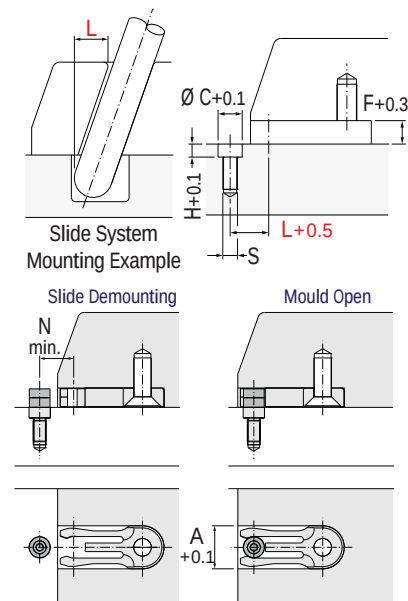
Material: 1.8159
Hardness: 45 ± 3 HRC



Order	A	B	C	E	F	G
RCM.163808	16	38	8	25	7.6	7.6
RCM.204810	20	48	10	32	8.7	8.6
RCM.245712	24	57	12	37.5	9.6	9.6

H	J	K	N	R	S	T	U
4	10	8 Kg.	7	8	M5	M6	9
5	11	14 Kg.	8	10	M6	M8	12
6	12	18 Kg.	9	12	M8	M10	15

K: Force to release the retainer.

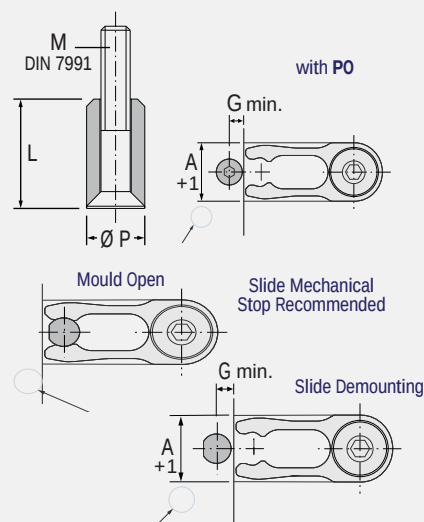


Optional Dowel Pin for Slide Retainer

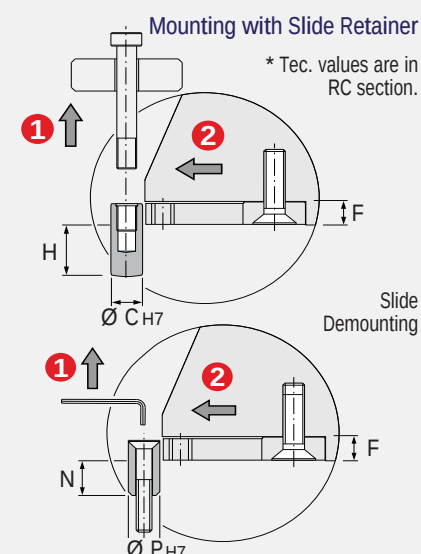
Code: PO

Optional method for holding the Slide Retainer, that simplifies the disassembling. This item must be ordered separately.

Material: 1.3505
Hardness: 60 ± 2 HRC



Order	L	M	N	P
PO.120320	12	M3x20	7.5	6
PO.150425	15	M4x25	10	8
PO.200530	20	M5x30	13	10
PO.250635	25	M6x35	16	12
PO.340850	34	M8x50	23	16

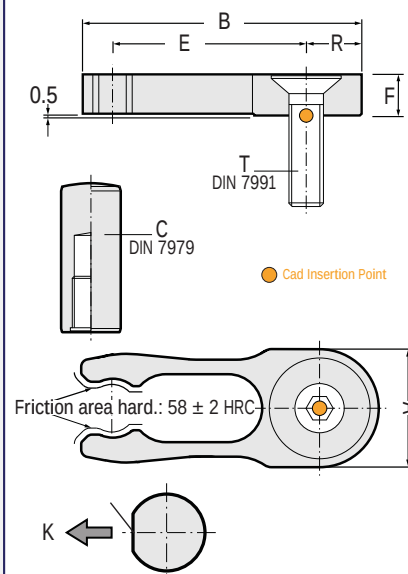


Slide Retainer

Code: RC

Less machining for installation compared to similar products on the market. Minimum space required for installation. Reduces costs in tool downtime. Offers a standard solution to the mould makers.

Material: 1.8159
Hardness: 45 ± 3 HRC



K: Force to release the retainer.

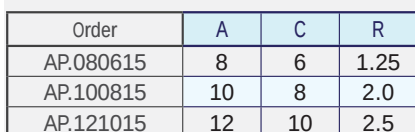
Slot depths should be: $F = +0.30$ mm.

Order	A	B	C	E	F
RC.123006	12	30	6x20	21	4.7
RC.164008	16	40	8x20	28	5.7
RC.205010	20	50	10x24	34	7.7
RC.246012	24	60	12x32	42	9.7
RC.328012	32	80	16x40	56	11.7
RC.328016	32	80	16x40	56	15.7

G	H	K	R	T
4	16	5 Kg.	6	M5x16
5	15	7 Kg.	8	M6x20
6	17	14 Kg.	10	M8x25
7	23	21 Kg.	12	M10x30
9	27	28 Kg.	16	M12x35
9	25	38 Kg.	16	M12x50



Standard extension. Flat for key position included. Hardened and ground to size. Enables a standard length of the PW up to 315mm. Keyed pocket included.



S	T	U	V
9.5 x 2	M4	14	5
11.5 x 2	M5	16	6
14.5 x 2.5	M6	20	8

Mounting Example

The diagram illustrates the mounting of a cable assembly. The top part shows a cross-section of the cable with a central core labeled **PW Sprung Core**. The cable is secured by a **G110 Mounting Flange**. The flange has a diameter of $\varnothing A$ and a thickness of 0.5 . The cable has an outer diameter of $\varnothing U$ and a length of V . The flange is mounted on a base with a radius R .

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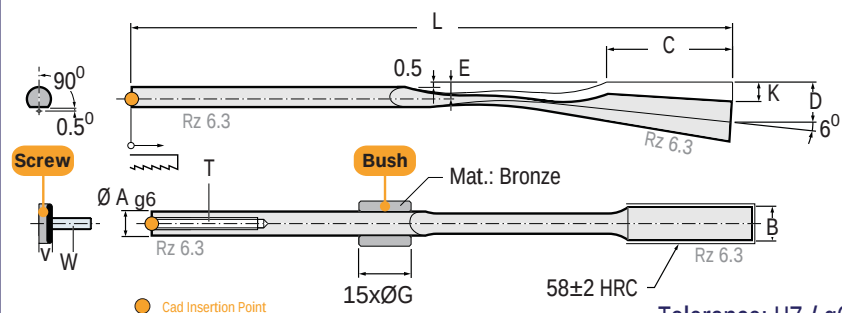


Code: PW

Minimum space required for installation, only needs the space of an ejector. No milling, grinding or hardening other than the machining of detail needed. Machining for installation is easier due to always being at 90° to parting line. No need for complex mechanical systems. The opening of the sprung cores is a radial movement. Due to this, at the edge of the stroke, the opening is 3.5mm (0.138"), 4.5mm (0.177") and 5.5mm (0.217"), depending on the model (K dimension in the catalogue).

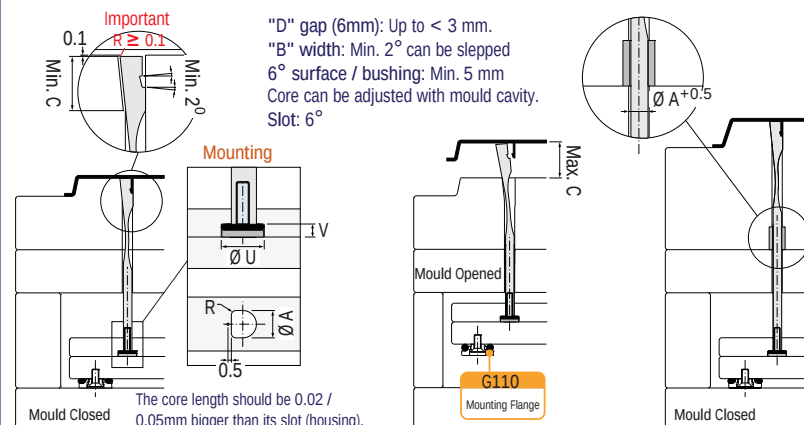
Correctly installed sprung cores (following our catalogue installation instructions) can produce more than 1 million parts. (welding is not recommended on any of the sprung core products & we only recommend using Balinit C coating, other coatings are not recommended as they can reduce the sprung core life)

Material: 1.8159 **Hardness:** 45 ± 3 HRC **Max. working temperature:** 150°.



Tolerance: H7 / g6

Order	A	B	C	D	E	G	K	L	M	N	R	T	U	V	W
PW.060622	6	6.2	22	9	3.5	-	3.5	125	16	18	1.25	M4 x 36	12	5	M4 x 16
PW.060630			30	10		12	4.5	175	20	26					
PW.060822		8.2	22	9		-	3.5	125	16	18					
PW.060830			30	10		12	4.5	175	20	26					
PW.080825	8	8.2	25	11.5	4.5	-	4.5	140	18	21	2.0	M5 x 36	14	6	M5 x 16
PW.081025		10.2				-									
PW.081030			30	11.2		12		175	20	26					
PW.081225		12.2	25	11.5		-		140	18	21					
PW.081230			30	11.2		12		175	20	26					
PW.101430	10	14.2	30	13.6	5.5	16	5.5	175	20	26	2.5	M6 x 36	18	8	M6 x 16
PW.101630		16.2													
PW.101830		18.2													





"PX" Cutting Jig

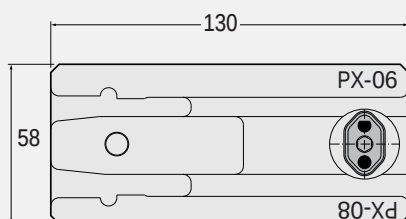
Code: CX

Enables accurate fine tuning in the height of the PX. Simplifies the measuring and cutting of the shaft of the PX. Easier to cut larger quantities of PX at a time.

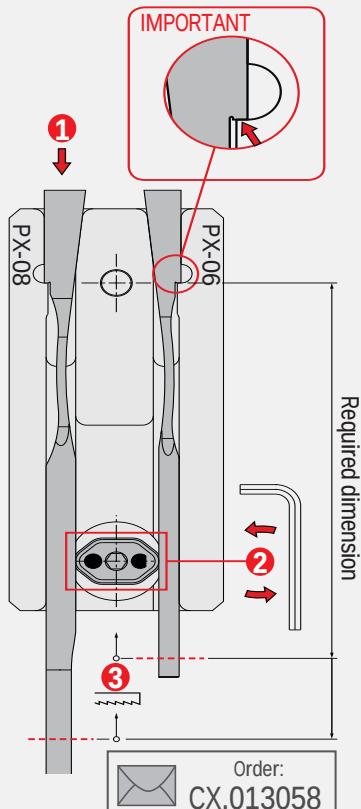
How to use the PX Cutting Jig ?

- 1- Insert the PX into the corresponding slot, for 6 or 8mm. shank. Ensure that the shape of the PX head is adjusted in the housing support.
- 2- Use an allen key to select the correct option: flat or round.
- 3- Cut the PX to the required dimension.

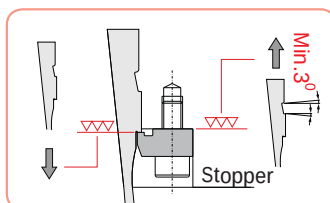
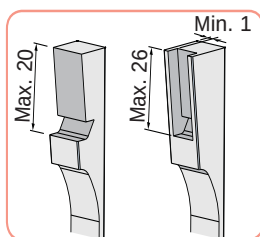
Material: INOX / 1.4034



IMPORTANT



After setting core, please machining 0.1mm from end section to make ejector effortlessly.

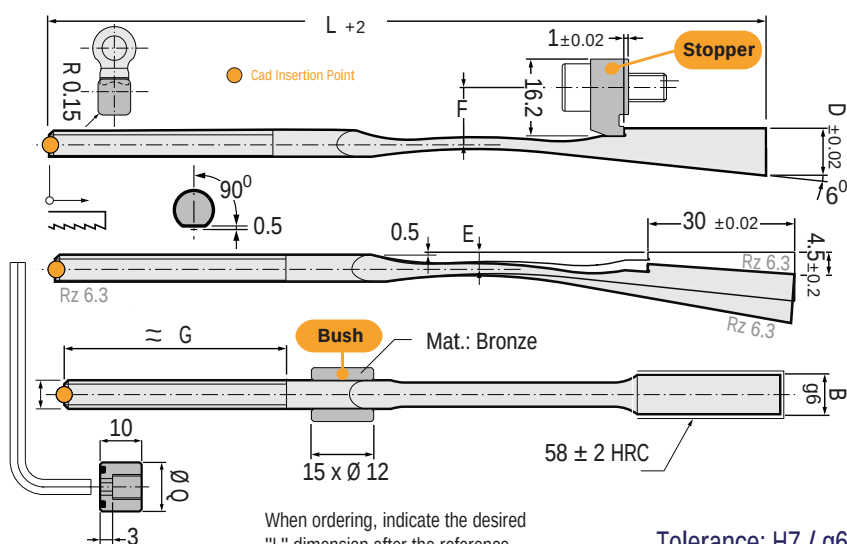


Xtra Sprung Core

Code: PX

The stopper simplifies the adjustment and allows a longer lifetime guarantee. Completely adjusted to fit an H7 housing, radiuses already made on the head of the sprung core. Simple fixing system due to its external thread.

Available in three lengths. Jig to guarantee the part is cut at the exact length (supplied separately).
Material: 1.8159 Hardness: 45 ± 3 HRC Max. working temperature: 150°.

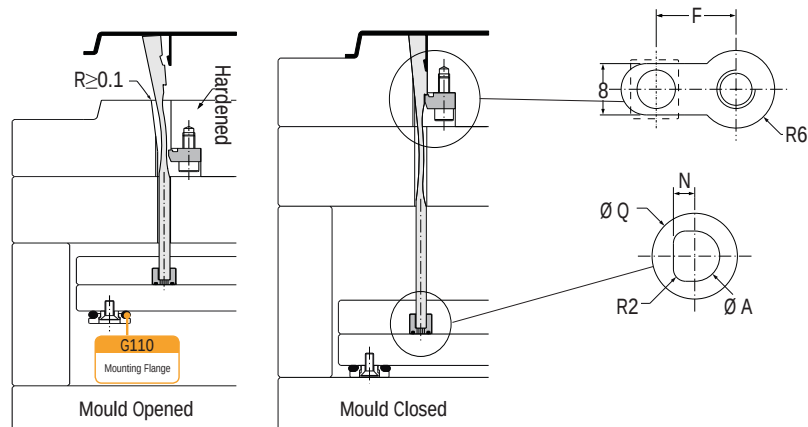


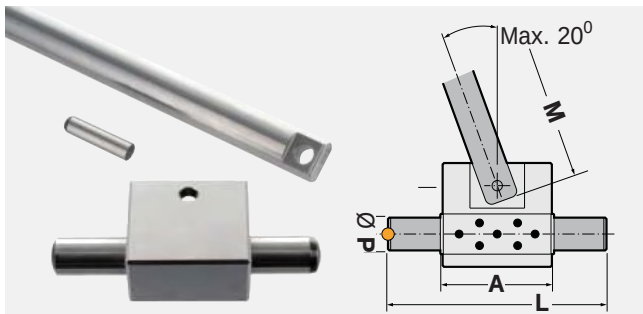
When ordering, indicate the desired "L" dimension after the reference

Tolerance: H7 / g6

Order	A	B	D	E	F	L=175		L=250		L=325		N	Q
						G	Bush	G	Bush	G	Bush		
PX.060630-...	6	6.2	10	3.5	12.5	60	-	80	-	80	-	2.5	12
PX.060830-...	6	8.2	10	3.5	12.5	60	-	80	-	80	-	2.5	12
PX.081030-...	8	10.2	11.2	4.5	13.5	60	-	80	-	80	-	3.5	14
PX.081230-...	8	12.2	11.2	4.5	13.5	60	-	80	-	80	-	3.5	14

As other ejector, it is operated with ejector plates. Especially, it is ideal to remove small lugs.





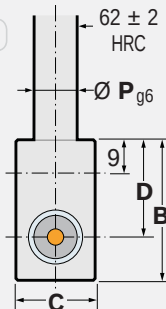
Undercut Base Unit

Code: SD

Used for internal undercut movements which require different angles of ejection. Its bronze guide bushing with graphite inserts, simplifies its movement. No milling, grinding or hardening need, only pocket machining.

Mat.: 1.2312 $\approx 1.080 \text{ N/mm}^2$

Order	A	B	C	D	L	M	P
SD.3220GR	32	37	20	27	80	180	10
SD.3824GR	38	40	24	28	80	210	12
SD.4528GR	45	44	28	30	100	250	16

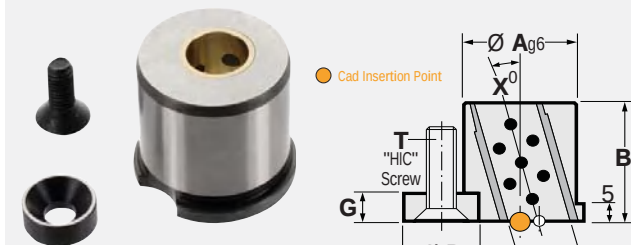
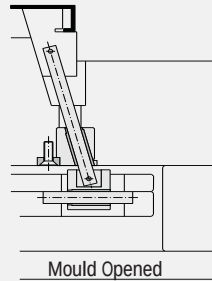
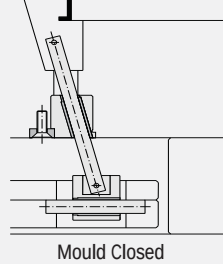


Attention: The unit and the rod are delivered separately.

The maximum weight that the Undercut Base Unit can support:

SD.322010 - 320 kg
SD.382412 - 420 kg
SD.452816 - 680 kg.

Mounting



Angled Guide Bush

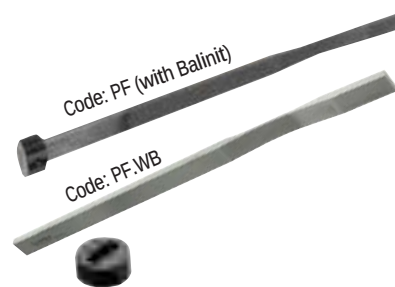
Code: CI

This unit is a guide bush for angled undercut blocks, which only requires a straight drilled hole for fitting. It does not require oil grooves due to the graphite-bronze insert.

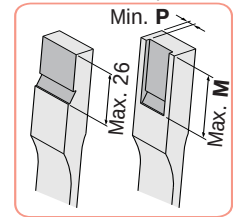
Material: 1.7242 Hardness: $58 \pm 3 \text{ HRC}$

Order	A	B	C	D	E	G	H	T	U	X°
CI.3034-5	30	34	34	16	20	6	0	M6x16	10	5°
CI.3438-5	34	38	38	20	24	8	0	M8x20	12	
CI.4040-5	40	40	44	20	27	8	0		16	
CI.3034-10	30	34	34	16	20	6	7	M6x16	10	10°
CI.3438-10	34	38	38	20	24	8	8.5	M8x20	12	
CI.4040-10	40	40	44	20	27	8	8.5		16	
CI.3034-15	30	34	34	16	20	6	7	M6x16	10	15°
CI.3438-15	34	38	38	20	24	8	8.5	M8x20	12	
CI.4040-15	40	40	44	20	27	8	8.5		16	
CI.3034-20	30	34	34	16	20	6	7	M6x16	10	20°
CI.3438-20	34	38	38	20	24	8	8.5	M8x20	12	
CI.4040-20	40	40	44	20	27	8	8.5		16	

"S": Demounting screw hole. Please see 3D file for "S" hole position.



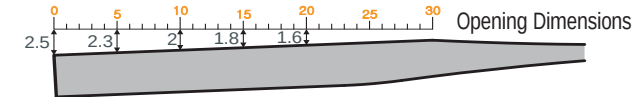
After setting core, please machining from end section to "P" due to make ejector effortlessly.



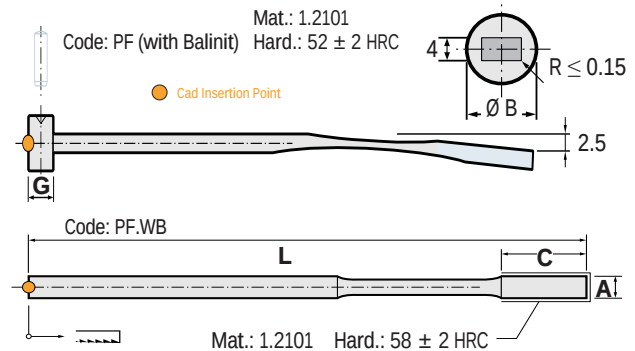
Flexible Sprung Core

Code: PF

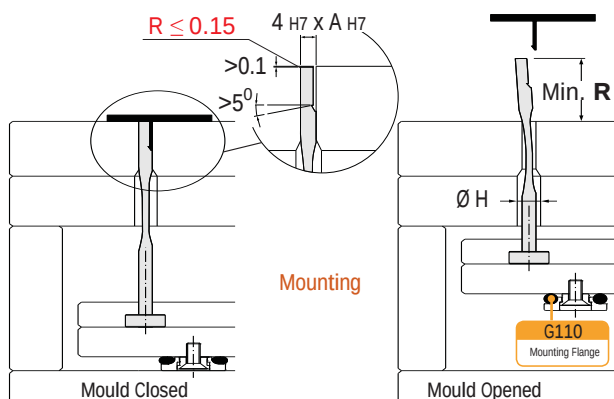
Thanks to its parallel walls, this core allows undercuts to be released in compact areas (only 4mm. thickness). Include a simple system for adjustment. A new feature to this product is that it ejects first then releases the undercut. Minimum space required for installation, only needs the space of an ejector. No milling, grinding or hardening other than the machining of detail needed. All drilling is 90° to the parting line. Available with and without Balinit C® coating.

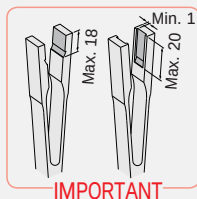


The opening of the sprung cores is a radial movement. Due to this, at the edge of the stroke, the opening is 2.5mm (0.098").



Order	A	B	C	G	H	L	M	N	P	R	Balinit C
PF.044150	4	8	24	6	6	150	12	14	0.8	30	•
PF.054150	5				6	150					•
PF.064200	6	12			7						•
PF.084200	8	14			9	200	18	20	1.0	36	•
PF.104200	10	16			11						•
PF.124200	12	18			13						•
PF.0642-WB	6	12			7						-
PF.0842-WB	8	14			9	200	18	20	1.0	36	-
PF.01042-WB	10	16			11						-
PF.01242-WB	12	18			13						-





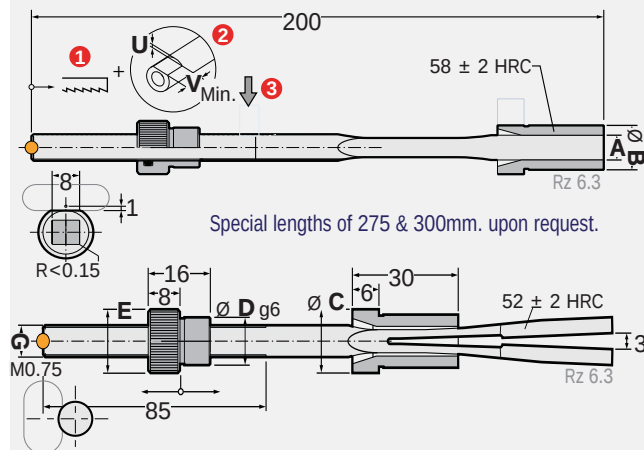
Double Ejector

Code: ED

Two separate movements in one component. Minimum space required for installation, only needs the space of an ejector. No milling, grinding or hardening other than the machining of detail needed. No need for complex mechanical systems. Useful to release small undercuts, this ejector is pre-adjusted and height adjustable. Easy to install, machining is 90° to parting line. The Balinit C® coating offers smooth action.

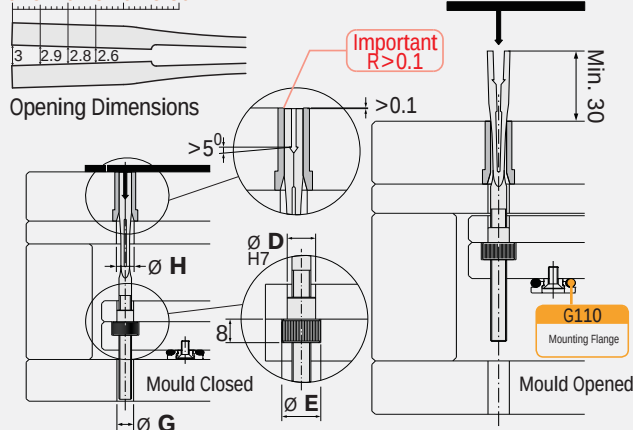
Material: 1.2101 Hardness: 45 ± 3 HRC
Max. working temperature: 150°.

Every Ejector is adjusted individually with its bushing, with a tolerance g6/H7 between them. For this reason, it is important to keep track of both pieces in pairs while handling and installing. The opening of the sprung cores is a radial movement. Due to this, at the edge of the stroke, the opening is 3.0 mm.



Order	A	B	C	D	E	G	H	U	V
ED.068200	6	12	14	10	14	6	10	0.5	10
ED.088200	8	14	16	12	16	8	12		
ED.108200	10	16	18	14	18	8	14		
ED.128200	12	16	18	16	20	8	15	15	

0 5 10 15 20 25 30



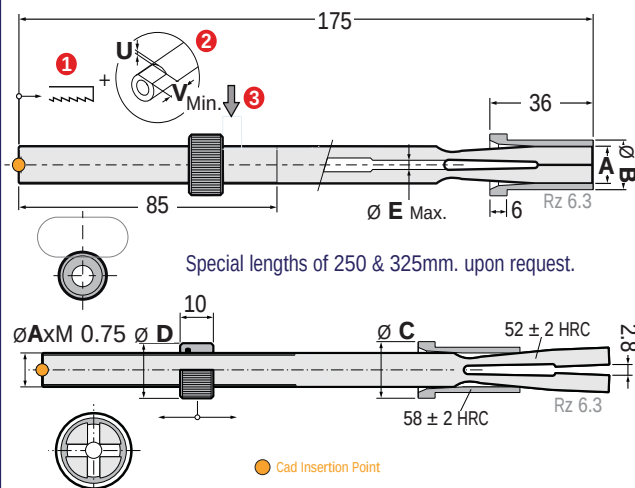
Tulip Ejector

Code: EE

Four separate movements in one component. Useful to release small undercuts, this ejector is pre-adjusted and height adjustable. Cylindrical machining and made 90° regarding the parting line. No milling, grinding or hardening other than the machining of detail needed. The Balinit C® coating offers smooth action. Minimum space required for installation, only needs the space of an ejector.

Material: 1.2101 Hardness: 45 ± 3 HRC
Max. working temperature: 150°.

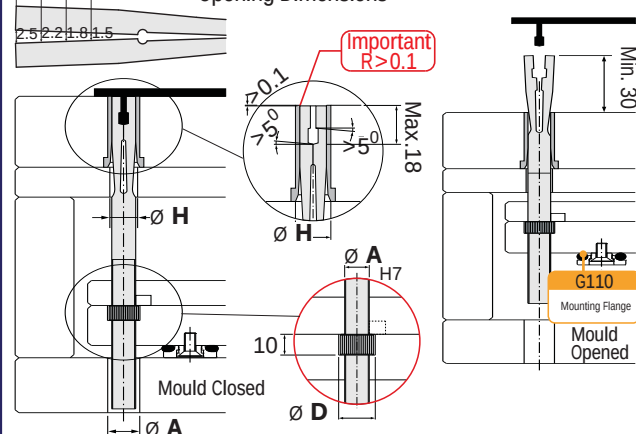
Every Ejector is adjusted individually with its bushing, with a tolerance g6/H7 between them. For this reason, it is important to keep track of both pieces in pairs while handling and installing. The opening of the sprung cores is a radial movement. Due to this, at the edge of the stroke, the opening is 2.8mm (0.110").

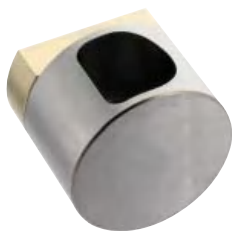


Order	A	B	C	D	E	H	U	V
EE.060175	6	10	12	12	-	9	0.5	10
EE.082175	8	12	14	14	2	11		
EE.103175	10	14	16	16	3	13		
EE.124175	12	16	18	18	4	15	15	
EE.168175	16	20	22	22	8	19	1.0	20

0 5 10 15 20 25 30

Opening Dimensions



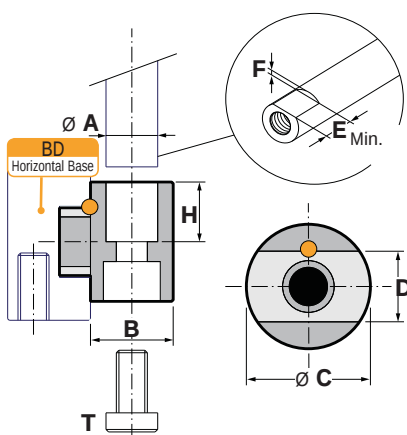


Fixed Lifter Base

Code: **DF**

Keyed pocket for the lifter shaft. Minimum space required in the ejector plates.
"VI" (Lifter Shaft) may be used as ejector.

Material: INOX 1.4034
Hardness: 48 ± 2 HRC

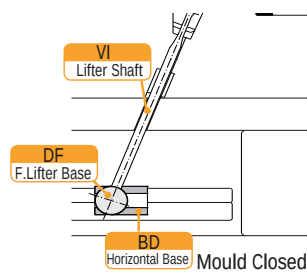


● Cad Insertion Point

Code: **DF**

Order	A	B	C	D
DF.061220	6	12	20	11.5
DF.081220	8	12	20	11.5
DF.101624	10	16	24	13.5
DF.121624	12	16	24	13.5
DF.162032	16	20	32	19
DF.202538	20	25	38	21
DF.253148	25	31	48	28

E	F	H	T
12	0.5	10	M4 x 12
12	0.5	10	M5 x 12
14	0.5	12	M6 x 16
14	1.0	12	M8 x 16
18	1.5	16	M8 x 22
21	1.5	19	M10 x 25
26	2.0	24	M12 x 35

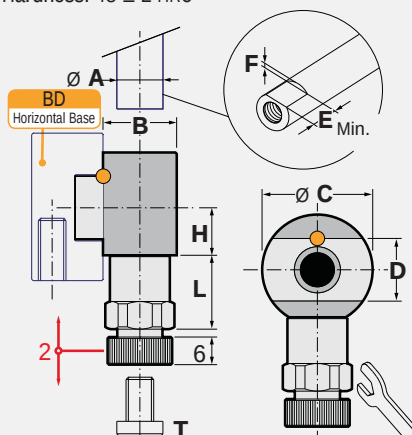


Adjustable Lifter Base

Code: **DA**

Keyed pocket for the lifter shaft.
Minimum space required in the ejector plates."DA"
Allows easy adjustment of the lifter shaft height.

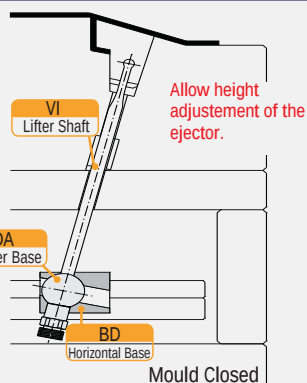
Material: INOX 1.4034
Hardness: 48 ± 2 HRC



Code: **DA**

Order	A	B	C	D
DA.061020	6	10	20	11.5
DA.081220	8	12	20	11.5
DA.101624	10	16	24	13.5
DA.121824	12	18	24	13.5

E	F	H	L	T
15	0.5	9.0	14	M4 x 40
15	0.5	8.5	14	M5 x 40
17	0.5	10.2	16	M6 x 40
17	1.0	9.6	16	M8 x 40

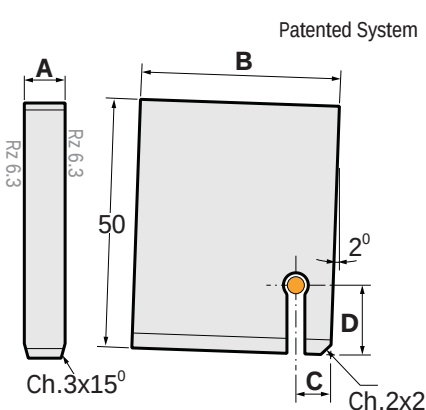


Lifter Head

Code: **IF**

Lifter Head hardened and ground to size.
No need for threads or dowel pins to attach the Lifter Head to the Lifter Shaft.
Offers a standard solution to the mould makers.

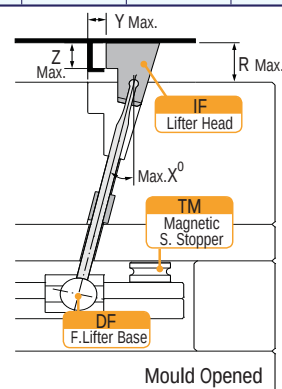
Material: 1.2344
Hardness: 45 ± 2 HRC



Code: **IF**

Order	A	B	C	D
IF.064050	6.2	40	6	12
IF.084050	8.2	40	7	14
IF.104450	10.2	44	8	16
IF.124450	12.2	44	9	18

R	X	Y	Z
40	5	3.5	36
38	10	6.7	35
38	15	10.2	34
37	20	13.5	32



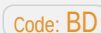


Lifter shaft includes oilless bushing.
No need for threads or dowel pins to attach the
Lifter Head to the Lifter Shaft.
Offers a standard solution to the mould makers.



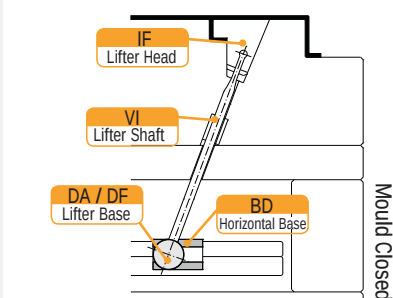
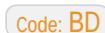
Adaptable Base

Cam slide for internal lifters.
Different hardness and materials between base
and limiter guarantees smooth movements.
Minimum space required for installation.
Material: 1.2311 **Hardness:** 45 ± 2 HRC



Horizontal Base

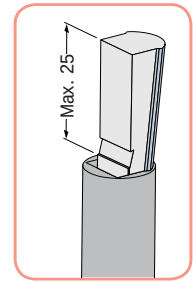
Cam slide for internal lifters.
Different hardness and materials between base
and limiter guarantees smooth movements.
Minimum space required for installation.
Material: 1.2311 **Hardness:** 45 ± 2 HRC





Standard Lifter

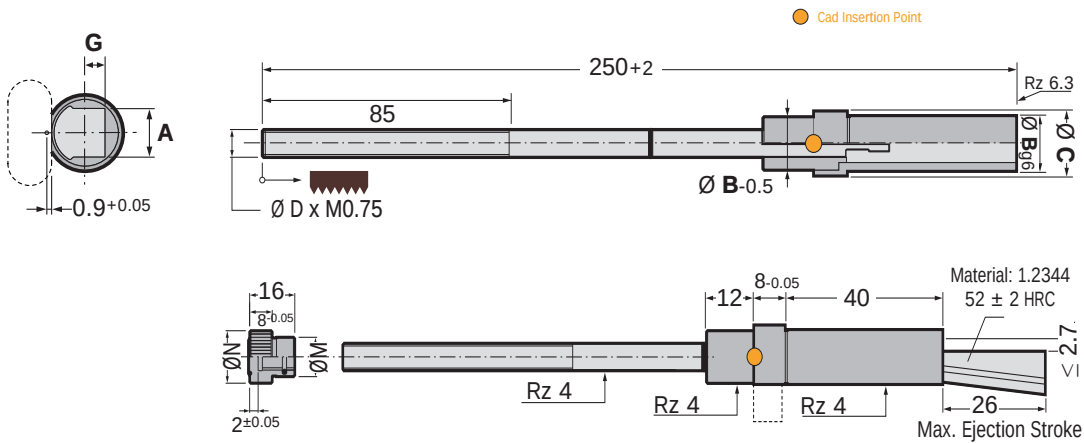
Code: PS



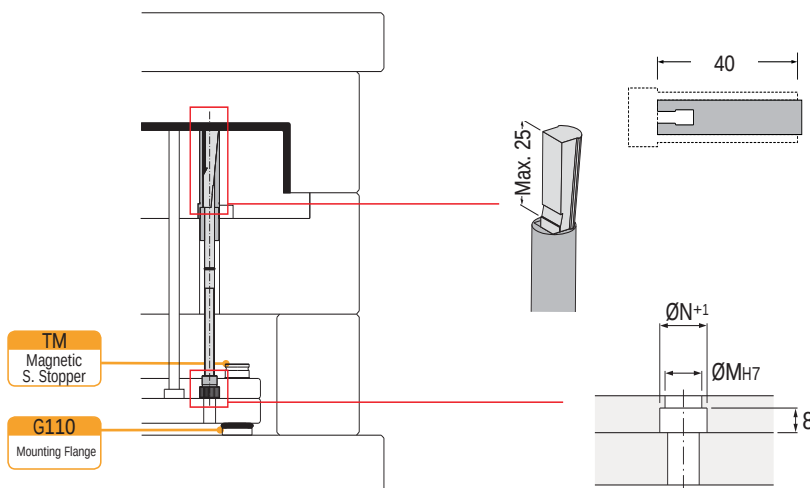
Important
Max. Operation Length

Compact unit for the release of small undercuts. The unit is completely pre adjusted and easy to install.
The space required for installation is reduced due to the vertical movement perpendicular to the ejector plates.
Minimum space required for installation, only needs the space of an ejector.
Mechanical solution. No milling, grinding or hardening other than the machining of detail needed.

Material: INOX 1.4034 Hardness: 48 ± 2 HRC Patented System



Order Code	A	B	C	D	G	M	N	R
PS.062250	6.2	10	12	6	3.4	12	16	1.25
PS.082250	8.2	12	14	6	4	12	16	1.25
PS.102250	10.2	14	16	8	4.2	14	18	2
PS.122250	12.2	16	18	8	4.2	14	18	2



* The bushing can be machined to make the molding surface up to 25mm (0.98").

How much can be cut from the top on the bushing and RP in Z axis?

PS.062250: 8 mm (0.315")
PS.082250: 15 mm (0.591")
PS.102250: 15 mm (0.591")
PS.122250: 20 mm (0.787")



Vertical Lifter Block

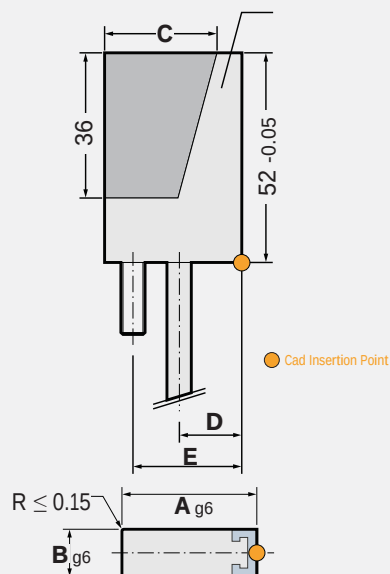
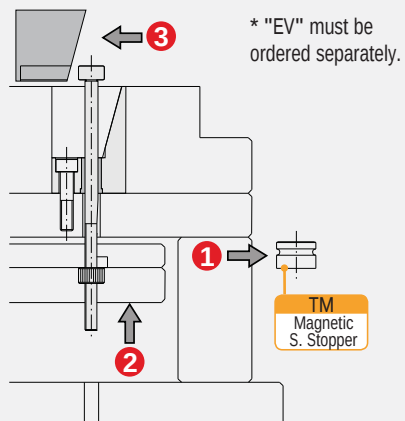
Code: PV

They are used along with mechanic Vertical Lifters, in profile block vertical lifting.

Material: 1.2842 Hardness: 56 ± 2 HRC

Usage: Removal process of profile block (according to technical drawing detail).

- 1- Pull "TM" (Magnetic Stopping) safety disc.
- 2- Push ejector plate forward.
- 3- Remove lifter housing.



Order	A	B	C	D	E
PV.341252	34	12	28	15.5	27
PV.402452	40	24	34	18.5	33



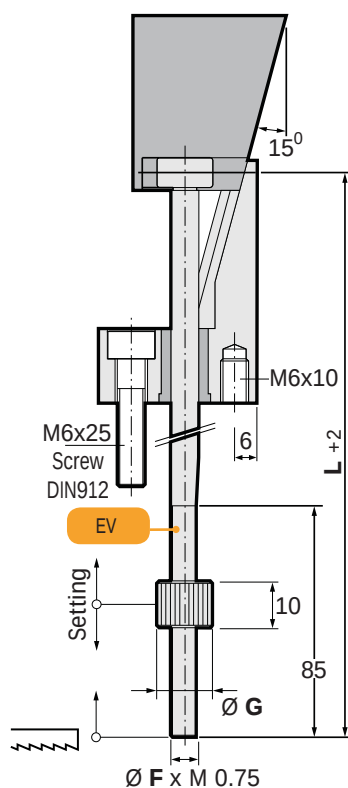
Vertical Lifter

Code: EV

Reduces costs in machining and fitting. Reduces costs in tool downtime.

All machining are made in a 90° position. Less space required compared to conventional solutions. Offers a standard solution to the mould makers.

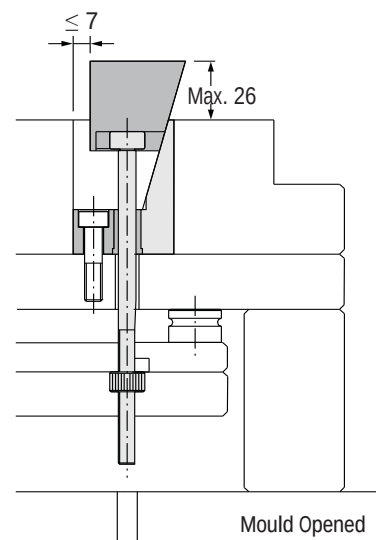
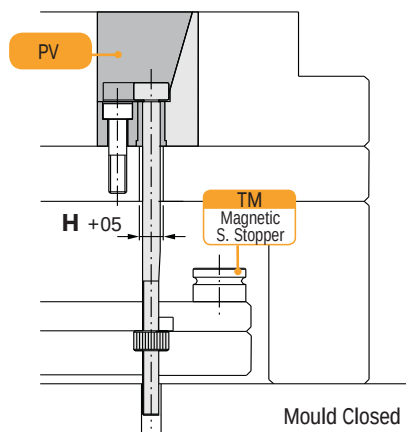
Material: 1.2344 Hardness: 50 ± 2 HRC Patented System



- * "PV" must be ordered separately.
- * When ordering, indicate the desired "L" dimension after the reference.

Code: EV

Order	F	G	H	L	
EV.006. (L)	6	12	6.5	150	225
EV.012. (L)	12	18	12.5	150	225

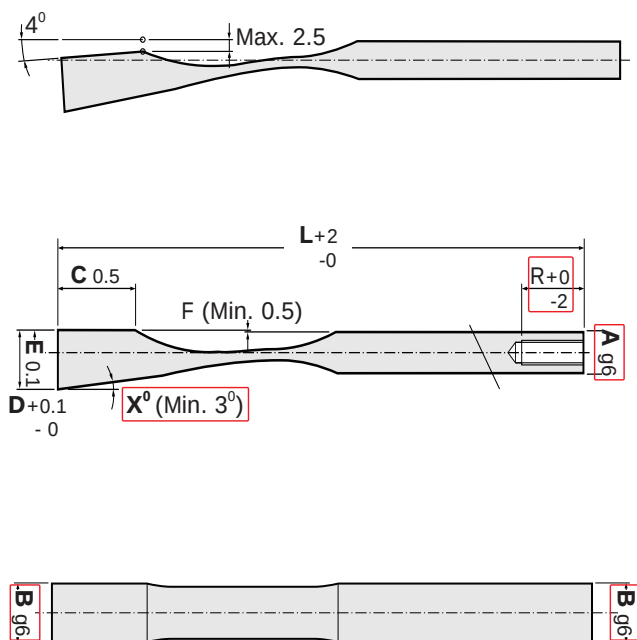




Custom-Made Sprung Cores

Special sprung cores to suit your dividual requirements.
If no other undercuts product is compatible, this is your solution.
Delivery time from 6 to 8 weeks.
Different strokes and undercut dimensions are available.

Material: 1.8159 Hardness: 45 ± 3 HRC



The dimensions A, R and X° will be determined by depending on the head dimensions required by the customer.

Custom-Made Sprung Cores

Order	B	C	D	E	F	L	Pcs.
Custom-made production							

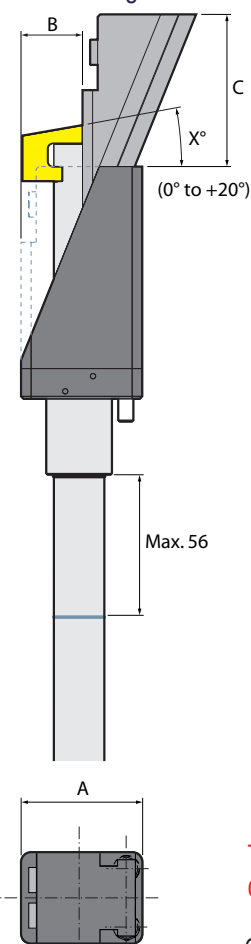


Custom-Made Angular Dog Lifters

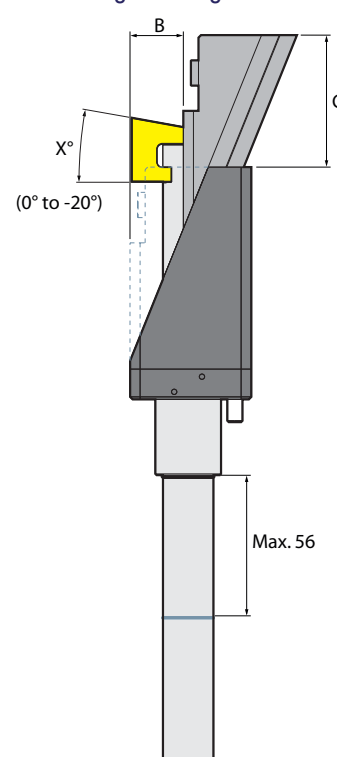
This unit allows to use the advantages of the DB reference in angled parts.
To order this part just fill the Ordering Table provided. Once we receive the required dimensions we will send to you a 3D file for your approval.

Material: 1.2311 Gas Nitrided ≈ 840Hv.

Positive Angle Version



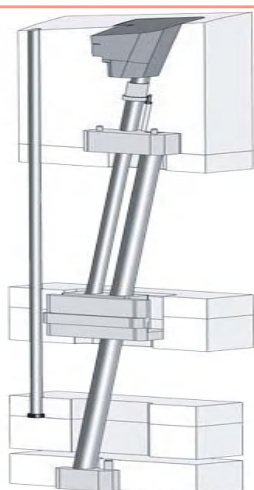
Negative Angle Version



The other dimensions will be determined.

Custom-Made Angular Dog Lifters

Order	A	B	+ X°	- X°	Pcs.
Custom-made production	44				
	48				
	54				



Single Ejector System



Code: DB

Material: PKT-117 Hardness: 42 ± 2 HRC.
Gas Nitrided ≈ 840 Hv.

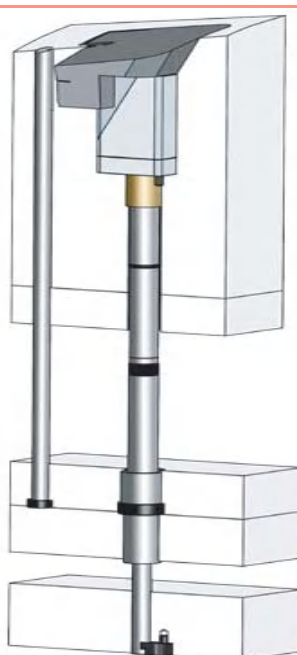
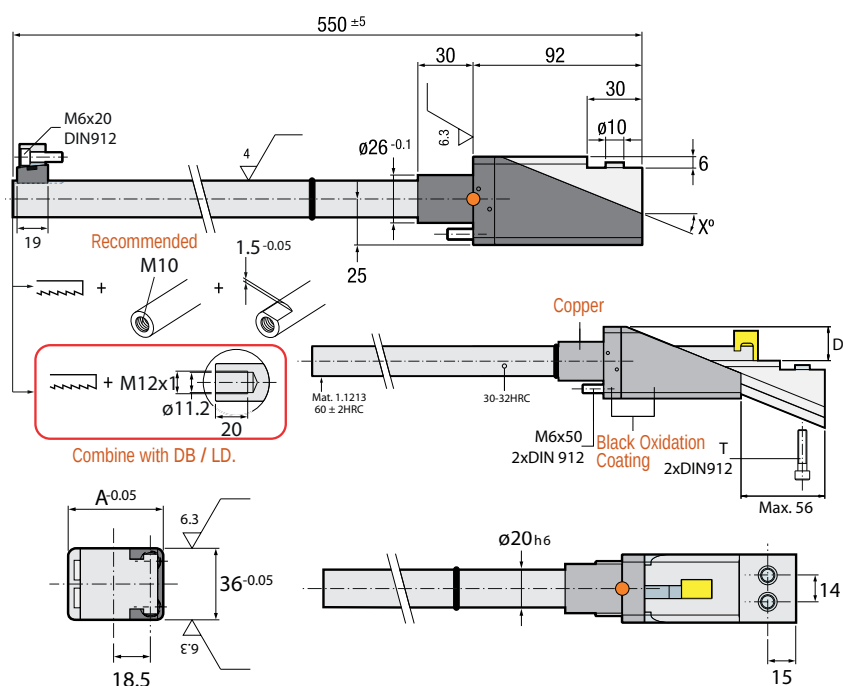


Code: LD

Material: 1.2311 Gas Nitrided $\approx 840\text{Hv}$.

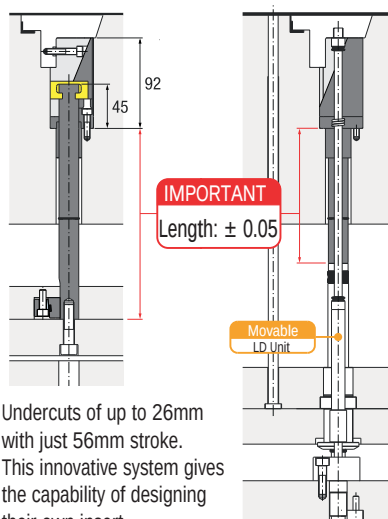


90° Machining and
mould area



Completed Mounting

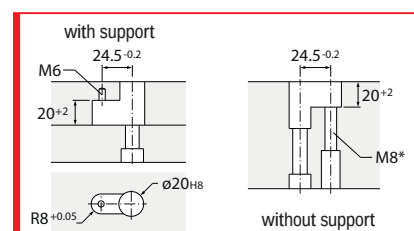
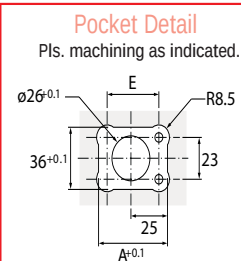
Order	A	D	E	T	X
DB.482292	48	22	35	6x40	22
DB.542792	54	26	41	6x45	26



Undercuts of up to 26mm
with just 56mm stroke.
This innovative system gives
the capability of designing
their own insert.

Order
LD.142130

"DB / LD" order
should be given
separately





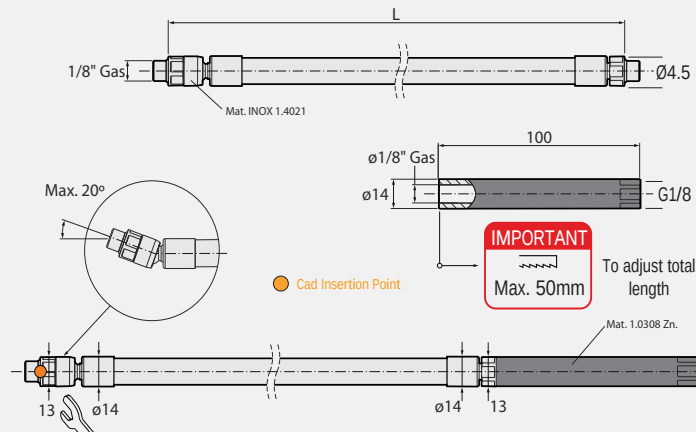
"DR" Cooling Hose

Code: DK

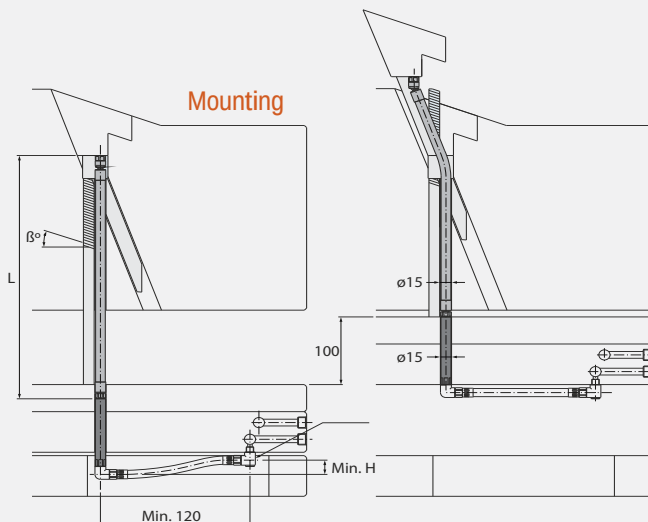
Cooling Hose for 90° "DR" Lifters.

The swivel coupling prevents the hose from bending excessively when demolding the undercut.

Maximum cooling fluid temperature 50°C.



Order	β^0	H			
		DR.xx-8	DR.xx12	DR.xx16	DR1.xx20
DK.141818	0°	10	10	10	10
	+1° ~ +9°	10	10	10	15
	+10° ~ +20°	10	15	20	25
	>+20°	15	20	25	30

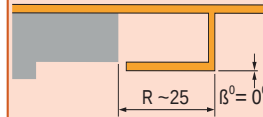


Important

Please indicate the required L dimension when ordering; the length will be rounded up to the next multiple of 25mm.

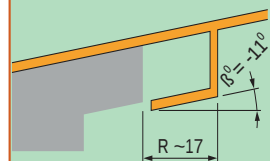
Double Rack Lifter (DR) Selection Table

Neutral Angle ($\beta = 0^\circ$)



DR.xx100L-16
DR.xx125L-12

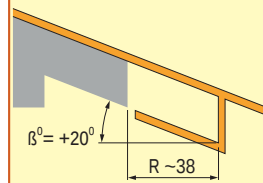
Negative Angle ($\beta < 0^\circ$)



DR.xx100L-12
DR.xx125L-8

Designed according to the colour system in the table!

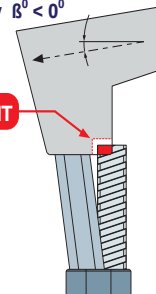
Positive Angle ($\beta > 0^\circ$)



DR.xx100L-20
DR.xx125L-16

Only $\beta < 0^\circ$

IMPORTANT

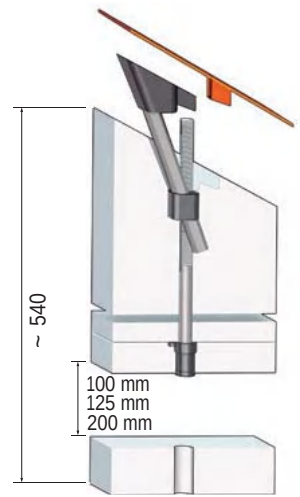


β^0	DR.xx-100L - 8		DR.xx-100L-12		DR.xx-100L-16		DR.xx-100L-20	
	S (-β°)	S (+β°)	S (-β°)	S (+β°)	S (-β°)	S (+β°)	S (-β°)	S (+β°)
0	14.0		21.2		28.6		36.4	
1	14	14	21.1	21.3	28.5	28.8	36.1	36.6
2	13.9	14.1	21.1	21.4	28.3	28.9	35.9	36.8
3	13.9	14.1	21	21.5	28.2	29.1	35.7	37.1
4	13.9	14.1	20.9	21.5	28.1	29.2	35.4	37.3
5	13.8	14.2	20.8	21.6	27.9	29.4	35.2	37.5
6	13.8	14.2	20.7	21.7	27.8	29.5	35	37.8
7	13.8	14.3	20.7	21.8	27.7	29.7	34.8	38.1
8	13.7	14.3	20.6	21.9	27.5	29.8	34.6	38.3
9	13.7	14.3	20.5	22	27.4	30	34.4	38.6
10	13.7	14.4	20.4	22	27.2	30.2	34.2	38.8
11	13.6	14.4	20.4	22.1	27.1	30.3	33.9	39.1
12	13.6	14.4	20.3	22.2	27	30.5	33.7	39.4
13	13.6	14.5	20.2	22.3	26.8	30.7	33.5	39.7
14	13.5	14.5	20.1	22.4	26.7	30.8	33.3	40
15	13.5	14.6	20.1	22.5	26.6	31	33.1	40.3
16	13.5	14.6	20	22.6	26.5	31.2	32.9	40.6
17	13.4	14.6	19.9	22.7	26.3	31.4	32.7	40.9
18	13.4	14.7	19.8	22.8	26.2	31.6	32.5	41.2
19	13.4	14.7	19.8	22.9	26.1	31.8	32.3	41.6
20	13.3	14.8	19.7	23	25.9	32	32.1	41.9

Object Position / Mounting & Demounting Measurement Table:

Stroke	F	G	H	J	K	M	N	S	T	W	Y	Z
DR16	10	4.6	4.5	3	2.35	3	2.8	2.5	M5	6	9	M4
DR22	13	5.6	5.6	4.2	3.7	4.2	3.5	2.5	M6	8	12	M4
DR28	16	7.5	7.5	5	5.4	4.8	4.8	2.5	M8	8	13.5	M4
DR34	16	10.5	8	7	7	5	6	4	M8	8	16	M4
DR40	20	11	11	7	8	7	7	4	M10	10	20	M6
DR46	25	13	13	8	8	9	9	5	M12	10	24	M6

Locating and Rack Combination



Double Rack Lifter System

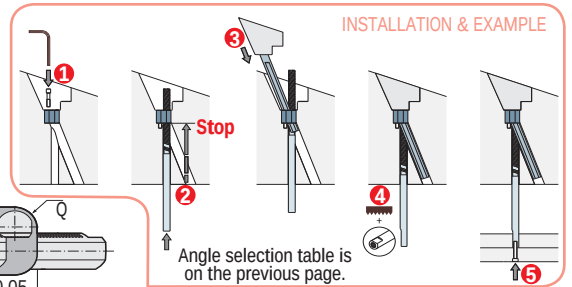
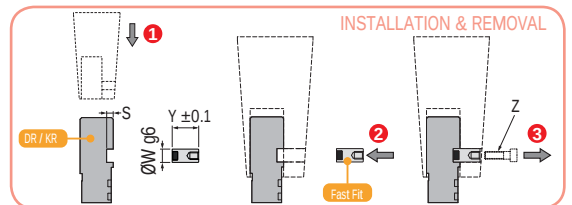
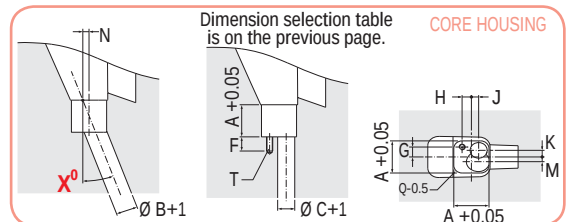
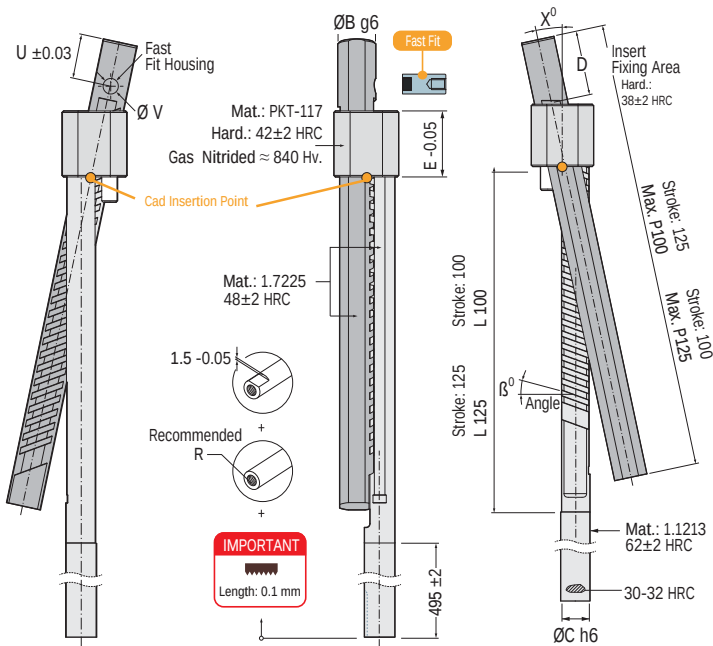
Code: DR

De-moulding strokes from 14mm to 60mm. Significant reduction to the ejection stroke.

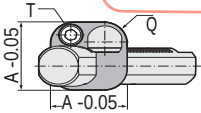
"Mirror" parts available for 1+1 cavities moulds.

In Mounting: Fast delivery of the required draft. Vertical function maximizing strength. Complete flexibility for the moulding insert dimension. Eliminates the need for high-precision angled housings in the core plates. Smaller and less expensive injection machine required. Possibility to produce angles bigger than $\pm 20^\circ$ upon request. Big savings in time & cost for machining and adjustments.

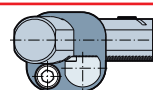
Stroke (Value): 14mm.
Undercut Width (Value): 70mm.
Ejection Stroke: 100mm.
Mechanism Type: Mechanical
Cooling Available: Yes
Max. Undercut Degrees: $+35^\circ$
Min. Undercut Degrees: -55°



Order "Stroke 100"	Order "Stroke 125"	X°		A	B
DR16100L-X	-	8	12	16	9
DR22100L-X	DR22125L-X			22	12
DR28100L-X	DR28125L-X			28	16
DR34100L-X	DR34125L-X			34	20
DR40100L-X	DR40125L-X			40	22
DR46100L-X	DR46125L-X	16	20	46	24



IMPORTANT
Mirror Part



"S" letter is added to the end of order code for Mirror Part.

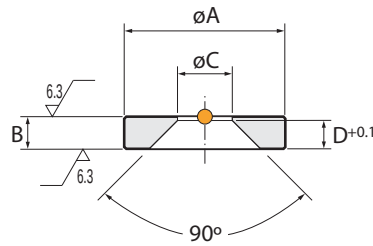
C	D	E	L100	P100	L125	P125	Q	R	T	U	V	Order: Stroke 100 - S	Order: Stroke 125 - S
8	20	20	142	178	-	-	4	M4	M5	10	6	DR16100L-X-S	-
12	30	22	148	202	202	261	6.5	M6	M6	17	8	DR22100L-X-S	DR22125L-X-S
14	36	28	152.5	214	194.5	266	8.5	M8	M8	23	8	DR28100L-X-S	DR28125L-X-S
16	36	34	160.5	227	188.5	264	10.5	M10	M8	23	8	DR34100L-X-S	DR34125L-X-S
20	36	40	170	244	204	284	10.5	M12	M10	20	10	DR40100L-X-S	DR40125L-X-S
24	42	46	175	258	201	289	10.5	M16	M12	26	10	DR46100L-X-S	DR46125L-X-S

IMPORTANT!

When ordering, replace the x in the reference with the required X° dimension (8° , 12° , 16° or 20°) and indicate the required β° .

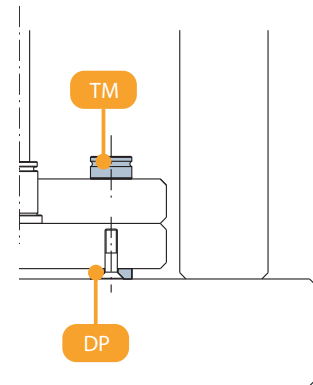
Ejector Foot

Code: DP



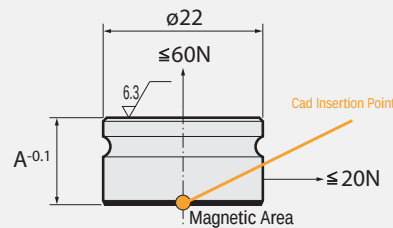
Order	A	B	C	D
DP.200506	20	5	6.5	3.5
DP.250508	25	5	8.5	4.4
DP.280610	28	6	12	5.5

This unit is fixed through both ejector plates in conjunction with the spacer discs to provide support to the plates. These are fixed to the ejector plates so eliminating machining in the back plates. Easy installation by using just one screw.



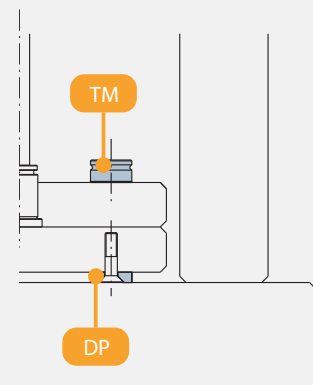
Magnetic Safety Stopper

Code: TM



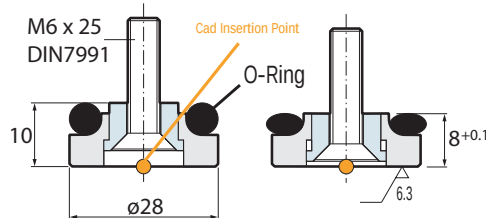
Order	A
TM.102214	10
TM.122214	12.5
TM.152214	15
TM.202214	20

This is a safety stop to prevent the actuation of the ejector bases. It can be easily removed to release the grip on the pins when required.



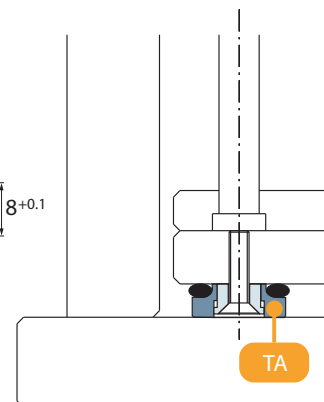
Shock Absorber Disc

Code: TA



Order: TA.280806

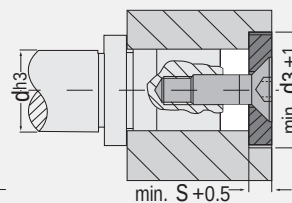
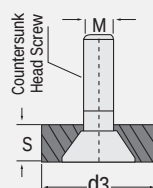
Used to minimize the vibrations caused by the ejector plates returning to position. The main advantage is the increase in the life of parts within the ejector frame through the reduction of damage and wear.



Mounting Flange

Code: G110

Support washer & Guide pillar fixation



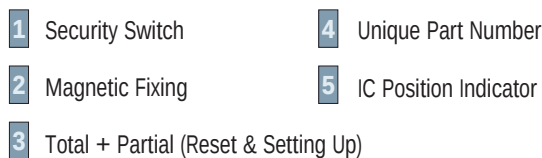
Order: G110 x d3

Usage: Support washer (Mould)
Guide pillar fixation (Die)

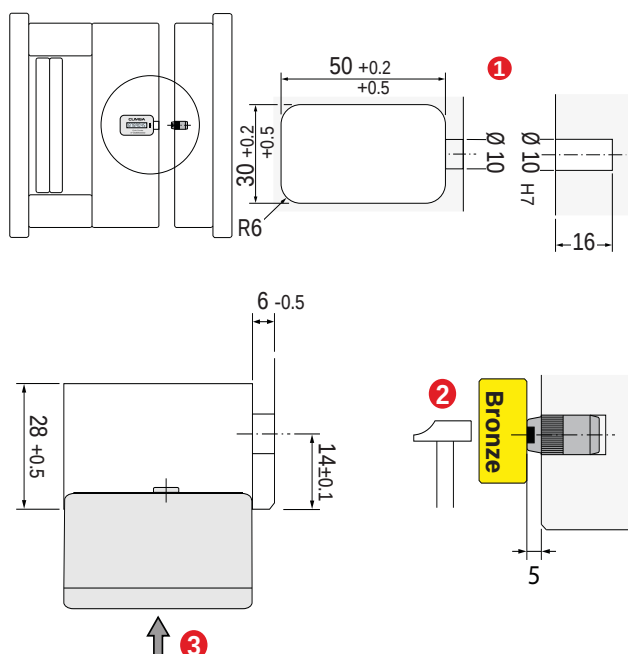
★ It can also be used to support for ejector plates in injection moulds / etc.

★ Reliable product used for guide pillar with centre collar mountings min. d3 + 1

Ø d3	Pillar Diameter d	Flange S	Screw 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	Reset & Setting Up	Cycles / Min.
CC.HS5328	Suitable	Up to 500



Code: CC

This mechanism only activates after the first 25 consecutive shots. In case you want to know the injected pieces during mould testing, you can install the Counter and remove it with tape before the 25th shot, then the Counter will go back to 0. As it has 7 numbers, it can count up to 9.999.999 parts.

To check exact total life time of the mould. To ensure that how many shots a determined mould made when our sourced. To predict preventive maintenance. Available with partial reset. The unique part nº for each counter gives a guarantee to the mould makers and a planning aid for maintenance to the mould makers. Any tampering with the unit is shown in the screen.

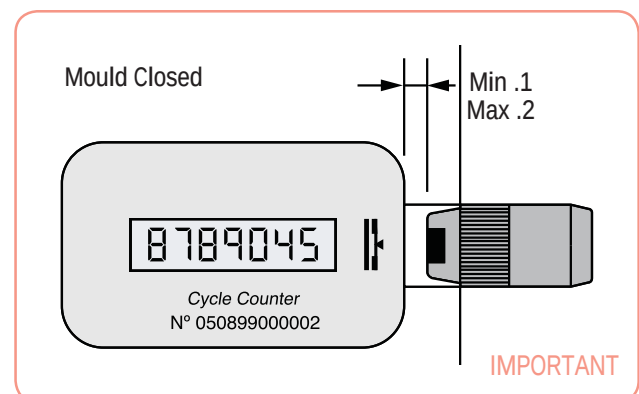
This unit contains an electronic circuit which counts the number of cycles made by the mould.

Mounting Instructions:

- 1 - Please machine housing in a way that as determined in technical drawing.
- 2 - Please hammer Counter Pin (IC) of Counter to housing with bronze hammer.
- 3 - Please insert Counter unit (CC) its housing.

Working Temperature:

We recommend the Cycle Counter be placed at zones under 60 °C (140°F).





Ejector Plate Accelerator

Code: EP

This item allows increased movement of a second ejector plate within a normal ejector stroke. Simple mechanical double ejection system.

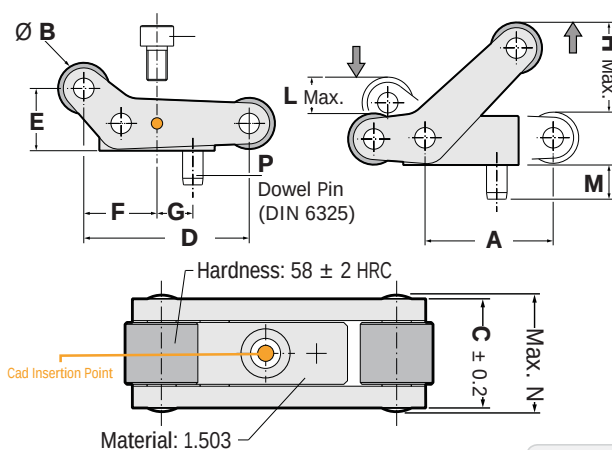
Minimum space required for installation.

Avoids complex systems like others currently available in the market.

In small and medium moulds with standard ejectors, 1 piece is sufficient.

In more larger moulds and systematic moulds according to their configurations, dual Ejector Plate Accelerator can be used.

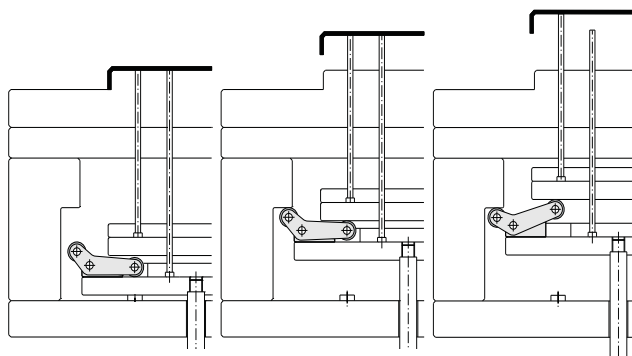
In a symmetric manner, generally 4 pieces.



Code: EP

Order	A	B	C	D	E	F	G
EP.200813	20	8	13.2	25.8	9.4	11.4	6
EP.251016	25	10	16	32.3	11.8	14.3	7
EP.371522	37.5	15	22	48.5	17.7	21.5	10.5
EP.502030	50	20	30	64.6	23.6	28.6	14

H Max.	L Max.	M	N	$\varnothing P$	T	Max. Force
11.6	4.4	5	15	2.5 x10	M3 x12	125 Kg.
15	5.7	6	18.5	3 x12	M4 x16	250 Kg.
23.5	9.1	8	25	4 x16	M6 x25	350 Kg.
32	12.5	10	34	5 x20	M8 x30	800 Kg.



NOTE: It is recommended two piece to be used reciprocally in ejector system in mould applications.

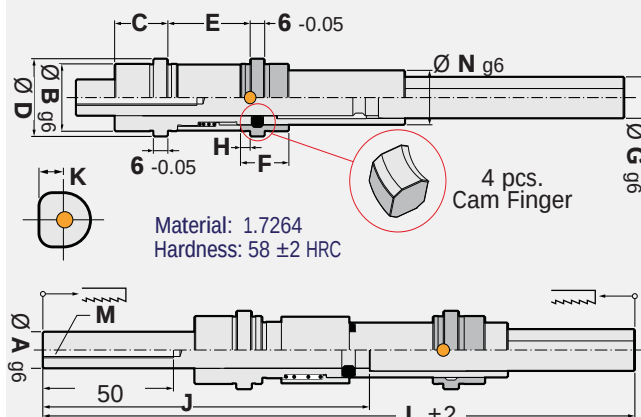


Superior Double Ejector

Code: DX

The rear plates stop and the upper plates continue for the full ejection stroke. Thanks to the assembly of the units away from the center of mold but within the ejector frame the space required for installation is drastically reduced leaving more space for other mechanisms. Also works as the ejector guide pins and bushes, having the possibility of eliminating the need to install extra items.

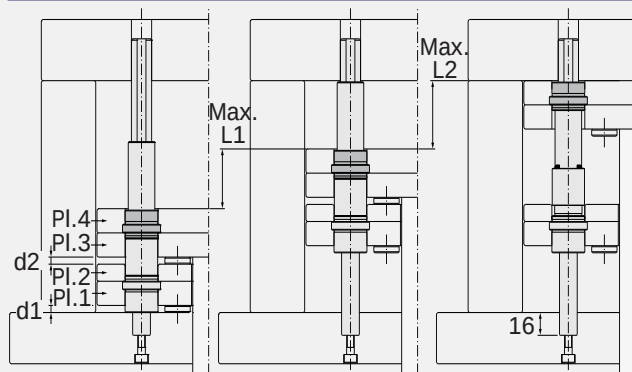
Maximum working temperature 150°C.



Code: DX

Order	A	B	C	D	E	F	G	H
DX.142622	14	26	22	30	34	20	16	4
DX.163027	16	30	27	34	44	23	18	6

J	K	L	M	N	L1	L2
125	7.2	243	M6	21	42	48
152	8	314	M8	24	54	80



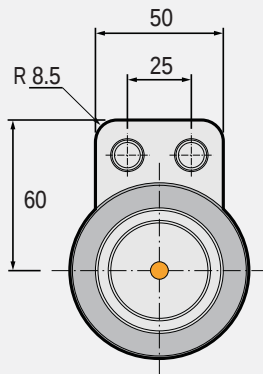
Standard Ejector Plate Combination

Size mm	DX.142622				Size mm	DX.163027								
	1	2	3	4		1	2	3	4	5	6	7	8	9
d1	5	5	5	5	d1	5	5	5	5	0	0	0	0	0
Pl.1	17	17	17	17	Pl.1	22	22	22	22	27	27	27	27	27
Pl.2	9	12	12	12	Pl.2	12	12	17	17	17	17	22	22	22
d2	13	10	5	5	d2	5	5	5	5	5	5	10	0	0
Pl.3	12	12	17	17	Pl.3	27	27	22	22	22	22	17	22	22
Pl.4	9	9	9	12	Pl.4	17	22	12	17	12	17	12	12	17

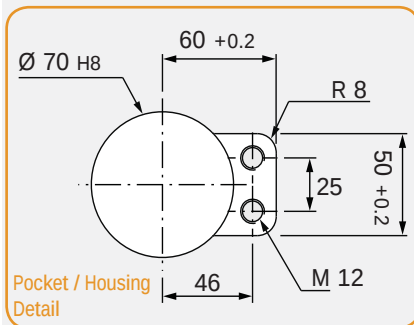
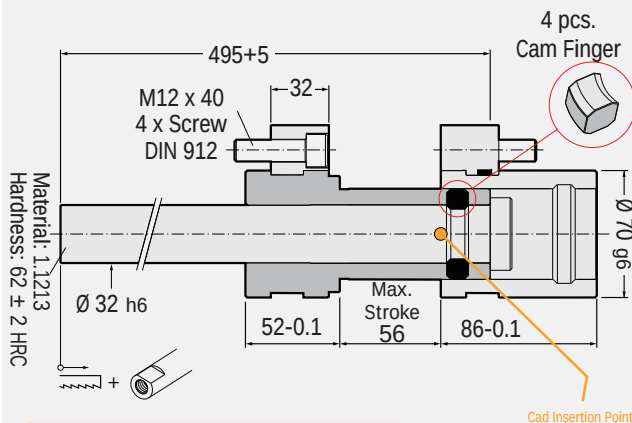


Compact Double Ejection

Code: SY

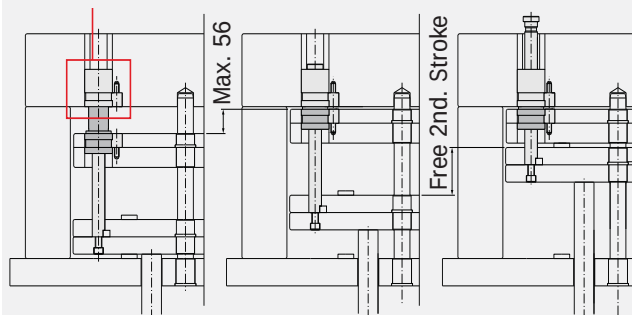


Developed for medium / large moulds. The upper ejector plate stops when reaching the core plate, and the rear plate continues until it reaches the upper plate. As the assembly of the units is not in the center of the mold, but within the ejector frame, the space required for installation is drastically reduced. Double ejection up to 56mm.



Material:
1.7242
Hardness:
56 ± 2 HRC
Patented
System

Order: SY.327054

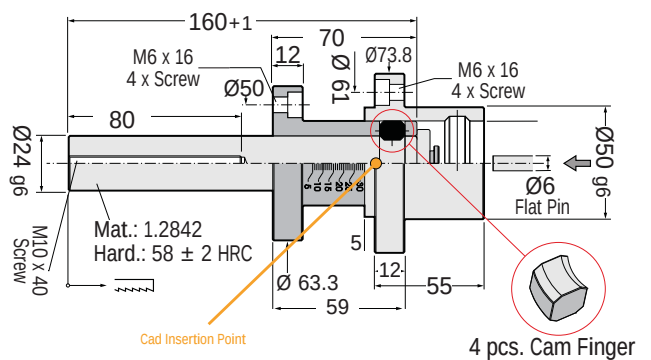


Two-Stage Ejector System

Code: DE

This unit divides the ejection travel in two predefined steps. Useful to obtain automatic ejector strokes in moulds with sprung cores and collapsible cores units. Only round pockets needed to install the part. Double ejector stroke up to 30mm.

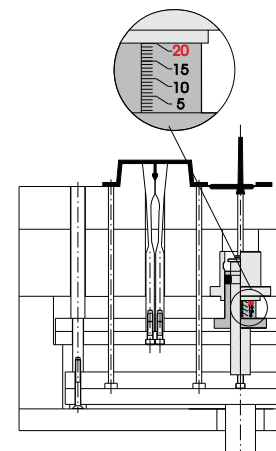
Material: 1.7243 Hardness: 58 ± 2 HRC



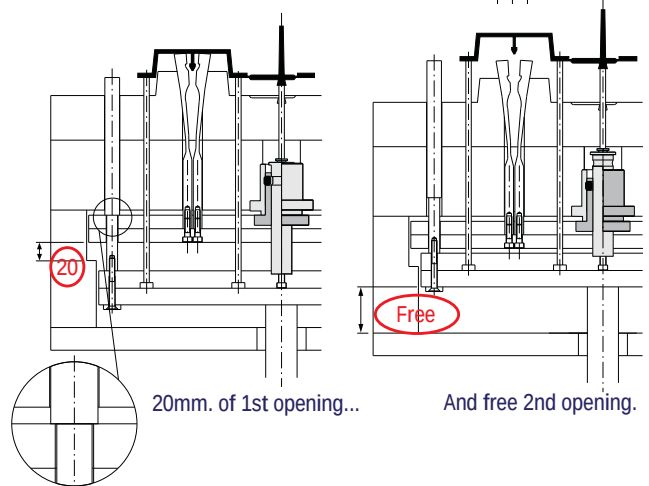
IMPORTANT!

To determine assembly dimensions, use the scale from 0 to 30mm, to select the first stroke.

Order: DE.243648



If 20mm is selected...



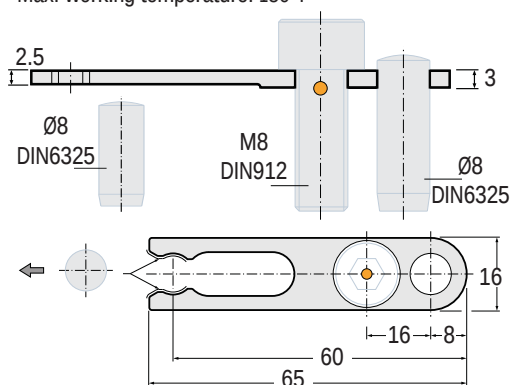


Modular Retainer

Code: **RM**

Useful for moulds that require delayed opening of parting line. Resistance can be increased by adding clips. No pocket machining required as needed with other similar products on the market. Minimum space required for installation. Reduces costs compared to conventional mechanisms. 4 pieces can be used on same surface max. The system should be distributed to different areas if the more use is needed.

Material: 1.8159 Hardness: 45±3 HRC
Max. working temperature: 150°.

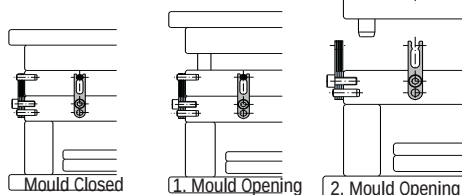
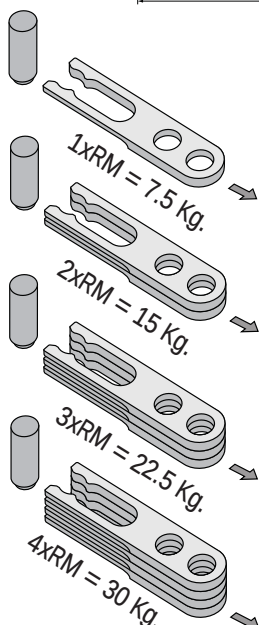


IMPORTANT!

The values displayed on the image are approximate values and they are used with 1-2-3-4 groups. Modular Retainer groups should be created in different regions / directions of the mould for more loadings.

Fasteners:
Screw and pin should be procured separately.

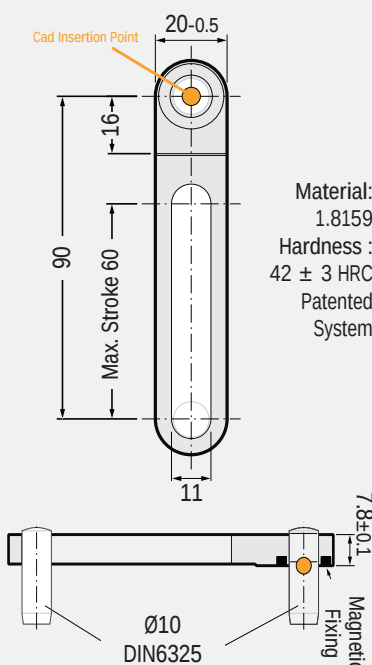
Order:
RM.651608
(1 pcs.)



Stroke Limiter

Code: **SL**

Stroke mechanical limiter for PR - Plate Retainer. When PR coded product is used dual opening systems with stripper limit stroke of bearing plate which is opened first in 1st group. Possibility to reduce the max. opening - 60mm. Then 2nd group's opening is engaged.



Order:
SL.602008

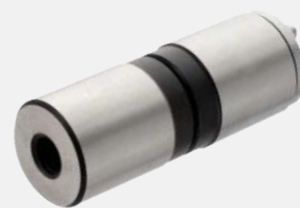
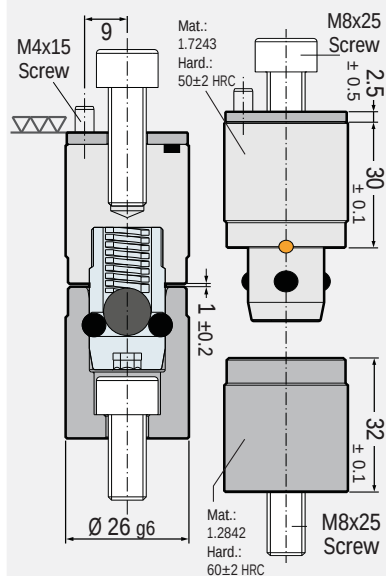


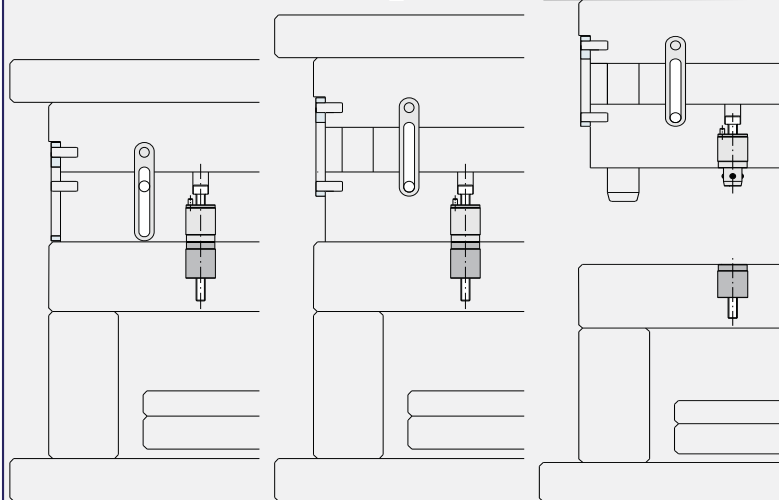
Plate Retainer

Code: **PR**

PR - Guarantees that the second opening stays closed until the first is completely open. 50 Kg. opening load required per unit (Minimum of 2 parts required). Possibility to change inner spring from the parting line. Also protects mould affecting from vibrations and impacts by reducing speed tension and absorbing pinking during opening. The most important advantage of it is to extend life time of mould parts.



Order:
PR.263230

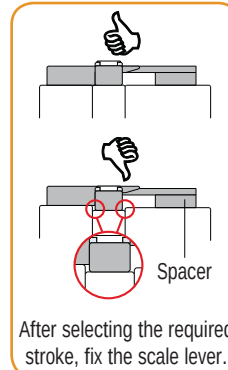
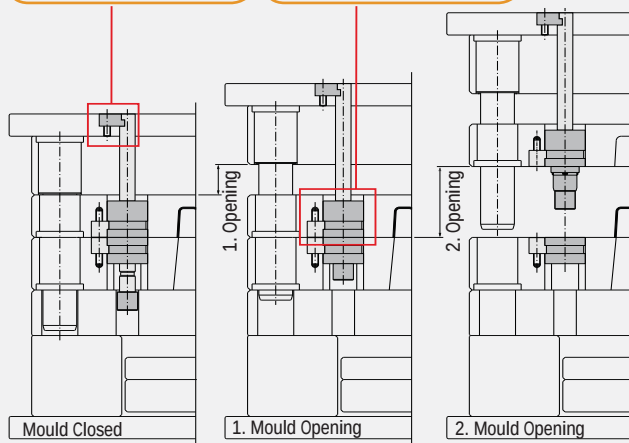
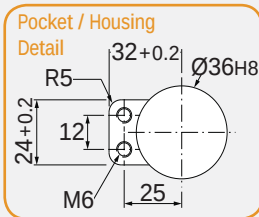
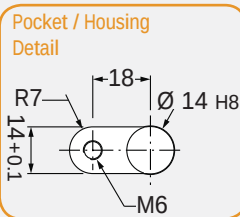
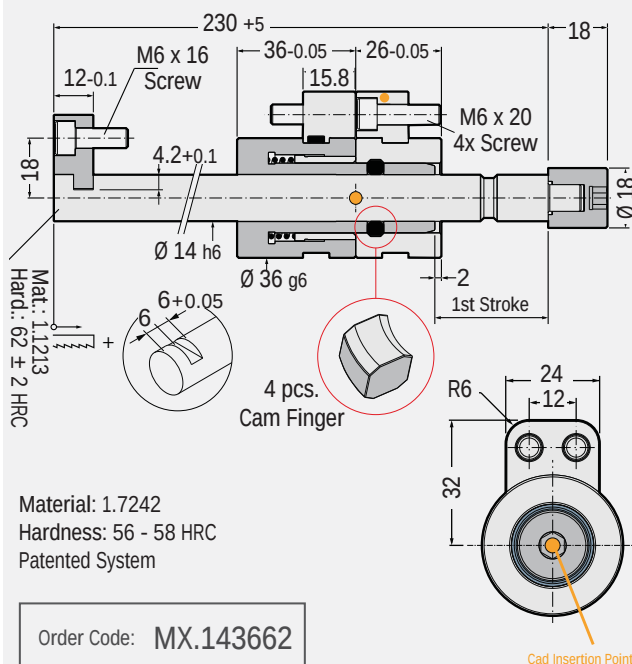




Internal Latch Lock

Code: MX

Controls two stage opening of the tool. Internal mechanism. Reduced space required for installation. Developed for small / medium tools.
Can also be used to control two sets of ejection plates for two stage ejection.

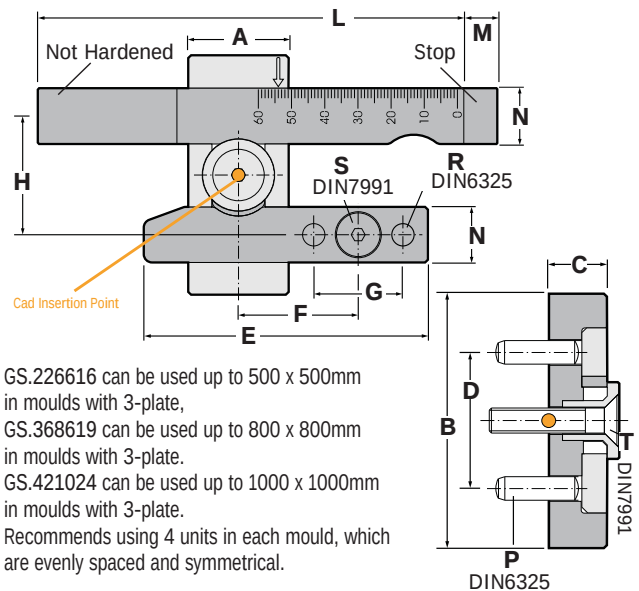


Latch Lock

Code: GS

Designed for two steps opening moulds. The gradual scale allows selection of the first opening. The priority of opening depends on position of assembly. More accurate first plate opening compared to other conventional systems. Scale lever indicates opening of the first plate. Reduces costs compared to conventional mechanisms.

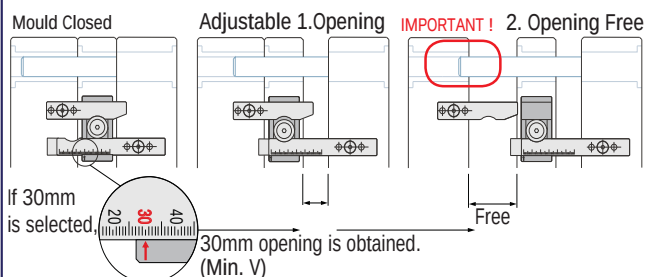
Material: 1.2842 Hardness: 55 ± 3 HRC (friction area) Patented System



GS.226616 can be used up to 500 x 500mm in moulds with 3-plate,
GS.368619 can be used up to 800 x 800mm in moulds with 3-plate.
GS.421024 can be used up to 1000 x 1000mm in moulds with 3-plate.
Recommends using 4 units in each mould, which are evenly spaced and symmetrical.

Order	A	B	C	D	E	F	G	H	L
GS.226616	22	66	16	38	75	30	25	32	105
GS.368619	36	86	19	46	102	43	32	42.7	153
GS.421024	42	106	24	56	124	51	40	50.2	190

M	N	P (x2)	R (x4)	S (x2)	T	V	Scale
10	15	6x20	6x30	M6x30	M6x35	10	40
12	20	8x24	8x36	M8x35	M8x40	11.5	60
15	24.5	10x30	10x40	M10x40	10x45	14	80





Code: BA

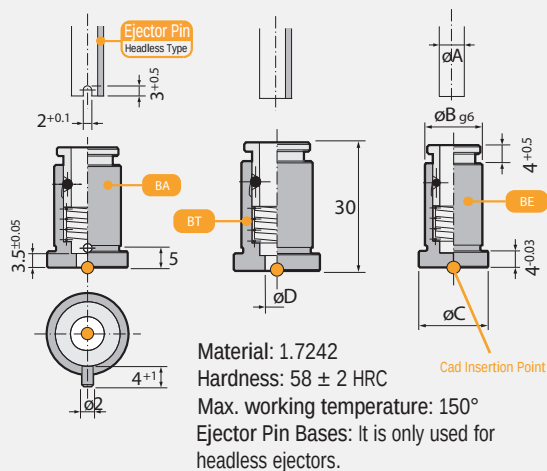
Code: BT

Code: BE



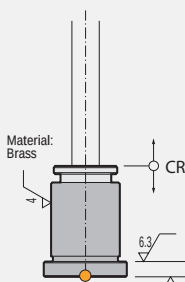
Ejector Pin Base (for headless ejector pins)

The ejector base unit is an automatic unit which holds the ejector pin in position until the top is actuated. The pins can be taken out from the front of the tool. Enables quick replacement of ejectors, ejector sleeve and moulding inserts without taking the mould from the press. There is no requirement for strip down when repair or maintenance is needed.



Code: BE

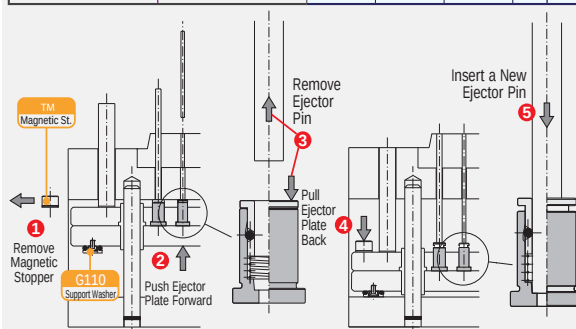
Order	A	B	C	CR(N)
BE.031115	3	11	15	≥ 2550
BE.041216	4	12	16	≥ 2550
BE.051317	5	13	17	≥ 3800



Code: BA

Code: BT

Order	A	B	C	D
BA.061418	6	14	18	3.5 4.2
BA.081620	8	16	20	5.5 6.2
BA.101822	10	18	22	7 7
BA.122024	12	20	24	9 9



Accelerated Ejector

Code: AE

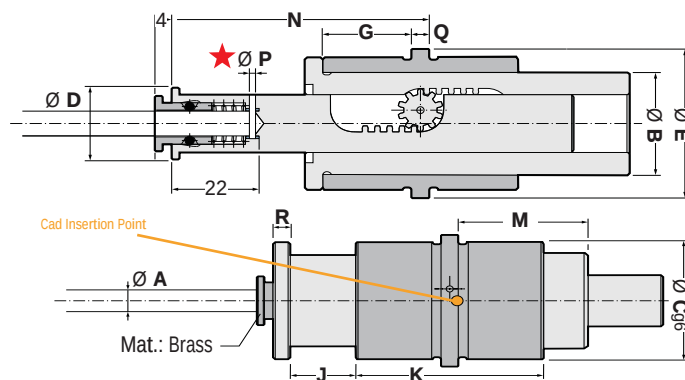
Allows to increase the stroke of selected ejectors within the tool. It is easy to install due to its cylindrical shape and possible to automate conventional tools. Enables 8mm. / 15mm. / 20 mm. additional stroke on one ejector pin. Only round pockets needed to install the part. Possible to key. Enables quick replacement of the ejector pin.

Material: 1.7225

Hardness: 54 ± 2 HRC

Max. working temperature: 150°

Patented System



Order	A	B	C	D	E	F	G
AE.031620	3	16	20	12.5	22	13	14
AE.041620	4	16	20	12.5	22	13	14
AE.052430	5	24	30	16	34	16	20
AE.062430	6	24	30	16	34	16	20
AE.082430	8	24	30	17	34	17	20
AE.103036	10	30	36	21.5	40	21	28
AE.123036	12	30	36	21.5	40	21	28

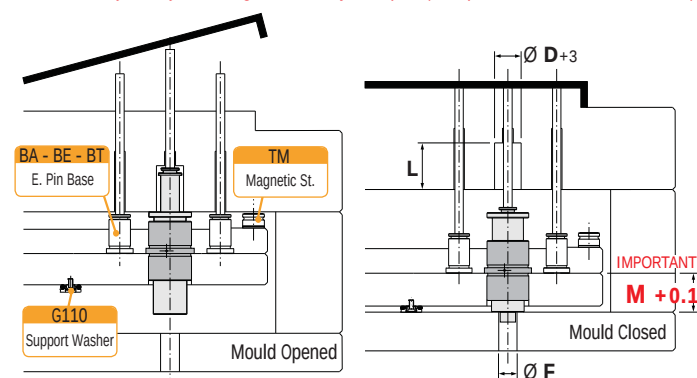
J	K	L	M	N	P	Q	R
8	32	22	17	37	-	4	3
8	32	22	17	37	-	4	3
15	44	36	27	57	2	4	3
15	44	36	27	57	2	4	3
15	44	36	27	57	2	4	3
20	62	46	34	78	2	6	4
20	62	46	34	78	2	6	4

When the internal bushing of this piece gets in contact with the plate, the mechanism starts working. From that point, the ejector of the AE goes at double stroke.

The extra strokes of units:

- 8mm (0.315") of extra stroke, with the AE031620 and AE041620.
- 15mm (0.591") of extra stroke, with the AE052430, AE062430 and AE082430.
- 20mm (0.787") of extra stroke, with the AE103036 and AE123036.

★ Possibility to key for using a curved ejector pin. (except AE.031620 & AE.041620)



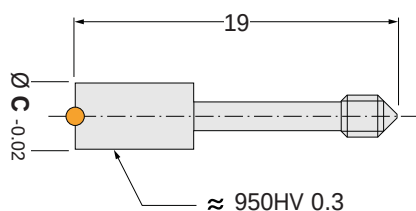


Code: IT

High Temperature Insert for Date Stamp

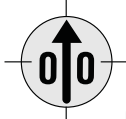
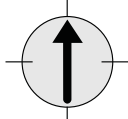
Due to fact that the insert is adjustable / removable from the front of the mould, there is no need to remove the tool from the machine or disassemble the mould.

Material: 1.2344 Nitrided



Arrow only

Year



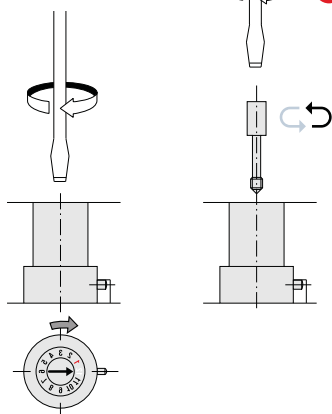
Code: IT

Order Arrow only	Order Year	C
IT.4719SF	IT.4719 ..	4.7
IT.6719SF	IT.6719 ..	6.7

* Please indicate the desired year after the code.

IMPORTANT!

When replacing the insert, be sure to tighten until hearing the engagement "click".

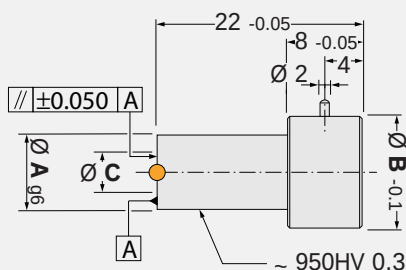


Code: FT

High Temperature Date Stamp

High temperature date stamp. Designed for injection mold tools which operate in high temperature environments, like: Zamak, Zinc, Polyester, Bakelite, etc.. Possibility to change annual insert.

Material: 1.2344 Nitrided + Inconel 2.4669
Max. working temperature: 450°

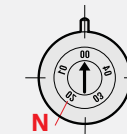
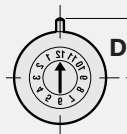


Possibility to change annual insert.

12 Months

12 Months + Year

Year



(Number of years)

Code: FT

Order 12 Months	A	B	C	D	N
FT. 0847SF	8	12	4.7	11	5
FT. 1267SF	12	16	6.7	12	8

Order 12 Months + Year	A	B	C	D	N
FT. 084712	8	12	4.7	11	5
FT. 126712	12	16	6.7	12	8

Order Year	A	B	C	D	N
FT. 084705	8	12	4.7	11	5
FT. 126708	12	16	6.7	12	8

* Please indicate the desired year after the code.

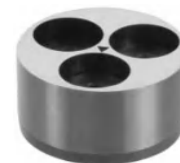
The depth is the engraving on the "FT" Date Stamp:

FT.08 (Year) : 0.15-0.25mm

FT.08 (Arrow) : 0.40-0.50mm

FT.12 (Year) : 0.15-0.25mm

FT.12 (Arrow) : 0.50-0.60mm



Code: BM

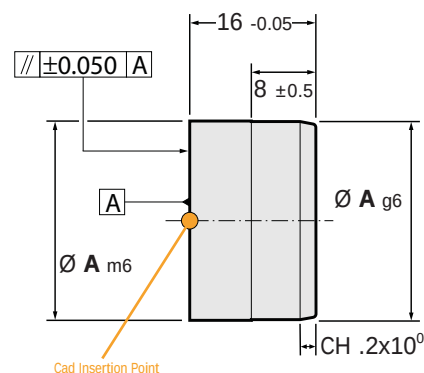
Block Base Insert

Wide range of diameters. Possibility of 3 or 4 information's. Only a H7 pocket required for assembly. No downtime when changing inserts. Guarantee that the insert will be replaced due to internal mechanism.

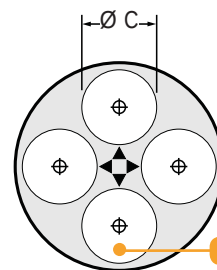
Material: INOX 1.4034

Hardness: 51 ± 3 HRC

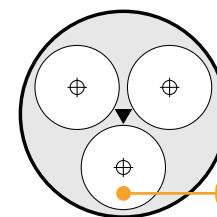
Max. working temperature: 150°



Cad Insertion Point



4 x PM

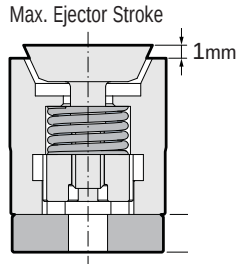


3 x PM

Code: BM

Order	A	C	E	#PM
BM.160603	16	6.5	8	3
BM.180604	18	6.5	8	4
BM.220903	22	8.7	10	3
BM.250904	25	8.7	10	4
BM.281103	28	11.5	12	3
BM.321104	32	11.5	12	4



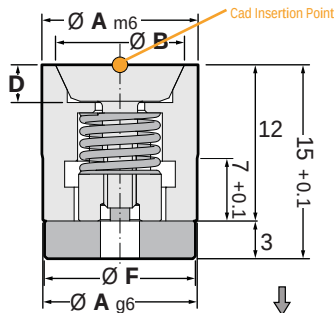


Air Valve for High Pressure

Code: **VH**

Developed for high injection pressures and high speed cycles. Incorporates an internal stopper to sustain injection loads, preventing the system to block. Keyed unit to allow the installation in angled or shaped surfaces. Easy installation thanks to its adjusting ring, as well as allowing uninstallation if needed.

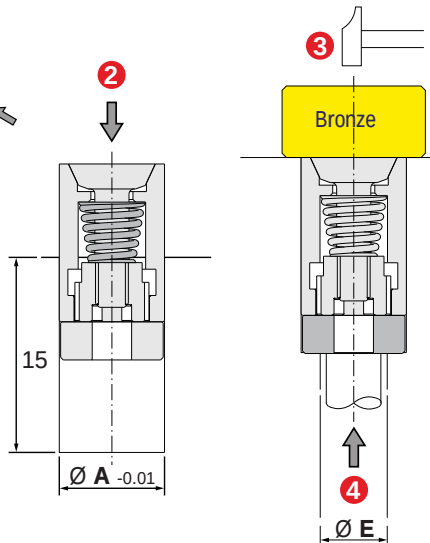
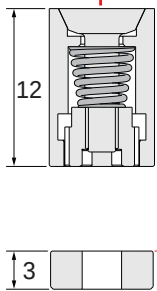
Material: INOX 1.4034
Hardness: 51 ± 3 HRC
Max. working temp.: 150°
Working pressure: 2-10 Bar
1 Bar ≈ 1 Kg. / cm^2



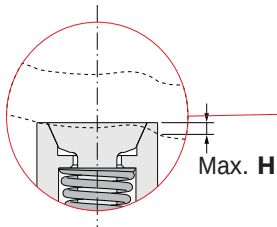
Order	A	B	D	E	F	H
VH.065215	6	5.3	1.9	4	5.8	0.25
VH.086515	8	6.7	2.1	5	7.8	0.75
VH.121015	12	9.8	2.9	5	11.8	1.0

Triple air entrance to ensure balanced opening.

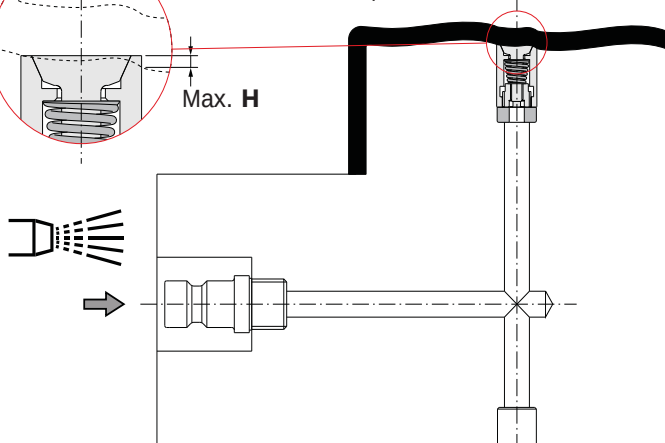
Maximum Injection Pressure: 2500 Kgs / cm^2



IMPORTANT!
Maximum machining allowed



"VH" can be used on angled or shaped surfaces.



Air Poppet Valve

Code: **VA**

Manufactured completely from stainless steel this unit has the advantage of high airflow. Helps part ejection with air. Recommended working under 150°C (302°F). Above that temperature, steel starts dilatation, so the resort introduced on the Air Valve would lose efficiency. If so, the plastic material could go in and the Air Valve would be damaged.

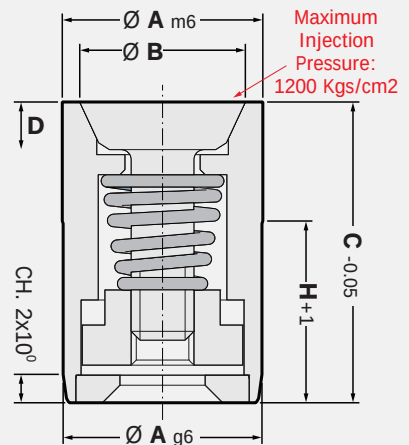
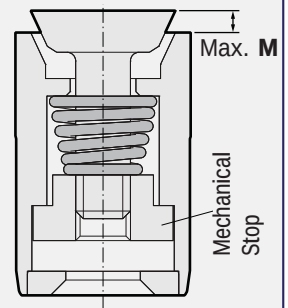
Material:
INOX 1.4034

Hardness:
 51 ± 3 HRC

Max. working temp.: 150°

Min. working pressure: 3 Bar

1 Bar ≈ 1 Kg. / cm^2



Code: **VA**

Order	A	B	C	D	E	H	M
VA.050412	5	3	12	1.5	4	7	2.5
VA.065212	6	5.2	12	1.5	4	7	0.95
VA.086512	8	6.5	12	1.5	4	7	0.95
VA.100812	10	8	12	2	8	7	0.95
VA.121012	12	10	12	2.5	10	7	0.95
VA.161320	16	13	20	3	12	12	1.55
VA.201720	20	17	20	3.5	16	12	1.55

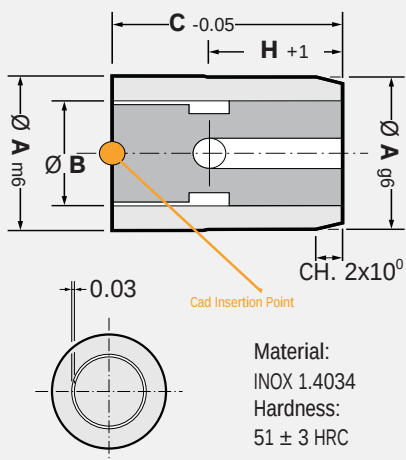
* Product VA.050412 does not contain mechanical stop.



Double Air Valve

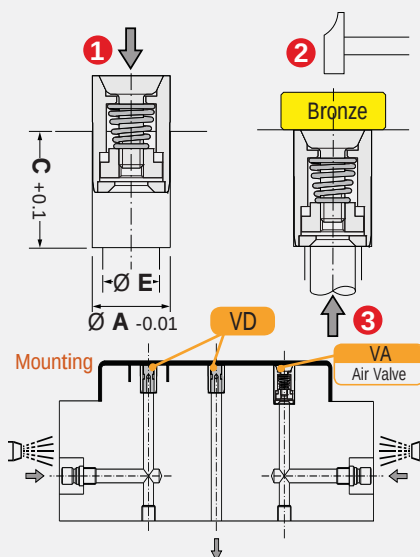
Code: VD

An effective method of semi pneumatic ejection, for moulds with ribs (in thin walled mould) or areas forming gas traps or vacuum conditions. Helps part ejection with air. Allows venting.



Code: VD

Order	A	B	C	E	H
VD.080512	8	5	12	4	7
VD.100612	10	6	12	5	7
VD.120812	12	8	12	7	7
VD.161020	16	10	20	9	12



Sprue Adjuster

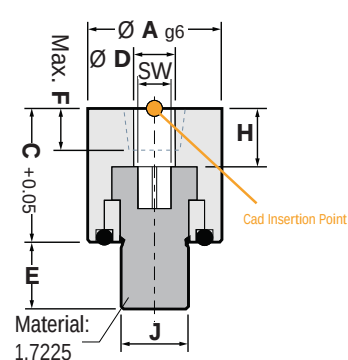
Code: SA

It is suitable to use on high injection pressure and fast / mass production stamps.

This unit allows runner shut off directly from the parting line.

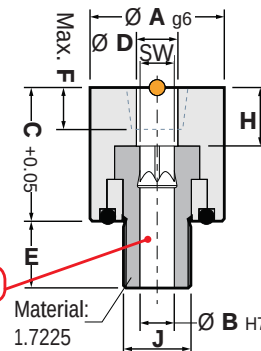
Two models are available, depending if an ejector pin is required or not.

It can be installed in the cavity or in the core, allowing trapezoidal or full round runners.



Material: INOX 1.4034
Hardness: 48 ± 3 HRC
Max. working temp.: 100°

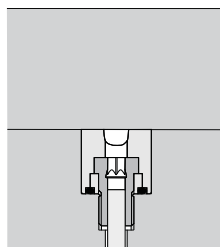
With Ejector Bore



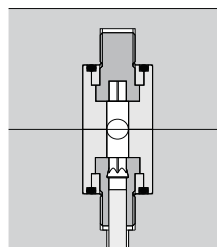
Order	A	C	D	E	F	H	J	SW
SA.120014	12	14	4	6	3	5	M6	3
SA.160016	16	16	5	8	5	7	M8	4
SA.200018	20	18	6	10	6	9	M10	5

Order	A	B	C	D	E	F	H	J	SW
SA.120314	12	3	14	4	6	3	5	M6	3
SA.160416	16	4	16	5	8	5	7	M8	4
SA.200518	20	5	18	6	10	6	9	M10	5

Runner Position Configurations

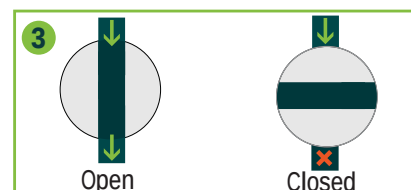
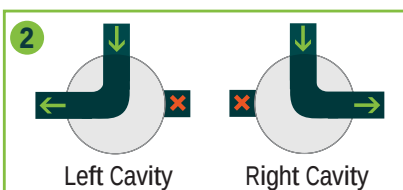
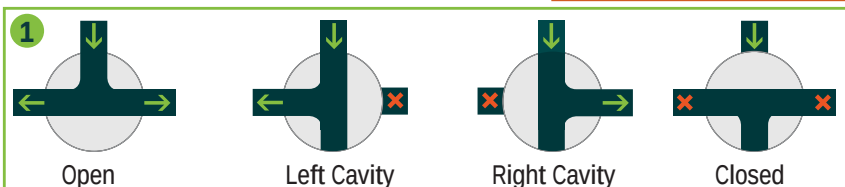
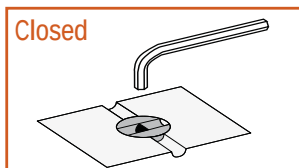
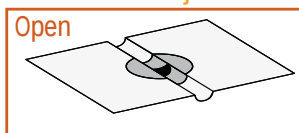


Trapezoidal Runner



Full Round Runner

Runner Adjuster



NEW

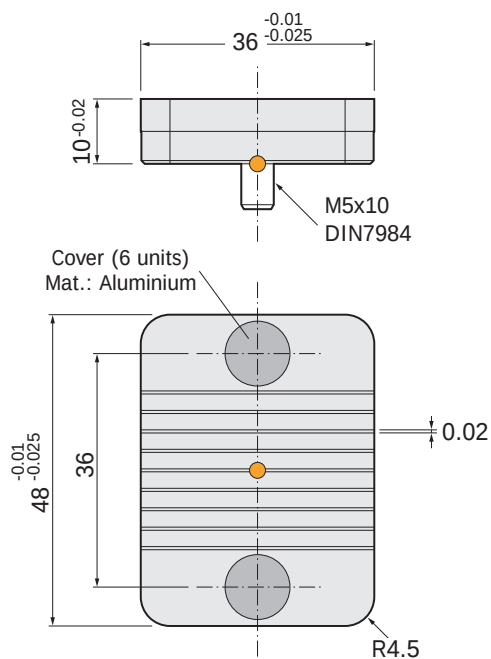


Laminar Gas Vent

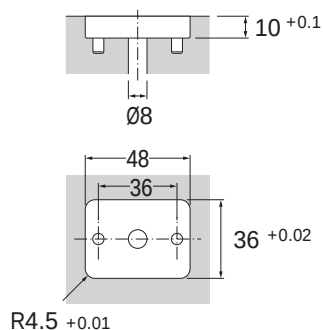
Order Code: **LV.483610**

Helps venting the mould cavity and the pneumatic ejection of the plastic part (allows air passing in both directions). Maximize performance installing at the end of the plastic flow. Supplied with 6 covers for maintenance purposes. Also designed for use with VB and SV systems.

Material: 1.4021



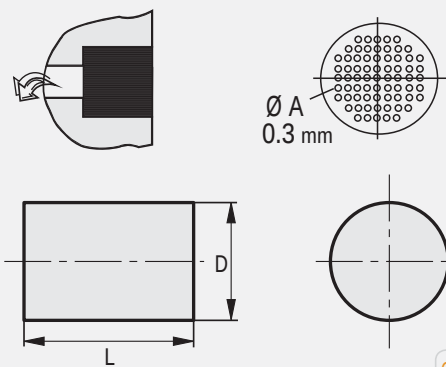
Pocket / Housing Detail:



Gas Venting Filter for Diecasting (aluminium & zamak moulds)

Code: **AHV**

It is designed / produced with heat treated and large discharge poles. It is a specially designed and highly productive product for Diecasting Moulds & Injection Moulds. The service life of the product is longer than the equivalent products. You can minimize product replacement times by increasing productivity levels.



Code: **AHV**

Order	D (Ø)	L (mm)	A (Pore pcs.)
AHV.03	3.0	10	40
AHV.04	4.0	10	40
AHV.05	5.0	10	90
AHV.06	6.0	10	90
AHV.08	8.0	10	200
AHV.10	10	10	340
AHV.12	12	10	340
AHV.16	16	15	340
AHV.20	20	15	550

It is resistant to high temperature and pressure.

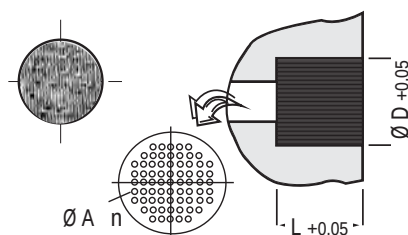




Code: SGA

Sintered Gas Venting Filter

With its sintered & multi-pores structure, it is a special product which discharges compressed gas in injection moulds. Sintered Gas Venting Filters are used for optimum venting of the mould cavity. It is a high quality, stainless product which does not leave marks on injected objects and can resist high pressures.



D	L	A	n	D	L	A	n
1.6	5	0.03	250 / 400	6.5	10	0.05	880
2.0				9.0			
2.5				10			
3.6				12.5			
4.1	9	0.03	880	15	20	0.05	1200
5.0	10			20			

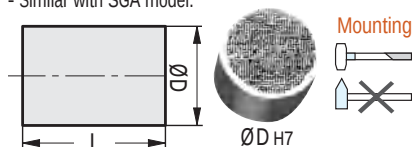
Order: SGA. D x L



Code: GVSY

Sintered Gas Venting Filter with Steel Casing

- External surface grinded.
- Sintered structure.
- Similar with SGA model.



Material: Stainless Sintered Steel
Filter Fineness: 10 Microns
Tension: 300 N / mm²
Resistance: Weak bases - Organic acids,
Plastic melts - Synthetic resins

Order	D	L	Order	D	L
GVSY.04	4	10	GVSY.12	12	12
GVSY.06	6		GVSY.16	16	14
GVSY.08	8		GVSY.20	20	15
GVSY.10	10	12	GVSY.28	28	



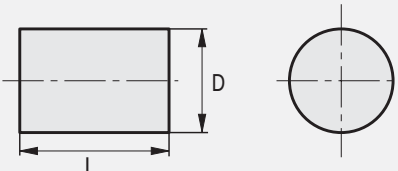
Code: GGA

Gas Venting Filter - Yellow Wired

In injection moulds, it drains unwanted gas created by melted raw material fast via wide channels. Does not resist to very high pressures, can dent and leave a mark on objects in stamp. It is mostly suitable to be used inner parts. It can be used in metal injection moulds which do not require very high temperature. It is an economical product.

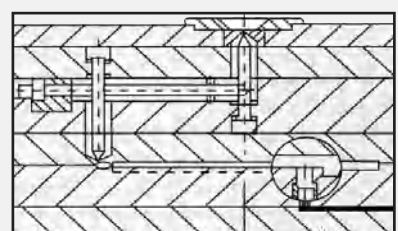
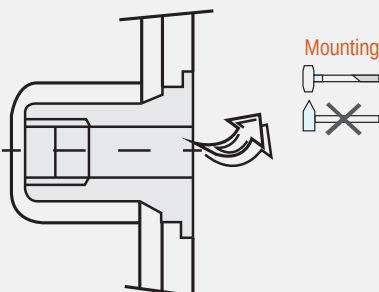
In Mounting: Please use copper / rubber hammer. Do not make any mechanic or polishing / levelling process on filter unit, since this would clog up the pores.

In Production: Never touch Venting Filters on operating moulds by hand.



Code: GGA

Order	D	L
GGA.03	3.0	8
GGA.04	4.0	10
GGA.05	5.0	10
GGA.06	6.0	10
GGA.08	8.0	10
GGA.10	10	10
GGA.12	12	10
GGA.16	16	10

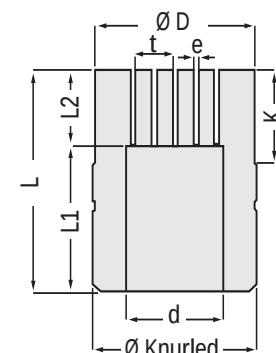
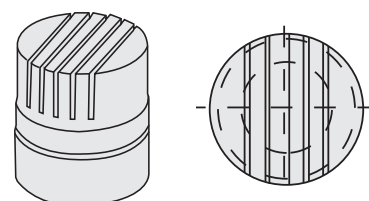


Code: STV

Air Venting Valve for Blow Moulding

It is used in blow mouldings for optimum ventilation to mould cavity. Due to the air channels of valve being parallel and wide, it drains the air in mould rapidly, also air chamber inside of the unit acts as a pool in drainage of the air. If the burrs become on the product that should be cleaned instantly. Those burrs causes adhesion to pores. For cleaning, the compressed air or cleaning spray can be used. (Cungang Cleaning Spray Code: W170104).

Mounting: It provides tight keep and inside the safe of hole thanks to its knurled outer part.



Code: STV

Order	STV. 0610	STV. 0810	STV. 1010	STV. 1210
D	6	8	10	12
L	10	10	10	10
d	4.3	5.7	6.1	8.1
t	2.0	2.0	2.0	2.0
e	0.3	0.3	0.3	0.3
K	4.0	4.5	4.5	4.5
L1	7.0	6.5	7.0	7.0
L2	3.0	3.5	3.0	3.0
Knurled	6.1	8.1	10.1	12.1



Recycling Date Stamp

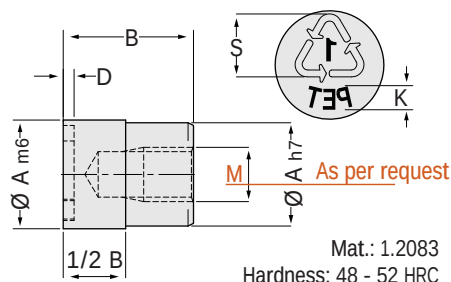
Code: GDM

(Plastic raw material data, definition & recycling stamps)

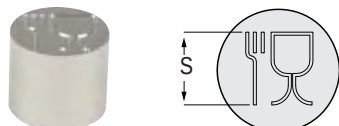
Text and Definition Characters: It is for precise sign / mark and definition of plastic raw material that is inlaid in 0.2 depth (conical graduated) processing on moulds in production according to diameters. In Addition, it facilitates to recognize raw material that is about to break.

Stamp: It is compatible with DIN 6120 single symbol, ISO 1043-1 normal sign / mark and international codes.

Types	
	Logo GDM01
	Blank GDM02
	PET GDM03
	HDPE GDM04
	PE-HD GDM05
	PVC GDM06
	LDPE GDM07
	PE-LD GDM08
	PE-BD GDM09
	PP GDM10
	PS GDM11
	Other GDM12
	Other (0) GDM13
	Foodmark GDM14

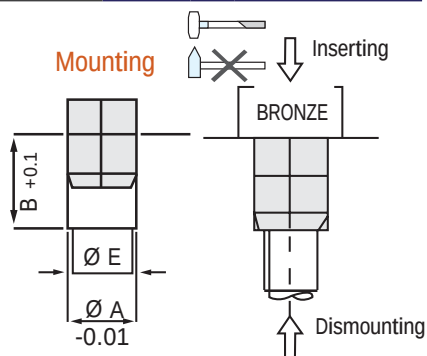


Order	A	B	D	E	K	S	M
GDM... 06	6	10	0.3	6	-	4.0	M4
GDM... 08	8	10		6	-	4.0	M4
GDM... 10	10	12		8	1.6	5.6	M5
GDM... 12	12	12		10	2.0	6.8	M6
GDM... 16	16	14		12	2.6	9.0	M6
GDM... 20	20	16		16	3.2	11.5	M6

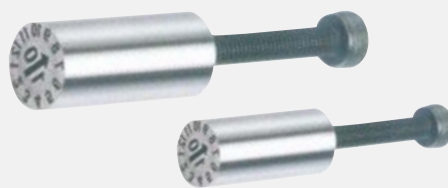


Date Stamp for Food Legislation

Order	A	B	D	E	S	M
GDM14.10	10	12	0.3	10	6.10	M5
GDM14.16	16	14		16	9.08	M6
GDM14.20	20	16		20	12.30	M6



+ Production
+ Economic Price
+ High Quality



Date Stamp - Screwed

Code: VKT

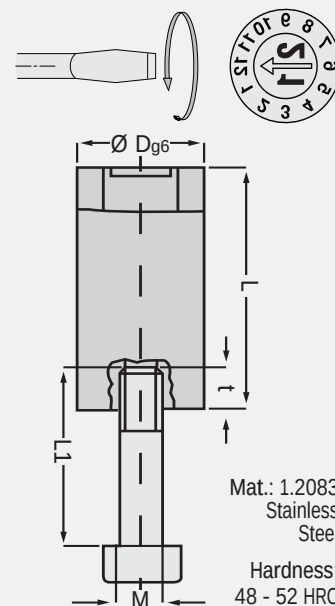
The Date Stamps which are mostly preferred for medium and small dimensional moulds.

Easy to mount and can be mounted on tools such as Ejector Pins.

Rotary inner hub of Date Stamps can be adjusted as limitless (worm gear).

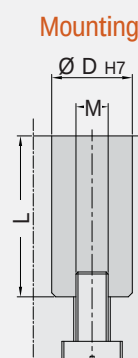
Mounting is completed by pressing on inner hub arrow and pulling with screw from lower part. We offer wide range of options with our affordable prices.

Types	
	Month VKT01
	Month + Year VKT02
	Year VKT03
	Weekly VKT04
	Daily VKT05
	Shift VKT06
	Number (figure) VKT07
	Letter from A to M VKT08
	Letter from N to Z VKT09
	Arrowed (blank) VKT10
	Custom-Made VKT11



D	L	t	L1	M
4	12.5	3	4	M2
5	14	3	4	M2.5
6	16	3	4	M3
8	18	4	4	M3
10	22	4	4	M3
12	25	6	6	M4

Order: VKT (type). D x L



Date Stamp "FT" product should be selected for metal injection moulds which require high temp.



Date Stamp

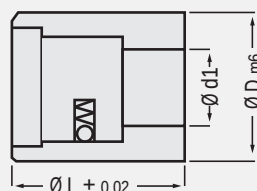
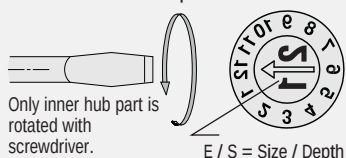
Code: KT

Standard Models

It is suitable to be used in all injection mould systems. Only a hole as product diameter (H7 - Reamed) is sufficient for mounting to mould.
Mounting: Drill a suitable hole in the desired part of mould and place Date Stamp into it (with bronze or rubber hammer). Making a tight hole (not to rotate date stamp) is useful.

A wide range of options are available at affordable prices.

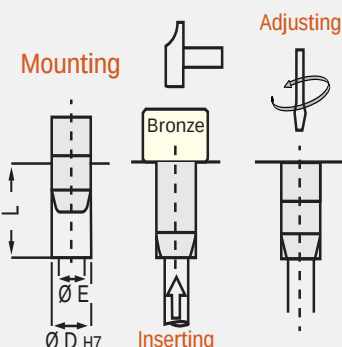
Types	
	Month KT01
	Month + Year KT02
	Year KT03
	Weekly KT04
	Daily KT05
	Shift KT06
	Number (figure) KT07
	Letter from A to M KT08
	Letter from N to Z KT09
	Arrowed (blank) KT10
	Custom-Made KT11



* KT02 & KT04: Pls. specify "year" for your KT02 & KT04 orders.

D	L	d1	S	E
4	6	2	0.2	3.5
4	8	2	0.2	3.5
5	8	2.5	0.2	3.5
6	8	3.5	0.2	4.0
8	10	4.5	0.2	6.0
10	10	4.8	0.2	8.0
12	12	6.0	0.25	10
16	14	7.8	0.35	12
20	14	9.7	0.35	14
25	25	12.7	0.35	16

Order:
KT (type). D x L



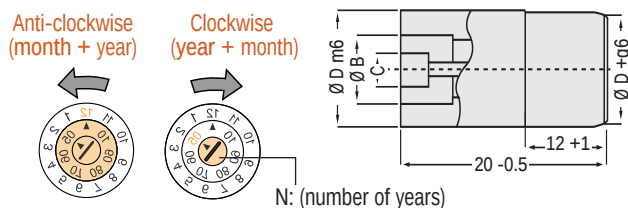
Multi-Date / Double Date Stamp

Code: DKT

Two different Date Stamps, with a unit as months + years.

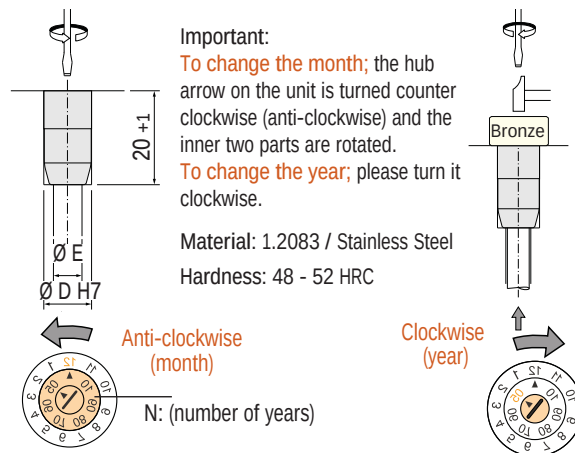
This Cungang product reducing needs and area required for cost and two different Date Stamp, shows two different criteria on one unit. Its standard model is as 12 month + 6 year, in other words is not required any change along 6 years.

The length of all Date Stamps are same (20 mm).



Code: DKT

Order	D	B	C	E	N
DKT.08	8	5.5	3	6	5
DKT.10	10	6	3	10	6
DKT.12	12	8	4	10	6
DKT.16	16	10.5	5.3	12	10
DKT.20	20	12	6	16	12



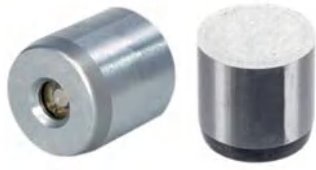
Mini Screwdriver Set Date Stamp Adjusting Kit

Order Code: CRP



Mini Screwdriver Series:
6 pcs. rotary head set;
+ 4 pcs. 1.5 - 2 - 2.5 - 3 head mini screwdriver.
+ 2 pcs. PH0 - PH1 phillips head mini screwdriver.

* Chrome vanadium steel.
* Blackened stainless ends.
* Ergonomic handles.
* Upper part of handle is rotary head.

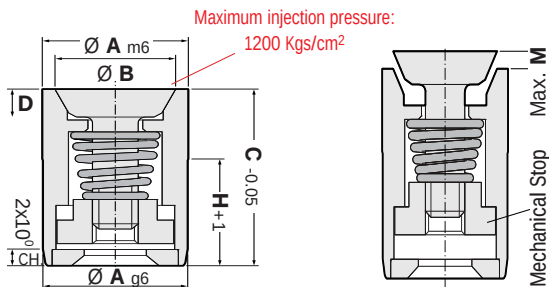


Air Venting Valve

Code: CHV

"CHV" Air Venting Valves produced from stainless steel. It provides high air discharge. Also, the conical ejector rises and helps the product exit from mould. The operating temperature under 150°C is recommended.

In higher temperature than 150°C; steel starts to expand and melt plastic raw material gets into valve and prevents operation.



Material: INOX 1.4034

Operating air pressure: 1.5 - 6 Bar

1 BAR $\approx$ 1 Kg. / cm²

Order	A	B	C	D	H	M
CHV.05	5	3	12	1.5	7	2.5
CHV.06	6	5.2	12	1.5	7	0.95
CHV.08	8	6.5	12	1.5	7	0.95
CHV.10	10	8	12	2	7	0.95
CHV.12	12	10	12	2.5	7	0.95
CHV.16	16	13	20	3	12	1.55
CHV.20	20	17	20	3.5	12	1.55

NEW

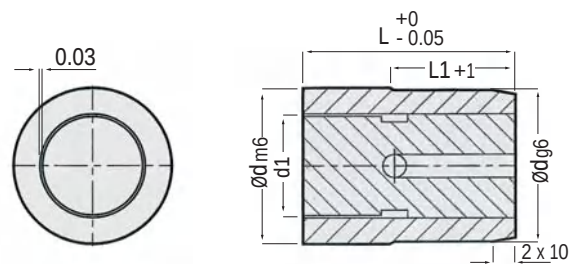


Double Air Venting Valve

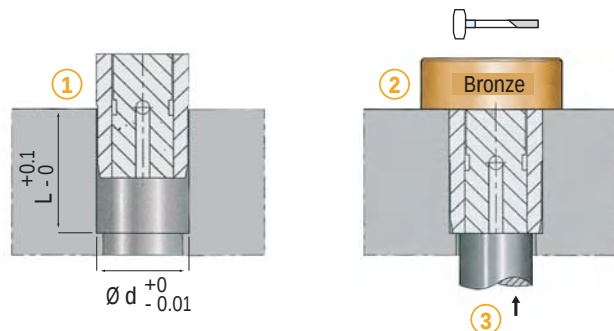
Code: DHV

"DHV" Double Air Venting Valves produced from stainless steel. The product is effective for the semi-pneumatic ejection method. It is effective in discharging gas and air trapped in the final filling areas of deep details in the moulds or in other possible areas and it helps the product exit from mould.

In mounting; please use the copper or rubber hammer and bronze wedge.

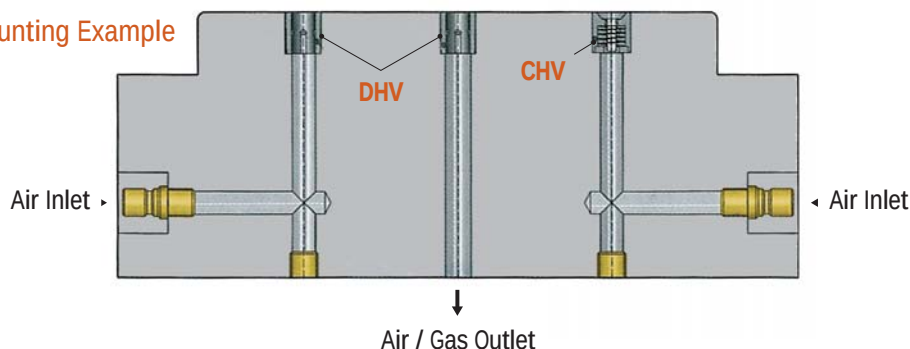


Material: INOX 1.4034



Order	d	d1	L	L1
DHV.08	8	5	12	7
DHV.10	10	6	12	7
DHV.12	12	8	12	7
DHV.16	16	10	20	12

Mounting Example





Code: VHV

Venting Valve for High Pressure

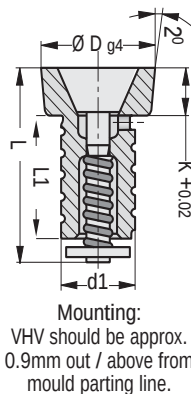
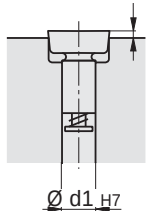
- Metal Injection gas venting & pneumatically activated ejector.
- 2° conical head / mounting with special reamer.

Mounting: It should be provided with special reamer (VHR) and should be approx. 0.9mm out / above from mould parting line.

It is compatible with metal injection moulds.

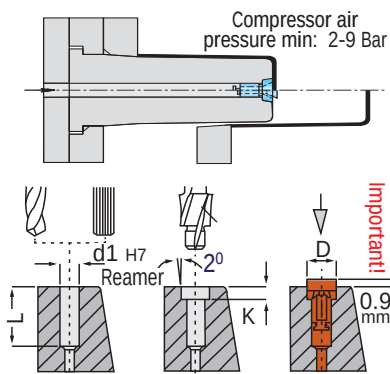


Material: 1.4301 INOX
Max. temp.: 250°C

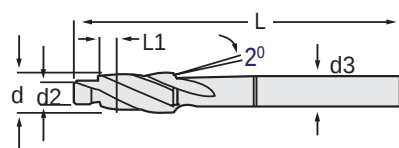


Mounting:
VHV should be approx.
0.9mm out / above from
mould parting line.

Order	D	d1	K	L1	L
VHV.08	8	6	5	8	16
VHV.12	12	8	5	13	21
VHV.16	16	10	6	14	22



Special Reamer for "VHV" Valve



Code: VHR

Order	d	d2	d3	L1	L
VHR.08	8	6	10	5	69
VHR.12	12	8	12	5	100
VHR.16	16	10	12	6	122



Air Venting Valve

Code: KHV

It is the most suitable method for dissolving vacuum during injection. In wide and narrow walled objects; it continues to discharge compressed air by vacuum in mould. All casing and machined surfaces have been produced from stainless steel.

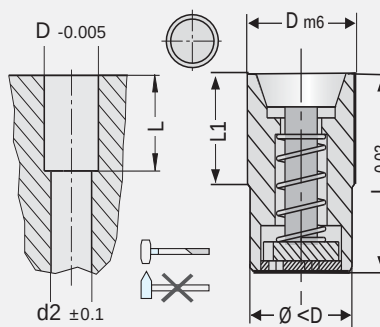
In comparison with PHV (pinned type), the shorter length is advantageous.

Compressor air pressure min: 3-10 Bar

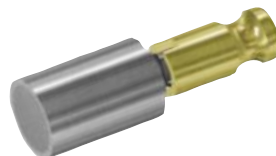
Material: 1.4034 Hardness: 52-55 HRC

Max. temp.: 150°

"in vacuumed objects"



Order	D	L	L1	d2
KHV.06	6	12	7	3.5
KHV.08	8	15	9	5
KHV.10	10	20	13	6
KHV.12	12	25	15	8
KHV.16	16	30	17.5	8
KHV.20	20	30	19	10
KHV.25	25	30	19	12
KHV.30	30	30	27.5	15



Air Venting Valve with Pin

Code: PHV

It is the most efficient air venting product.

It is especially ideal for deep and large moulds.

In mounting; please use the copper or rubber hammer and bronze wedge.

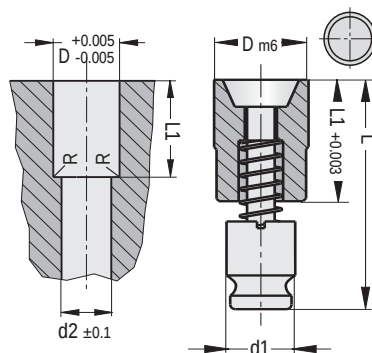
"in high and deep objects"



Compressor air pressure min: 2-9 Bar

Material: 1.4031 Hardness: 52-55 HRC

Max. temp.: 150°



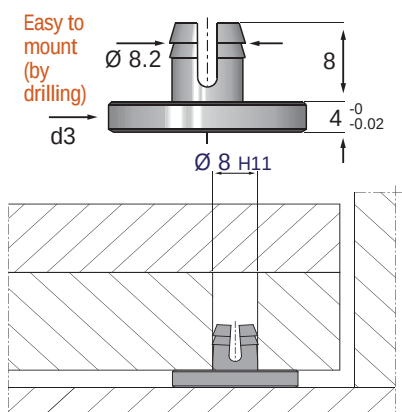
Order	D	L	L1	d1	d2	R
PHV.08	8	28	11	6	7	01
PHV.10	10	28	11	7	8	01
PHV.12	12	30	11	8	9	02
PHV.16	16	43	20	10	14	02
PHV.18	18	43	20	10	14	03
PHV.20	20	43	20	10	16	03
PHV.25	25	60	20	16	16	04



Code: **G144**

Ejector Plate Thrust - Support

For using inside of the mould, this supports can be put under the plates. By drilling a hole (8mm / H11), flexible claws on product are opened inside of the hole and is retained. It can be easily removed during an impact. Thus, symmetry is provided in mounting and repetition of plates.



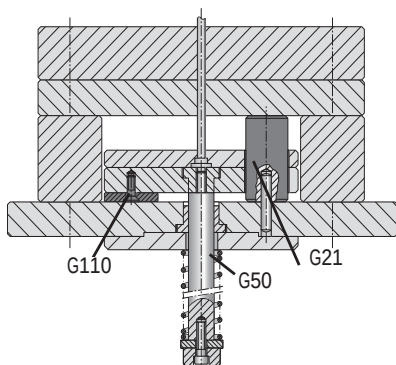
Order	d3
G144.20	20
G144.30	30



Code: **G110**

Mounting Flange

In-mould mounting kit & Support washer



Refer to page-34 for order and technical info.

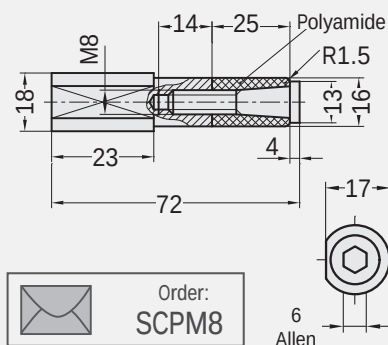


Code: **SCPM8**

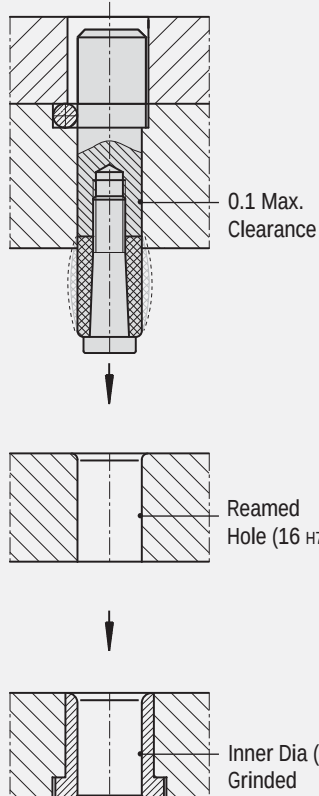
Friction Puller (Parting Locks)

This simple friction puller provides great benefit in "3-plate moulds" that average gravitation force and plate accuracy are sufficient. Similarly, it can be used as brake with stopping purpose between plates. For example; if it is desired to wait or postpone opposite / counter parts motions or to avoid collision of hard detrimental plates, it provides suitability for use.

Maximum operating temperature: 120°C
Polyamide extrusion (tightening) holes ends should be left with radius. Please do not lubricate the extrusion surfaces.



Mounting Example



Code: **GPLA**

Friction Puller (Parting Locks)

You can provide optimal parting line control to desired plate group in mould with this simple part. Life time is approx. 50.000 stamps.

It provides mounting and dismantling easiness and being cost effective.

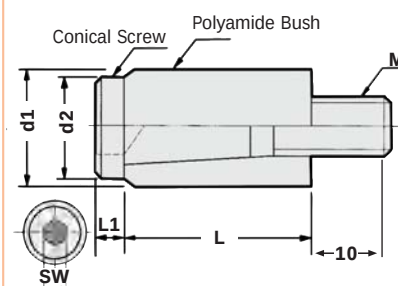
It is also used in small / medium dimensional moulds, beside two stepped moulds or side cores.

According to Mould Weights:

- GPLA.12 - 4pcs / up to 100 kg.
- GPLA.16 - 4pcs / up to 500 kg.
- GPLA.20 - 4pcs / up to 1000 kg.
- Over 1000 kg; GPLA.20 - 6pcs should be used minimum.

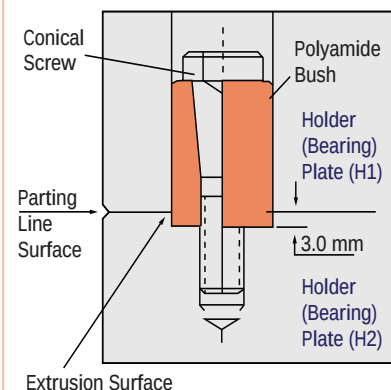
Product holes in moulds should be reamed and hole tolerance should be $\pm 0.1\text{mm}$. Polyamide extrusion (tightening) holes ends should be left with radius. Please do not lubricate the extrusion surfaces.

Maximum operating temperature: 80°C



Order	d1	d2	M	SW	L1	L
GPLA.10	10	8.5	M5	4	3	18
GPLA.12	12	11	M6	5	3.5	20
GPLA.13	13	11	M6	5	3.5	20
GPLA.16	16	14	M8	6	4	25
GPLA.20	20	18	M10	6	4	30

Mounting Example

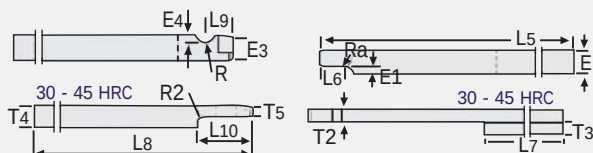
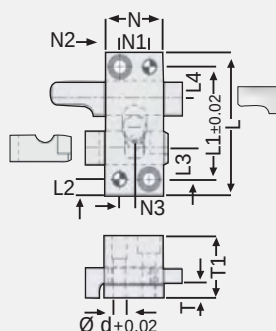
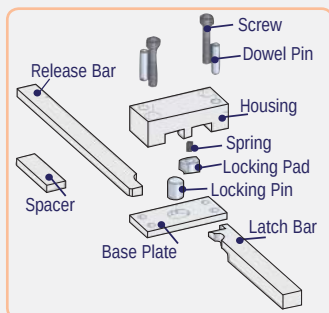




Latch Lock Unit

Code: KAU

The unit is heat-treated. Safe and reliable with its double sided lock system. It is for two-stage (stripper plate) moulds. The unit can easily mounted due to its compact design. Opening priority of plates relates to the mounting direction of unit. During mounting, after selecting desired stroke, the other Latch Bar is secured.



Parallel Mounting of Latch Lock Unit:

- Install the Housing parallel to the parting line face.
- Adjust or cut Latch Bar to required length.
- Open hole positions of screws, tight Latch Bar with screw on their position. Complete adjusting position with compatible parts, form the dowel holes and fix the Latch Bar.
- Cut the Release Bar in required length and install it perpendicular to the mould. Make the overhang length "L" of each release bar the same for equal of release points on each sliding.

* At least 2 Latch Lock Units are required, which are respectively mounted at outer surfaces (center of the mould). Units must be mounted symmetrically in such a way as to prevent tilting of the plate.

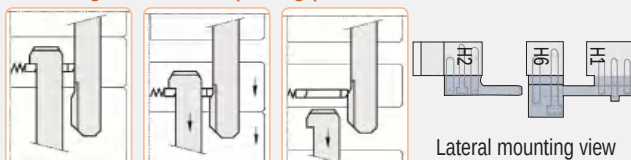
IMPORTANT:

The operation test should be performed for your mould exactly. Please check motion sequence of bars and stripper plate. Fine adjustment is necessary. You should repeat this procedure until both Latch Locks work together exactly. The moving parts can be lubricated.

Order	L	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	N
KAU.55	55	43	6	12	12	150	12	40	100	14	28	24
KAU.67	67	53	7	15	14	200	16	50	150	18	36	32

N1	N2	N3	d	E	E1	E3	E4	R	Ra	T	T1	T2	T3	T4	T5
12	6	6	5	13	4	13	4	5	5	5	24	6	5.5	11.5	6
16	8	8	6	16	5	18	5	6	6	6	32.5	10	6.5	16.5	10

Mounting and mould opening positions:

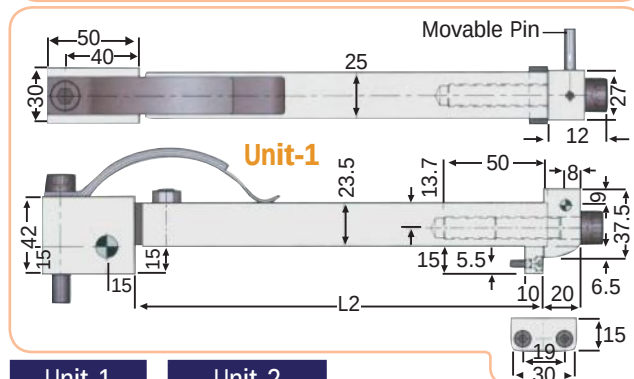
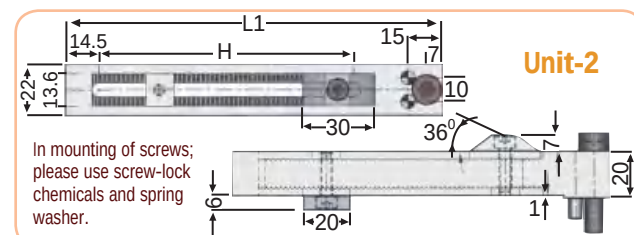


Latch Lock (Mould Plate Parting Combination)

Code: BOX

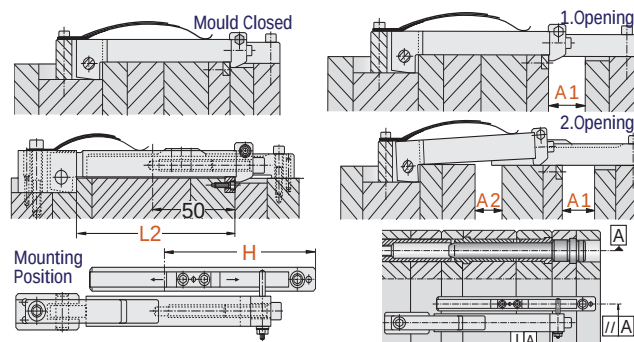
In this combination system; Unit-2 consist of fixed and Unit-1 consist of movable group. While mould is opened, movable 1.Unit (Unit-1 with leaf spring) is moved on fixed Unit-2 on sliding. While pin of leaf spring group (Unit-1) is passed over elevation on fixed group (Unit-2), hook is released and 2. stripper group of mould starts to open. One of the products always used to move of free plates, such as those for the removing, is the BOX. It is composed by a supporting bar, determining the stroke of the plate to be moved, and a lever which properly positioned, allows the drag and release.

Both units should be parting well-timed. Incorrect mounting causes tapering and bending of movable plate or breaking of unit lever. Units should be adjusted before mould is closed, open mould and control movable plate and movements of levers (fine adjustment is required). Please apply it until released / movable levers are fully operating with each other with leaf spring and locks. Then released lever will become centred / linked with Unit-1. While these operations continue, please lubricate movable parts of units with thin grease oil. In mounting, impacts and strokes of plate should be considered. During and after mounting, screws and other fasteners should be controlled. In part replacement; first, it should be started by dismantling Unit-1.



Unit-1	Unit-2
L2	L1 H
90	140 83.5
170	204 152
220	254 198

Order	L1	H	L2
BOX460.140	140	83.5	90
BOX460.204	204	152	170
BOX460.254	254	198	220

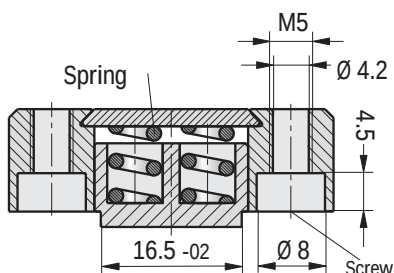
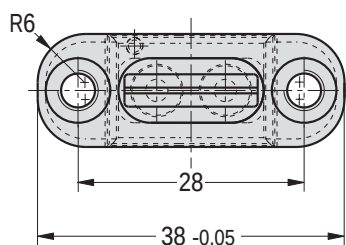
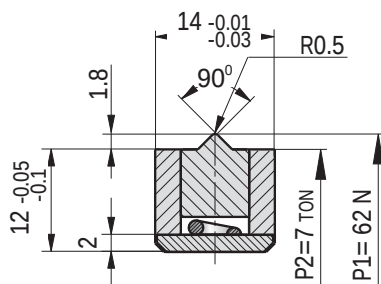




Slide Retainer

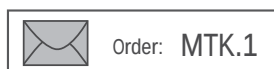
Code: **MTK.1**

Contact linkage line in core / slide systems



Maximum temperature: 100°C

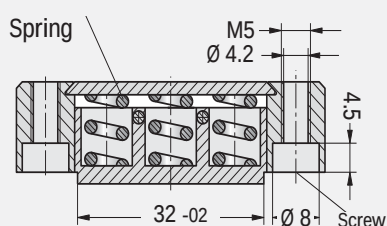
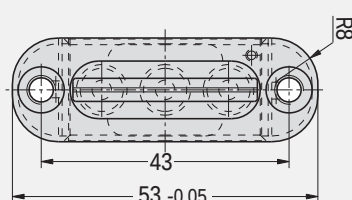
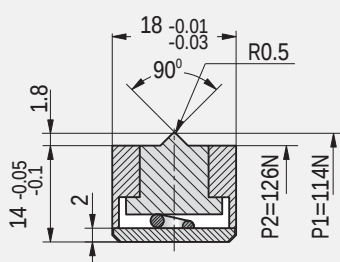
Material: 1.2343 Hardness: 54 ± 2 HRC



Slide Retainer

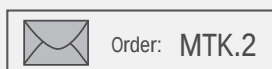
Code: **MTK.2**

It lifts the core / slide without the holder in slide system, self-contained unit



Maximum temperature: 100°C

Material: 1.2343 Hardness: 54 ± 2 HRC

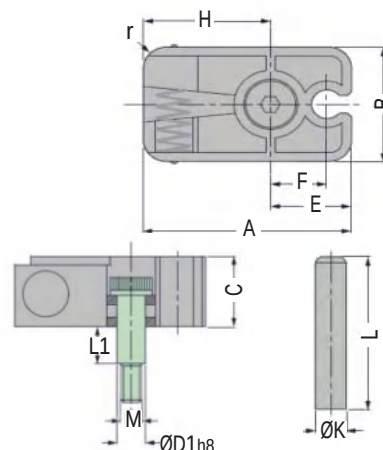


Code: **MTS..M**

Slide Retainer Pinned & Lock

Precise, with lock, align, pin and spring

The body of MTS..M can not be deadlock with retainer screws, need some hole or cavity to limitless motions. This unit is for limitless motions.



Order	A	B	C	E	F	H
MTS.10M	38	19	16	16	9.1	22
MTS.20M	54	32	20	21	12.7	33
MTS.40M	86	45	30	33	20.3	53

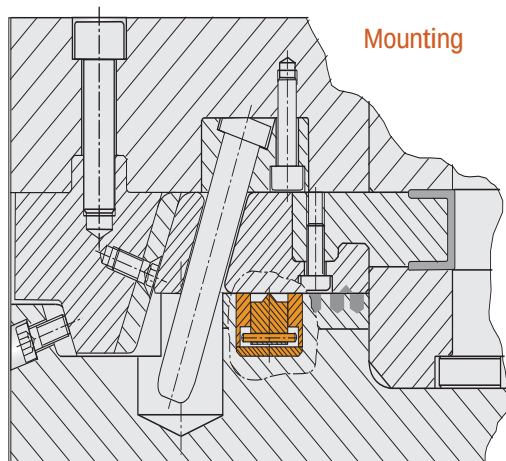
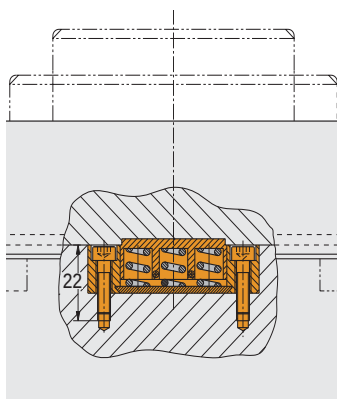
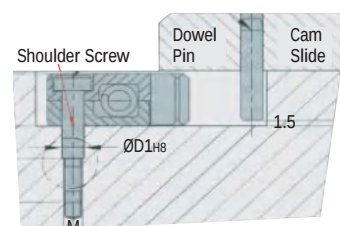
K	D1	L	L1	r	M	Max. Slide Weight (kgf)
6	6	30	6	5	M5	10
8	8	40	8	6	M6	20
10	10	60	10	10	M8	40

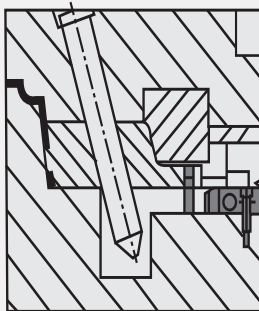
"Kgf." value: It is max. load value required to emerge slide / core block from slide retainer.

When slide / core is opened, pin gets into the retainer. "MTS..M" designed with over-travel, to avoid the damage by the wrong settle of the travel. Operation continues even though there are mistakes (misalignments).

Mounting Procedure:

1. To remove Slide Retainer body from housing again, a dowel pin (extractor) hole should be opened on mould.
2. The distance between pin centre on the Slide Retainer and screw centre on Slide Retainer during mounting are precise (F), it should be calculated and adjusted well (must be in the same direction).
3. Please prefer a model with more force than the ultimate load requires for MTS..M / M that is suitable for your mould, this is important for safety.





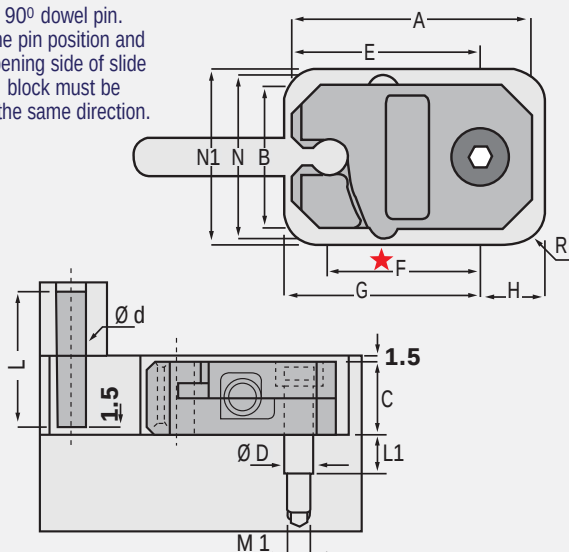
Slide Retainer - Pinned & Lock

Code: MTB

Precise, with lock, align, pin and spring

The body of "MTB" can not be deadlock with retainer screws, need some hole or cavity to limitless motions. This unit is for limitless motions.

It can be mounted with 90° dowel pin. The pin position and opening side of slide block must be in the same direction.



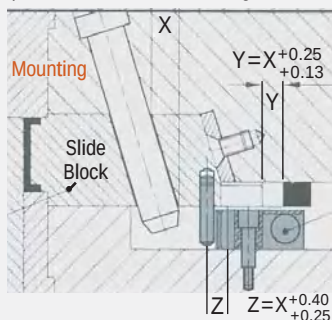
MTB can be used as "Latch Lock" mentality if there is no any special request on the system of the mould closing.

Code: MTB

Order	A	B	C	E	★F	N	G	H
MTB.38	38	19	16	31.5	24.89	24	34.5	10
MTB.54	54	32	20	43	34.93	36.5	46	14.5
MTB.86	86	45	30	67	53.98	49.5	70	22.5

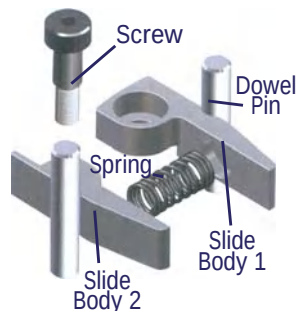
N1	R	D	L1	M1	d / L	Max. Slide Weight (kgf)
25.5	8	6	8.5	M5X11	6x30	10
38	10	8	10.5	M6X14	8x40	20
51	12	10	17	M8X18	10x60	40

Practice: When slide / core is opened, pin gets into the retainer. "MTB" designed with over-travel, to avoid the damage by the wrong settle of the travel. Operation continues even though there are mistakes (misalignments).



★ = Dimension is important.

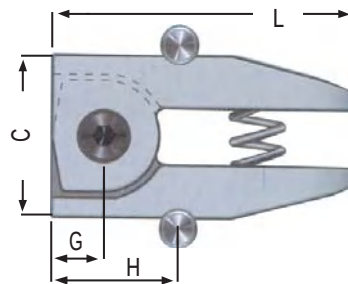
Important: The distance from the center of the dowel pin to the center of the shoulder screw is crucial / critical. The dowel pin installed in the slide positively locks into the retainer until disengaged by the mould closing motion. Designed with a efficient lead-in at the housing opening so the dowel pin will lead-in the housing even if there is a slight misalignment between the retainer and the pin.



Slide Retainer with Latch

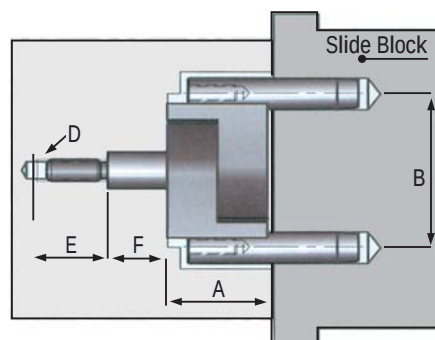
Code: MTM

Screw (F) added to hole should not be in too deep. After slide body locks itself, it should be operated smoothly. Therefore, don't tight the screw too much. When dowel pin is on core / slide, the body is fixed on mould, also core sliding distance should be calculated precisely and then should be mounted.



Max. temp.: 100°

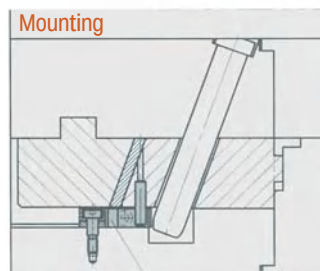
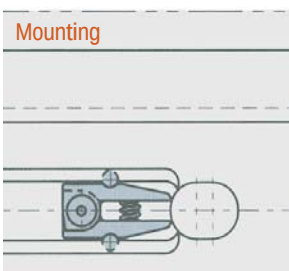
Especially, it can be preferred in alloy material moulds.

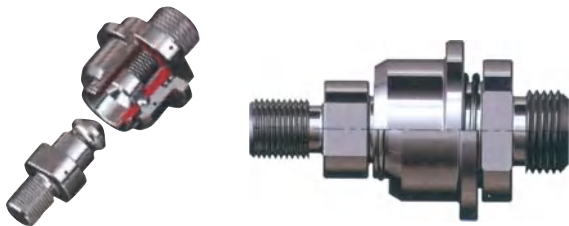


Code: MTM

Order	A	B	C	E	F
MTM.1040	10	21.5	18	9.5	5.1
MTM.1243	12	25.5	22	11	6.1
MTM.1650	16	31.5	28	11	8.1

G	H	L	D	Max. Retaining	Dowel Pin
7	17.5	40	M5	Ø 6 - 30	10
7.5	18	43	M6		15
9.5	20.5	50	M6		25





Automatic Ejector Coupling

Code: G115 & G116

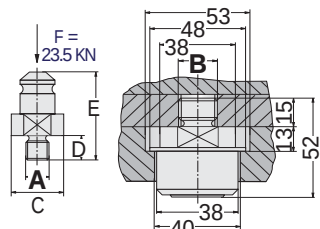
Reliable Return of the Ejector Pins & Reliable Ejection of the Mouldings.

- Rapid and simple mounting (even within existing moulds).
- Engages in any position and disengages only after ejection has taken place.
- Can be used on any injection moulding machine with a hydraulic or mechanical ejector.
- Mounting times are very short, since the mould can be adjusted before it is fitted into the machine.
- For rapid and economic operation, up to 25–30 strokes per minute.

Material: 1.7147 Hardness: 60 HRC

Light Duty

Code: G115

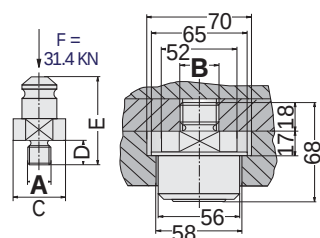


Light Duty / Force = 2400 kg

Order	A	C	D	E	B
G115 A / B	M10 x 1.5	26	20	55	M16 x 1.5
	M12 x 1.75				M16 x 2.0
	M14 x 2.0				M16 x 2.0
	M16 x 2.0				M16 x 2.0

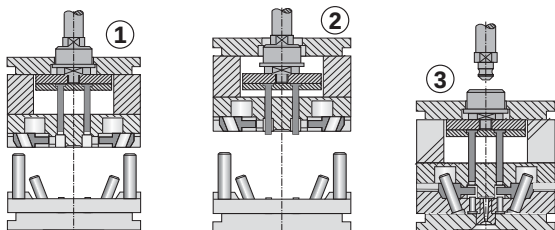
Heavy Duty

Code: G116

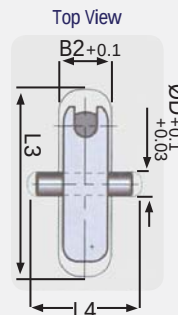


Heavy Duty / Force = 3200 kg

Order	A	C	D	E	B
G116 A / B	M16 x 2.0	35	25	68	M16 x 1.5
	M18 x 2.5				M18 x 1.5
	M20 x 2.5				M20 x 1.5
	M24 x 3.0				M24 x 1.5
	M27 x 3.0				M27 x 1.5
	M30 x 3.5				M30 x 1.5



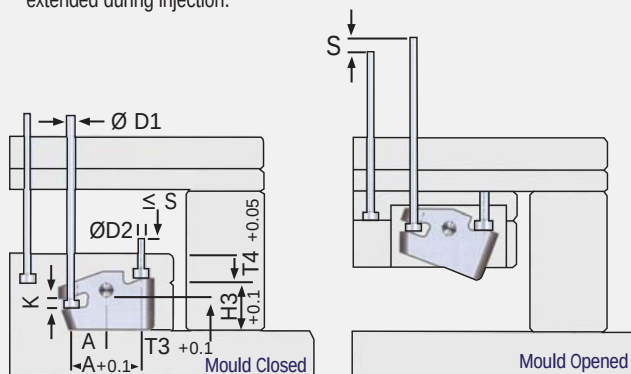
- 1) The ejector plate is returned to the stop. Return screw and ejector screw disengage. Over the remainder of the closure movement, the jaws move without obstacle.
- 2) Mould in ejector position. The side splits are extended, the return pin is latched to the return coupling by means of balls.
- 3) Mould closed. The injection operation begins.



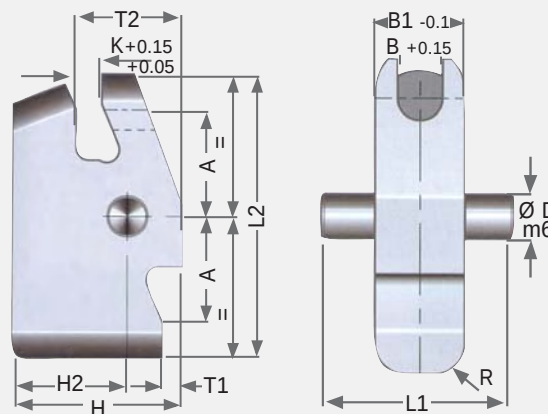
Acceleration Rocker for Ejector

Code: IHS

- It is used in case that Ejector Plate requires stroke more than normal stroke distance.
- By fitting an Ejector Pin to the product (IHS), repulsion / ejection can be extended during injection.



Acceleration Rocker (mechanical swing system) increasing stroke distance of ejector that it is fastened.



Code: IHS

Order	D	D2	B	B1	B2	B3	A	A1	T1	T2
IHS.3	4	4	3	8	8.5	4	10	20	2	10
IHS.6	8	8	6	16	16.5	8	21	42	4	21
IHS.8	8	8	8	16	16.5	8	21	42	4	21

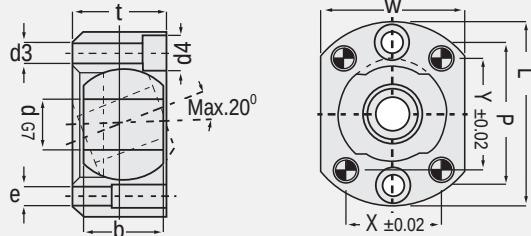
T3	T4	D1	L1	L2	L3	L4	H	H2	H3	K	R	S
4	4	3	16	26	31	23	19	14	16	3	4	2.5
8	8	6	36	56	63	45	34	23	27	5	8	7.6
8	8	8	36	56	63	45	34	23	27	5	8	7.6



Spherical Guide Bush for Inclined Pin

Code: **G133K**

Guide Bush unit transmitting angle motion. It offers easy installation for desired Inclined Pin design in large moulds. Angle adjustment can be done between 0° and 20°. Max. operating temp.: 170°



Order	d	L	w	t	b	p	e	x	y	d3	d4	M
G133K.08	8	44	28	17	14	32	5	20	28	6	10	M5
G133K.10	10	46	30	20	16	34	5	22	28	6	10	M5
G133K.12	12	50	32	22	18	36	6	22	30	7	11	M6
G133K.16	16	58	45	29	25	45	6	30	35	7	11	M6
G133K.20	20	65	50	33	28	52	6	35	40	7	11	M6
G133K.25	25	78	57	38	33	62	8	40	50	9	15	M8
G133K.30	30	86	65	43	37	70	8	48	55	9	15	M8
G133K.35	35	98	72	49	40	78	8	52	60	11	18	M10
G133K.40	40	106	77	53	44	84	8	55	65	11	18	M10
G133K.45	45	118	85	57	48	96	8	59	72	11	18	M10

Inclined Pin Holder Unit

Code: **G133E**

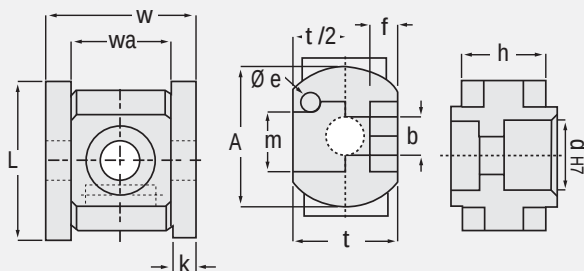


- Mountable to the ejector plate. It is mounted by machining to ejector plate of mould.

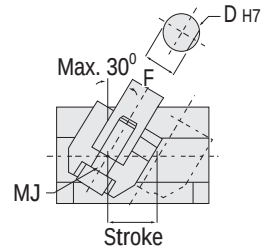
- Self-lub. system is greased up to 300° in unit.

Mat.: C45

Slide parts: Bronze + Graphite



Order	d	w	L	wa	k	h	A	t	f	m	b	e
G133E.08	8	24	25	12	6	13	20	16	5	7.5	5	3
G133E.10	10	28	32	14	7	17	20	16	4	8.5	6	3
G133E.12	12	31	40	17	7	20	25	20	5	10	7	4
G133E.16	16	36	45	21	7.5	24	30	24	6	13	9	6
G133E.20	20	43	45	28	7.5	24	40	30	8	17	11	6
G133E.25	25	48	50	33	7.5	26	45	35	9.5	22	14	6
G133E.30	30	55	60	38	8.5	30	50	38	9	27	14	6
G133E.35	35	64	70	44	10	34	55	40	10	31	14	8
G133E.40	40	72	80	50	11	38	60	43	11.5	36	18	8



Inclined Ejector Pin Unit

Code: **G133**

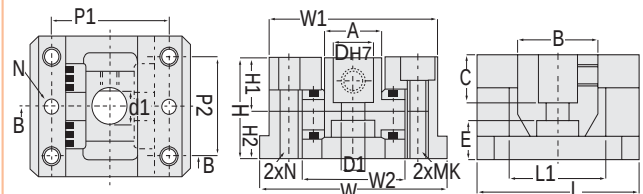
It moves the Inclined / Angle Pin Systems in the desired angle.

It provides important contribution to production period. The product parting from moulds with this unit is more economical compared with similar systems.

- The heat resistance of unit in mould is 300c (with self lubricating bearing system), unit can lubricate itself.

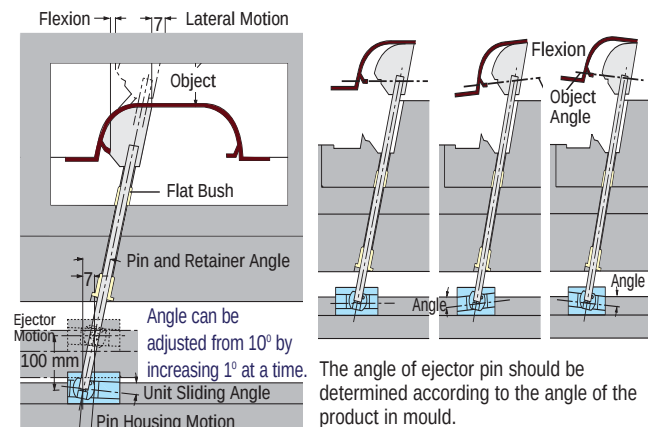
- Operating angle of ejector pin can be inclined up to 10° - 20° - 30°.

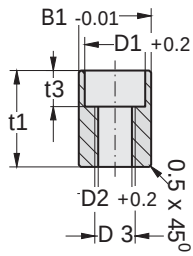
- It can be fastened to ejector plates via dowel pins and screws during mounting. The position of the centre block can be adjusted according to the length of pin specified. Please make this adjustment when centre block and pin are attached and removed easily. For the precise bottom support of unit, G147 product can be used.



Order	D	d1	D1	A	B	C	E	F	MJ
G133.08	8	7	4.5	11	20	8	10	7	M4
G133.10	10	7	5.5	15	25	10	12.5	9	M5
G133.12	12	10	7	17	25	12	15	11	M6
G133.16	16	12	9	22	30	16	15	14.5	M8
G133.20	20	14	11	26	40	20	16	18	M10
G133.25	25	16	14	32	45	25	17	22.5	M12
G133.30	30	18	14	38	50	30	17	27	M12
G133.35	35	20	14	45	60	35	18	32	M12
G133.40	40	25	18	55	70	40	19	36	M16
G133.45	45	30	18	60	80	45	24	40	M16

H	H1	H2	L	L1	W	W1	W2	P1	P2	MK	N	Stroke
22	12.5	5	32	20	33	30	19	24	20	M3	3	10
27	15.5	5	45	25	45	40	25	32	30	M4	4	18
32	18	7	50	30	57	51	31	39	35	M6	6	20
36	20	8	65	40	65	58	38	46	40	M6	6	25
42	23	11	80	50	80	72	44	56	55	M8	8	30
50	28	15	90	55	93	85	52	66	65	M10	10	35
55	30	15	100	60	101	93	60	74	70	M10	10	40
62	35	15	120	75	120	110	70	85	80	M12	10	45
70	40	15	135	85	130	120	80	95	90	M12	10	50
80	45	15	150	95	140	130	90	105	110	M12	10	55





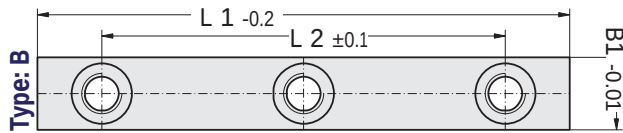
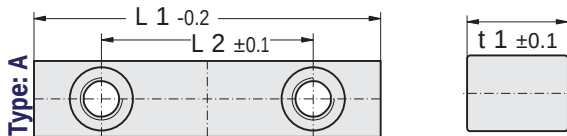
Support Slide for Core Position

Code: **G147**

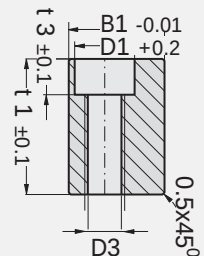
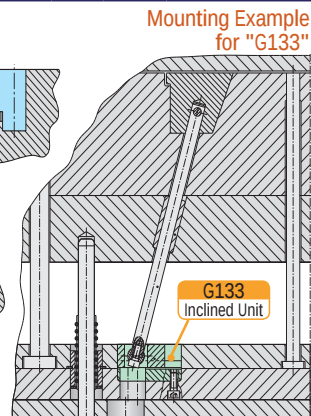
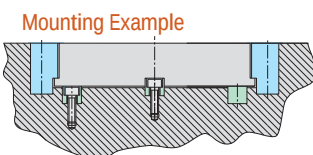
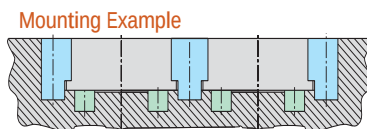
It can be used also as Bottom Support Plate for Core Guide Block or Guide Block for Inclined Ejector Pin Unit (G133).

Milled, precision ground, perpendicularity controlled and opened fitting holes.

Material: 1.2842 Hardness: 58 + 2 HRC



Order	B1	t1	L1	Type	t3	L2	D1	D2	D3
G147.1250	11	11	50	A	5.7	30	10	5.3	M6
G147.1260			60	A		40			
G147.1270			70	B		50			
G147.1275			75	B		60			
G147.1280			80	B		60			
G147.1290	12	12	90	B		70			
G147.12100			100	B		80			
G147.12120			120	B		100			
G147.12140		16	140	B		120			
G147.12160			160	B		140			
G147.12180			180	B		160			
G147.18100	18	16	100	A	6.8	76	11	6.4	M8
G147.18120			120	A		96			
G147.18140			140	B		116			
G147.18160			160	B		136			
G147.18180			180	B		156			
G147.24140	24	21	140	B	6.8	116	11	6.4	M8
G147.24160			160	B		136			
G147.24180			180	B		156			
G147.24200			200	B		176			
G147.24220			220	B		196			



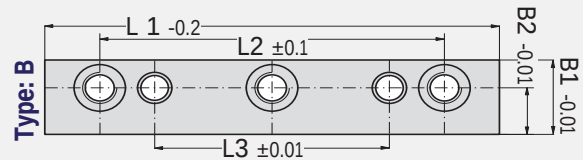
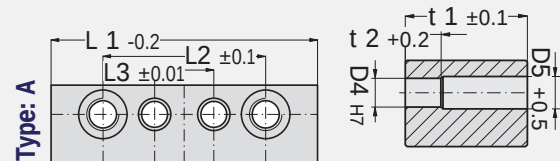
Support Slide for Core Position Side Guide

Code: **G148**

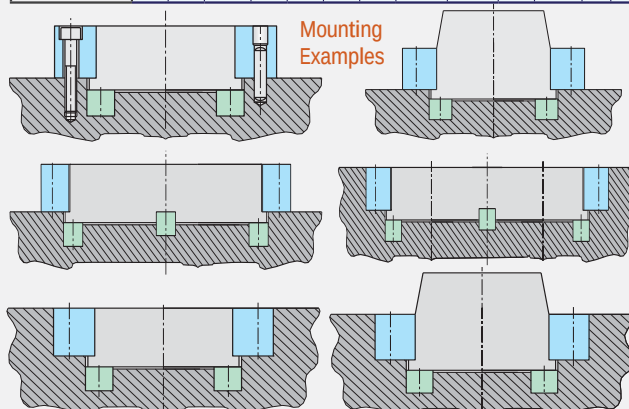
Milled, precision ground, perpendicularity controlled and opened fitting holes.

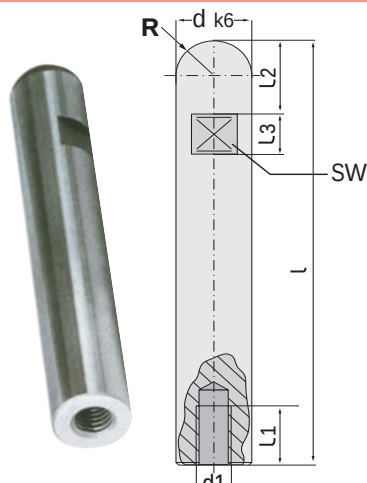
Material: 1.2842 Hardness: 58 + 2 HRC

Custom-made production can be done as per request.



Order	B1	t1	L1	Type	B2	t2	t3	L2	L3	D1	D3	D4	D5
G148.1550	15	11	50	A	9	5.7	5.7	30	10	10	M6	4	-
G148.1560			60	A				40	20				
G148.1570			70	B				50	30				
G148.1575			75	B				60	40				
G148.1580			80	B				60	40				
G148.1590	18	22	90	B	11	12	6.8	70	50	11	M8	6	7
G148.1880			80	A				56	32				
G148.18100			100	B				76	52				
G148.18120			120	B				96	72				
G148.18140			140	B				116	92				
G148.18160	24	36	160	B	15	12	9.0	136	112	15	M10	8	9
G148.24100			100	A				68	36				
G148.24120			120	A				88	56				
G148.24140			140	B				108	76				
G148.24160			160	B				128	96				
G148.24180	30	50	180	B	18	18	11	148	116	18	M12	10	11
G148.30120			120	A				80	40				
G148.30140			140	A				100	60				
G148.30160			160	B				120	80				
G148.30180			180	B				140	100				
G148.30200	30	50	200	B	18	18	11	160	120				





Core Guide Pillar (Inclined & Threaded)

Code: G14

It is compatible to use at injection moulds, angled guide pillar positioning, core systems as cam pin. GTH mould pillars are polished with surface polishing machine at final stage of production (after grinding).

d	l	l1	l2	l3	d1	R	SW
8	40						
	50						
	63	10	10	8	M.5	4	7
	80						
	100						
10	50						
	63	12	10	9	M.6	5	8
	80						
	100						
12	50						
	63	12	12	9	M.6	6	10
	80						
	100						
16	63						
	80						
	100	15	15	12	M.8	8	13
	125						
	160						
20	200						
	250						
	63						
	80						
	100	20	16	15	M.10	10	16
	125						
25	160						
	200						
	250						
	80						
	100	20	20	15	M.12	12.5	21
	125						
30	160						
	200						
	250						
	100						
	125	25	25	18	M.16	15	27
32	200					16	
	250						

Order: G14. d x l
Material: < Ø 20 = 1.7131
> Ø 20 = 1.1213 (Cf53)
Hardness: 58 - 62 HRC

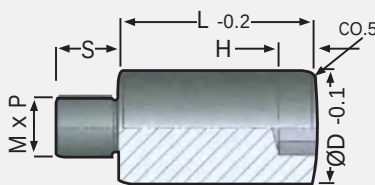


Please use
"Hexwrench" for
clamping screw.

Code: G150

Stopping Pin for Core Slide

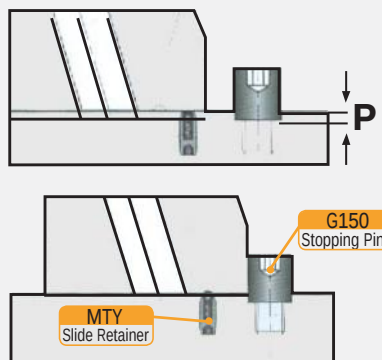
Stopping Pin is a product which is practical and easy to mount.



Code: G150

Order	M x P	SW
G150.M6	M6 x 1.0	5
G150.M10	M10 x 1.5	8
G150.M12	M12 x 1.75	10
G150.M16	M16 x 2.0	14

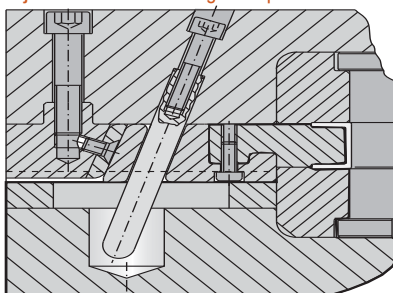
D	L	H	S	P
10	40	4	10	15
16	40	5	15	15
20	40	6	28	15
25	40	9	24	15



It can be used with
G61 Angled Guide
Bush



Injection Mould Mounting Example

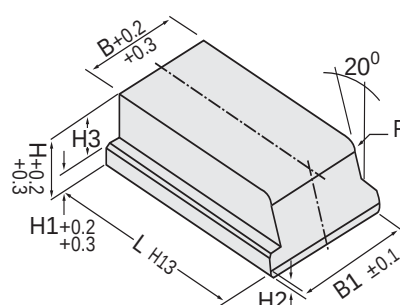


Angular Core Slide

Code: G149

G149 ready for machining. The only thing to be done is to machine cavity surfaces.

Milled, precision ground and 20° inclined angular has been given to cavity surface. All edge corner are chamfered. Slide has been machined as T-Slot.

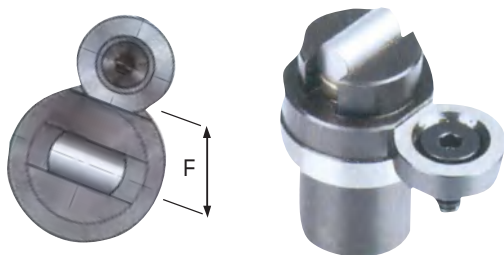


Mat.: 1.2344

Hardn...: 42 - 45 HRC

Code: G149

Order	H	L	B	B1	H1	H2	H3	R
G149.1220			20	26				
G149.1225			25	31				
G149.1240	12	40	40	46	4	1.5	8	1.5
G149.1263			63	69				
G149.1620			20	26				
G149.1625			25	31				
G149.1640	16	50	40	46	4	1.5	12	1.5
G149.1663			63	69				
G149.2040			40	46				
G149.2063			63	69	5	2	15	2
G149.2080			80	86				
G149.2540			40	46				
G149.2563			63	69	5	2	20	2
G149.2580			80	86				
G149.3263			63	71				
G149.3280	32	100	80	88	6	3	26	3
G149.32100			100	108				
G149.4063			63	71				
G149.4080			80	88	6	3	34	3
G149.40100			100	108				
G149.5080			80	90				
G149.50100	50	112	100	110	8	4	42	4
G149.50125			125	135				
G149.6380			80	90				
G149.63100	63	112	100	110	8	4	55	4
G149.63125			125	135				



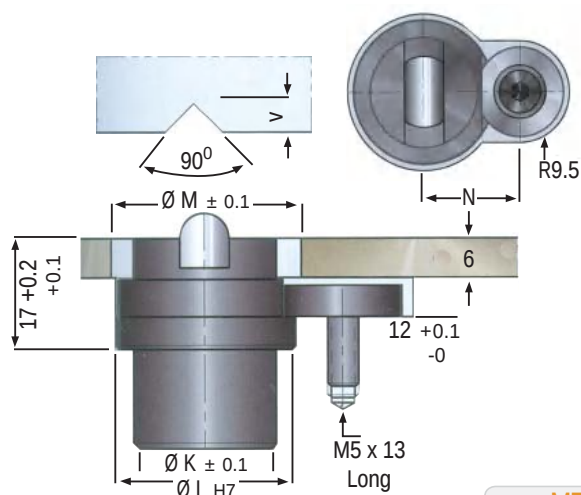
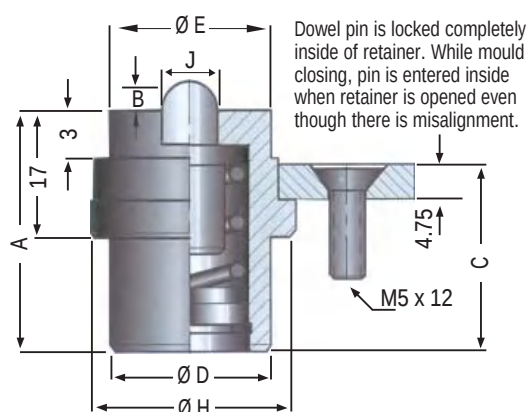
Slide Retainer - Pinned & Round

Code: **MTY**

Small, round, easy to mount, self-contained design and line contact engagement.

- Three different sizes with retaining ratings loadings for 48, 88 and 176 N.

Material: 1.2767 Hardness: 52 HRC Max. Temp.: 120°C

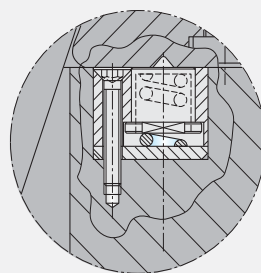


Code: **MTY**

Order	A	B	C	D	E	F
MTY.100	27.43	1.83	20.2	15.75	16	9.52
MTY.200	33.53	3.07	26.29	18.8	19	10.67
MTY.400	32	3.78	24.76	22.1	22	11.86

H	J	V	K	L	M	N	Kgf.
22	4.8	2.3	15.87	22	24	17	4.5
25	6.35	3.9	19.05	25	27	18.2	9
28	7.92	4.9	22.23	28	30	19.4	18

Note: It provides mounting facility to mould, thanks to its robust, small and round structure.

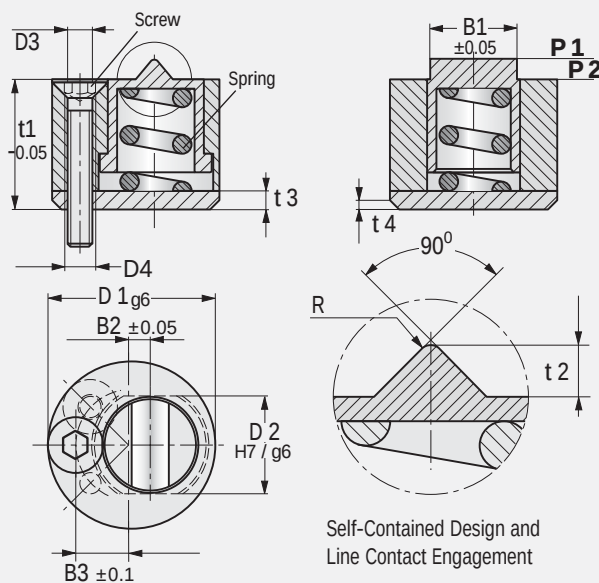


Slide Retainer - Round Type

Code: **MTC**

MTC Slide Retainers are operated without Dowel Pin and also can lift the core / slide without Slide Retainer. Easy mounting due to round structure.

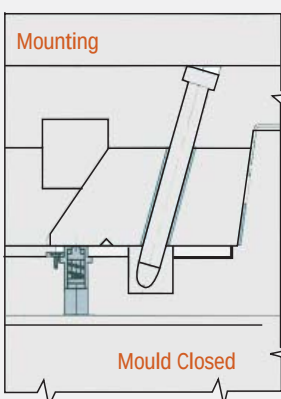
Material: 1.2767 Hardness: 52 HRC Max. Temp.: 100°C



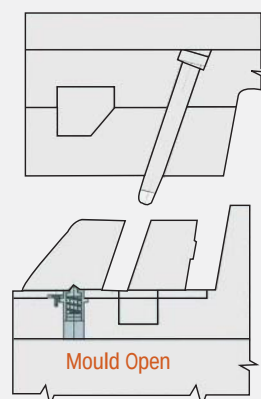
Code: **MTC**

Order	D1	B1	B2	B3	t1	t2	t3
MTC.13	13	6.6	1.4	4.3	10	1.0	1.6
MTC.18	18	9.6	2.0	6.0	14	1.8	2.0
MTC.27	27	14.4	3.0	9.0	21	2.8	3.0

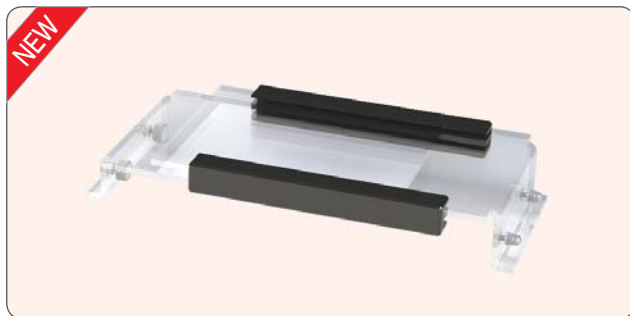
t4	D2	D3	D4	R	P1	P2	Screw (DIN7991)
0.35	7	2.2	M3	0.35	28 Nw	34 Nw	M2 x 16
0.50	10	3.2	M4	0.50	38 Nw	42 Nw	M3 x 50
0.50	15	4.3	M5	0.75	38 Nw	92 Nw	M4 x 25



Mould Closed



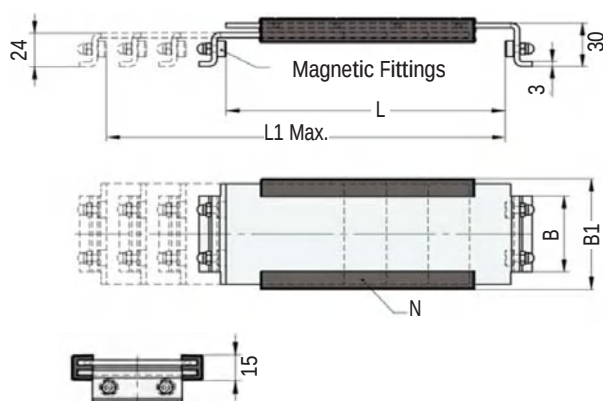
Mould Open



Adjustable Ejector Plate Cover

Code: **G158**

Security and Protection Mechanism for Ejector Plate



Code: **G158**

Order Code	L - L1 Max.	N	B1	B
G158.156218.56	156 - 218	2	78	56
G158.156218.76			98	76
G158.156218.96			118	96
G158.246396.66	246 - 396	2	88	66
G158.246396.76			98	76
G158.246396.86			108	86
G158.246396.96			118	96
G158.246396.116			138	116
G158.446596.96	446 - 596	2	118	96
G158.446596.116			138	116
G158.446596.136			158	136
G158.446596.156			178	156

- * Adjustable to suit the requirements of your mould widths.
- * Efficient and reliable protection againsts pollution or falling plastic parts.

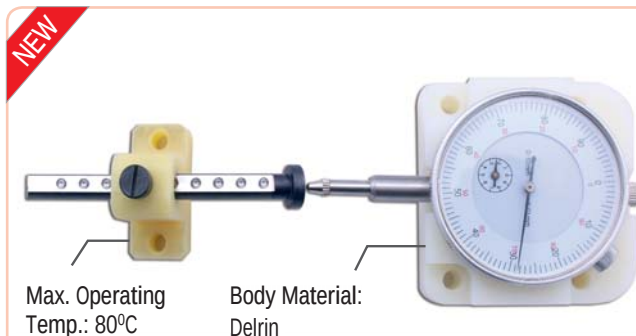
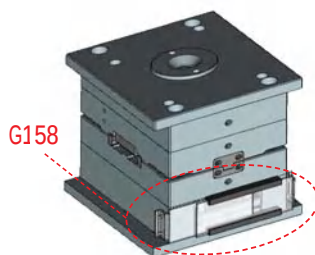
Material:

PC (Polycarbonate)

Operating Temperature:

Max. 110°C

- * Consider sizes (L - L1 max.) specified in the table for safety.



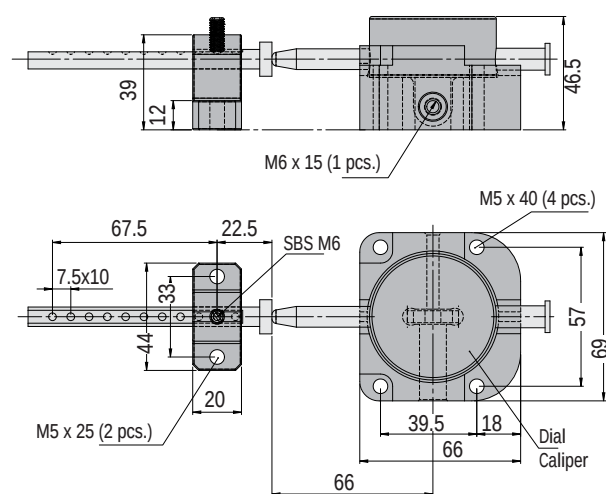
Max. Operating Temp.: 80°C

Body Material: Delrin

Dial Caliper for Load Control Monitoring with Mounting Body

Code: **G73**

* It shows the opening distance, caused by the over pressure or other reasons, untill in min. 0.01mm while mould trials or production.

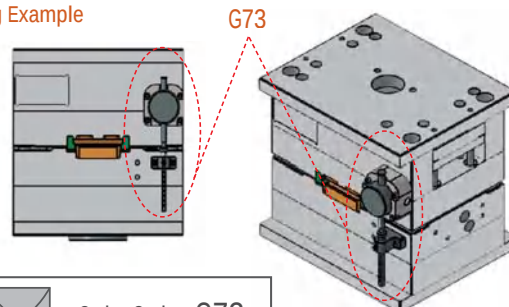


Main reasons of the mould openings (spacing) while running;

- * 2nd pressure is too high.
- * Machine shut power is not enough.
- * Too much resin sent into the mould.
- * Problem with the mould adjustment so that the mould can not be closed completely.
- * Not returned ejector.
- * Broken insert.
- * Unwanted resin, left from the previous shut.

Note: Please make the mounting holes according to the drawing.

Mounting Example



Order Code: **G73**

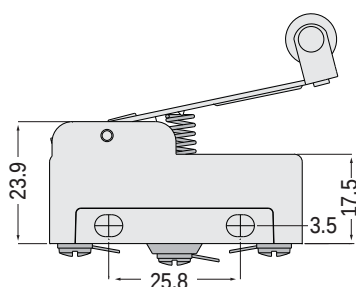
NEW



Micro Limit Switch with Long Roller

Code: **MN2MIM2**

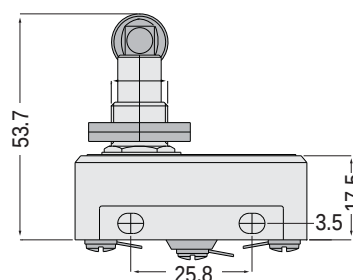
Movement Limit Switches for Ejector Plate, Stripper Plate and Side Lifters



Micro Limit Switch with Dome Roller

Code: **MN2MUM3**

Movement Limit Switches for Ejector Plate, Stripper Plate and Side Lifters



Technical Specifications / All "MN2" types have similar specifications:

Mechanical Life	500.000 Opening-Closing min. (60rpm)
Electrical Life	100.000 Opening-Closing min. (30rpm)
Operating Temperature	- 15 / +125°C
Protection Class	IP20 - IP40
Operating Voltage (Ue)	440V AC
Operating Current (Ie)	10A
Isolation Voltage (Ui)	660V
Impact Resistance Voltage	2.5kV
Short Circuit Breaking Capacity ..	1 kA
Operating Frequency (f)	50 Hz.
Isolation Resistance	10 MΩ min. (500V DC)
Usage Class	AC15
Dielectric Resistance	1.500V AC (for 1 minute)
Pollution Degree	3
Connection Cable Section	1.5-2.5 mm ²
Standard	TS EN 60947-5-1

All "MN2" types have similar specifications:

- Product variety for wide application areas.
- Long life and high contact reliability.
- Standard mounting holes.
- It ensures all movable parts such as Ejector Group / Ejector Plate, Stripper Plate, Side Lifters etc. operating with injection machine in a harmony.
- Switch cables will be provided by the user.
- Min. 8 x 8mm cable slots are recommended.
- Please do switch connection according to the contact scheme specified in the catalogue.

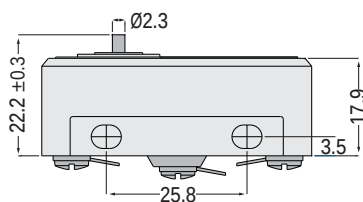
* Please contact with Cungang for different types of Limit Switch.

Order	Contact Structure	Contact Scheme	Sensor Type	Sensor Material
MN2MIM2	Changable Contact		Lever Long Roller	Metal
MN2MUM3			Dome Roller	
MN2MUM8			Dome Roller	
MN2PUM1			Dome	
MN2PUM3			Dome	

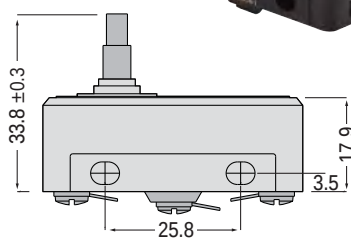
Code: **MN2PUM1**

Model:

- Thin & short dome
- Thin pointed
- Needle probe
- For precision work

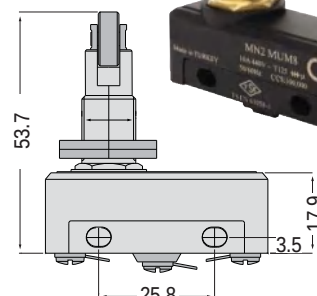


Code: **MN2PUM3**



Model: Thin & long dome

Code: **MN2MUM8**



Model: Dome roller

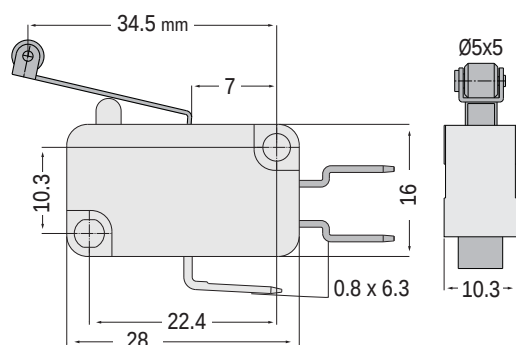
NEW



Code: MK1MIP2

Micro Limit Switch with Long Plastic Roller

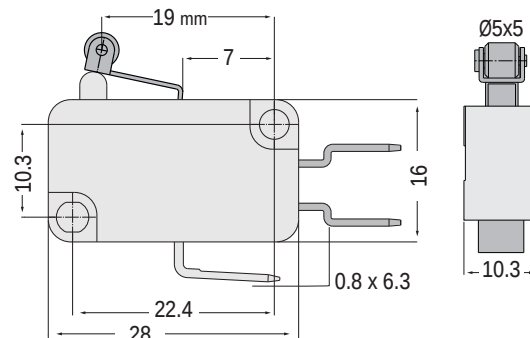
Movement Limit Switches for Ejector Plate, Stripper Plate and Side Lifters



Code: MK1MIP1

Micro Limit Switch with Short Plastic Roller

Movement Limit Switches for Ejector Plate, Stripper Plate and Side Lifters



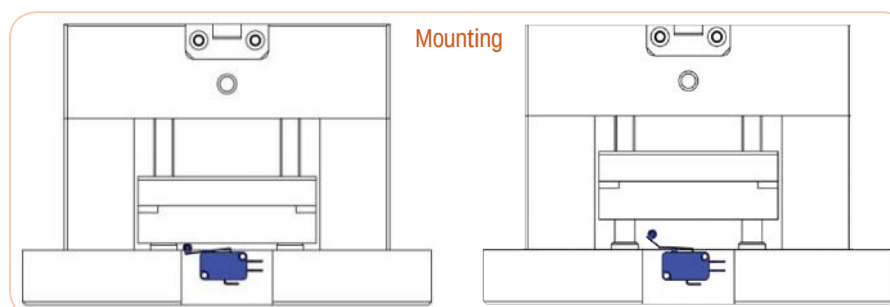
Technical Specifications / All "MK1MIP" types have similar specifications:

Mechanical Life : 10.000.000 Opening-Closing min.(60rpm)
 Electrical Life : 100.000 Opening-Closing min.(30rpm)
 Operating Temperature : - 15 / +125°C
 Protection Class : IP20
 Operating Voltage (Ue) : 250V AC
 Operating Current (Ie) : 10 (4) A
 Isolation Voltage (Ui) : 660V
 Impact Resistance Voltage : 2.5kV
 Short Circuit Breaking Capacity . : 1 kA
 Operating Frequency (f) : 50 / 60 Hz.
 Isolation Resistance : 10 MΩ min. (500V DC)
 Usage Class : AC15 - AC3
 Dielectric Resistance : 1.500V AC (for 1 minute)
 Pollution Degree : 3
 Standard : TS EN 60947-5-1

All "MK1MIP" types have similar specifications:

- Compact design.
- Product variety for wide application areas.
- Long life switches & high contact reliability.
- Material having "VO" feature which increases product reliability.
- It ensures all movable parts such as Ejector Group / Ejector Plate, Stripper Plate, Side Lifters etc. operating with injection machine in a harmony.
- Switch cables will be provided by the user.
- Min. 8 x 8mm cable slots are recommended.
- Please do switch connection according to the contact scheme specified in the catalogue.

Order	Contact Structure	Contact Scheme	Sensor Type	Sensor Material
MK1MIP1	Changable Contact	NO 4	Lever Roller	Plastic
MK1MIP2				
MK1MIP3				



Micro Limit Switch with Plastic Bent Roller

Code: MK1MIP3



* Please contact with Cungang sales dept . for different types of Limit Switches



External Side Lifter Unit with Hydraulic Piston

Cungang Patented System: **TR2016 06729B**

Code: **G136**

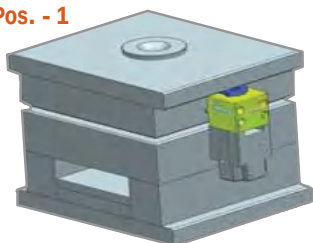
One of the important sections in mould design and production is Lifter / Core Systems. Many practical product range related to these complicated systems is presented in our catalogue. Cungang engineers will develop a new and standard product which is more clear and impress mould makers in Lifter / Core Creations and provide advantages in terms of time and cost.

If we consider Lifter / Core Systems as pouches of moulds by imagining their positions in injection moulds, mould producers make this system in moulds traditionally with high costs and efforts. As innovative Cungang, we have planned this system out of the mould. Easy to mount and without other instruments which may cause additional costs. Also, our External Side Lifter Unit with Hydraulic Piston which are offered ready and with economic prices and structure without protruding part (compact design). We convert traditional mechanical system into a new system with hydraulic support by combining movable unit with hydraulic piston (today, hydraulic distributor is available in all injection machines). Our new product apply linear movement taken from hydraulic piston into mould perpendicularly. Thus, all details of Lifter / Core formation in moulds which is hard are carried out. Namely, easy Lifter / Core System is completed with minimized position. Now, moulds with Lifter Systems will be produced fastly with low cost by you. In this way, it will provide shorter time in press / stamp durations - production possibility with less machine options by minimizing moulds and longer mould lifetimes.

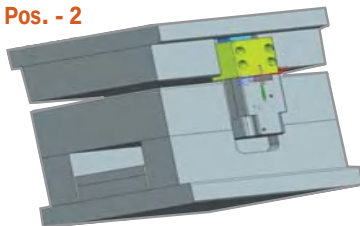
It is a practical system, it will be easily interfered with quick processes and the most important feature will be your economic price offers and fast mould deliveries. It will also provide different applications on mould for users. GTH - G136 "External Side Lifter Unit with Hydraulic Piston: We plan to increase difference with competitors by performing our R & D studies. In a different way, adding mould design & production methods consultancy to our products and job family. We expect important support of mould sector for these developments.

Design Application Examples

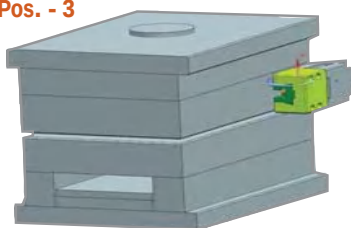
Pos. - 1



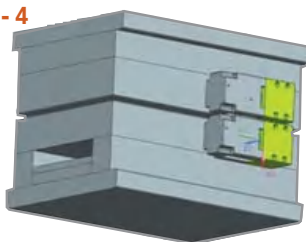
Pos. - 2



Pos. - 3



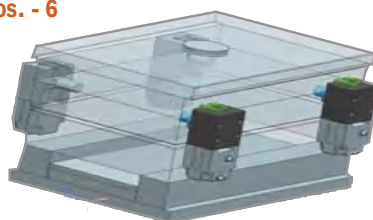
Pos. - 4



Pos. - 5



Pos. - 6



Hydraulic Piston; with special viton (resistant to 180° temperature) felt set.

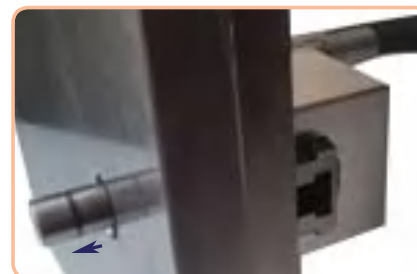
IMPORTANT: In mounting position 1 / 2 / 6 etc. applications, a clearance of 1.5mm should be left in mould base in order to prevent hydraulic cylinder bumping into mould steel.



External Side Lifter with Hydraulic Piston



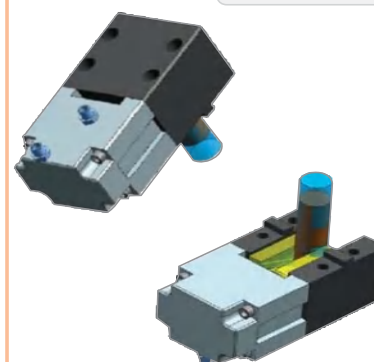
Lifter, Backward / Close Position



Lifter, Forward / Open Position

GTH standard side lifter systems can be used with working distance of stroke settings from 7mm up to 20mm.

Code: **G136.HPM**





External Side Lifter Unit with Hydraulic Piston

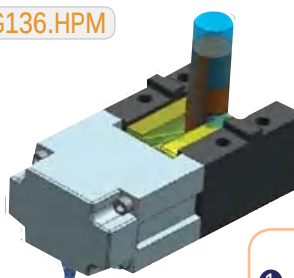
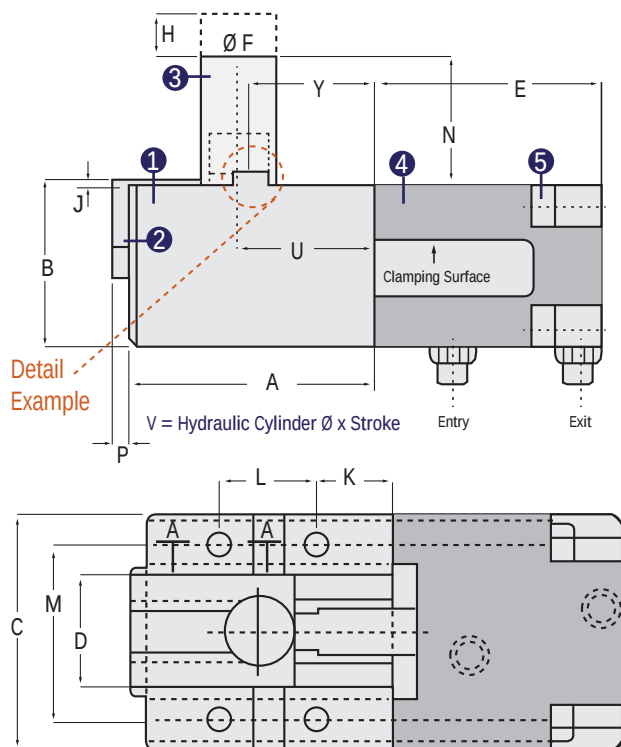
Cungang Patented System: **TR2016 06729B**

Code: **G136.HPM**

"Since 1976" *Tradition *Development *Innovation

During application, in order to provide the correct combination, do not hesitate to contact engineers in our company.

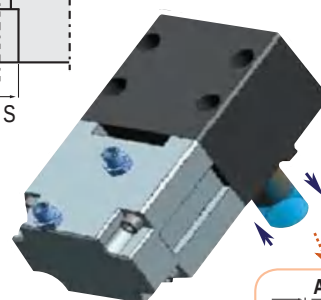
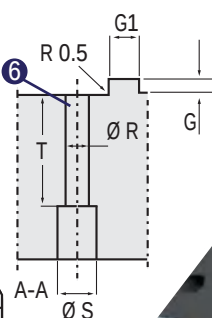
Mounting and Technical Support:



Material List:

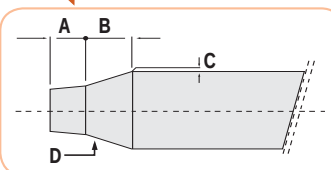
- ① Lifter Body : 1.2312 / HRC 44-46
- ② Inner Lifter Body : 1.2312 / HRC 40-42
- ③ Sliding Pin : 1.2344 / Nitrided
- ④ Hydraulic Cylinder : Standard Type
- ⑤ Screw : DIN ISO 4762 (4 pcs)
- ⑥ Screw : DIN ISO 4762 (4 pcs)

Note: Sliding pin with number ③ in Lifter System will be formed as per request by user.



"Lifter Slide Pin" Recommended Practice Area

If $J > 0$: On mould surface which system will be mounted: A discharge will be performed in dimensions of " $D+2\text{mm} \times (A+P)+3\text{mm} \times J+1\text{mm}$ ".



Order: **G136.HPM... x Type**

Model	HPM.050	HPM.070	HPM.096	HPM.126
Type	300	100	300	100
Dim.	300	100	300	100
A	48 mm	64 mm	86 mm	126 mm
B	39.8 mm	60 mm	70 mm	86 mm
C	49.6 mm	70 mm	96 mm	126 mm
D	23.2 mm	32.6 mm	40.6 mm	60.6 mm
E	70 mm	106 mm	118 mm	118 mm
F	16 mm	20 mm	25 mm	38 mm
G	3 mm	4 mm	6 mm	8 mm
G1	8.0 mm	7.9 mm	9.9 mm	15.9 mm
H (max)	10 mm	7.5 mm	12.7 mm	10.7 mm
J	J<0	J<0	J<0	J<0
K	17 mm	21 mm	33 mm	39 mm
L	-	24 mm	30 mm	50 mm
M	37 mm	50 mm	74 mm	94 mm
N (*)	80 mm	92.5 mm	87.4 mm	90.3 mm
P (*)	6 mm	10 mm	1.5 mm	2.0 mm
R	6.5 mm	8.5 mm	10.5 mm	13 mm
S	11 mm	15 mm	17 mm	20 mm
T	31 mm	48 mm	48 mm	61 mm
U	24.5 mm	33.5 mm	43.5 mm	69.5 mm
V	25 x 25 mm	32 x 30 mm	40 x 40 mm	40 x 50 mm
Y	26 mm	33 mm	48 mm	64 mm

H (max): Lever movement of External Lifter with Hydraulic Piston.

(*) : Values given on table are approximate values.

Order Example: If "H" (max.) 7.5mm is suitable for the product, your order code should be G136. HPM.070 x 100.

Hydraulic Piston Order: If Hydraulic Pistons in the system are ordered, Example: G136. HP x "External Lifter dimension" is enough.

"Lifter Slide Pin" Recommended Practice Dimensions:

Dim.	Descriptions	Minimum	Maximum
A	Form Depth	< 5	> 20
B	Burr Cutting Practice Length	5	12
C	Form Pin Bearing Clearance	0.03	0.1
D	Burr Cutting Practice Angle	5	10

Definition & Purpose: It is an important support component which contribute mould production process in order to obtain details in type of round, square etc. on plastic part with Side Lifter. According to Side Lifter with Cam System and Ejector Group supported (jiggle) Lifter designs:

*It reduces design process. *Material cost decreases because it gives steel size advantage from 50mm minimum up to 250mm in mould sizes according to the product design. *Since detail machining of Side Lifter is reduced to 90%, it provides advantage from Cnc machining duration. *It supports mould assembly / practice process. *Thanks to its automatic locking design, reverse resistance is in maximum level during 2nd press of injection. *Die marking problem is minimum or none with the feature of using as a hidden lifter / core.

Terms of Use: According to the details and sizes of moulds;

1 - It is used to obtain one or more similar profiles which are specified with examples below to be obtained male or female side of the mould as blind or full hole within the range of stroke 7.00 - 22.60 mm.



2 - While lifter / core hydraulic working stroke distance is not interfered, in obligatory cases, it should be made without distributing hydraulic.

3 - Mounting details of system should be process according to the dimensions specified in the catalogue, +0,05 / +0,1 maximum.

4 - When vibration occurs in hydraulic during mould trials, system should be fixed to the mould by using details on hydraulic side surfaces and Cungang clamps.

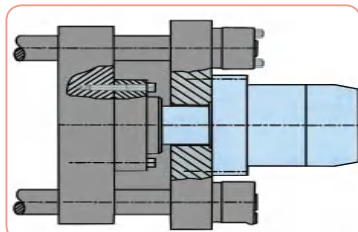
5- During trials and production phases, before opening injection machine clamp, form slide pin or steel should be separated from plastic detail by pulling back hydraulic.

Hydraulic piston app. pressure: Max. 160 Bar
Max. temp.: 160°C



Hydraulic Cylinder - Round Type

Code: THS



Dimension	Formula	Unit
Force (Newton)	F	N
Length	s	m
Speed (Stroke)	v	m / s
Pressure	p	bar
Area (Piston)	A	cm ²
Volume	V	m ³
Flow Rate	Q	m ³ / s
Efficiency	η	-
Performance	P	kW

The information is advisory.

Cylinder Force:

$$F (N) = p (\text{bar}) \times A (\text{cm}^2) \times 10$$

A = Effective piston area

Required Flow Rate:

$$Q (L / \text{min.}) = A (\text{cm}^2) \times v (\frac{m}{s}) \times 6$$

Repulse and Return Speed:

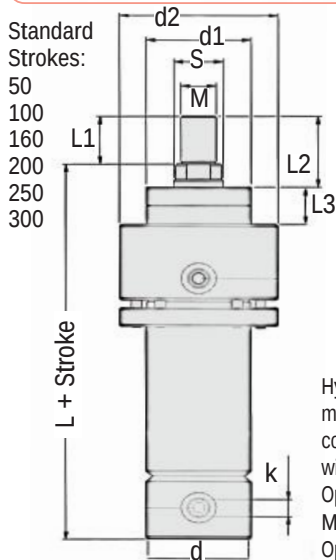
$$v (\frac{m}{s}) = \frac{Q (L / \text{min.})}{A (\text{cm}^2)} \times \frac{1}{6}$$

Q = Flow Rate

Required Pump Capacity:

$$P (kW) = \frac{Q (L / \text{min.}) \times p (\text{bar})}{\eta} \times \frac{1}{600}$$

η = Pump Efficiency



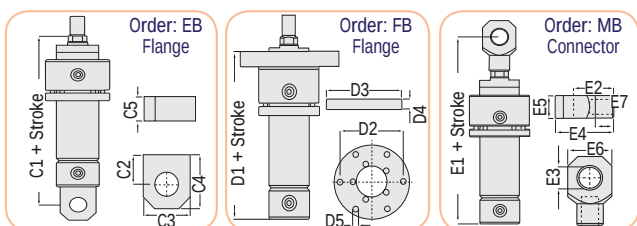
Motion Type: Double Action
Sealing: Polyurethane + NBR

Hydraulic Cylinders: Used in injection moulds for waste water and for other cores / lifters. Piston motion is provided with joints in injection machine.
Operating: Hydraulic Oil
Max. Operating Pressure: 160 Bar
Operating Temp.: -20 / +80°
Stroke Inaccuracy : $\pm 0.3\text{mm}$
Shaft: C45 / Hard Chrome Coated

Code: THS

Order	d	d1	d2	S	M	k	L	L1	L2	L3
THS.40	50	50	80	22	M.16 x 1.5	1/4	160	22	35	20
THS.50	60	60	95	28	M.20 x 1.5	1/4	194	31	46	25
THS.63	75	70	125	36	M.27 x 2.0	3/8	208	39	55	25
THS.80	95	85	130	45	M.33 x 2.0	3/8	235	47	65	30
THS.100	115	109	160	56	M.42 x 2.0	1/2	244	60	80	30
THS.125	145	130	195	70	M.48 x 2.0	1/2	276	67	90	37

Hydraulic Cylinders Joint Types:



Hoses for Hydraulic Cylinder:
"as per request" Order: PB..

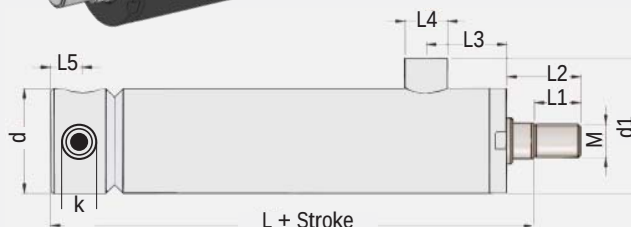


Hydraulic Cylinder - Tube Type

Code: TBTHS



Flange joint
as per request
(Code: EB)



Order	d	d1	M	k	L	L1	L2	L3	L4	L5
TBTHS.40	50	65	M.16 x 1.5	1/4	125	22	35	40	20	15
TBTHS.50	60	75	M.20 x 1.5	1/4	152	31	46	43	20	21
TBTHS.63	75	90	M.27 x 2.0	3/8	163	39	55	50	25	23
TBTHS.80	95	110	M.33 x 2.0	3/8	209	47	65	60	20	29
TBTHS.100	115	135	M.42 x 2.0	1/2	211	60	80	82	30	27
TBTHS.125	145	165	M.48 x 2.0	1/2	229	67	90	82	30	30



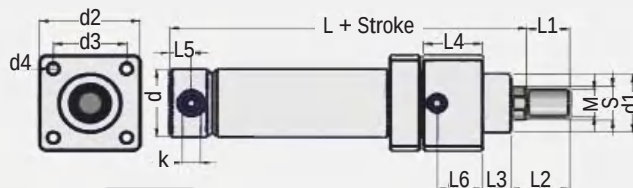
Custom-made Production (for all Hydraulic Cylinders):

- For too hot environments, special piston with Viton Felt (180°C).
- Single action (spring converter).
- Shaft material & dimensions can be produced acc.. to your demand.



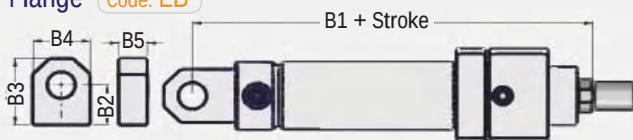
Hydraulic Cylinder Square Type

Code: THKS



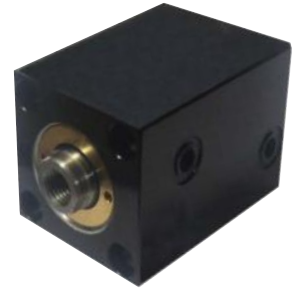
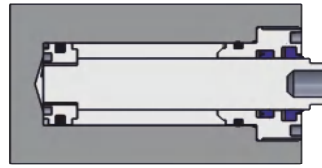
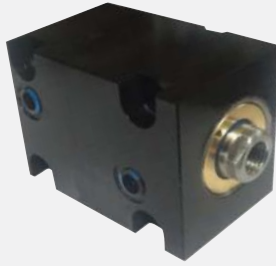
Flange

Code: EB



Order	d	d1	d2	d3	d4	S	M	k
THKS.40	50	43	70	51	M.10	25	M.20 x 1.5	1/4
THKS.50	60	62	78	56	M.10	28	M.20 x 1.5	1/4
THKS.63	75	70	95	70	M.10	36	M.27 x 2.0	3/8
THKS.80	95	85	115	90	M.12	45	M.33 x 2.0	3/8

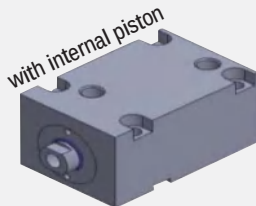
L	L1	L2	L3	L4	L5	L6	B1	B2	B3	B4	B5
170	30	41	20	41	15	31.5	200	30	50	40	20
178	26	39	25	37	21	26	208	30	55	50	25
189	39	51	30	41	22.5	28	229	40	70	60	30
235	47	65	30	68	29	41	280	45	80	70	35



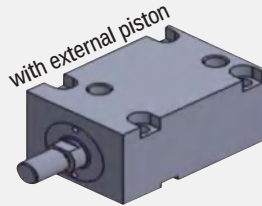
Hydraulic Piston - Square Type

Code: **THCS**

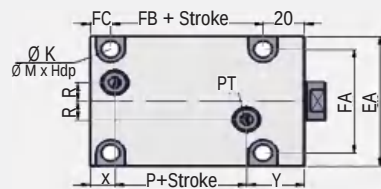
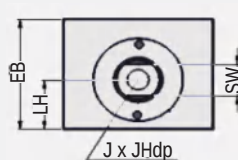
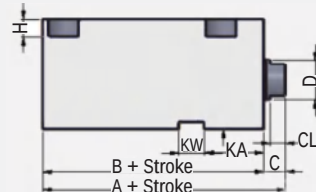
Bottom Slotted (KW type) & with 4-Fastening Holes from Upper Side
It has a compact design. It is at the forefront with strong bearing system.
As per request: For too hot environments, special piston with Viton Felt (180°C).



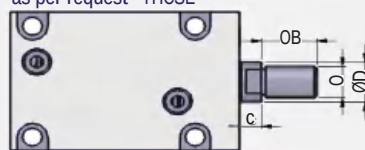
"THCS" Series Ø 32 - Ø 80



"THCSE" Series Ø 32 - Ø 80



as per request "THCSE"



Operating:
Hydraulic Oil
Max. Operating Temp.:
-20 / +80°
Max. Operating Pressure:
140 Bar
Stroke Inaccuracy:
± 0.3mm
Shaft:
C45 / Hard Chrome Coated
Piston Tube:
Nodular Cast Iron
Sealing:
Polyurethane + NBR

Order	A	B	C	CL	D	EA	EB	FA	FB	FC
THCS.32	64	54	10	7	20	70	56	56	24	10
THCS.40	65	55	10	7	25	80	62	62	23	12
THCS.50	71	60	11	8	28	94	74	74	27	13
THCS.63	80	67	13	10	36	114	89	90	32	15

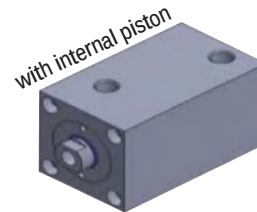
Order	H	J	JH	K	KA	KW	KT	LH	M	OB
THCS.32	9	M12 x 1.75	15	9	28	12	3.5	25	14	25
THCS.40	11	M16 x 2	20	11	28	12	3.5	29	18	30
THCS.50	13	M20 x 2.5	25	14	29	14	4	34	20	35
THCS.63	15	M27 x 3	35	16	31	16	4.5	42	23	40

Order	O	P	PT	R	SW	X	Y
THCS.32	M16 x 1.5	14	1/4"	10	17	12	28
THCS.40	M20 x 1.5	15	1/4"	10	22	12	28
THCS.50	M20 x 1.5	18	1/4"	10	22	12.5	29.5
THCS.63	M27 x 2	20	3/8"	10	30	16	31

Hydraulic Piston - Square Type

Code: **THCF**

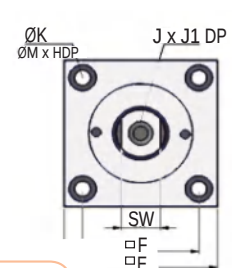
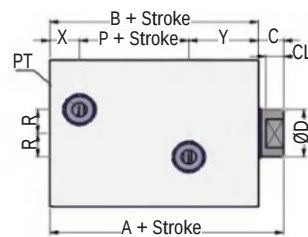
Compact Design & with 4-Fastening Holes from Front Side
As per request: For too hot environments, special piston with Viton Felt (180°C).



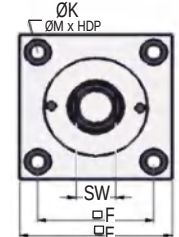
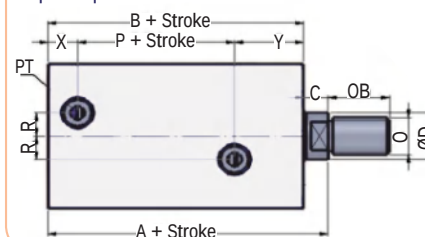
"THCF" Series Ø 32 - Ø 63



"THCFE" Series Ø 32 - Ø 63



as per request "THCFE"

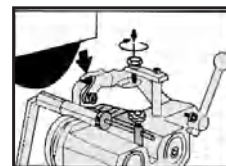
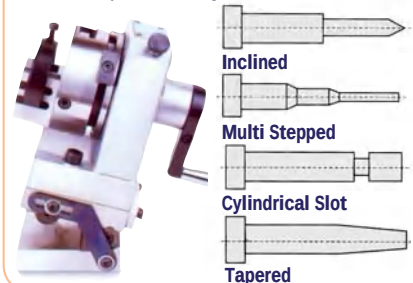


Order	A	B	C	CL	D	E	F	H	J
THCF.32	64	54	10	7	20	62	47	6.5	M12 x 1.75
THCF.40	65	55	10	7	25	70	52	9	M16 x 2
THCF.50	71	60	11	8	28	80	58	11	M20 x 2.5
THCF.63	80	67	13	10	36	94	69	13	M 27 x 3
THCF.80	95	78	17	14	45	114	86	15	M 30 x 3.5

J1	K	M	O	OB	P	PT	R	SW	X	Y
15	6.5	11	M16 x 1.5	25	14	1/4"	10	17	12	28
20	9	14	M20 x 1.5	30	15	1/4"	10	22	12	28
25	11	18	M20 x 1.5	35	18	1/4"	10	22	12.5	29.5
35	14	20	M27 x 2	40	20	3/8"	10	30	16	31
35	16	23	M33 x 2	45	27	3/8"	15	36	18	33

As per request: Piston fasteners and pressed hose are provided.

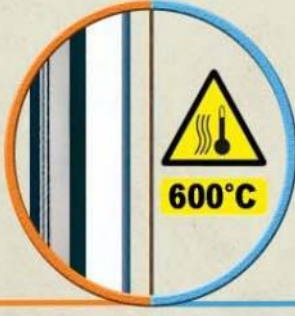




Before starting grinding, ensure that all fasteners are tightened.

Why **CUNGANG?**

The Distinguishing Features of the Cungang Ejector Pins from the Similar Products

	Stable fitting-operation possibilities (rigid system & tight fitting) with the head top surface grinding processes ($Ra\ 3.2/\sqrt{\text{ }}$).	 DIN 1.2343 MATERIAL X 40 Cr Mo V 51 Nitrided	During press, it does not adhere to raw material in mould - slippery surface.	
	Improved radius geometry which prevents head breaking & chamfer forms which are suitable for pin head and body structure.	 OXIDATION COATING	- Abrasion resistant surface with oxidation coating. - Increased mould working life and perfect dry operation feature. - High corrosion protection and unstainable surface. - More durable than the traditional (common) pins.	
	Minimum roughness and minimum friction ($Ra\ 0.8/\sqrt{\text{ }}$) = more durable operation life compared to the similar products.	 600°C	1.2343 / Plasma-Nitriding with Oxidation Coating offers stable operation, protection against humidity / water, and high temperature resistance.	

Type: Plastic Injection

Type: Metal and Plastic Injection

"As **Cungang** we use our missions in favour of our customers by adding value and try to meet their expectations best. We always aim better for you with our team which works customer oriented, our innovative and efficient business approach." **ATTENTION:** Each black looking pins are not oxidation coating pins (like cheap series from Far East). You can use **Cungang** oxidation coating pins with confidence.

Note: Our products are designed more quality and economic by **Cungang** engineers.

d1	l	d2	k
9.0	100	11	1.0
	125		
	160		
	200		
	250		
9.5	100	12	1.0
	125		
	160		
	200		
	250		
10	100	12	1.0
	125		
	160		
	200		
	250		
	315		
10.5	100	13	1.0
	125		
	160		
	200		
11	100	13	1.0
	125		
	160		
	200		
	250		
12	100	14	1.0
	125		
	160		
	200		
	315		
13	100	15	1.0
	125		
	160		
	250		
14	100	16	1.5
	125		
	160		
	200		
	315		
16	100	18	1.5
	125		
	160		
	200		
	315		

d1	l	d2	k
5.4	100	6.5	0.5
	125		
	160		
5.5	100	7.0	0.5
	125		
	160		
	200		
	315		
5.6	100	7.0	0.5
	125		
	160		
5.7	100	7.0	0.5
	125		
	160		
5.8	100	7.0	0.5
	125		
	160		
5.9	100	7.0	0.5
	125		
	160		
6.0	100	8.0	0.5
	125		
	160		
	200		
	315		
6.5	100	9.0	1.0
	125		
	160		
	200		
7.0	100	9.0	1.0
	125		
	160		
	200		
	315		
7.5	100	10	1.0
	125		
	200		
8.0	100	10	1.0
	125		
	160		
	200		
	315		
8.5	100	11	1.0
	125		
	160		
	200		
	315		

d1	l	d2	k
3.9	100	5.0	0.5
	125		
	160		
4.0	100	5.5	0.5
	125		
	160		
	200		
	315		
4.1	100	5.5	0.5
	125		
	160		
4.2	100	5.5	0.5
	125		
	160		
4.3	100	5.5	0.5
	125		
	160		
4.4	100	5.5	0.5
	125		
	160		
4.5	100	6.0	0.5
	125		
	160		
	200		
	315		
4.6	100	6.0	0.5
	125		
	160		
4.7	100	6.0	0.5
	125		
	160		
4.8	100	6.0	0.5
	125		
	160		
4.9	100	6.0	0.5
	125		
	160		
5.0	100	6.5	0.5
	125		
	160		
	200		
	315		
5.1	100	6.5	0.5
	125		
	160		
5.2	100	6.5	0.5
	125		
	160		
5.3	100	6.5	0.5
	125		
	160		

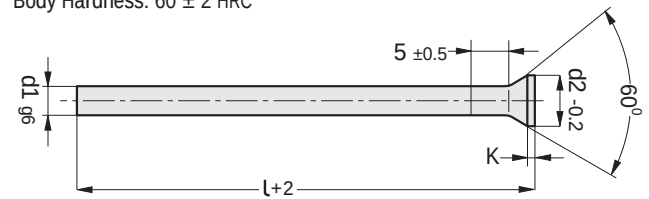


Ejector Pin - Conical Head / DIN 1530-D

Code: HBI

Material: 1.2516 WS
Head Hardness: 45 ± 2 HRC
Body Hardness: 60 ± 2 HRC

Heat Resistance: 220° max.
Tensile Resistance: 1300 N / mm²



d1	l	d2	k
2.9	100	4.0	0.5
	125		
	160		
3.0	100	4.5	0.5
	125		
	160		
	200		
	315		
3.1	100	4.5	0.5
	125		
	160		
3.2	100	4.5	0.5
	125		
	160		
3.3	100	4.5	0.5
	125		
	160		
3.4	100	4.5	0.5
	125		
	160		
3.5	100	5.0	0.5
	125		
	160		
	200		
	315		
3.6	100	5.0	0.5
	125		
	160		
3.7	100	5.0	0.5
	125		
	160		
3.8	100	5.0	0.5
	125		
	160		

d1	l	d2	k
2.0	100	3.0	0.5
	125		
	160		
	200		
	315		
2.1	100	3.2	0.5
	125		
2.2	100	3.2	0.5
	125		
2.3	100	3.5	0.5
	125		
	160		
2.4	100	3.5	0.5
	125		
	160		
2.5	100	3.5	0.5
	125		
	160		
	200		
	315		
2.6	100	4.0	0.5
	125		
2.7	100	4.0	0.5
	125		
2.8	100	4.0	0.5
	125		
	160		

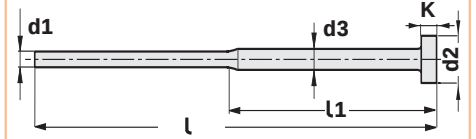
d1	l	d2	k
1.0	100	1.8	0.5
	125		
	160		
	200		
1.1	100	1.8	0.5
	125		
	160		
1.2	100	2.0	0.5
	125		
1.3	100	2.0	0.5
	125		
1.4	100	2.2	0.5
	125		
	160		
1.5	100	2.2	0.5
	125		
	160		
	200		
1.6	100	2.5	0.5
	125		
	160		
1.7	100	2.5	0.5
	125		
	160		
1.8	100	2.8	0.5
	125		
	160		
1.9	100	2.8	0.5
	125		
	160		



Order: HBI. d1 x l



For your order of special dimensions, technical drawing can be used:



Cylinder Head Stepped Ejector Pin / DIN ISO 8694

Code: **SBKAH**

Material: 1.2516 WS

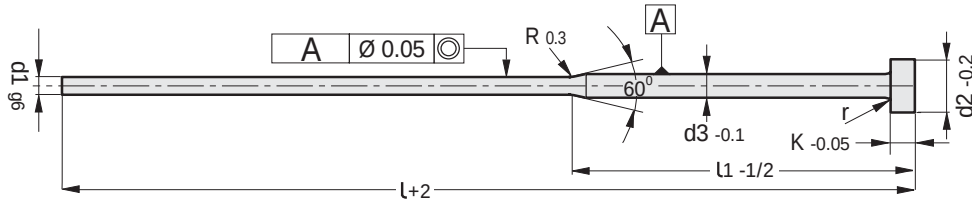
Heat Resistance: 220° max.

Head Hardness: 45 ± 2 HRC

Tensile Resistance: 1300 N / mm²

Body Hardness: 60 ± 2 HRC

As per request / Custom-made orders.



Type: AH

Code: **SBKAH**

d1	l	l1	d3	d2	k
0.8	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160				
1.0	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160				
	200				
1.1	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160				
1.2	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160				
1.3	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160				

d1	l	l1	d3	d2	k
1.4	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160				
1.5	63	25	3	6	3
	80	35			
	100	50			
	125				
	150				
	160				
	200				
1.6	80	35	3	6	3
	100	50			
	125				
	150				
	160				
	200				
1.7	80	35	3	6	3
	100	50			
	125				
	150				
	160				
	200				
1.8	80	35	3	6	3
	100	50			
	125				
	150				
	160				
	200				

d1	l	l1	d3	d2	k
2.0	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				
2.2	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				
2.5	100	50	3	6	3
	125				
	150				
	160	75			
	200				
2.6	100	50	3	6	3
	125				
	150				
	160	75			
	200				
2.7	100	50	3	6	3
	125				
	150				
	160	75			
	200				
2.8	100	50	3	6	3
	125				
	150				
	160	75			
	200				



Order:

SBKAH. d1 x d3 x l1 x l

Order Example:

SBKAH. 1.4 x 2 x 50 x 100

d1	l	d2	k
12	100	18	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
13	100	20	7.0
	125		
	160		
	200		
	250		
	315		
	400		
14	100	22	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
16	100	22	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
18	100	24	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
20	100	26	8.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
25	100	32	10
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		

d1	l	d2	k
7.5	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
8.0	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
8.2	100	14	5.0
	160		
	250		
	500		
8.5	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
9.0	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
10	100	16	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
10.2	125	16	5.0
	250		
	500		
	1000		
10.5	100	16	5.0
	125		
	160		
	200		
	315		
11	100	16	5.0
	125		
	160		
	200		
	250		
	315		
	400		



Code: **SBIAH**

Ejector Pin - Cylinder Head / ISO 6751, DIN 1530 Form: AH

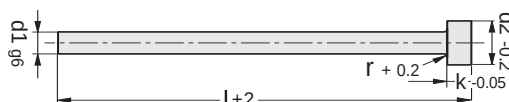
Material: 1.2516 WS

Heat Resistance: 220° max.

Head Hardness: 45 ± 2 HRC

Tensile Resistance: 1300 N / mm²

Body Hardness: 60 ± 2 HRC



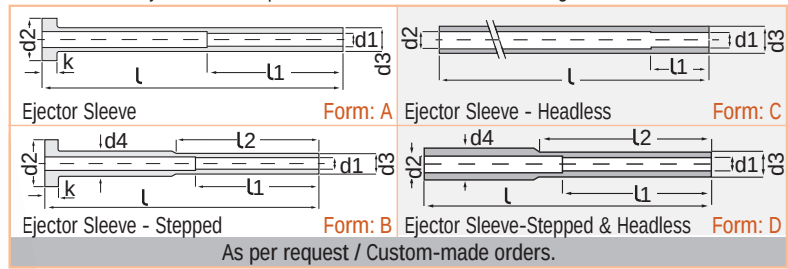
d1	l	d2	k
5.2	100	10	3.0
	200		
	250		
	315		
	400		
5.5	100	10	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
6.0	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
6.2	100	12	5.0
	160		
	250		
	500		
6.5	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
7.0	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		

d1	l	d2	k
3.2	100	6.0	3.0
	160		
	200		
	250		
3.5	100	7.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
3.7	100	6.0	3.0
	160		
	250		
4.0	100	8.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
4.1	100	8.0	3.0
	160		
	200		
4.2	100	8.0	3.0
	160		
	200		
4.5	100	8.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
5.0	100	10	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		

d1	l	d2	k
1.0	100	2.5	1.2
	125		
	160		
	200		
	250		
1.1	315	2.5	1.2
	100		
1.2	100	2.5	1.2
	160		
1.3	100	3.0	1.5
	160		
1.4	100	3.0	1.5
	160		
1.5	100	3.0	1.5
	125		
	160		
	200		
	250		
1.6	315	3.0	1.5
	100		
1.7	100	3.0	1.5
	160		
1.8	100	3.0	1.5
	160		
1.9	100	3.0	1.5
	160		
2.0	100	4.0	2.0
	125		
	160		
	200		
	250		
	315		
	400		
2.2	500	4.0	2.0
	100		
2.3	160	4.0	2.0
	250		
2.4	100	5.0	2.0
	160		
2.5	100	5.0	2.0
	125		
	160		
	200		
	250		
	315		
	400		
2.7	500	5.0	2.0
	100		
3.0	160	6.0	3.0
	100		
	125		
	160		
	200		
	250		
	315		
630	400		
	500		



"For your order of special dimensions, technical drawing can be used."

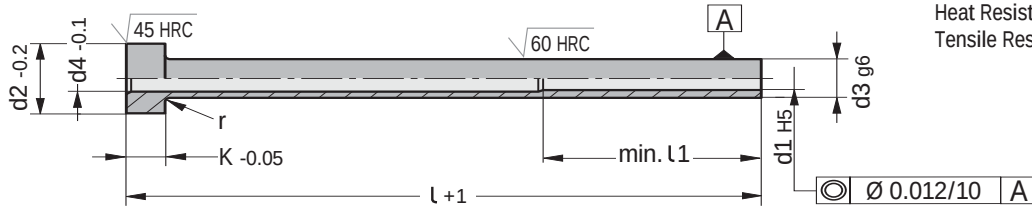


Ejector Sleeve - Nitrided / DIN ISO 8405

Code: **SMB**

Rear part of inner hole is ground in 30 - 45 mm Ejector Pin working tolerance.

Material: 1.2343
 Head Hardness: 45 ± 2 HRC
 Body Hardness: 60 ± 2 HRC
 Heat Resistance: 500 - 550° max.
 Tensile Resistance: 1450 N / mm²



d3	l	d1	l1	d4	d2	k	r
4	75	2.0	35	2.3	8	3	0.3
	100						
	125						
	150						
	160						
	175						
	200						
	250						
5	75	2.5	35	3.0	10	3	0.3
	100						
	125						
	150						
	160						
	175						
5	75	3.0	45	3.3	10	3	0.3
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						

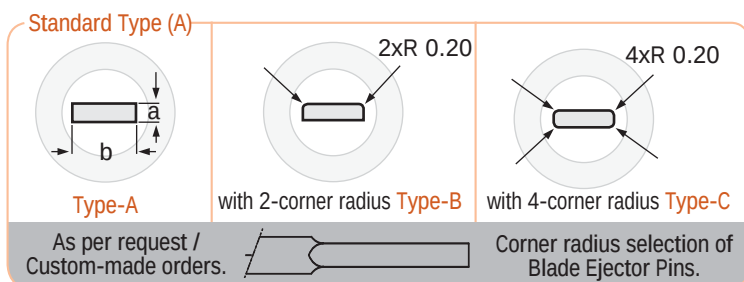
d3	l	d1	l1	d4	d2	k	r
6	75	3.5	45	4.0	12	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
6	75	4.0	45	4.3	12	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

d3	l	d1	l1	d4	d2	k	r
8	75	5.0	45	5.3	14	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
10	75	6	45	6.3	16	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
12	75	8	45	8.3	20	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						

d3	l	d1	l1	d4	d2	k	r
12	200	8	45	8.3	20	7	0.8
	250						
	300						
	350						
	400						
	450						
	500						
	500						
14	75	10	50	10.3	22	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
16	75	12	50	12.3	22	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
16	300	12	50	12.3	22	7	0.8
	350						
	400						
	450						
	450						
	500						
	500						
	500						



Order:
SMB. d1 x d3 x l

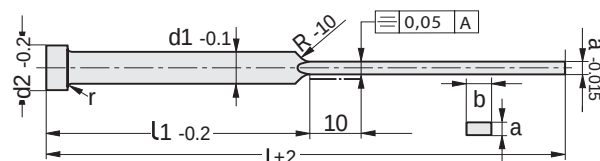
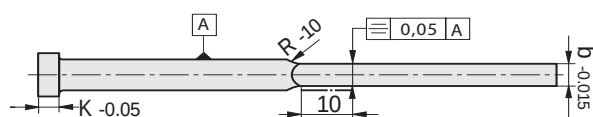


Code: **SPLAH**

Material: 1.2516 WS (Hardened)
Head Hardness: 45 ± 2 HRC
Body Hardness: 60 ± 2 HRC
Heat Resistance: 220° max.

Blade Ejector Pin - Hardened / ISO 8693 (DIN 1530 F) Form: FAH

Our standard stocks are created from Type-A. Type-B & Type-C are as per request.



a	b	d1	l	l1
1.5	5.5	6.0	100	50
			125	60
			160	80
			200	100
			250	125
			315	160
1.5	7.5	8.0	100	50
			125	60
			160	80
			200	100
			250	125
			315	160
1.5	9.5	10	160	80
			200	100
			250	125
			315	160
			400	200
2.0	5.5	6.0	100	50
			125	60
			160	80
			200	100
			250	125
			315	160
2.0	7.5	8.0	125	60
			160	80
			200	100
			250	125
			315	160
			400	200
2.0	9.5	10	160	80
			200	100
			250	125
			315	160
			400	200
2.0	11.5	12	160	80
			200	100
			250	125
			315	160
			200	100
			250	125
2.5	11.5	12	315	160

a	b	d1	l	l1
1.2	3.5	4.0	80	40
			100	50
			125	60
			160	80
			200	100
			250	125
1.2	4.5	5.0	80	40
			100	50
			125	60
			160	80
			200	100
			250	125
1.2	5.5	6.0	80	40
			100	50
			125	60
			160	80
			200	100
			250	125
1.2	7.5	8.0	80	40
			100	50
			125	60
			160	80
			200	100
			250	125
1.5	4.5	5.0	100	50
			125	60
			160	80
			200	100
			250	125
			315	160

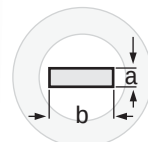
a	b	d1	l	l1
0.8	3.5	4.0	80	40
			100	50
			125	60
			160	80
0.8	4.5	5.0	100	50
			125	60
			160	80
			200	100
0.8	5.5	6.0	100	50
			125	60
			160	80
			200	100
1.0	4.5	5.0	80	40
			100	50
			125	60
			160	80
			200	100
			250	125
1.0	5.5	6.0	80	40
			100	50
			125	60
			160	80
			200	100
			250	125
1.0	7.5	8.0	100	50
			125	60
			160	80
			200	100
			250	125
			315	160



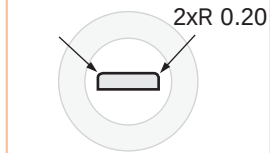
Order: **SPLAH**. $a \times b \times d1 \times l$
(Standard Type-A)



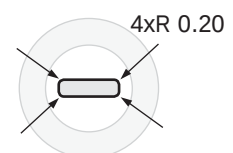
Standard Type (A)



Type-A



with 2-corner radius Type-B



with 4-corner radius Type-C

As per request / Custom-made orders.



Corner radius selection of Blade Ejector Pins.

Blade Ejector Pin - Nitrided and Oxidation Coated / ISO 8693 (DIN 1530 F) Form: FA

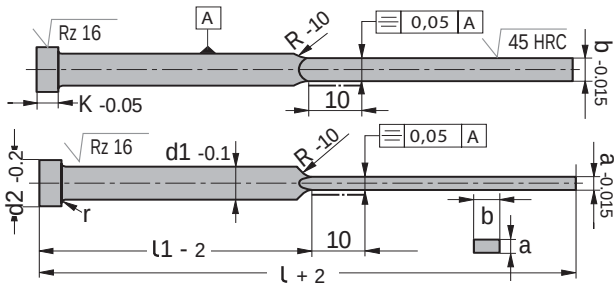
Code: SPW

Our standard stocks are created from Type-A. Type-B & Type-C are as per request.

Material: 1.2343 Plasma Nitrided + Oxidation Coated

Heat Resistance with Lubricating Grease: 1400° max.

Heat Resistance: 650° max. (without lub. grease)



a	b	d1	l	l1
0.8	3.5	4.0	80	40
			100	50
			125	60
1.0	4.5	5.0	80	40
			100	50
			125	60
1.0	5.5	6.0	160	80
			80	40
			100	50
1.2	3.5	4.0	125	60
			160	80
			80	40
1.2	4.5	5.0	100	50
			125	60
			160	80
1.2	5.5	6.0	80	40
			100	50
			125	60
1.2	7.5	8.0	160	80
			200	100
			80	40
1.5	4.5	5.0	100	50
			125	60
			160	80

a	b	d1	l	l1
1.5	5.5	6.0	100	50
			125	60
			160	80
			200	100
1.5	7.5	8.0	125	60
			160	80
			200	100
			250	125
1.5	9.5	10	160	80
			200	100
			250	125
			315	160
2.0	5.5	6.0	100	50
			125	60
			160	80
			200	100
2.0	7.5	8.0	160	80
			200	100
			250	125
			315	160
2.0	9.5	10	200	100
			250	125
			315	160
			400	200
2.0	11.5	12	200	100
			250	125
			315	160
			400	200
2.5	11.5	12	200	100
			250	125
			315	160
			400	200

Order:
SPW. a x b x d1 x l
(Standard Type-A)

Order Example:
SPW. 1.2 x 3.5 x 4 x 100



Code: AWF1400

Code: W150200 & W160200

High Temperature Ejector Pin Greases

High temperature lubricating greases for Ejector Pins & Core Systems.

Our special greases are consists well refined mineral oils and EP additives providing lubricity as film strip between other mould parts and mould parts that do not affect from high temperature of ejector systems and core systems in working mould in high temperature such as metal injection. Thanks to solid lubricants and additives, it has comfortable operation (working without load). It has high heat insulation and provides resistance up to 1400°C. It is in film strip position of surfaces between parts.

Even at very high temperature, it prevents sticking each other. It is produced from vegetable oils and not harmful to the health.

Advantage of using AWF1400 lubricating greases:

- * It is resistant against oxidization and friction.
- * It is resistant to corrosion and abrasion.
- * It is silicium and white (it does not make any contamination on mould).
- * It is resistant against water and humidity (water proof).
- * Due to dust atmosphere as casting moulds, the user's hands are not painted black. It is a very good protector.
- * It does not cause any reaction on surfaces.



Order Code	(custom-engineered)
AWF1400.01	1Kg. (canister)
AWF1400.03	40g. (mini tube with sponge)



Order Code	(standard type)
W150200	1Kg. (plastic can)
W160200	400ml. (spray)



Cylinder Head Ejector Pin
Plasma Nitrided and Oxidation Coated
DIN 1530-1 Form A

Material: 1.2343 Plasma Nitrided + Oxidation Coated
Heat Resistance with Lubricating Grease: 1400° max.
Heat Resistance: 650° max. (without lub. grease)
Head Hardness: 45 ± 5 HRC
Body Hardness: 44 HRC
Oxidation Clad Body Hardness: 70 HRC
Tensile Resistance: 1450 N / mm²



Our "SBMAV03" ejector pins are produced by high level / special Plasma Nitriding + Oxidation Coating methods.

d1	l	d2	k
5.0	100	10	3
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630	r		
800	0.3		
5.2	100	10	3
	200		
5.5	100	10	3
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630	r		
0.3			
6.0	100	12	5
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630	r		
800	0.5		
6.2	100	12	5
	125		
	160		
	250		
0.5	r		
0.3			
d1	l	d2	k
3.2	100	6	3
	160		
3.5	100	7	3
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630	r		
0.3			
3.7	100	7	3
	160		
	0.3		
4.0	100	8	3
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630	r		
800	0.3		
4.2	100	8	3
	200		
4.5	100	8	3
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630	r		
0.3			
d1	l	d2	k
1.5	100	3	1.5
	125		
	160		
	200		
2.0	100	4	2
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630	r		
0.2			
2.2	100	5	2
	160		
2.5	100	5	2
	125		
	160		
	200		
	250		
	315		
	400		
	500		
100	r		
0.3			
2.7	100	5	2
	160		
3.0	100	6	3
	125		
	160		
	200		
	250		
	315		
	400		
	500		
630	r		
0.3			

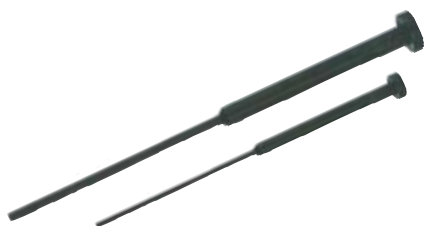


Order:

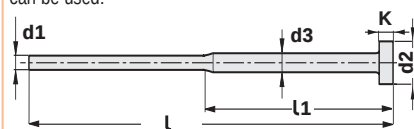
SBMAV03. d1 x l

- Order Example:

SBMAV03. 14 x 315



For your order of special dimensions, technical drawing can be used:

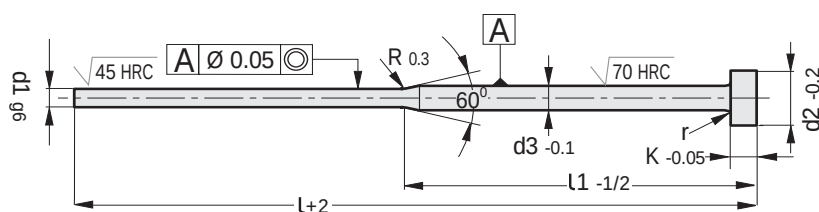


As per request / Custom-made orders.

Stepped Ejector Pin - Nitrided and Oxidation Coated ISO 8694 (DIN 1530 Form C)

Code: **SBW**

Material: 1.2343 Plasma Nitrided + Oxidation Coated
Heat Resistance with Lubricating Grease: 1400° max.
Heat Resistance: 650° max. (without lub. grease)



Code: **SBW**

d1	l	l1	d3	d2	k	r
0.8	100	50	2	4	2	0.2
	125	50				
	160	75				
0.9	100	50	2	4	2	0.2
	125	50				
	160	75				
1.0	100	50	2	4	2	0.2
	125	50				
	160	75				
	200	75				
1.1	100	50	2	4	2	0.2
	125	50				
	160	75				
1.2	100	50	2	4	2	0.2
	125	50				
	160	75				
1.3	100	50	2	4	2	0.2
	125	50				
	160	75				

d1	l	l1	d3	d2	k	r
1.4	100	50	2	4	2	0.2
	125	50				
	160	75				
1.5	100	50	3	6	3	0.3
	125	50				
	160	75				
	200	75				
2.0	100	50	3	6	3	0.3
	125	50				
	160	75				
	200	75				
2.5	100	50	3	6	3	0.3
	125	50				
	160	75				
	200	75				



Order:
SBW. d1 x d3 x l1 x l

Order Example:

SBW. 2 x 3 x 75 x 160



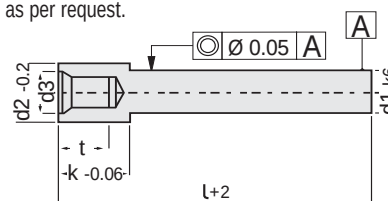
Code: **SBD**

Ejector Pin - Threaded DIN 1530 - A / ISO 6751

In-mould (ejector plate & core/lifter) usage.
It has pin mounting feature without dismantling other mould parts.

Material: 1.2343 Ground and Hardened
Tensile Resistance: 1400 N / mm²

Our custom-made production is available
as per request.

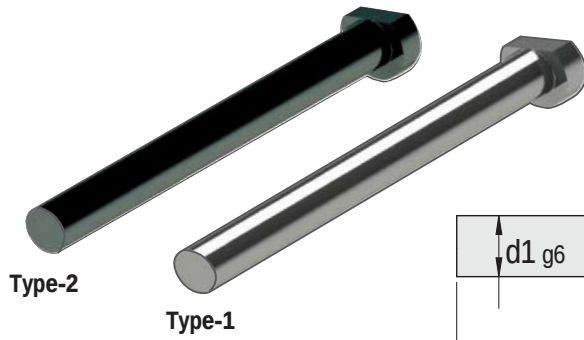


Code: **SBD**

d1	l	d3	t	k	d2
3	63	M4	5	10	6
	125				
4	63	M5	7	12	8
	125				
5	80	M6	9	14	9
	160				
6	80	M6	9	14	10
	160				
8	80	M6	10	16	13
	160				
10	100	M10	12	18	15
	200				
12	100	M12	14	22	18
	200				
14	100	M12	14	22	20
	200				



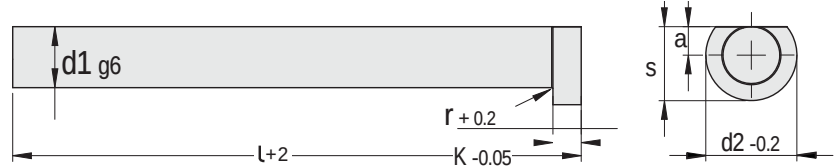
Order:
SBD. d1 x l x d3



Ejector Pin with Locking Head (Anti-Rotating)

Code: **SDI**

The new generation of ejector pins with locking head allows the precise centring of individually contoured ejector or core pins in the mould. The centring ensures a precise mounting position within the mould.



Type-1

Material: 1.2516 WS
Head Hardness: 45 ± 2 HRC
Body Hardness: 60 ± 2 HRC
Heat Resistance: 220° max.
Tensile Resistance: $1300 \text{ N} / \text{mm}^2$

Type-2

Material: 1.2343 Plasma Nitrided + Oxidation Coated
Heat Resistance with Lubricating Grease: 1400° max.
Heat Resistance: 650° max. (without lub. grease)
Head Hardness: 45 ± 5 HRC

Body Hardness: 44 HRC
Oxidation Clad Body Hardness: 70 HRC
Tensile Resistance: $1450 \text{ N} / \text{mm}^2$

d1	l	d2	K	a	s
3.0	100	6	3	1.5	4.5
	125				
	160				
	200				
	250				
	315				
	400				
3.5	100	7	3	1.75	5.25
	125				
	160				
	200				
	250				
4.0	100	8	3	2	6
	125				
	160				
	200				
	250				
	315				
4.5	100	8	3	2.25	6.25
	125				
	160				
	200				
	250				
5.0	100	10	3	2.5	7.5
	125				
	160				
	200				
	250				
	315				
	400				
	500				

d1	l	d2	K	a	s
5.5	100	10	3	2.75	7.75
	125				
	160				
	200				
	250				
6.0	100	12	5	3	9
	125				
	160				
	200				
	250				
7.0	100	12	5	3.5	9.5
	125				
	160				
	200				
	250				
7.5	100	12	5	3.75	9.75
	125				
	160				
	200				
	250				
8	100	14	5	4	11
	125				
	160				
	200				
	250				
	315				
	400				
	500				

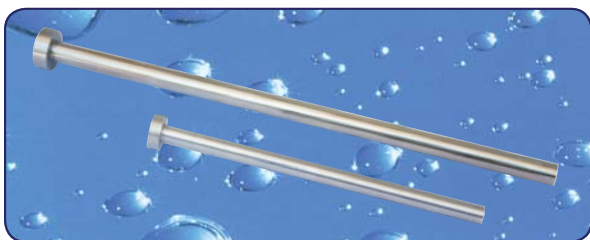
d1	l	d2	K	a	s
8.5	100	14	5	4.25	11.25
	125				
	160				
	200				
	250				
	315				
9	100	14	5	4.5	11.5
	125				
	160				
	200				
	250				
10	100	16	5	5	13
	125				
	160				
	200				
	250				
	315				
	400				
11	100	16	5	5.5	13.5
	125				
	160				
	200				
	250				
	315				
	400				
12	100	18	7	6	15
	125				
	160				
	200				
	250				
	315				
	400				
	500				

d1	l	d2	K	a	s
14	100	22	7	7	18
	125				
	160				
	200				
	250				
16	100	22	7	8	19
	125				
	160				
	200				
	250				
	315				
20	100	26	8	10	23
	125				
	160				
	200				
	250				
	315				
25	100	32	10	12.5	28.5
	125				
	160				
	200				
	250				
	315				
	400				

Note: Our custom-made production is available as per request.



Order: **SDI. d1 x l x Type**



Ejector Pin - Stainless / INOX

Code: SPI

ISO 6751, DIN 1530 Form: AH

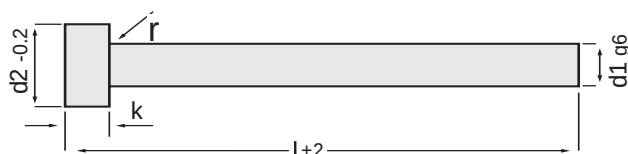
"SPI" Ejector Pins are compatible with medicine and food industry standards. The ejector pins has been produced to avoid corrosion problems. They are anti-magnetic products resistant to corrosion and acids for production in severe climate conditions in chemistry / medicine and food industry, also in hygienic places.

Material: 1.4125 INOX

Body Hardness: 56 + 2 HRC

Heat Resistance: 180° max.

Head Hardness: 45 ± 5 HRC



Code: SPI

d1	l	d2	k	r
4.5	100	8	2	0.3
	160			
	200			
	250			
5.0	100	10	2	0.3
	160			
	200			
	250			
5.5	100	10	2	0.3
	160			
	200			
	250			
6.0	100	12	5	0.5
	160			
	200			
	250			
8.0	100	14	5	0.5
	160			
	200			
	250			

d1	l	d2	k	r
2.0	100	4	2	0.2
	160			
	200			
	250			
2.5	100	5	2	0.3
	160			
	200			
	250			
3.0	100	6	2	0.3
	160			
	200			
	250			
3.5	100	7	2	0.3
	160			
	200			
	250			
4.0	100	8	2	0.3
	160			
	200			
	250			



Order:
SPI. d1 x l

Order Example:
SPI. 5 x 200



Ejector Pin - Copper Alloy

Code: SPPAV07

ISO 6751, DIN 1530 Form: AH

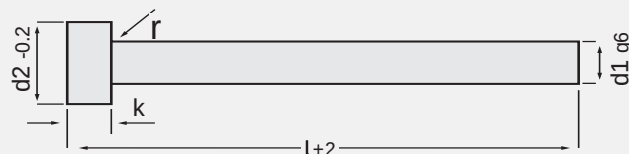
"SPPAV07" Ejector Pins are produced with added copper / Cbn (nickel boronite) into material during production. Considerably higher heat conductivity. The cooling for the desired area of mould is provided very quickly without deviating the targeted area. Due to thermal optimisation, very high quality product is obtained from moulds under optimum temperature. Also, due to thermal optimisation again, production time per part is shortened as 30%. By changing according to the material, the heat conductivity is x6 times higher than standard ejector pins. There is no need to use pin lubricating oil for Copper Ejector Pins. Even after cooling, it does not lose its conductivity, does not deform, it can be welded, soldered, ground and polished. However, coated products cannot be machining on the lathe or milling machine.

Material: Copper Alloy

Body Hardness: HRC min. 180 HB Head Hardness: HRC min. 180 HB

Tensile Resistance: ~650 N/mm² Heat Conductivity: ~200 W/mK

Surface Roughness: Ra <0.8 Micron



Code: SPPAV07

d1	l	d2	k	r
2.0	100	4	2	0.2
	160			
2.5	100	5	2	0.3
	160			
3.0	100	6	3	0.3
	160			
	250			
3.5	100	7	3	0.3
	160			
4.0	100	8	3	0.3
	160			
	250			
4.5	100	8	3	0.3
	160			
5.0	100	10	3	0.3
	160			
	250			
6.0	100	12	5	0.5
	160			
	250			
	315			

d1	l	d2	k	r
7.0	100	12	5	0.5
	160			
	250			
8.0	100	14	5	0.5
	160			
	250			
	315			
10	100	16	5	0.5
	160			
	250			
	315			
12	100	18	7	0.8
	160			
	250			
	315			
14	160	22	7	0.8
	250			
	400			
	500			
16	160	22	7	0.8
	250			
	400			
	500			



Order:
SPPAV07. d1 x l

Digital Laser Thermometer

Order: IR550

IR550 is used to measure the temperature of the injection moulds.



Infrared Thermometer

Features:

- * More stable performance in high precision with Heimann infrared probe.
- * Built-in laser pointer.
- * Illuminated LCD screen.
- * Data storage.
- * Max. / min. / average / DIF data storage.
- * High / low heat alarm function.
- * Alert function on pre-set temperature.
- * Set to zero function.
- * Unit symbol indication.
- * Low battery warning.
- * Automatically shut-off (to save battery).

Technical Specifications:

Measurement range:

-50°C ~ 550°C / -58°F ~ 1022°F

Accuracy (deviation):

±1.5°C or ±1.5%

Measurement unit selection: .. °C / °F

Distance / target ratio: D:S=12:1

Auto power off appr.:..... 6 Sec.

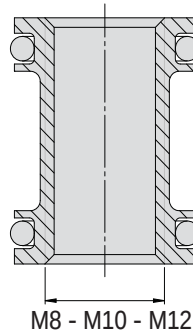
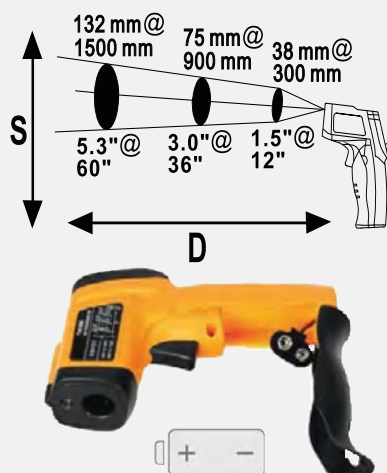
Measurement speed: ≤ 0.5 seconds

Adjustable ignition ratio:..... 0.1 ~ 1

LCD screen display:..... 3 digits

Power consumption: ≤ 50mW

Battery: 9V battery



Cooling Junction

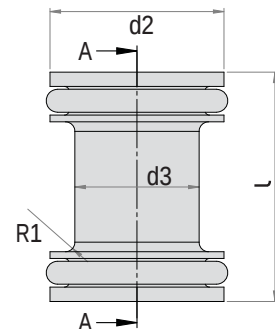
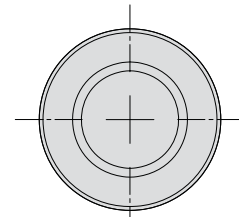
Code: GSK

It reduces number of cooling channels and improves your designs.

It is a system which will ensure circulation of water under a certain pressure and speed in water circulation channel arrangements and creating of entries / exits in mould cooling system.

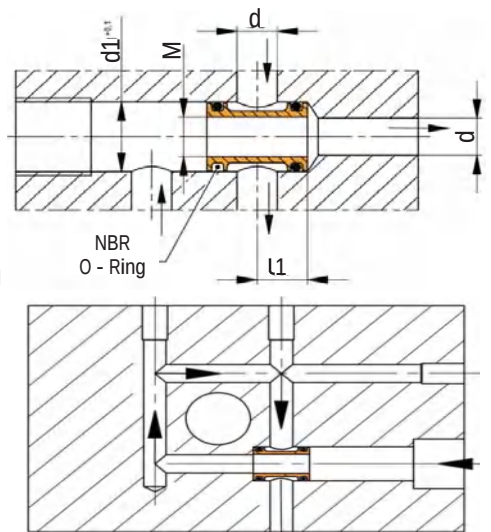
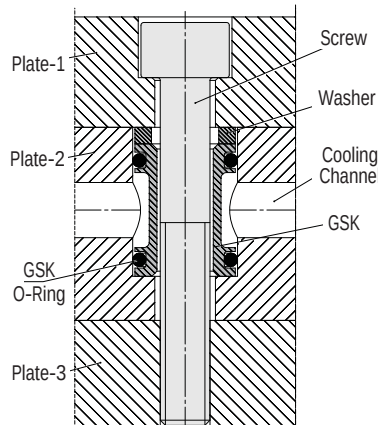
Features:

- It provides homogeneous temperature distribution.
 - It provides quick mounting and facilitates demounting.
 - It saves time and cost.
 - Minimum pressure loss in water flow rate.
 - No rust in cooling channels.
 - "NBR O-ring" is used (resistant to temperature).
- Please check O-rings in mountings and demountings.
Do not use damaged and torn / worn O-Rings.

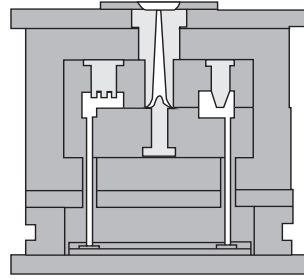


Order Code	d	d1 +0.1	d2 -0.05	d3 -0.05	l1	l -0.2	M	O-Ring
GSK06	06	11.5	11.1	9	10	20	M8	Ø8 x 1.5
GSK08	08	15	14.6	11			M10	Ø11 x 2
GSK10	10	18.5	18.2	13	12	24	M12	Ø13.9x2.4

Mounting Example



Material: Brass
O-Rings: NBR

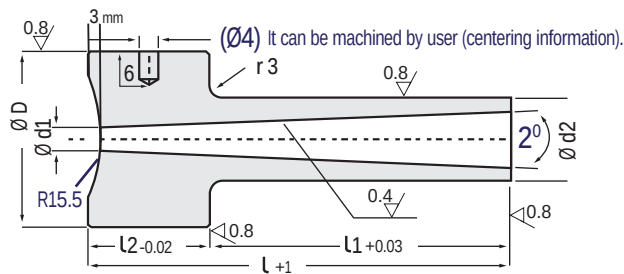


Sprue Bush for Metal Injection

High heat resistant / Hot-work tool steel / Cold runners.

Material: 1.2344 Hardness: 48-50 HRC Max. Temperature: 500°C

Code: MEY



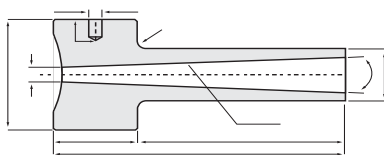
d2	l	d1	D	l1	l2
12	55	6.2	20	35	20
	65			45	
	75			55	
12	55	6.2	28	30	25
	65			40	
	75			50	
	85			60	
	95			70	
14	55	6.5	28	30	25
	65			40	
	75			50	
	85			60	
	95			70	



Order:
MEY. d2 x l x D

d2	l	d1	D	l1	l2
16	55	6.5	28	30	25
	65			40	
	75			50	
	85			60	
	95			70	
18	55	6.5	28	30	25
	65			40	
	75			50	
	85			60	
	95			70	
20	55	9.0	28	30	25
	65			40	
	75			50	
	85			60	
	95			70	

For your order of special dimensions, technical drawing can be used:



We produce Special Nozzles,
Runners & Sprue Bushes
as per request.



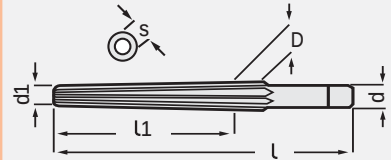
As per request / Custom-made orders.



Code: KYR

Taper Sprue Bush Reamer

HSS (Hand Reamer) Taper= 1:10



d1	D	d	l	l1	S
4	10	10	100	70	8
9	16	12.5	120	80	10
14	24	20	160	110	16
20	32	25	200	140	20



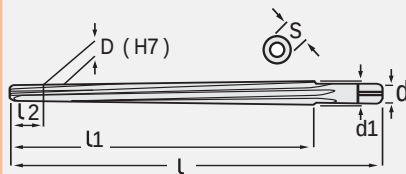
Order: KYR. d1 x D x l



Code: KPR

Taper Pin Reamer

DIN 9, HSS (Hand Reamer) Taper= 1:50

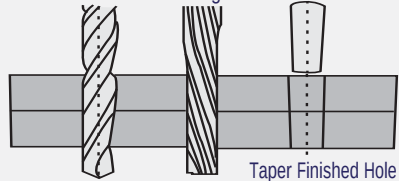


D	d1	d	l	l1	S
3	4.06	4	80	58	3.15
4	5.26	5	93	68	4
5	6.36	6.3	100	73	5
6	8.0	8	135	105	6.3
8	10.8	10	180	145	8
10	13.4	12.5	215	175	10
12	16	14	255	210	11.2
14	18	14	255	210	11.2
16	20.4	18	280	230	14

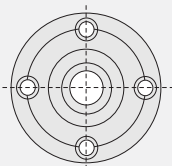
Taper
Pre-drill

Dimension
Reaming

Taper
Pin



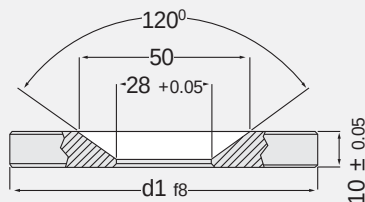
Order: KPR. D x l



Locating Ring

Code: **DYE**

Material: CK 45 (Ground)



Order	d1	Order	d1
DYE.60	60	DYE.125	125
DYE.70	70	DYE.150	150
DYE.80	80	DYE.175	175
DYE.90	90	DYE.200	200
DYE.100	100		

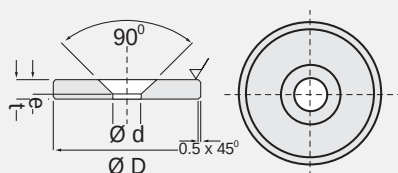
Note: Fitting holes are opened as per request.



Locating Ring

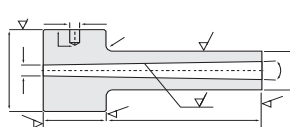
Code: **KYF**

Material: CK 45 (Ground)

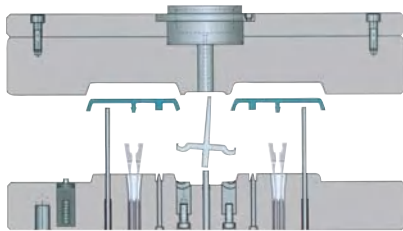


Order	Ø D	Ø d	t	e
KYF.60	60	28	15	8
KYF.80	80	28	15	8
KYF.100	100	28	20	10
KYF.125	125	28	20	10
KYF.150	150	28	20	10
KYF.175	175	28	20	10
KYF.200	200	28	20	10

Note: Fitting holes are opened as per request.



As per request / Custom-made orders.

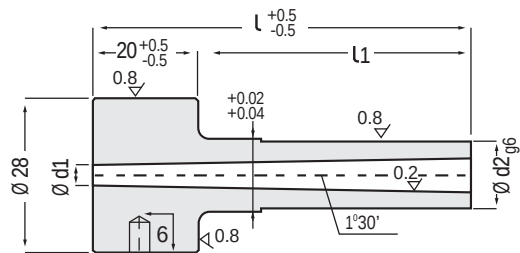


Sprue Bush - DIN 16752

Code: **EYM**

Material: 1.2826 Hardness: 50 - 55 HRC

Two Different Angle Options: Standard Angle; d1 3.3 : angle 1.5° / Wide Angle; d1 4.3 : angle 2°



Code: **EYM**

d2	l	d1	l1
12	50		30
	65		45
	75		55
	85		65
	95	3.3	75
	105		85
	115	4.3	95
	125		105
	135		115
	150		130
	200		180
14	50		30
	65		45
	75		55
	85		65
	95	3.3	75
	105		85
	115	4.3	95
	125		105
	135		115
	150		130
	200		180
16	50		30
	65		45
	75		55
	85		65
	95	3.3	75
	105		85
	115	4.3	95
	125		105
	135		115
	150		130
	200		180
18	50		30
	65		45
	75		55
	85		65
	95	3.3	75
	105		85
	115	4.3	95
	125		105
	135		115
	150		130
	200		180

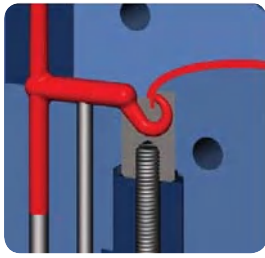


Order:
EYM. d2 x l x d1



For Sprue Adjuster, please refer to
Code: SA product

Tunnel Gate Inserts



Benefits of Exaflow Tunnel Gate Inserts:

- Perfect surface quality and concealed gate marks through tunnel gating, even on rear moulding wall thanks to innovative Ringelflow technology.
- Variable gate diameters from 0,5 to 3,5 mm.
- Clearly defined separating edge for precise degating.
- Save time and cost through fast & easy interchangeability.
- High wear resistance.
- Compact dimensions due to single-part design.
- Enhances moulding process reliability.
- Unsurpassed balance in multiple gating applications.



GTR



GTE



GTM - Blank Gate



GTK



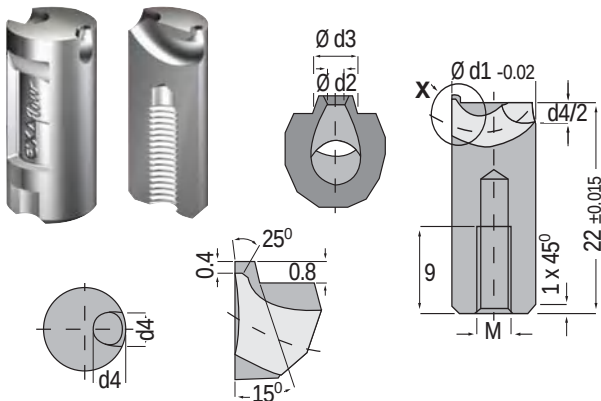
GRF-1



GMK



GXX



Standardflow - Gate Insert

Code: **GTR**

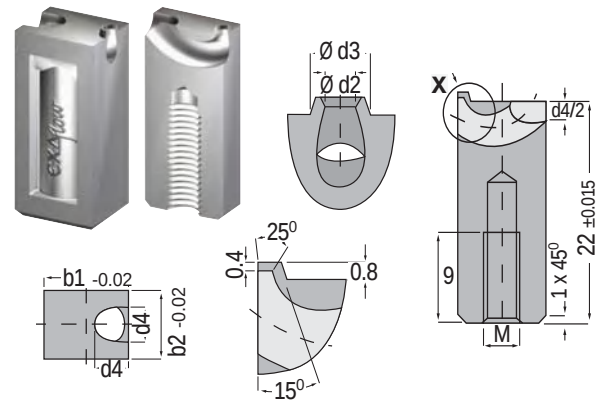
For tunnel gating of small to medium-sized mouldings along a flat separating plane. The projecting calotte ensures concealed degating.

- Available gate diameters from 0,8 to 2,4 mm.
- Usable for all thermoplastics including fillers up to 50 % glass fibre.

Order Code	d1	d2	d3	d4	M	Viscosity - Grams		
						High	Regular	Low
GTR10-08	10	0.8	2.1	4	4	8	7	5
GTR10-10		1.0	2.3			14	12	9
GTR10-12		1.2	2.5			20	16	10
GTR10-14		1.4	2.7			30	23	15
GTR10-16		1.6	2.9			40	30	20

Order Code	d1	d2	d3	d4	M	Viscosity - Grams		
						High	Regular	Low
GTR12-08	12	0.8	2.1	5	5	8	7	5
GTR12-10		1.0	2.3			14	12	9
GTR12-12		1.2	2.5			20	16	10
GTR12-14		1.4	2.7			30	23	15
GTR12-16		1.6	2.9			40	30	20
GTR12-18		1.8	3.1			54	40	27
GTR12-20		2.0	3.3			68	52	34

Order Code	d1	d2	d3	d4	M	Viscosity - Grams		
						High	Regular	Low
GTR14-12	14	1.2	2.5	6	6	20	16	10
GTR14-14		1.4	2.7			30	23	15
GTR14-16		1.6	2.9			40	30	20
GTR14-18		1.8	3.1			54	40	27
GTR14-20		2.0	3.3			68	52	34
GTR14-22		2.2	3.5			85	65	43
GTR14-24		2.4	3.7			100	80	50



Standardflow - Gate Insert

Code: **GTE**

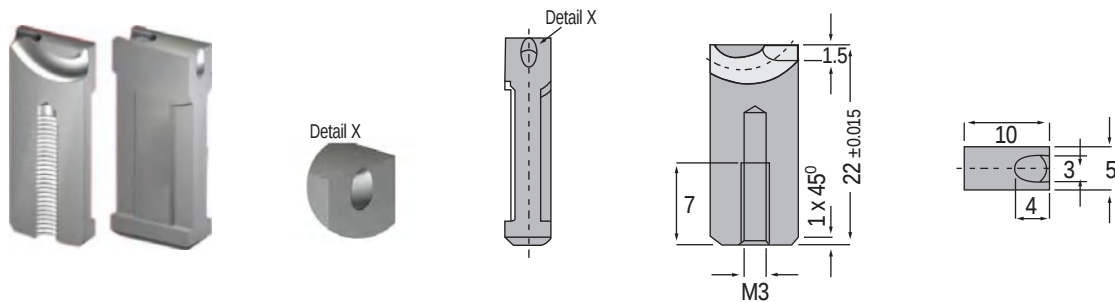
For tunnel gating of small to medium-sized mouldings along a flat separating plane. The projecting calotte ensures concealed degating.

- Available gate diameters from 0,8 to 2,4 mm.
- Usable for all thermoplastics including fillers up to 50 % glass fibre.

Order Code	b1	b2	d2	d3	d4	M	Viscosity - Grams		
							High	Regular	Low
GTE10-08	10	8	0.8	2.1	4	4	8	7	5
GTE10-10			1.0	2.3			14	12	9
GTE10-12			1.2	2.5			20	16	10
GTE10-14			1.4	2.7			30	23	15
GTE10-16			1.6	2.9			40	30	20

Order Code	b1	b2	d2	d3	d4	M	Viscosity - Grams		
							High	Regular	Low
GTE12-08	12	10	0.8	2.1	5	5	8	7	5
GTE12-10			1.0	2.3			14	12	9
GTE12-12			1.2	2.5			20	16	10
GTE12-14			1.4	2.7			30	23	15
GTE12-16			1.6	2.9			40	30	20
GTE12-18			1.8	3.1			54	40	27
GTE12-20			2.0	3.3			68	52	34

Order Code	b1	b2	d2	d3	d4	M	Viscosity - Grams		
							High	Regular	Low
GTE14-12	14	12	1.2	2.5	6	6	20	16	10
GTE14-14			1.4	2.7			30	23	15
GTE14-16			1.6	2.9			40	30	20
GTE14-18			1.8	3.1			54	40	27
GTE14-20			2.0	3.3			68	52	34
GTE14-22			2.2	3.5			85	65	43
GTE14-24			2.4	3.7			100	80	50



Miniflow - Blank Gate Insert

Order Code: **GTM**

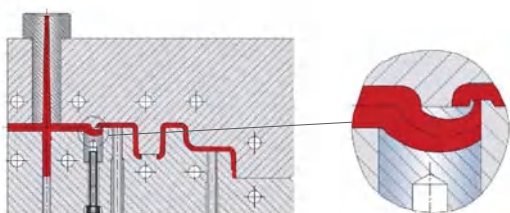
For tunnel gating of small, thin-walled mouldings.

This gate insert has a closed gate diameter and is therefore suitable for the use of low article weight and for very thin-walled mouldings.

- The closed surface enables the creation of individual gate diameter.
- Usable for all thermoplastics including fillers up to 50 % glass fibre.

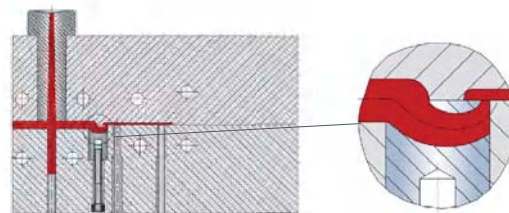
Installation Examples "GTR - GTE - GTM"

Standard



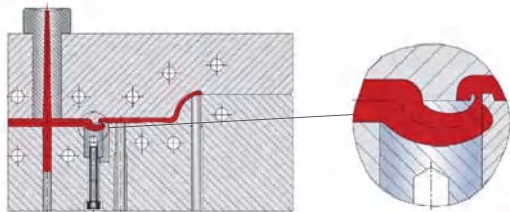
The front of the gate insert is sealed off by the mould cavity.
- to reduce pressure loss. / - to avoid jetting.

Thin-walled Parts Miniflow



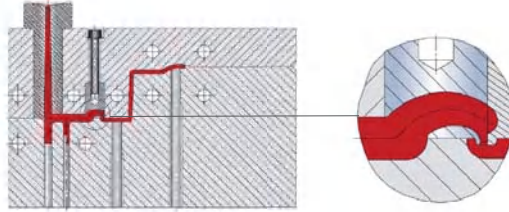
Designed for particularly thin-walled Parts (0,5 to 1,2 mm wall thickness). The tunnel gate insert has no calotte. Gating will occur flush with the moulding. - The gating point will be flush with, or slightly projecting from, the bottom surface depending on plastic used.

Flat Parts



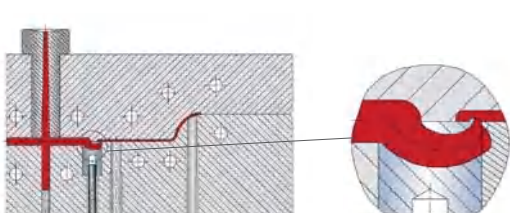
The front of the gate insert is fully sealed off by a companion calotte (baffle) on the cavity or by an auxiliary insert.
- to reduce pressure loss. / - to minimize shear.

Nozzle-side Installation



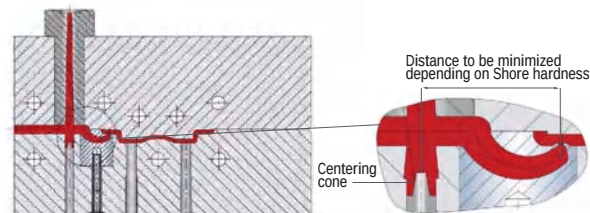
The gate insert is screwed into the nozzle side of the mould. The front of the gate insert is sealed off by the cavity.
- to reduce pressure loss. / - to minimize shear.

Thin-walled Parts Standardflow



The calotte height can be reduced to a minimum of 0,4 mm. This is the height defined by the cutting edge. The front of the gate insert is sealed off by the cavity to the height of the parting line.
- to reduce pressure loss. / - to minimize shear.

Thermoplastic Elastomers

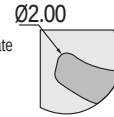
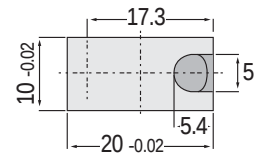
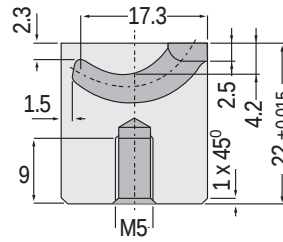


When processing thermoplastic elastomers, please observe the following recommendations to ensure reliable demoulding:

- The distance "L" should decrease with the Shore hardness value.
- A centering cone should be provided. / - This application instruction applies to elastomers in the medium Shore hardness range up to 100 Shore A.



Order Code: **GTK**



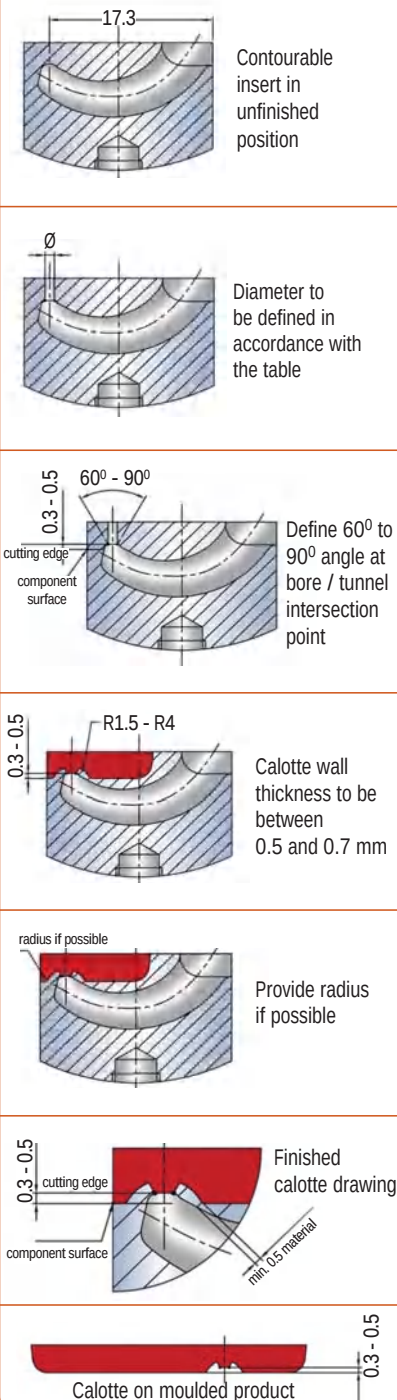
The spherical geometry in the gate area permits gating on inclined or curved surfaces.

Konturflow - Contourable Gate Insert

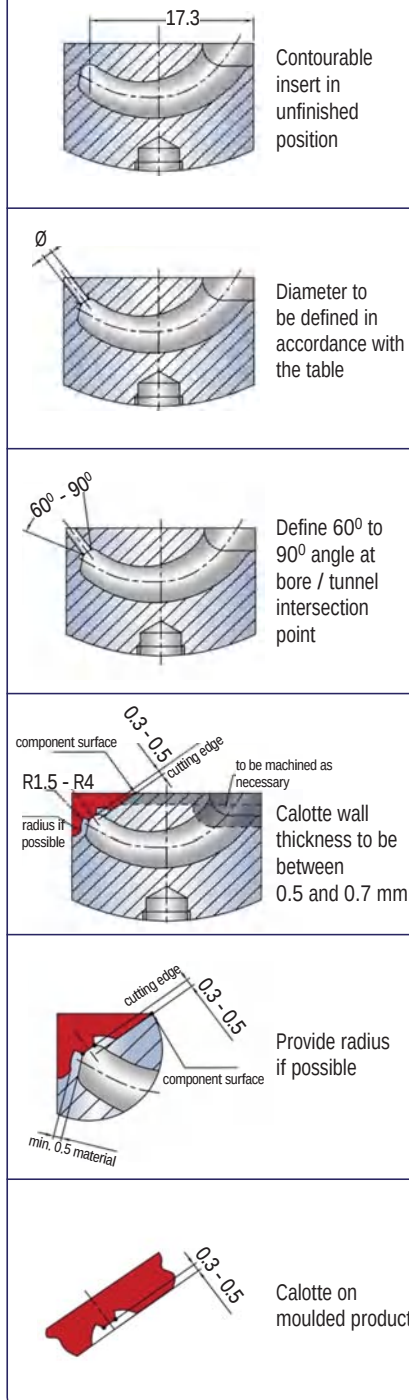
For tunnel gating of small to medium sized mouldings contoured in the gate area.

- Maximum gate diameter (pointed tunnel) up to 1,7 mm.
- Contourable up to 3 mm depth.
- Usable for all thermoplastics including fillers up to 50 % glass fibre.

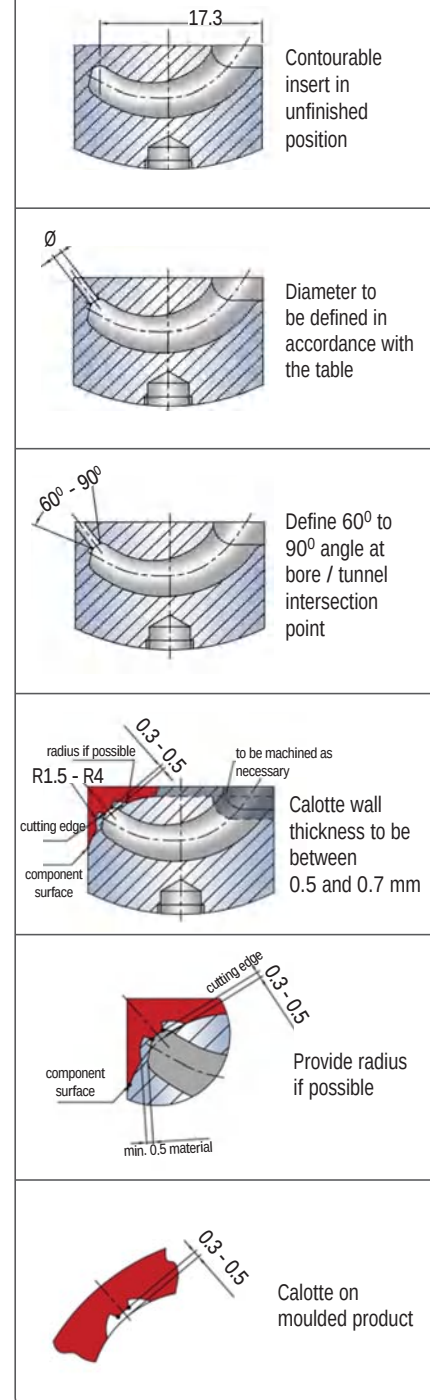
Calotte Design: Standard



Calotte Design: Inclined Surface



Calotte Design: Curved Surface

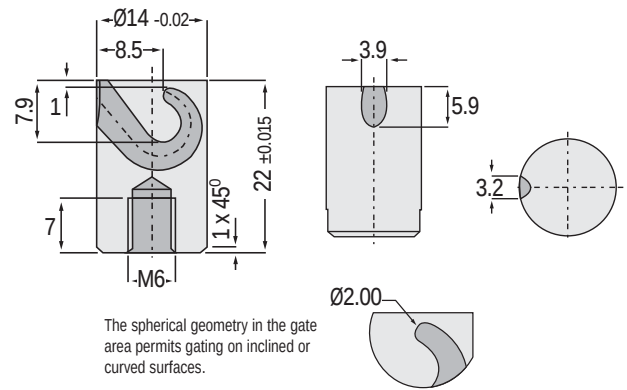




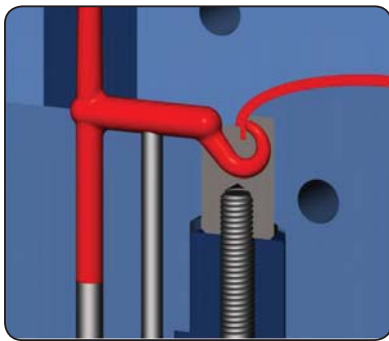
Order Code: **GRF-1**

Ringelflow - Contourable Gate Insert

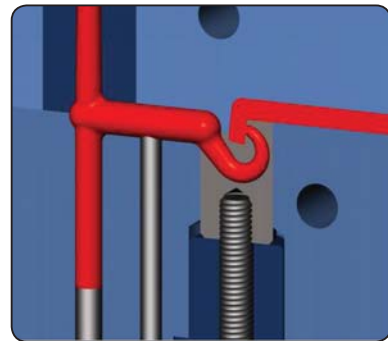
For rear surface gating of small to medium sized mouldings.
Supports gate diameters up to 1,8 mm and shot weights up to 100 g per insert.
Suitable for all common non-reinforced plastic types.



Installation Examples "GRF-1"



For best operating results the Ringelflow insert requires one central ejector and one supporting ejector. Please ensure that all sharp edges in the runner are thoroughly rounded. For reliable demoulding, the diameter of the runner must exceed that of the curved tunnel.



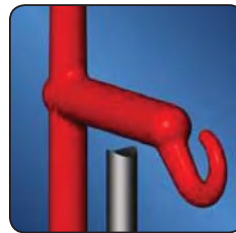
For best operating results the Ringelflow insert requires one central ejector and one supporting ejector. Please ensure that all sharp edges in the runner are thoroughly rounded. For reliable demoulding, the diameter of the runner must exceed that of the curved tunnel.



Contouring of a supporting ejector



Optimum gate geometry, with edges rounded



Contouring of a supporting ejector



Optimum gate geometry, with edges rounded

Ringelflow "GRF-1" Benefits

- * Optimum solution to prevent jetting.
- * No gate marks on visible external surfaces and bottom wall.
- * Ideal for fully rounded edges.
Example; toys, mouldings with sealing edges and joints.
- * Permits internal gating of 2-component mouldings.



Technical Support for Tunnel Gate Inserts

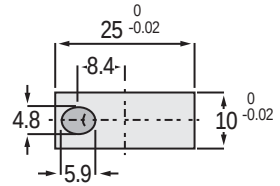
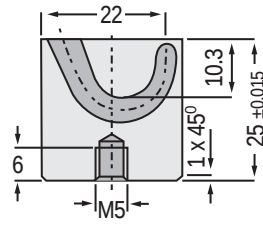
You can request the "Tunnel Gate Inserts Information Form" from us. The form filled by you will be examined by our engineers and the most suitable method will be produced for you.

* * *

We are supporting you with customizable offers about technical and costing issues of your projects and we are producing the best solutions.

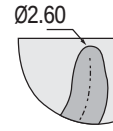


Code: **GMK**



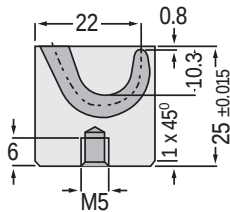
Midiflow - Contourable Gate Insert

For bottom (submarine) gating of medium components. Supports contouring to a depth of 8 mm. Suitable for gate diameters up to 2 mm and shot weights up to 200 g per insert. Suitable for all common plastics, including reinforced types.

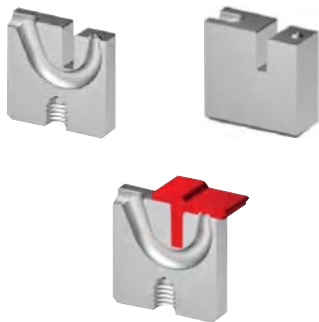


The spherical geometry in the gate area permits gating on inclined or curved surfaces.

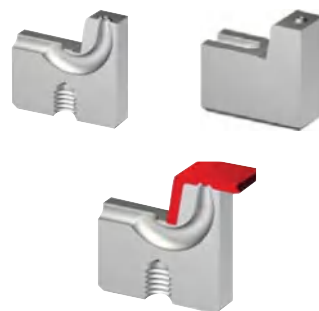
Order Code: **GMK-1**



Installation Example: Below the parting line



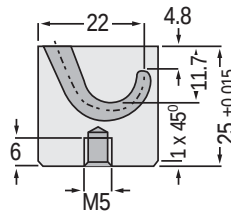
Installation Example: Above the parting line



Midiflow "GMK-1" Benefits

- Gating point may be located up to 8 mm above the parting line.
- Permits gating immediately behind projecting ribs.
- Gate may be remote from moulding wall.
- The spherical geometry in the gate area permits gating on inclined or curved surfaces.

Order Code: **GMK-2**



Installation Example: Below the parting line



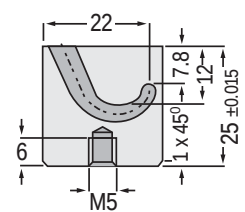
Installation Example: Above the parting line



Midiflow "GMK-2" Benefits

- Gating point may be located up to 5 mm below or above the parting line.
- Permits gating immediately behind projecting ribs.
- Gate may be remote from moulding wall.
- The spherical geometry in the gate area permits gating on inclined or curved surfaces.

Order Code: **GMK-3**



Installation Example: Below the parting line



Installation Example: Above the parting line

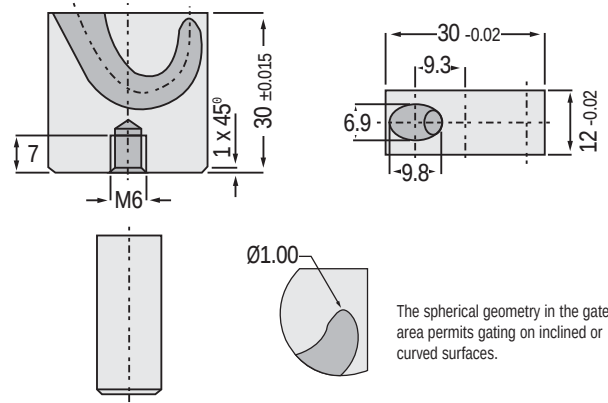


Midiflow "GMK-3" Benefits

- Gating point may be located up to 8 mm below the parting line.
- Permits gating immediately behind projecting ribs.
- Gate may be remote from moulding wall.
- The spherical geometry in the gate area permits gating on inclined or curved surfaces.



Code: GXX

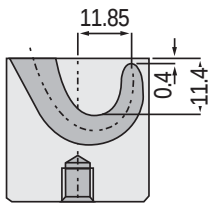


Maxiflow - Contourable Gate Insert

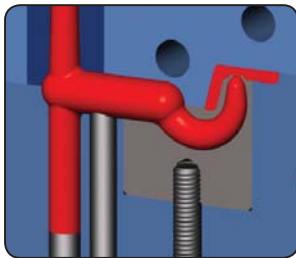
For bottom (submarine) gating of medium to large components.

Supports contouring to a depth of 11,5 mm. Suitable for gate diameters up to 3,5 mm and shot weights up to 1,200 g per insert. Suitable for all common plastics, including reinforced types.

Order Code: GXX-1



Installation Example



For best operating results the Maxiflow insert requires one central ejector and one supporting ejector. Please ensure that all sharp edges in the runner are thoroughly rounded. For reliable demoulding, the diameter of the runner must exceed that of the curved tunnel.



Contouring of a supporting ejector

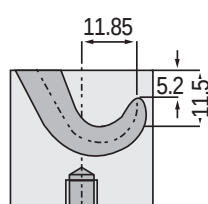


Optimum gate geometry, with edges rounded

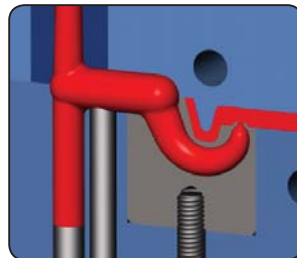
Maxiflow "GXX-1" Benefits

- Gating point may be located up to 10 mm above the parting line.
- Permits gating immediately behind projecting ribs.
- Gate may be remote from moulding wall.
- The spherical geometry in the gate area permits gating on inclined or curved surfaces.

Order Code: GXX-2



Installation Example



For best operating results the Maxiflow insert requires one central ejector and one supporting ejector. Please ensure that all sharp edges in the runner are thoroughly rounded. For reliable demoulding, the diameter of the runner must exceed that of the curved tunnel.



Contouring of a supporting ejector

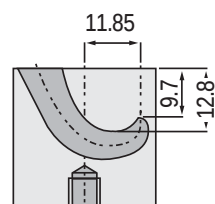


Optimum gate geometry, with edges rounded

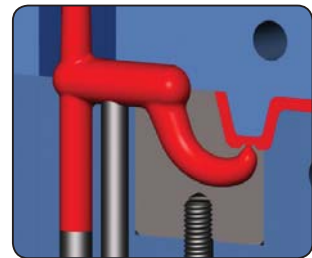
Maxiflow "GXX-2" Benefits

- Gating point may be located up to 5 mm above or below the parting line.
- Gate may be remote from moulding wall.
- The spherical geometry in the gate area permits gating on inclined or curved surfaces.

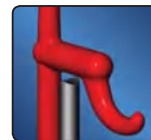
Order Code: GXX-3



Installation Example



For best operating results the Maxiflow insert requires one central ejector and one supporting ejector. Please ensure that all sharp edges in the runner are thoroughly rounded. For reliable demoulding, the diameter of the runner must exceed that of the curved tunnel.



Contouring of a supporting ejector



Optimum gate geometry, with edges rounded

Maxiflow "GXX-3" Benefits

- Gating point may be located up to 10 mm below the parting line.
- Gate may be remote from moulding wall.
- The spherical geometry in the gate area permits gating on inclined or curved surfaces.

Installation Dimensions

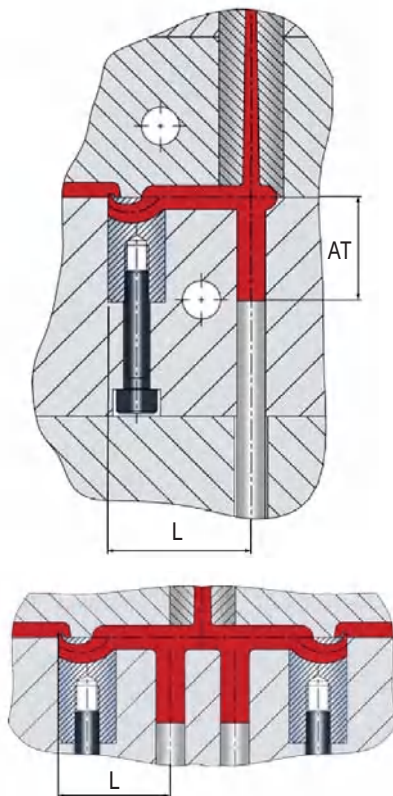
GTM - GTR / GTE - GTK

Plastic Group	GTM	GTR/GTE	GTK
HD-PE, LD-PE PET, PP, PA PC, PVC. (L)	>15	>20	>25
Runner design	round	round	round
Ejector depth (AT)	>11	>16	>20

ABS, M ABS, ASA PS, PC-ABS POM, PBT. (L)	>20	>25	>30
Runner design	round	round	round
Ejector depth (AT)	>14	>20	>24

Elastomere TPE TPU, TPP, TPA. (L)	>15	>15	>20
Runner design	arbitrary	arbitrary	arbitrary
Ejector depth (AT)	>11	>11	>16

Brittle Plastics	>25	>30	>40
Runner design	half-round	half-round	half-round
Ejector depth (AT)	>18	>24	>32



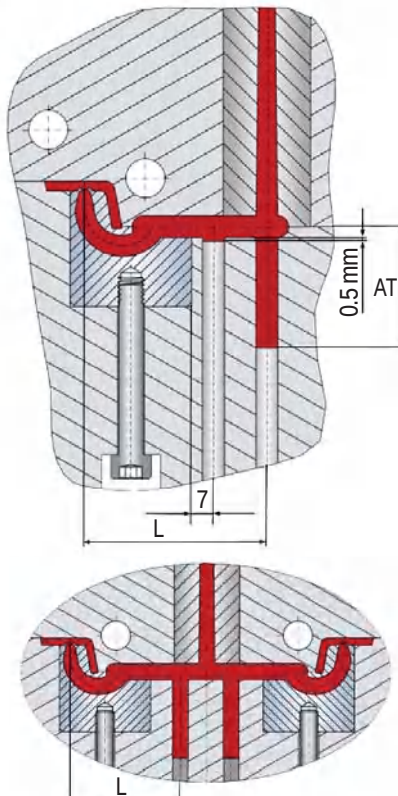
GXK - GMK

Plastic Group	GXK	GMK
HD-PE, LD-PE PET, PP, PA PC, PVC. (L)	>35	>30
Runner design	round	round
Ejector depth (AT)	>35	>30

ABS, M ABS, ASA PS, PC-ABS POM, PBT. (L)	>40	>35
Runner design	round	round
Ejector depth (AT)	>40	>35

Elastomere TPE TPU, TPP, TPA. (L)	>30	>25
Runner design	arbitrary	arbitrary
Ejector depth (AT)	>30	>16

Brittle Plastics	on request	on request
Runner design	half-round	half-round
Ejector depth (AT)	on request	on request



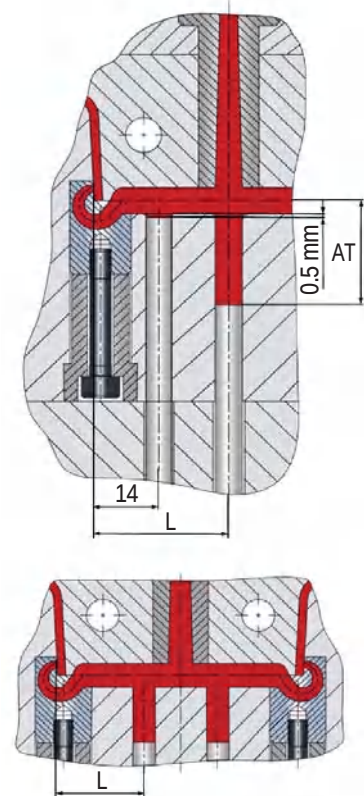
GRF-1

Plastic Group	GRF-1
HD-PE, LD-PE PET, PP, PA PC, PVC. (L)	>30
Runner design	round
Ejector depth (AT)	>30

ABS, M ABS, ASA PS, PC-ABS POM, PBT. (L)	>30
Runner design	round
Ejector depth (AT)	>30

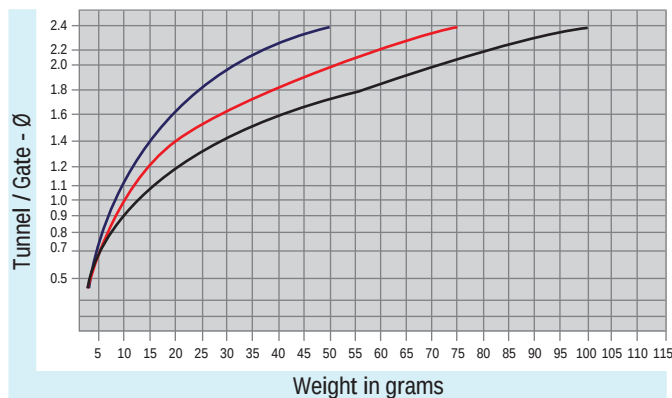
Elastomere TPE TPU, TPP, TPA. (L)	>20
Runner design	arbitrary
Ejector depth (AT)	>20

Brittle Plastics	on request
Runner design	half-round
Ejector depth (AT)	on request



Recommended distances "L" from the injection point to the sprue ejector are given above for the various material groups.
The distance "AT" describes the correlated ejector depth.

Table of Viscosity "GTR - GTE - GTM"

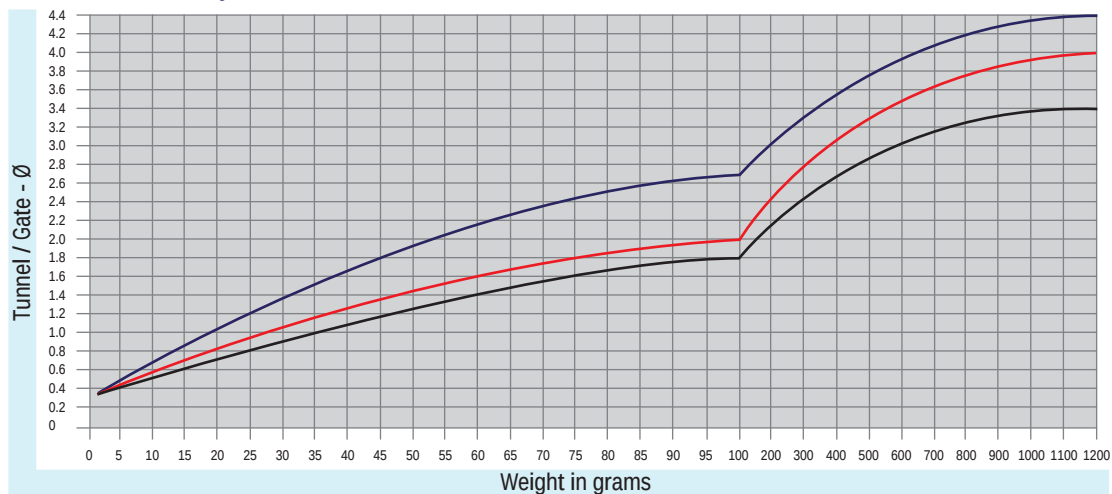


Low Viscosity: PA, PE, PC, PP, PET, PVC, PS, SB, TPA, TPE, TPU

Medium Viscosity: ABS, ASA, PS, PC-ABS, PBT, SAN

High Viscosity: PC, PPS, PSU, POM-H, PES, PPO, PEI, PC-ABS, PC-PBT, PMMA, PVC

Table of Viscosity "GTK - GMK - GXX - GRF"



Frequently asked questions and answers about Tunnel Gate Inserts

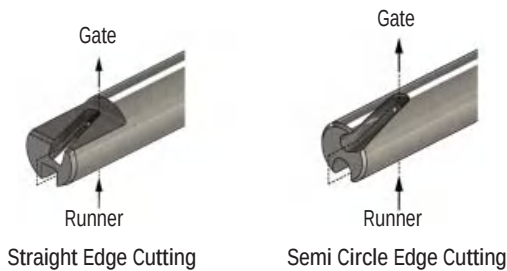
- + What's the ideal distance between injection point and ejector ? - For the choice of the distance (L) we provide you with a spreadsheet in the support section. You can read about the distances depending on the type of Exaflow gate inserts and materials there. In special cases please get in touch with our application engineers.
- + How can you prevent open jet formations ? - An open jet formation can be prevented by following parameters: * Use of a higher gate insert diameter
- * Install dead-end recess * Graduated injection profile (reduce injection speed) * Increase mass temperature * Increase screw back pressure
- * Increase tool temperature around the area of the injection point.
- + Can Exaflow gate inserts be used for mouldings with a wall thickness below 1,2mm ? - For the production of mouldings with a thin wall thickness we recommend our Miniflow (without head). If a 100 % sunk gate must be warranted it's possible to grind down the head of our standard Exaflow up to 0.4 mm (please attend our application examples).
- + Can terpolymers be processed (PEI) ? - Terpolymers can be processed without any problems, however the gate diameter and the distance between gate and ejector should be designed as big as possible.
- + Can Liquid crystal polymers be processed (LCP) ? - LCP's can be processed without any problems, however the cold runner cross section and the gate cross section should be as small as possible since the material "lives by the shearing".
- + How are the gating properties for polyolefins (PE,PP) ? - Polyolefins tend to thread forming (during the demoulding process), thus during the injection moulding of flat components an impact wall around the area of the head should be installed (please attend our application examples).
- + What does the dead-end recess do ? - The dead-end recess has several influences on the injection process: * Decrease of shearing
- * Reduction of pressure loss (up to 33 % in the injection region) * Improves the laminar flow * Prevents open jet formations due to improved laminar flow and the flow front gets an unsymmetrical velocity profile which results in a spin that makes the flow front attach to the interior wall of the moulding during the ejection process and brakes the following molten mass.
- + What is the right cross-section of the gate ? - The cross-section of the gate depends on the processed materials, shot weight and the proportion of flow path and wall thickness. (please look at the spreadsheet in our support section). The recommended distance between gate and ejection can't be adhered. In general, Exaflow recommends a full-round cold runner cross-section. If the recommended distance can't be adhered we recommend a half-round cold runner cross-section to ensure the necessary deflection.
- + Is a trapezoidal shaped cold runner distributor possible ? - A trapezoidal shaped cold runner distributor is possible in general, but due to the result of its geometry it's the most constrained variant of a cold runner. For an unproblematic demoulding process a long distance between gate and ejector should be picked.
- + How can you prevent the rough spot around the gate area ? - Problems usually occur with high-viscosity materials (PC, PMMA, ABS). Solution:
- * Graduated injection profile (fills the gate region slowly) * Increase cylinder temperature, increase back pressure * Increase tool temperature
- * Increase gate diameter * Inject the moulded part at a different spot.
- + Is it possible to process thermoplastic elastomers? (TPU, TPE, TPA...) - Processing thermoplastic elastomers is possible without any problems. However you should focus, in coherence with the shore hardness, the design of the cold runner connection. You can find assistance for this in the support section.

NEW

In-mould Edge Gate Cutting Components (automation systems)



- The Cutting Pin provides automation in cutting edge gates.
- The large gate enables a reduction in injection pressure and improves packing and part quality.
- The trouble-free runner is ejected from below.
- Drawings and 3D CAD Datas can be downloaded from our website



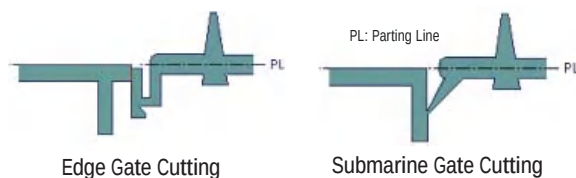
Cutting Pins are particularly effective and reliable in cutting hard engineering materials filled or unfilled as well as commodity plastics.

The Main Benefits:

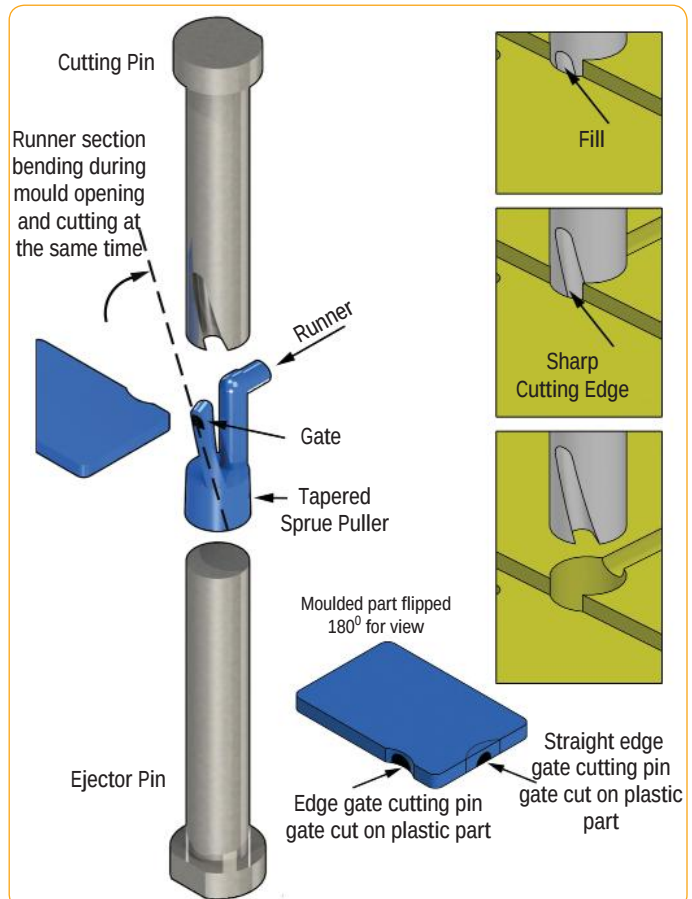
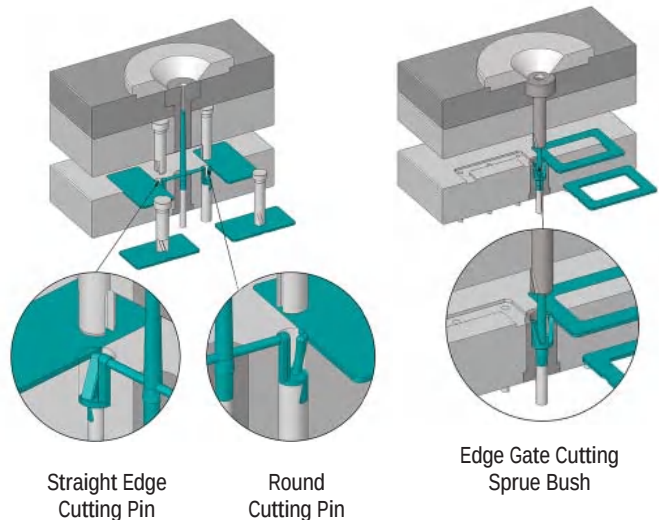
- + A gentle cutting so effective for hard engineering materials.
- + Large gate improves packing and the quality of the part.
- + Reliable ejection of cold runner system.
- + Simple and interchangeable.

The main reason for this claim is that the cutting action of the pins is spread along the full length of the cutting edge as well as the cutting action is like slicing with a knife. The cut is performed against the plastic part so there is no wear on the mould metal part.

Cutting Pins are designed to feed the edge of the plastic part positioned at the parting line of the mould.

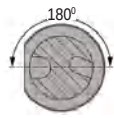


Submarine gates are designed to feed the part further up/down on the side wall of the plastic part. With a submarine gate the cutting action is hard, and the full cutting happens inside the size of the gate and it is cutting against the metal part of the mould.





P10.50.1 &
P12.60.1:



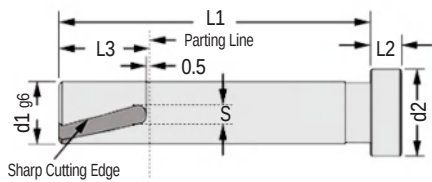
P12.60.2.90:



P10.50.2.120 &
P12.60.2.120:



In-mould Edge Gate Cutting Pin

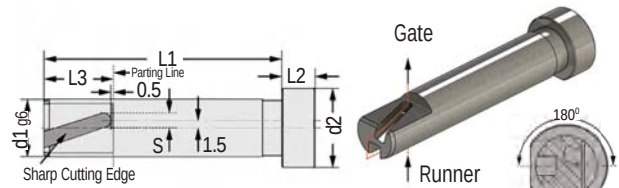


Material: 1.3343 Hardness: 62 HRC

Order Code	d1 mm	d2 mm	L1 mm	L2 mm	L3 mm	S mm	Gates
P10.50.1	10	13.7	50	5	14.5	3	1 / 180°
P10.50.2.120	10	13.7	50	5			2 / 120°
P12.60.1	12	16.5	60	7	14.5	3	1 / 180°
P12.60.2.90	12	16.5	60	7			2 / 90°
P12.60.2.120	12	16.5	60	7			2 / 120°

* Optionally, the length L1 can be custom-made.

In-mould Edge Gate Straight Cutting Pin

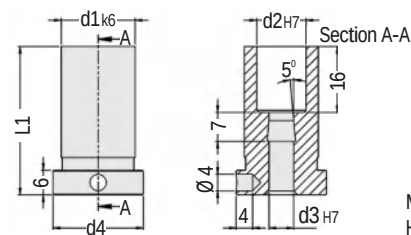


Material: 1.3343 Hardness: 62 HRC

Order Code	d1 mm	d2 mm	L1 mm	L2 mm	L3 mm	S mm	Gates
SE-P.12.60.1	12	16.5	60	7	14.5	3	1 / 180°

* Optionally, the length L1 can be custom-made.

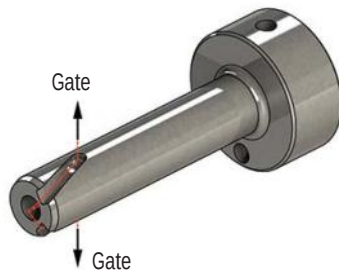
Spur Puller



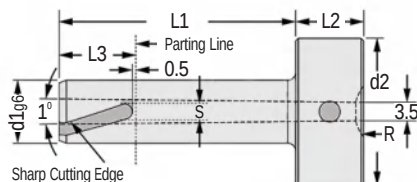
Material: 1.2510
Hardness: 58-60 HRC

Order Code	d1 mm	d2 mm	d3 mm	d4 mm	L1 mm
SP16.36	16	10	6	20	36
SP18.36	18	12		22	

* Optionally, the length L1 can be custom-made.



In-mould Edge Gate Cutting Sprue Bush

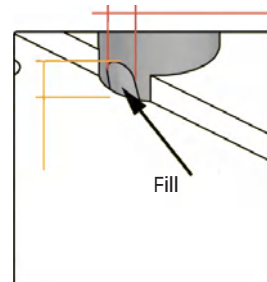
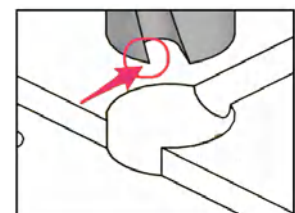
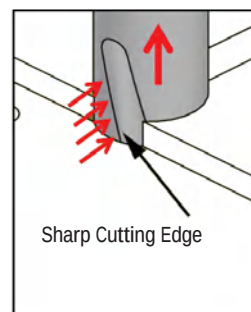


Material: 1.2826 Hardness: 54 HRC

Order Code	d1 mm	d2 mm	L1 mm	L2 mm	L3 mm	S mm	R
SB12.56.2.RF	12	28	56	13	14.5	3	Flat
SB12.76.2.RF			76				Flat
SB12.56.2.R155			56				15.5
SB12.76.2.R155			76				15.5

* Optionally, the length L1 can be custom-made.

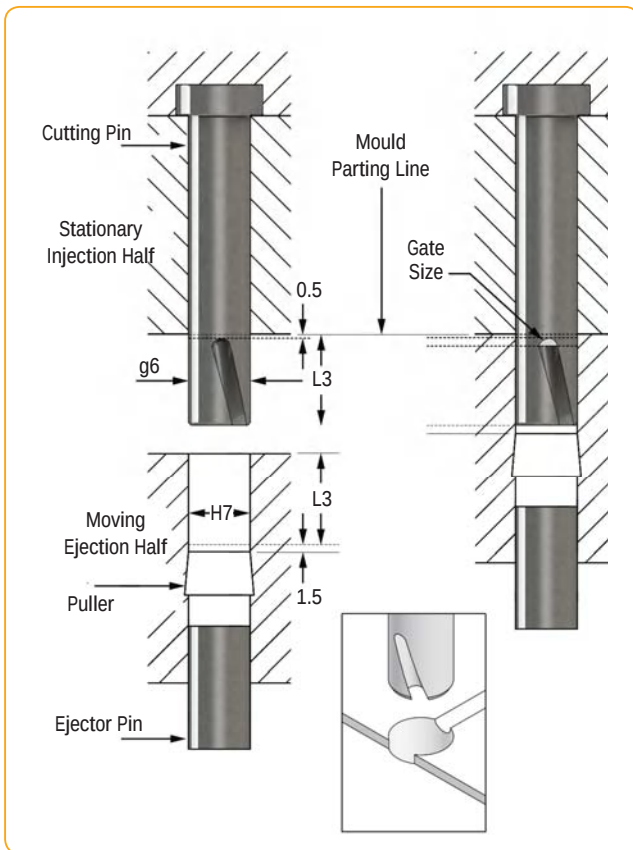
The Cutting Pins cut along the full length of the cutting edge.



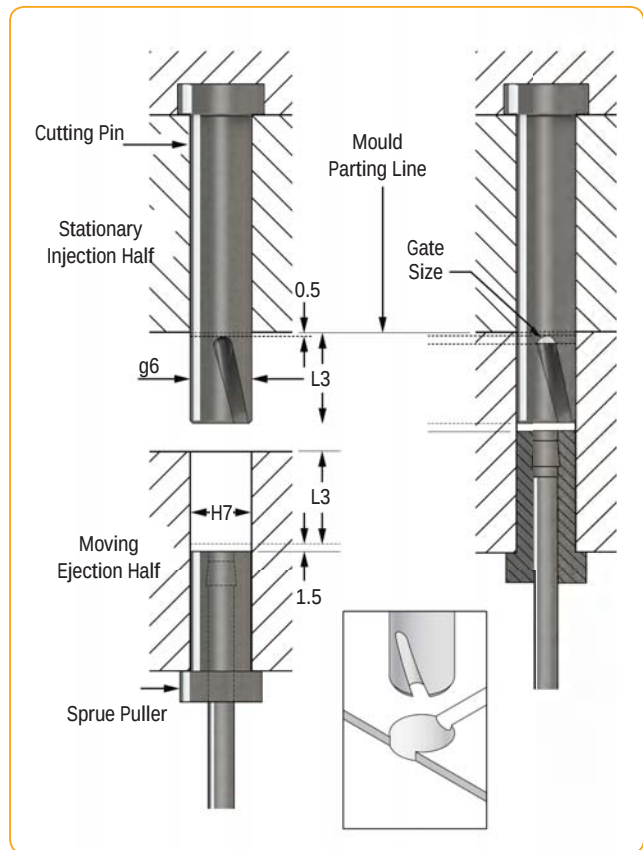
The Cutting Pins also enable a large gate opening to improve the mould fill and packing, keeping the gate open for the longest possible time and so improving the quality of the plastic part.

The Cutting Pins ejecting arrangement is reliable and does not leave the possibility of plastic remnants sticking to the mould.
The installation arrangement of the cutting pin in the injection side creates a cold well for plastic material.

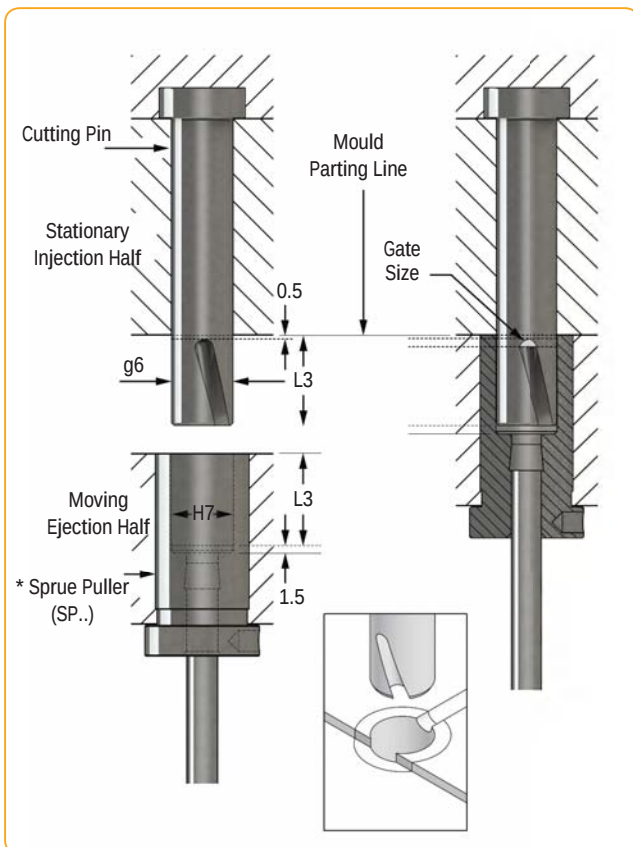
Cutting Pin / Installation Info - 1:



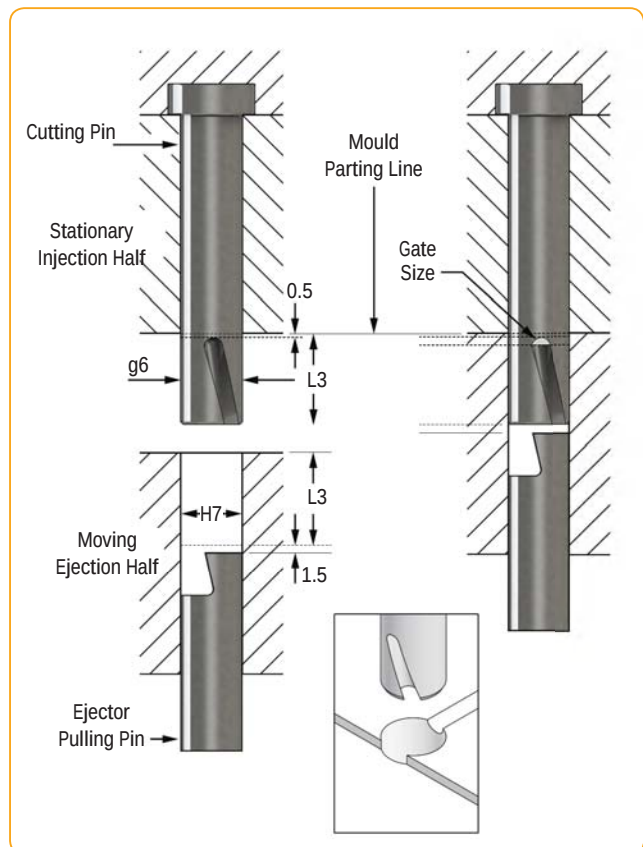
Cutting Pin / Installation Info - 2:



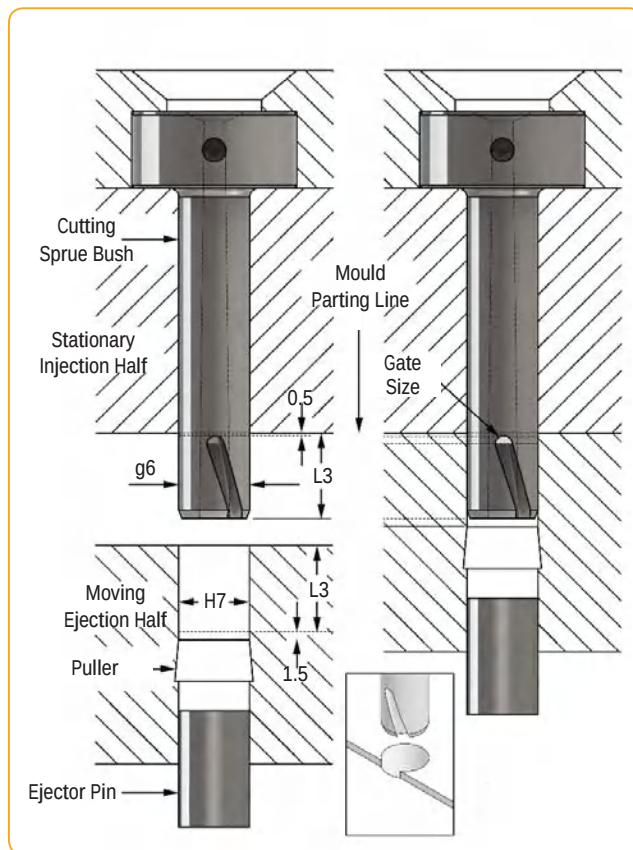
Cutting Pin / Installation Info - 3:



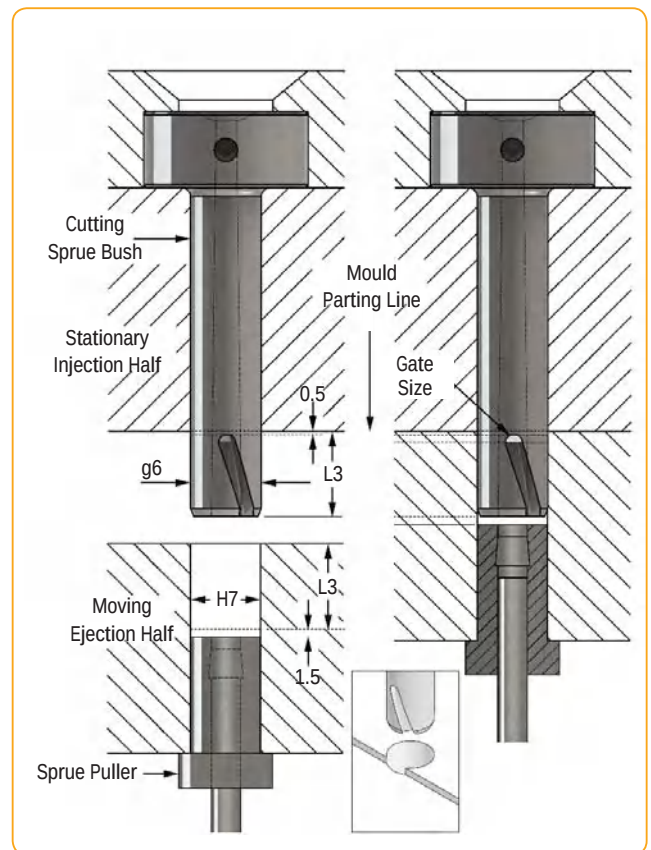
Cutting Pin / Installation Info - 4:



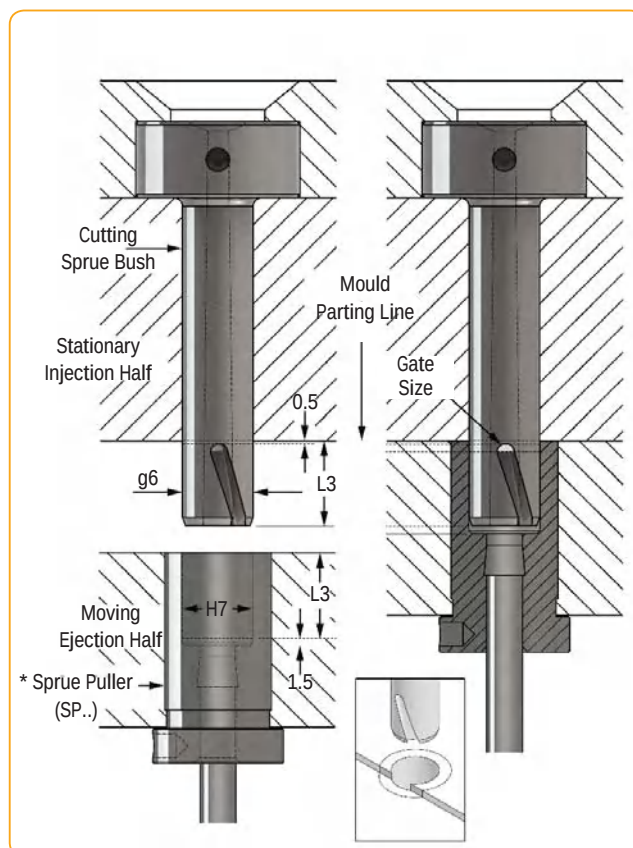
Cutting Sprue Bush / Installation Info - 1:



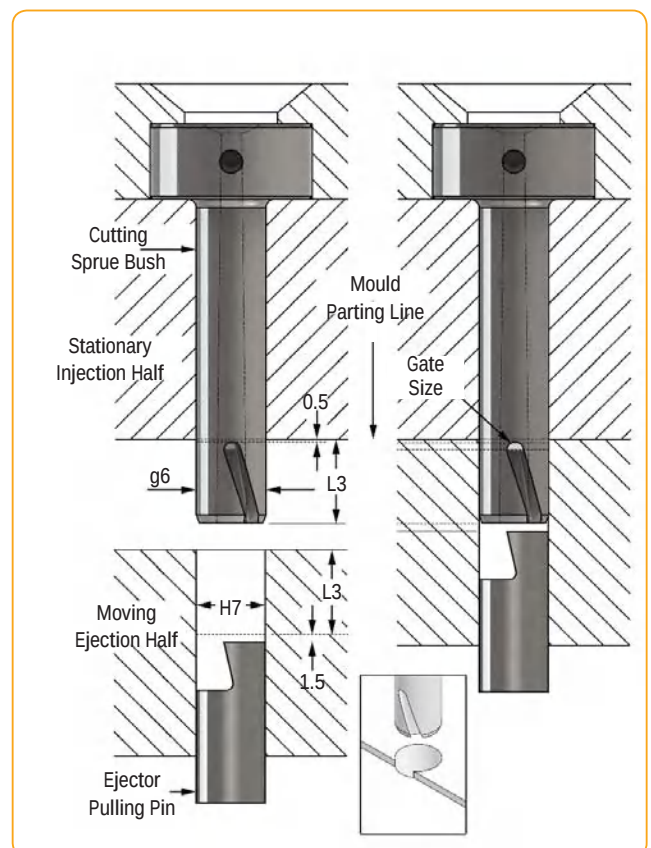
Cutting Sprue Bush / Installation Info - 2:



Cutting Sprue Bush / Installation Info - 3:



Cutting Sprue Bush / Installation Info - 4:





Heat Insulation Plates / High-tech

Code: **IYPA**

"IYPA" is preferred to use in applications in the mould and tool making industry where an excellent insulation effect and a high mechanical strength is required. It has no harm to human health and the environment.

Our products are safety certified.

- High continuous usage temperature.
- Superior mechanical strength.
- Excellent insulation effect.

Material: Glassfibre reinforced thermosetting plastic with filler content.

Recommended Operating Temp.: Max. 200°C

Recommended Operating Temp. - Continuous Exposure: Max. 180°C

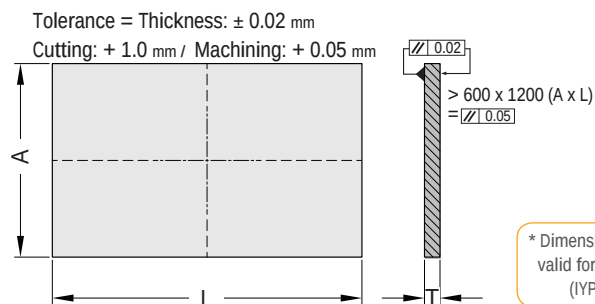
Compressive Strength - Room Temp.: 340 N/mm²

Compressive Strength - at 200°C: 130 N/mm²

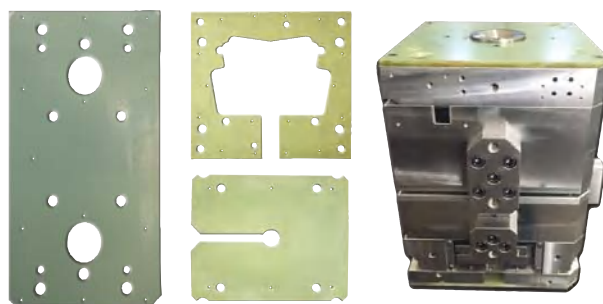
Thermal Conductivity: 0.18 W/mK

Flexural Strength: 115 N/mm² / at 200°C = 55 N/mm²

Density: 1.70 g/cm³



* Dimension tables are valid for both products (IYPA & IYPE).



Heat Insulation Plates / Economic Type

Code: **IYPE**

Impact and heat insulation processes of injection moulds.

Heat Insulation Plates help reduce heat loss between the mould and the plate.

They are preferred in order to avoid heat dissipation / clearance among mould plates or between machine clamping block plate and mould upper plates, especially in moulds produced with thermoplastic and thermosets raw material.

- They are not affected by impacts, water, friction and electricity.
- Heat Insulation Plates also raise the view standards of moulds used.

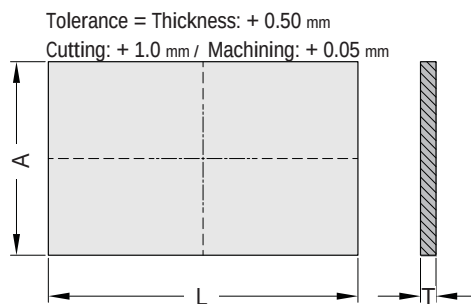
Material: Glassfibre and an impact resistant, thermosetting resinbonded mix.

Recommended Operating Temp.: Max. 120°C (continuous exposure)

Compressive Strength: Temperature at 120°C = 160 N / mm²

Thermal Conductivity: Temperature at 200°C = 3.0 x 10⁻³ W/mK

Moisture Absorption: 0.06 %



A mm	L mm	T mm	A mm	L mm	T mm	A mm	L mm	T mm	A mm	L mm	T mm	A mm	L mm	T mm	A mm	L mm	T mm
156	156	6 8 10	296	296	6 8 10	396	396	6 8 10	496	496	6 8 10	646	646	6 8 10	796	796	6 8 10
	196			346			446			546			696			846	
	206			396			496			646			896			996	
	246			446			546			696			896			1096	
	296			496			596			796			996			1196	
	346			546			646			796			896			996	
196	196	6 8 10	346	346	6 8 10	446	446	6 8 10	546	546	6 8 10	696	696	6 8 10	846	846	6 8 10
	206			366			496			596			746			896	
	246			396			546			646			796			896	
	296			446			496			596			896			996	
	346			496			546			646			896			996	
	396			546			596			646			796			896	
246	246	6 8 10	346	496	6 8 10	446	596	6 8 10	596	596	6 8 10	746	746	6 8 10	946	946	6 8 10
	266			546			646			796			896			996	
	296			596			696			796			896			996	
	346			646			796			896			996			1096	
	396			696			896			996			1096			1196	
	446			796			896			996			1096			1196	



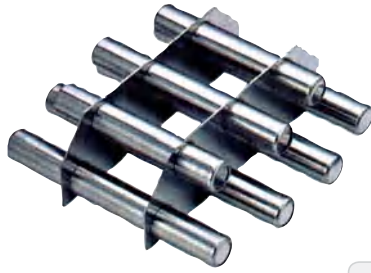
Order: IYPA. A x L x T

Order Example:

IYPA. 196 x 246 x 6 or IYPE 196 x 246 x 6



Order: IYPE. A x L x T

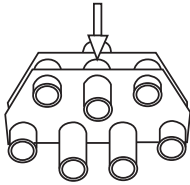
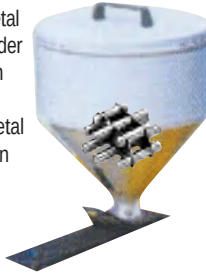


Code: EGM

Magnetic Separator for Injection Machine

It keeps unwanted metal particles in raw material. Especially in your injection machine, the unwanted metal particles mixed in the raw material damages the extruder of injection machine. This is for screening / elimination process at the bottom of fluid raw material. Stainless magnetic rods are excellently powerful in keeping metal particles and cylindrical magnetic rods can be used in liquids since they are compatible with fluidity compliance of raw material.

Additionally / Example: Its also keeping metal particles in liquid tank of Spark Erosion EDM.

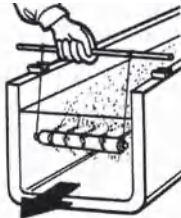


"EGM" Magnetic Separator is the cheapest insurance of your injection machine.

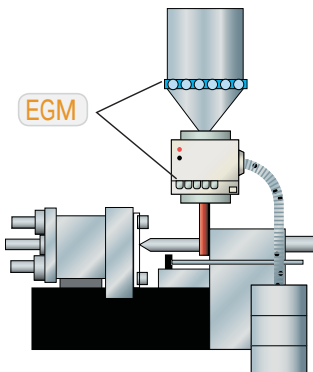
Order	Product Dimensions	Weight
EGM20C	width: 170 x length: 180 x height: 75mm	2.7 kg.
EGM25C	width: 220 x length: 230 x height: 75mm	4.0 kg.

It is for raw material feed hopper of injection machines. It is quick and practical in all metal screening / eliminating processes, a toolkit which should be used.

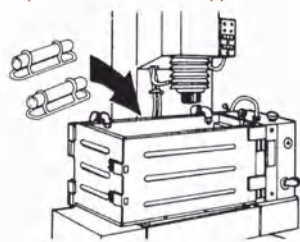
Usage: It is inserted to raw material feed hopper of injection machine. It is equipped with very powerful neodymium (Nd Fe B) magnets and materials are from stainless steel, also can keep very thin metal particles. When "EGM" Magnetic Separator is used, the extruder life of injection machine is prolonged considerably. The main advantage of magnetic magnet is its demagnetization opportunity. The cleaning of metal particles on stainless rods can be done rapidly and comfortably. Heat Resistance: 60°C



* Injection Machine Applications



* Spark Erosion "EDM" Applications



Order Code: GTH1000

Teknoclean Cleaning Agent (Cleanser & Colour Changing Agent)

Teknoclean Specifications: It provides quick and efficient transition in thermoplastic raw material and colour changing. It also cleans extruder area of injection machine. Less raw material consumption in raw material colour changing process. It easily cleans oxidized, burnt and stubborn dirt in injection machine extruder, thus it provides economical profit. It is efficient in colour changing processes of raw materials such as P and C, PP, TPU, PPS, PA6, PA66, POM, HDPE, LDPE, EVA, PS, ABS, PMMA, PC, SAN, SBS, SEBS, CA, PBT, PET and in injection machines, all hot and cold runner systems. It can be safely used during machine cleaning and colour changing process in extrusion machines (compounding, metal sheet, profile, cable and pipe) and blowing machines (packaging, film).

Package: 1 kg.

Fields of Usage:

1. * Decrease the injection / screw temperatures 20-30° from the current temperatures. Please check temperature / proportion table.
* Nozzle area temperature should be normal processing temperature (don't decrease 20-30°C).
* Hotrunner and nozzle temperatures should be increased 50°C above normal.

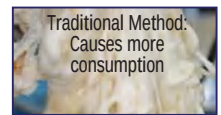
2. * Shake Teknoclean bottle well before use.
* Put %4-5 Teknoclean into natural color PP granules and mix very well. To adjust total amount please check screw diameter/mixture amount table.

3. * Decrease the screw speed up to %50 or lower and let the cleaning mixture go through from feed hopper to machine.
* Increase back pressure slightly.
* Use total injection stroke for cleaning.
* This agent can also be injected into opened mould to clean tooling, cold runner & hot runner system to clean dirty channels.

4. * Use pure PP natural for rinsing machine, the raw material you added is purely sprayed out of the machine.

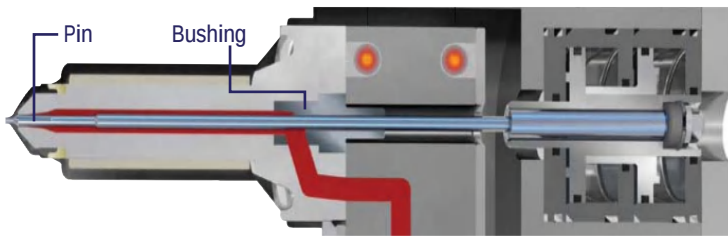


You can obtain the full user manual from our technical department or your sales representative.



"Teknoclean" usage according to injection machine screw diameter:

Screw Diameter	20 - 40 mm	40 - 50 mm	50 - 60 mm	60 - 80 mm	80 - 100 mm	100 - 120 mm
Carrier Polymer PP	0.5 - 1.0 kg.	1.0 - 3.0 kg.	3.0 - 5.0 kg.	5.0 - 10.0 kg.	10.0 - 25.0 kg.	25.0 - 35.0 kg.
Teknoclean Amount	25-50 gram	50 - 150 gram	150 - 250 gram	250 - 500 gram	500 - 1250 gram	1250 - 1750 gram
120 - 150 mm	175 - 100 mm	100 - 120 mm				
35.0 - 70.0 kg.	70.0 - 90.0 kg.	90.0 - 150.0 kg.				
1750-3500 gram	3500-4500 gram	4500-7500 gram				



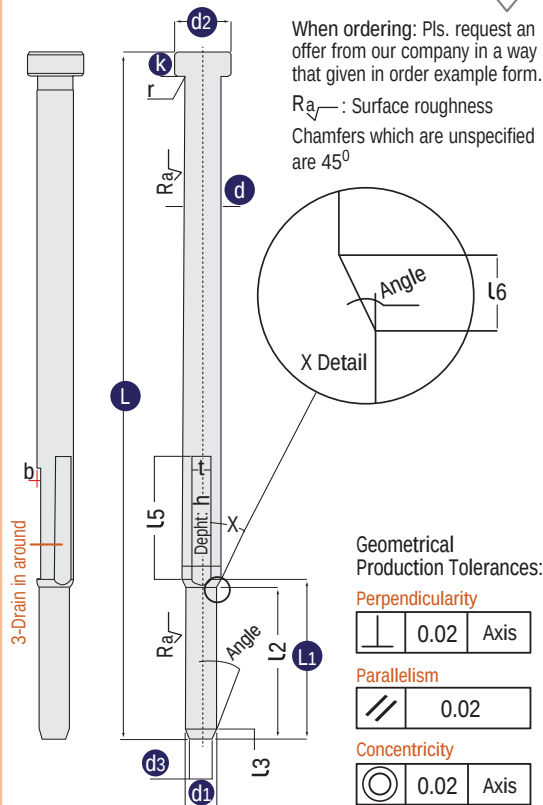
Valve Gate Pin & Bushing (custom-made production) Code: VGP



Valve Gate Pin: Mounting and demounting of Valve Gate Pin are such as the sectional view, they will be produced in desired material and dimensions.

Valve Gate Pin Bushing: The second Bushing in nozzle is to avoid expansion and bending of movable pin under load and heat. It can be changed by demounting. As per request in order, technical drawing or sample is required. The products will be produced in precision and faithfully.

Valve Gate Pin - Order Example:



Tolerance before TiN coating can be; -0.008 / After coating it can be; +0.01

Step chamfer dimensions:

Groove slotted machining dimensions:

TiN coating area & its length:

Full length & tolerance:

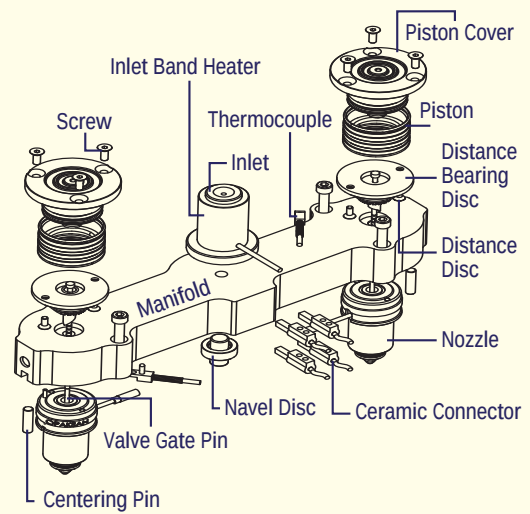
Material / Hardness: 1.2344 or HSS

Quantity:

General tolerance values $\pm$:

Important: For precision production of Valve Gate Pin, sending the previous existing pin or bushing sample offers good production.

Assembly Process of Valve Gate Systems



Assembly Steps

Holding Plate:

- * Insert the hot runner nozzles to the cavities / housings same axis with centering pin. Put the copper sealing plugs.
- * Put the manifold with centering pins secondly, tight manifold screws well-balancedly.
- * Insert the pin housing and distance disc into the manifold from upper side.

Top / Mould Cover Plate:

- * Tighten the distance bearing disc.
- * Put the manifold bridge plate (cavity plate) with taking care of hot runner systems heater and thermocouple wires.
- * Center the cover plate with pins, put on to bridge plate and tighten the screws.
- * Insert piston housing parts.
- * Insert piston-pin group into housing.
- * Close the piston with cover part, tighten the screws.
- * Check the movement of valve pins by air pressure before starting production.
- * Lay the mould in a way that nozzle tips can be seen, insert thermocouples and heaters in to their place and secure with retaining ring that given.
- * While making plug connection, external thermocouple wires in hot runner nozzles will be used, their own thermocouple wires of heater will be left idle.

Injection Mould Cooling Components



Injection Mould Cooling Components / Systems:
Cooling of Moulds; for providing suitable cooling, features of moulded material, material shape, mould structure and quantity of heat to be transferred should be known. In cooling with water, cooling channels should not be very close to mould surface. Otherwise, temperature changes can cause thermal shocks on mould surface. Cooling channels should not be so far from mould surface, because in this case, heat transfer should not be provided sufficiently.

Cooling channels may be created 2/3 times far of mould plate channel diameters. Water flowing should be provided to keep mould in certain temperature.

Effect of Cooling Time on Mould:

Injection Errors:

- Tensile - Distortion
- Sinking - Fragility
- Cracking - Shrinkage
- Visible ejector traces
- Tension whitening

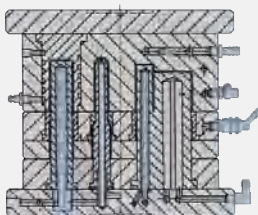
Solution Methods:

Cooling period should be increased and cooling system / channels should be controlled.

Quick-release Couplings:

Quick-release Couplings and fittings compatible with mould cooling systems and injection machines are commonly used in plastic - metal injection moulds. To use in water - air and oil flowing, different types are available and when desired mounting / demounting facilities on mould, Quick-release Couplings should be used.

For accurate and efficient cooling in mould cooling system, to choose Coupling / Fitting System to be most suitable to the temperature of your mould and mounting area in the correct way is important. Wide options related to this systems are presented at following pages. We have custom-made production service in all our Cooling Components.



Quick-release Couplings Series: 590

Fields of Usage: It is used in cooling systems of plastic, zinc - aluminium diecasting moulds and steam lines - hot oil circuits, water, washing & cooling systems of machines.

Material Info:

Body & Cover Valve = Brass / O-Ring = Viton

Spring - Ring & Ball = Stainless / Coupling Fitting = Brass

Operating Pressure = 0 - 15 bar / Flow Capacity = 9 mm

Operating Temperature = -5 / +180°

valved

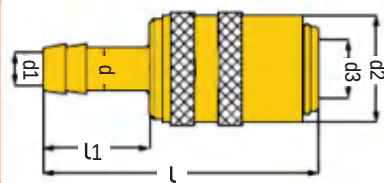


Valved: Controlled water flow is provided. When fitting is removed, water flow is closed in coupling.

non-valved



Non-valved: When fitting is removed, open circuit.

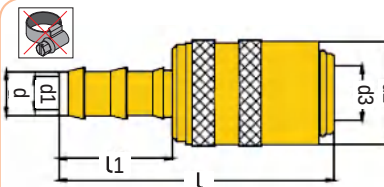


Quick-release Coupling

Code: 590HG (non-valved)

Code: 590HGB (valved)

Order Example	d	d1	d2	d3	l	l1
Code x 10	10	7.5	23	13	59	23
Code x 13	13	10				

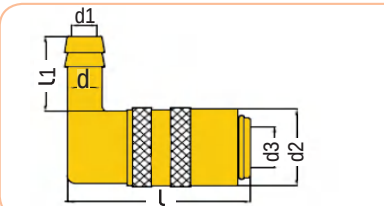


Quick-release Coupling

Code: 590FG (non-valved)

Code: 590FGB (valved)

Order Example	d	d1	d2	d3	l	l1
Code x 10	10	7.5	23	13	64	28
Code x 13	13	10				

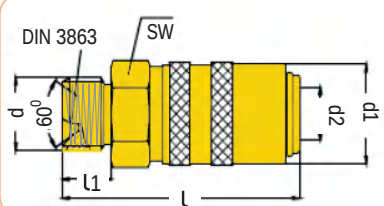


Quick-release Coupling / 90°

Code: 590LG (non-valved)

Code: 590LGB (valved)

Order Example	d	d1	d2	d3	l	l1
Code x 10	10	7.5	23	13	52	29
Code x 13	13	10				

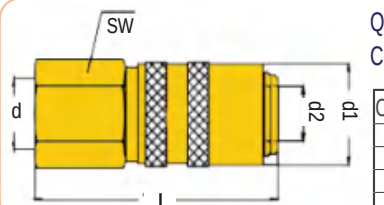


Quick-release Coupling / Male

Code: 590EG (non-valved)

Code: 590EGB (valved)

Order Example	d	d1	d2	l	l1	SW
Code x 13	BSP 1/4"					
Code x 17	BSP 3/8"					
Code x 21	BSP 1/2"	23	13	52	9	21
Code x 16M	M16x1.5				10	

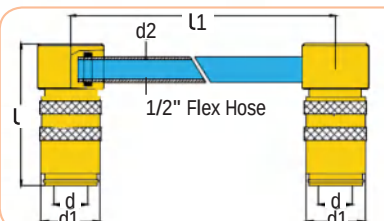


Quick-release Coupling / Female

Code: 590DG (non-valved)

Code: 590DGB (valved)

Order Example	d	d1	d2	l	SW
Code x 13	BSP 1/4"				21
Code x 17	BSP 3/8"				21
Code x 21	BSP 1/2"	23	13	52	24
Code x 16M	M16x1.5				21



Diverting Coupling Bridge

Code: 590KG (non-valved)

Code: 590KGB (valved)

Order Example	d	d1	d2	l	l1
Code x 125					125
Code x 250	13	23	10x1	52	250
Code x 500					500

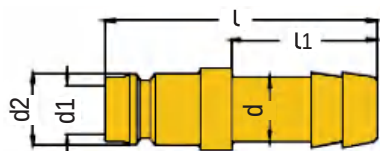


Fittings

Series: 590

Compatible with Series-590
Quick-release Couplings

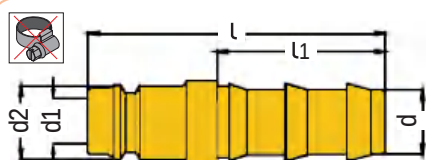
Material = Brass
Operating Pressure = 0 - 15 bar
Flow Capacity = 9 mm
Operating Temperature = -5 / +180°



Hose-tail Fitting

Code: 590HR

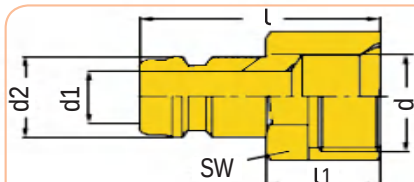
Order Code	d	d1	d2	l	l1
590HR.10	10	9	13	40	23
590HR.13	13			42	25



Push-lock Hose Fitting

Code: 590FHR

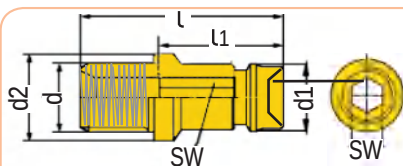
Order Code	d	d1	d2	l	l1
590FHR.10	10	9	13	43	28
590FHR.13	13			47	



Female Fitting

Code: 590DR

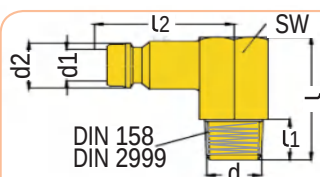
Order Code	d	d1	d2	SW	l	l1
590DR.13	G 1/4"	9	13	16	28	9
590DR.17	G 3/8"			19		



Male Fitting with Inner Hex.

Code: 590AER

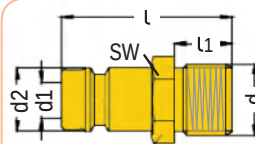
Order Code	d	d1	d2	SW	l	l1
590AER.13	G 1/4"	13	13.5	8	26	17
590AER.17	G 3/8"		17			
590AER.M14	M14 x 1.5		14.5			



Fitting 90° Male Threaded

Code: 590ER

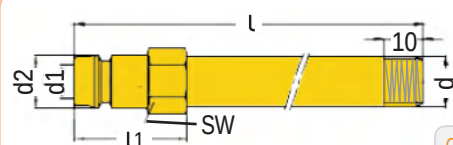
Order Code	d	d1	d2	SW	l	l1	l2
590ER.13x90	G 1/4"	9	13	15	34	10	25
590ER.17x90	G 3/8"			17			
590ER.M14x90	M14 x 1.5			15			



Male Fitting

Code: 590-ORE

Order Code	d	d1	d2	SW	l	l1
590-ORE.10	G 1/8"	9	13	14	29	10
590-ORE.13	G 1/4"			17		
590-ORE.17	G 3/8"			21		
590-ORE.21	G 1/2"					
590-ORE.M8	M8 x 1.25			14		
590-ORE.10.1	M10 x 1.5					
590-ORE.M10	M10 x 1.0					
590-ORE.M12	M12 x 1.75			21		
590-ORE.M14	M14 x 1.5					
590-ORE.M16	M16 x 1.5					



Male Fitting Long Type

Code: 590-ORE

Note: Our custom-made production is available as per request.

Order Code	d	d1	d2	SW	l	l1
590-ORE.M8.60	M8 x 1.25	9	13	14	60	20
590-ORE.M8.80					80	
590-ORE.M8.100					100	
590-ORE.M8.120					120	
590-ORE.M8.150					150	
590-ORE.M8.200					200	
590-ORE.M10.60	M10 x 1.5	9	13	14	60	20
590-ORE.M10.80					80	
590-ORE.M10.100					100	
590-ORE.M10.120					120	
590-ORE.M10.150					150	
590-ORE.M10.200					200	
590-ORE.M12.60	M12 x 1.75	9	13	14	60	20
590-ORE.M12.80					80	
590-ORE.M12.100					100	
590-ORE.M12.120					120	
590-ORE.M12.150					150	
590-ORE.M12.200					200	
590-ORE.10.60	G 1/8"	9	13	14	60	20
590-ORE.10.80					80	
590-ORE.10.100					100	
590-ORE.10.120					120	
590-ORE.10.150					150	
590-ORE.10.200					200	
590-ORE.13.60	G 1/4"	9	13	14	60	20
590-ORE.13.80					80	
590-ORE.13.100					100	
590-ORE.13.120					120	
590-ORE.13.150					150	
590-ORE.13.200					200	



Extension Fitting with Thread

Code: ARU

Order Code	d	l	SW
ARU.18.60	G 1/8"	60	14
ARU.18.80		80	
ARU.18.100		100	
ARU.18.150		150	
Order Code	d	l	SW
ARU.14.60	G 1/4"	60	16
ARU.14.80		80	
ARU.14.100		100	
ARU.14.150		150	



Quick-release Couplings & Fittings for Large Moulds

Material Info:

Body & Cover Valve = Brass

O-Ring = NBR

Spring - Ring & Ball = Stainless

Coupling Fitting = Brass

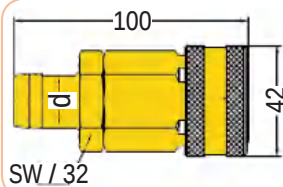
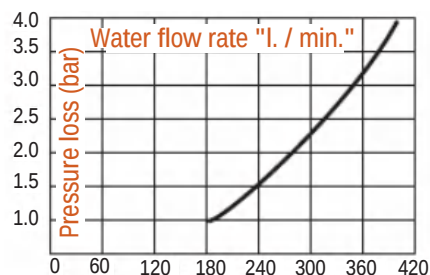
Operating Pressure = 0 - 35 bar / Flow Capacity = NW19

Operating Temperature = -20 / +100°

Series: 571

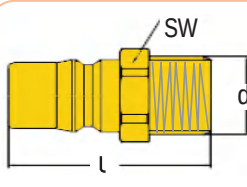
valved

non-valved



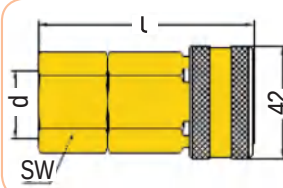
Quick-release Coupling Code: 571HG 571HGB (valved)

Order Example	d
Code x 16	16 mm - 5/8"
Code x 19	19 mm - 3/4"
Code x 25	25 mm - 1"



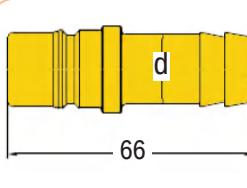
Male Fitting Code: 571ER

Order Code	d (BSP)	l	SW
571ER.26	3/4"	54	30
571ER.33	1"	57	36
571ER.42	1 1/4"	60	45



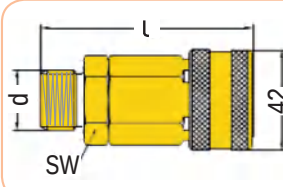
Quick-release Coupling / Female Code: 571EG

Order Code	d (BSP)	l	SW
571EG.21	1/2"	79	32
571EG.26	3/4"	81	32
571EG.33	1"	83	36
571EG.42	1 1/4"	85	46



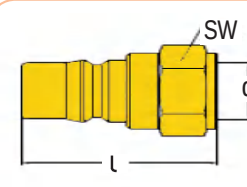
Hose-tail Fitting Code: 571HR

Order Code	d
571HR.16	16 mm - 5/8"
571HR.19	19 mm - 3/4"
571HR.25	25 mm - 1"



Quick-release Coupling / Male Code: 571DG

Order Code	d (BSP)	l	SW
571DG.21	1/2"	80	32
571DG.26	3/4"	81	32
571DG.33	1"	81	40
571DG.42	1 1/4"	83	50



Female Fitting Code: 571DR

Order Code	d (BSP)	l	SW
571DR.26	3/4"	51	32
571DR.33	1"	54	40
571DR.42	1 1/4"	54	50



Quick-release Couplings & Fittings for Large Moulds

Material Info:

Body & Cover Valve = Brass

O-Ring = NBR

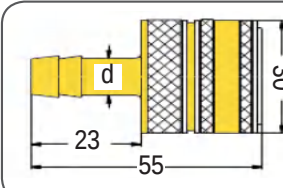
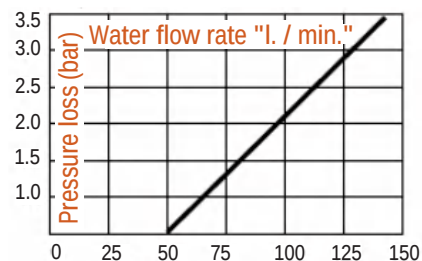
Spring - Ring & Ball = Stainless

Coupling Fitting = Brass

Operating Pressure = 0 - 15 bar / Flow Capacity = NW13

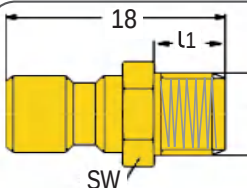
Operating Temperature = -20 / +100°

Series: 620



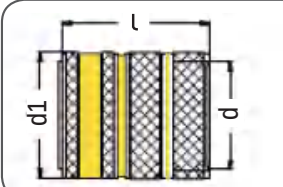
Quick-release Coupling Code: 620HG

Order Code	d
620HG.09	9 mm
620HG.13	13 mm
620HG.16	16 mm
620HG.19	19 mm



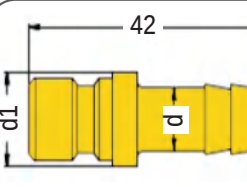
Male Fitting Code: 620ER

Order Code	d (BSP)	l1	SW
620ER.13	1/4"	9	19
620ER.17	3/8"	9	19
620ER.21	1/2"	12	22
620ER.26	3/4"	14	30
620ER.33	1"	15	34



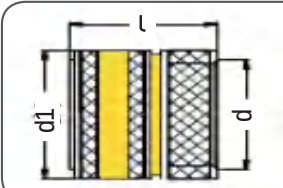
Quick-release Coupling / Female, Valved Code: 620DGB

Order Code	d (BSP)	l	d1
620DGB.26	3/4"	45	30



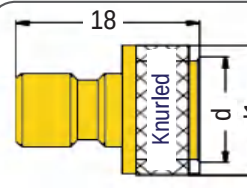
Hose-tail Fitting Code: 620HR

Order Code	d	d1
620HR.09	9 mm	19
620HR.13	13 mm	19
620HR.16	16 mm	19
620HR.19	19 mm	23



Quick-release Coupling / Female, Non-valved Code: 620DG

Order Code	d (BSP)	l	d1
620DG.26	3/4"	30	30



Knurled Female Fitting Code: 620DR

Order Code	d (BSP)	d1
620DR.13	1/4"	19
620DR.17	3/8"	19
620DR.21	1/2"	24
620DR.M22	M22x1	25
620DR.26	3/4"	30



Quick-release Couplings & Fittings with Colour Ring Series: 600

Colour Rings: In order to prevent confusion of lines (hot / cold) during usage.

Fields of Usage: It is used in cooling systems of plastic, zinc - aluminium diecasting moulds and water, washing - cooling systems of machines.

Material Info:

Body & Cover = Nickel Plated Brass / O-Ring = NBR

Spring - Ring & Ball = Stainless / Coupling Fitting = Nickel Plated Brass

Operating Pressure = 0 - 10 bar / Flow Capacity = 8 mm

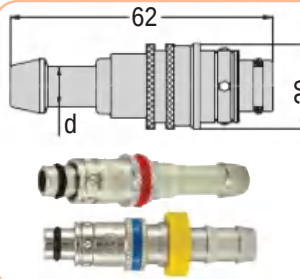
Operating Temperature = -20 / +90°

Pls. add the colour code to the end of the order code if you request colour ring.

Cold→Blue = B Hot→Red = R

Order Example:

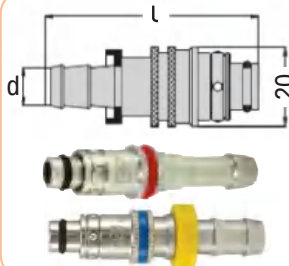
"600HG.10.B" or "600HG.10.R"



Quick-release Coupling

Code: 600HG

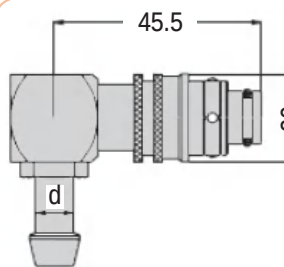
Order Code	d
600HG.06	1/4" - 6 mm
600HG.08	5/16" - 8 mm
600HG.10	3/8" - 10 mm
600HG.12	15/32" - 12 mm
600HG.13	1/2" - 13 mm



Quick-release Coupling

Code: 600FG

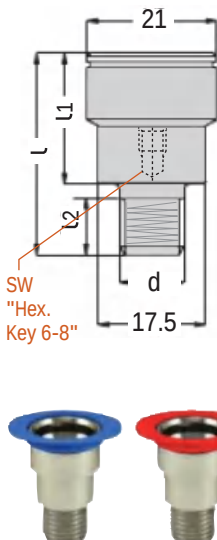
Order Code	d	l
600FG.10	3/8" - 10 mm	37
600FG.13	1/2" - 13 mm	40



Quick-release Coupling / 90°

Code: 600HA

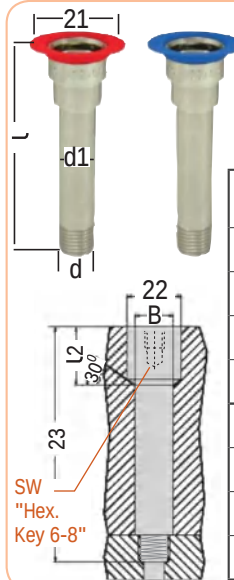
Order Code	d
600HA.06	1/4" - 6 mm
600HA.08	5/16" - 8 mm
600HA.10	3/8" - 10 mm
600HA.12	5/32" - 12 mm
600HA.13	1/2" - 13 mm



Fittings with Colour Ring

Code: 600ER

Order Code	d	l1	l2	l
600ER.10	BSPT 1/8"	21	8	31
600ER.13	BSPT 1/4"	21	10	33
600ER.17	BSPT 3/8"	11	11	24
600NR.10	NPT 1/8"	21	7	31
600NR.13	NPT 1/4"	21	10	33
600NR.17	NPT 3/8"	11	11	24
600ER.M10.1	M10 x 1"	21	10	31
600ER.M10	M10x1.5"	21	10	31
600ER.M12	M12x1.75"	21	11	31
600ER.M14	M14x1.5"	21	11	31



Fittings with Colour Ring Long Type

Code: 600ER

Order Example: 600ER. 10x100

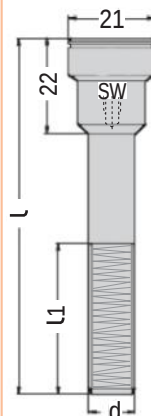
Order: 600ER	d	l Min. Max	L2	d1	B
10 x 100	BSP 1/8"	33 ~ 100	L - 5.5	10.2	11
10 x 150		100 ~ 150			
10 x 200		150 ~ 200			
10 x 250		200 ~ 250			
13 x 100	BSP 1/4"	33 ~ 100	L - 7.5	13.5	14
13 x 150		100 ~ 150			
13 x 200		150 ~ 200			
13 x 250		200 ~ 250			



Extension Fitting with Colour Ring non-threaded

Code: 600BU

Order Code	d	l	B	SW
600BU.10.50	10.2	50	11	6
600BU.10.100		100		
600BU.10.150		150		
600BU.10.200		200		
600BU.13.50	13.5	50	14	8
600BU.13.100		100		
600BU.13.150		150		
600BU.13.200		200		
600BU.13.250		250		



Extension Fitting with Colour Ring threaded

Code: 600UR

Order Code	d	l	l1	SW
600UR.10.50	BSPT 1/8"	50	26	6
600UR.10.100		100	60	
600UR.10.150		150	60	
600UR.13.50	BSPT 1/4"	50	27	8
600UR.13.100		100	60	
600UR.13.150		150	60	
600UR.13.200		200	60	



601HG



601DG



601RRB



601RR

Quick-release Couplings & Fittings (Precise & Tight Coupler)

Fields of Usage: It is used in cooling systems of plastic, zinc - aluminium diecasting moulds and steam lines - hot oil circuits, water, washing & cooling systems of machines.

Material Info:

Body = Brass / Cover Valve = 420 Stainless

O-Ring = Viton / Coupling Fitting = Brass

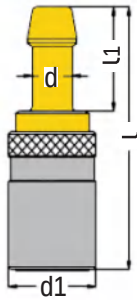
Spring - Ring & Ball = Stainless

Operating Pressure = 16 bar / Flow Capacity = 6 -9-10-12-16 mm

Operating Temperature = -10 / +180°

Note: Our custom-made production is available as per request.

Series: 601

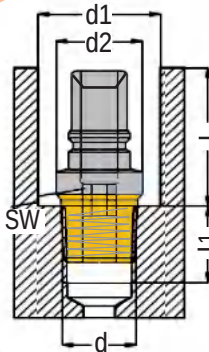


Quick-release Coupling

Code: 601HG (non-valved)

Code: 601HGB (valved)

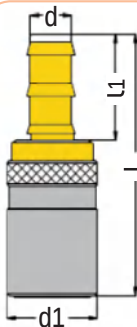
Order Example	d	d1	L	L1
Code x 08	08	19	60	23
Code x 12	12	25	69.5	28
Code x 13	13	31	82	28
Code x 14	16	31	82	28
Code x 16	16	32	109	28
Code x 19	19	38	114	33



Male Fitting with Inner Hex.

Code: 601RR

Order Code	d	d1	d2	L	L1
601RR.10	BSPT 1/8"	20	10	26	9
601RR.13	BSPT 1/4"	20	14	27	12
601RR.14	BSPT 1/4"	26	14	26	12
601RR.17	BSPT 3/8"	26	17	28	13
601RR.18	BSPT 3/8"	33	18	31	13

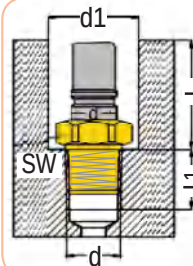


Quick-release Coupling

Code: 601FG (non-valved)

Code: 601FGB (valved)

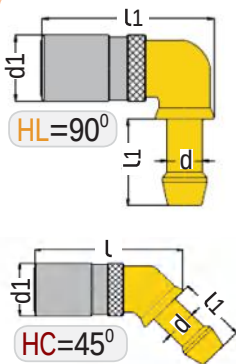
Order Example	d	d1	L	L1
Code x 10	10	19	60	24
Code x 12	10	25	69.5	24
Code x 13	13	25	69.5	28
Code x 14	13	31	92	38
Code x 16	16	38	109	38
Code x 19	19	38	109	38



Male Fitting

Code: 601TR
601RR

Order Code	d	d1	L	L1	SW
601TR.17	NPT 3/8"	36	29	11	24
601RR.21	BSPT 1/2"	33	29	15	22
601TR.22	NPT 1/2"	33	29	15	22
601RR.26	BSPT 3/4"	40	47	19	27

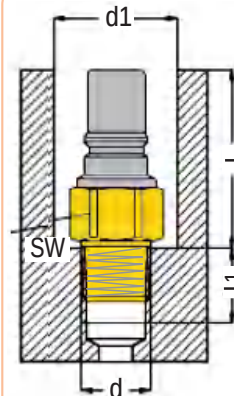


Quick-release Coupling / 90° & 45°

Code: 601HL or 601HC (non-valved)

Code: 601HLB or 601HCB (valved)

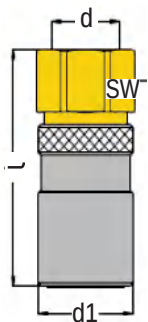
Order Example	d	d1	L	L1
HL or HLB x 08	08	19	59	23
HL or HLB x 10	10	25	60	28
HL or HLB x 12	12	25	65	28
HL or HLB x 16	16	31	82	28
HL or HLB x 19	19	38	132	60
HC or HCB x 08	08	19	59	23



Male Fitting

Code: 601RRB

Order Code	d	d1	L	L1	SW
601RRB.10	BSPT 1/8"	26	33	9	17
601RRB.13	BSPT 1/4"	26	33	12	17
601RRB.14	BSPT 1/4"	29	38.5	12	19
601RRB.17	BSPT 3/8"	29	38.5	13	20
601RRB.18	BSPT 3/8"	36	46.5	13	24
601RRB.21	BSPT 1/2"	36	46.5	15	24
601RRB.26	BSPT 3/4"	46	67	16	32

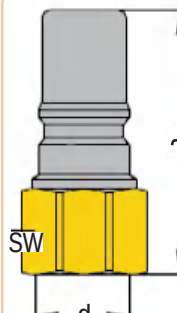


Quick-release Coupling / Female

Code: 601DG or 601NG (non-valved)

Code: 601DGB or 601NGB (valved)

Order Example	d	d1	L	SW
DG or DGB x 13	BSP 1/4"	19	46	17
DG or DGB x 17	BSP 3/8"	25	53	22
DG or DGB x 21	BSP 1/2"	31	67	27
NG or NGB x 21	NPT 1/2"	31	67	27
DG or DGB x 26	BSP 3/4"	38	90	35
NG or NGB x 26	NPT 3/4"	38	90	35



Female Fitting

Code: 601DR

Order Code	d	L	SW
601DR.13	BSP 1/4"	34	17
601DR.17	BSP 3/8"	37	22
601DR.21	BSP 1/2"	45	27
601DR.26	BSP 3/4"	58	32

Quick-release Couplings USA System

Fields of Usage: It is used in cooling systems of plastic, zinc - aluminium diecasting moulds and steam lines - hot oil circuits, water, washing & cooling systems of machines.

Material Info:

Body & Cover Valve = Brass / O-Ring = Viton

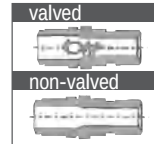
Spring - Ring & Ball = Stainless / Coupling Fitting = Brass

Operating Pressure = 0 - 15 bar / Flow Capacity = 9 mm

Operating Temperature = -5 / +180°



Series: 509



Valved: Controlled water flow is provided.

When fitting is removed, water flow is closed in coupling.

Non-valved: When fitting is removed, open circuit.

Quick-release Coupling USA

Code: **509HG** (non-valved)
Code: **509HGB** (valved)

Order Example	d	d1	d2	d3	l	l1
Code x 10	10	8	23	13	68	29
Code x 11	11	9				
Code x 13	13	10				

Male Fitting USA

Code: **509ER**

Order Code	d	d3	l1	lMax	l
509ER.10	1/8"	26	25	26	30
509ER.13	1/4"	30	25	22	33
509ER.17	3/8"	30	26	22	33
509ER.21	1/2"	32	26	22	37
509ER.M14	M14x1.5	28	25	26	33

Quick-release Coupling USA

Code: **509FG** (non-valved)
Code: **509FGB** (valved)

Order Example	d	d1	d2	d3	l	l1
Code x 10	10	8	23	13	68	29
Code x 11	11	9				
Code x 13	13	10				

Male Fitting USA Long Type

Code: **509ER**

Order Code	d	d1	d2	d3	l	SW
509ER.100	M14 x1.5	14	13	9	100	15
509ER.150					150	
509ER.200					200	
509ER.250					250	
509ER.300					300	

Note: Our custom-made production is available as per request.

Quick-release Coupling 90° / USA

Code: **509LG** (non-valved)
Code: **509LGB** (valved)

Order Example	d	d1	d2	d3	l	l1
Code x 10	10	8	23	13	39	29
Code x 11	11	9				
Code x 13	13	10				

Extension Fitting USA (non-threaded)

Code: **509BN**

Order Code	d	d1	d2	l	l1	SW
509BN.100	Ø 14	9	13	100	23	15
509BN.150				150		
509BN.200				200		
509BN.250				250		
509BN.300				300		

Quick-release Coupling - Male / USA

Code: **509EG** (non-valved)
Code: **509EGB** (valved)

Order Example	d	d1	d2	l	l1	SW
Code x 13	BSP 1/4"	23	13	59	9	17
Code x 16	M16x1.5					17
Code x 17	BSP 3/8"					19
Code x 18	M18x1.5					19
Code x 21	BSP 1/2"					24

Extension Adjustable Fitting USA

Code: **509BL**

Order Code	d	d1	d2	l	l1	SW
509BL.13	BSPT 1/4"	9	13	100	40	14
509BL.17	BSPT 3/8"					17
509BL.M10	M10 x 1					14
509BL.M14	M14 x1.5					14
509BL.M16	M16 x1.5					17

Quick-release Coupling - Female / USA

Code: **509DG** (non-valved)
Code: **509DGB** (valved)

Order Example	d	d1	d2	l	SW
Code x 13	BSP 1/4"	23	13	52	17
Code x 17	BSP 3/8"				21
Code x 21	BSP 1/2"				24

Diverting Coupling Bridge USA

Code: **509KG** (non-valved)
Code: **509KGB** (valved)

Order Example	d	d1	d2	l	l1
Code x 125	13	23	8x1	41	125
Code x 250					250
Code x 500					500



Code: **SDT**

Detent Plug - Straight

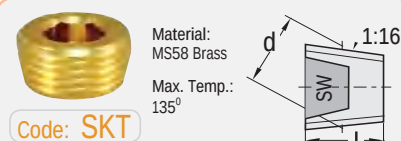
It is to plug / close unwanted cooling holes in injection moulds.

Mounting: It is inserted acc. to the product diameter by threading.

Material: MS58 Brass

Order Code	R / Thread	d	l	SW
SDT.18	G 1/8"	9.4	11.2	5
SDT.14	G 1/4"	12.8	12.5	7
SDT.38	G 3/8"	15.9	14.1	8
SDT.12	G 1/2"	20.5	17.8	10

Order Code	M / Thread	l	SW
SDT.M06	M6 x 0.75	7	3
SDT.M08	M8 x 0.75	8	4
SDT.M10	M10 x 1.0	10	5
SDT.M12	M12 x 1.5	10	6
SDT.M14	M14 x 1.5	10	7



Code: **SKT**



Code: **CKT**

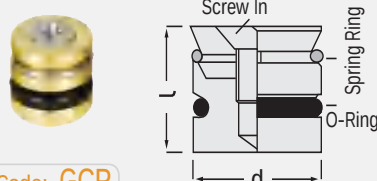
Detent Plug - Conical

Order Code	R / Thread	d	l	SW
SKT.18	NPT 1/8"	9.4	11.2	5
SKT.14	NPT 1/4"	12.8	12.5	7
SKT.38	NPT 3/8"	15.9	14.1	8
SKT.12	NPT 1/2"	20.5	17.8	10

Order Code	M / Thread	l	SW
SKT.M06	M6 x 0.75	7	3
SKT.M08	M8 x 0.75	8	4
SKT.M10	M10 x 1.0	8	5
SKT.M12	M12 x 1.5	10	6
SKT.M14	M14 x 1.5	10	7

CKT / Steel Type:

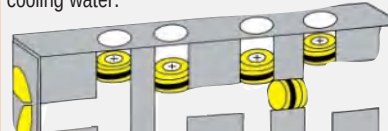
Order Code	R / Thread	d	l	SW
CKT.18	NPT 1/8"	9.4	11.2	5
CKT.14	NPT 1/4"	12.8	12.5	7
CKT.38	NPT 3/8"	15.9	14.1	8
CKT.12	NPT 1/2"	20.5	17.8	10



Code: **GCP**

Detent Plug with O-Ring

It is adjusted fixing plug in order to use canceling (inactive) of unwanted holes in cooling channel of injection moulds or to direct flow motions of cooling water.



Mounting:

The diameter of cooling channel should be at least 0.1 mm larger than "GCP product".

Any machining (threading etc.) on channel mounting and any mechanical process on product should not be done.

"GCP" is never rusting. The wall thickness of diameter on unit can be adjusted via O-ring.

Operating Temperature Range: 10 - 200°

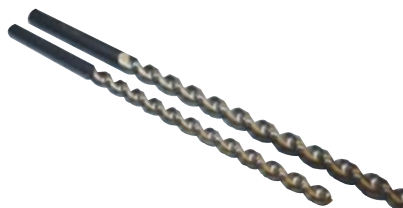
Compressive Strength:

Ø 6 - 8 mm = 16 Kg. / cm²

Ø 10 - 12 mm = 18 Kg. / cm²

Ø 14 - 16 mm = 25 Kg. / cm²

Order Code	d	l	Mounting Dia.
GCP.06	Ø 6	10	6.1 mm
GCP.08	Ø 8	10	8.1 mm
GCP.10	Ø 10	11	10.1 mm
GCP.12	Ø 12	12	12.1 mm
GCP.14	Ø 14	14	14.1 mm
GCP.16	Ø 16	14	16.1 mm
GCP.20	Ø 20	14	20.1 mm



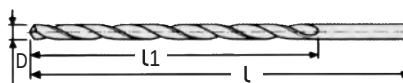
Extra Long Drill

Code: **MG**

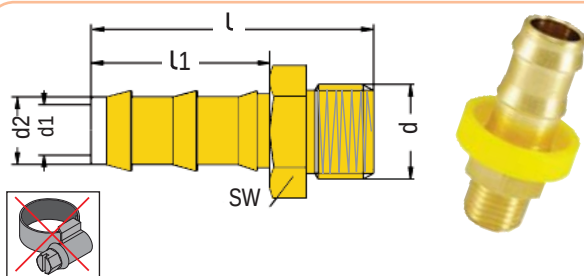
GT 100 type & for cooling channels

It is a long chip channel drill bit having great helix angle than normal.

Especially, "10XD" perforation machining is provided on the deep surfaces. Due to its helix structure, it works comfortably and does not sticking into the middle hardened steel and aluminium materials by evacuating chip outside during drilling.



Order Code	Ø D	l	l1
MG35.165	3.5 mm	165 mm	115 mm
MG35.210		210 mm	145 mm
MG35.265		265 mm	180 mm
MG04.175	4 mm	175 mm	120 mm
MG04.220		220 mm	150 mm
MG04.280		280 mm	190 mm
MG05.198	5 mm	198 mm	135 mm
MG05.245		245 mm	170 mm
MG05.315		315 mm	210 mm
MG55.205	5.5 mm	205 mm	140 mm
MG55.260		260 mm	180 mm
MG55.330		330 mm	225 mm
MG06.205	6 mm	205 mm	140 mm
MG06.260		260 mm	180 mm
MG06.330		330 mm	225 mm
MG65.215	6.5 mm	215 mm	150 mm
MG65.275		275 mm	190 mm
MG65.350		350 mm	235 mm
MG07.225	7 mm	225 mm	155 mm
MG07.290		290 mm	200 mm
MG07.370		370 mm	250 mm
MG75.225	7.5 mm	225 mm	155 mm
MG75.290		290 mm	200 mm
MG75.370		370 mm	250 mm
MG08.240	8 mm	240 mm	165 mm
MG08.305		305 mm	210 mm
MG08.390		390 mm	265 mm
MG85.240	8.5 mm	240 mm	165 mm
MG85.305		305 mm	210 mm
MG85.390		390 mm	265 mm
MG09.250	9 mm	250 mm	175 mm
MG09.320		320 mm	220 mm
MG09.410		410 mm	280 mm
MG95.250	9.5 mm	250 mm	175 mm
MG95.320		320 mm	220 mm
MG95.410		410 mm	280 mm
MG10.265	10 mm	265 mm	185 mm
MG10.340		340 mm	235 mm
MG10.430		430 mm	295 mm
MG105.265	10.5 mm	265 mm	185 mm
MG105.340		340 mm	235 mm
MG105.430		430 mm	295 mm
MG11.280	11 mm	280 mm	195 mm
MG11.365		365 mm	250 mm
MG11.455		455 mm	310 mm
MG115.280	11.5 mm	280 mm	195 mm
MG115.365		365 mm	250 mm
MG115.455		455 mm	310 mm
MG12.295	12 mm	295 mm	205 mm
MG12.375		375 mm	260 mm
MG12.480		480 mm	330 mm
MG125.295	12.5 mm	295 mm	205 mm
MG125.375		375 mm	260 mm
MG125.480		480 mm	330 mm
MG13.295	13 mm	295 mm	205 mm
MG13.375		375 mm	260 mm
MG13.480		480 mm	330 mm



Hose Fitting

Code: **FHR**

Material = Brass
Flow Capacity = 8 mm

Operating Pressure = 0 - 15 bar
Operating Temperature = -5 / +180°

Order Code	d	d1	d2	l	l1	SW
FHR.1310	G 1/4"	5.5	9.5	43	28	17
FHR.1313	G 1/4"	8	12.5	43	28	17
FHR.1710	G 3/8"	5.5	9.5	46	33	19
FHR.1713	G 3/8"	8	12.5	46	33	19
FHR.2113	G 1/2"	8	12.5	46	33	23

Rubber Hose



Code: **FLEX**

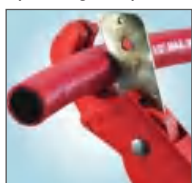
It is resistant to bending with its flexible structure reinforced with polyester for hot and cold water. It is suitable to be used according to fitting feature / with or without clamp.



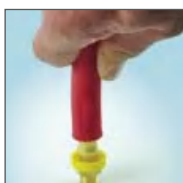
Order Code	Inner Ø	Outer Ø	Operating Pressure	Blast Pressure	Roll Length	Colour
FLEX.10B	9.5	15.4	28 Bar	60 Bar	20 Metre	Blue
FLEX.10R	9.5	15.4				Red
FLEX.13B	12.5	18.5				Blue
FLEX.13R	12.5	18.5				Red

Operating Temp. = -20 / +90°

Flow Capacity = 9.5 / 12.5 mm



Cut hose end straightly in desired length.



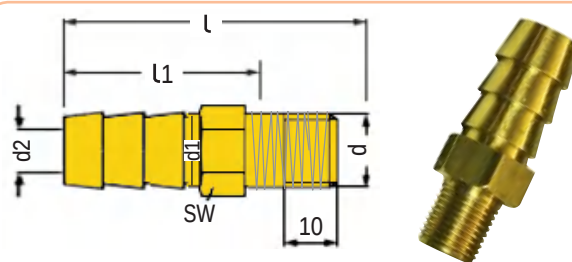
Insert hose into fitting.



Insert hose into plastic yellow slot by pushing hose settled on fitting.

There is no need to insert clamp in this way.
You need to cut hose end in order to remove hose from fitting.

Extension Fitting with Thread				Code: ARU			
Order Code	d	l	SW	Order Code	d	l	SW
ARU.18.60	G 1/8"	60	14	ARU.14.60	G 1/4"	60	16
ARU.18.80		80		ARU.14.80		80	
ARU.18.100		100		ARU.14.100		100	
ARU.18.150		150		ARU.14.150		150	



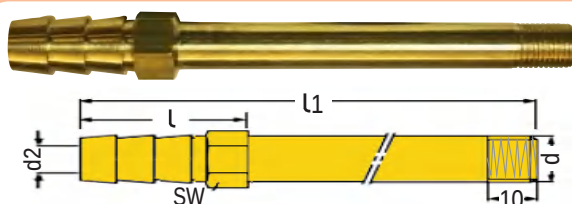
Hose Fitting

Code: **HRE**

Material = Brass
Flow Capacity = 8 mm

Operating Pressure = 0 - 15 bar
Operating Temperature = -5 / +180°

Order Code	d	d1	d2	l	l1	SW
HRE.M8	M8 x 1.25	12	7	36	28	13
HRE.M10	M10 x 1.50			36		13
HRE.M12	M12 x 1.75			40		13
HRE.M14	M14 x 2.0			40		14
HRE.M16	M16 x 2.0			40		16
HRE.1/8"	G 1/8"	12	7	36	28	13
HRE.1/4"	G 1/4"			40		14
HRE.3/8"	G 3/8"			40		17



Hose Fitting Long Tube

Code: **HRU**

Order Code	d	d1	d2	l	l1	SW
HRU.M08060	M8 x 1.25	12	7	60	28	13
HRU.M08080				80		
HRU.M08100				100		
HRU.M08120				120		
HRU.M08150				150		
HRU.M10060	M10 x 1.5	12	7	60	28	13
HRU.M10080				80		
HRU.M10100				100		
HRU.M10120				120		
HRU.M10150				150		
HRU.M12060	M12 x 1.75	12	7	60	28	13
HRU.M12080				80		
HRU.M12100				100		
HRU.M12120				120		
HRU.M12150				150		
HRU.10.060	G 1/8"	12	7	60	28	13
HRU.10.080				80		
HRU.10.100				100		
HRU.10.120				120		
HRU.10.150				150		
HRU.13.060	G 1/4"	12	7	60	28	14
HRU.13.080				80		
HRU.13.100				100		
HRU.13.120				120		
HRU.13.150				150		

Material = Brass
Flow Capacity = 8 mm

Operating Pressure = 0 - 15 bar
Operating Temperature = -5 / +180°

Quick Connect Pneumatic Fittings - Plastic Models

Plastic structure, quick connect and for pneumatic / air distribution mounting systems. Max. Temperature: 40°C.

Quick Connect Pneumatic Fittings also can be used in cooling system of Injection Moulds, it is recommended to keep the environment temperature and water temperature circulating - max. 40°C. Thermometers may be used for temperature measurement (code: IR550 or code: DT610C).

Attention: Possible temperature increases (over 40°C. max.) may cause water leakages in time !

"PH" Air Hose is recommended for installation of cooling system.

Fitting - Internal Thread

Order: DPCF. d x d1

DPCF



d	d1
1/8"	4 mm
1/8"	6 mm
1/8"	8 mm
1/4"	4 mm
1/4"	6 mm
1/4"	8 mm
1/4"	10 mm

Fitting - External Thread

Order: DPCG. d x d1

DPCG



d x d1	(metric) d x d1
1/8"x4	
1/8"x6	12-1.5x 6
1/8"x8	10-1.5x 8
1/8"x10	12-1.5x 8
1/4"x6	10-1.5x10
1/4"x8	12-1.5x10
1/4"x10	16-1.5x10
3/8"x10	10-1.5x12
3/8"x12	16-1.5x12

Elbow Fitting with Valve

Order: ISCG. d x d1

ISCG



d	d1
1/8"	4 mm
1/8"	6 mm
1/8"	8 mm
1/4"	4 mm
1/4"	6 mm
1/4"	8 mm
1/4"	10 mm
3/8"	10 mm
3/8"	12 mm

Hose Fitting with Valve

Order: DFSC. d1

DFSC



d1
4 mm
6 mm
8 mm
10 mm
12 mm

Elbow Fitting - 90°

Order: DPLG. d x d1

DPLG



d	d1
1/8"	4 mm
1/8"	6 mm
1/8"	8 mm
1/4"	4 mm
1/4"	6 mm
1/4"	8 mm
1/4"	10 mm
3/8"	10 mm
3/8"	12 mm

Manifold Fitting

Order: DPKD. d x d1

DPKD



d	d1
1/8"	4 mm
1/8"	6 mm
1/8"	8 mm
1/4"	4 mm
1/4"	6 mm
1/4"	8 mm
1/4"	10 mm
3/8"	10 mm
3/8"	12 mm

"T" Fitting

Order: DPT. d x d1

DPT



d	d1
1/8"	4 mm
1/8"	6 mm
1/8"	8 mm
1/4"	4 mm
1/4"	6 mm
1/4"	8 mm
1/4"	10 mm
3/8"	10 mm
3/8"	12 mm

"Y" Fitting

Order: DPWT. d x d1

DPWT



d	d1
1/8"	6 mm
1/8"	8 mm
1/4"	6 mm
1/4"	8 mm
1/4"	10 mm

Straight Fitting

Order: DPUC. d1

DPUC



d1
4 mm
6 mm
8 mm
10 mm
12 mm
14 mm
16 mm

Hose Reduction Fitting

Order: DPG. d1 x d2

DPG



d1 - d2
6 - 4 mm
8 - 4 mm
8 - 6 mm
10 - 6 mm
10 - 8 mm
12 - 8 mm
12 - 10mm

Hose Stop Nipple with Valve

Order: ISPLG. d x d1

ISPLG



d x d1
1/8" x 4
1/8" x 6
1/4" x 6
1/4" x 8

Hose Stop Nipple

Order: ISPU. d1

ISPU



d1 - Stop
4 mm
6 mm
8 mm
10 mm

Fitting with Valve

Order: HVFSG. d x d1

HVFSG



d	d1
1/8"	6 mm
1/8"	8 mm
1/4"	6 mm
1/4"	8 mm
3/8"	8 mm

"T" Hose Fitting

Order: DPUT. d1

DPUT



d1
4 mm
6 mm
8 mm
10 mm
12 mm
14 mm
16 mm

"Y" Hose Fitting

Order: DPY. d1

DPY



d1
4 mm
6 mm
8 mm
10 mm
12 mm

"Y" Hose Reduction Fitting

Order: DPW. d1 x d2

DPW



d1 - d2
6 - 4 mm
8 - 6 mm
10 - 8 mm
12-10 mm

Elbow Hose Fitting

Order: DPUL. d1

DPUL



d1
4 mm
6 mm
8 mm
10 mm
12 mm
14 mm
16 mm

Pipe Cross Hose Fitting

Order: DPZA. d1

DPZA



d1
4 mm
6 mm
8 mm
10 mm
12 mm

Manifold Fitting (4-Distributor)

Order: PXG. d1 x d2

PXG



d1 - d2
6 - 4 mm
8 - 8 mm
8 - 4 mm
8 - 6 mm

Plastic Muffler

Order: PSL. d1

PSL



d1
1/8"
1/4"
3/8"
1/2"

Valve for Hose (Spherical)

Order: HVFF. d1

HVFF



d1
4 mm
6 mm
8 mm
10 mm
12 mm

Sintered Muffler

Order: BSL. d1

BSL



d1
1/8"
1/4"
3/8"
1/2"
3/4"
1"

Rotary Joint Fitting



Order Code:
UCBAS

Thread: 1/4"
Shaft: 8 x 5mm

Quick Connect Pneumatic Fittings - Metal Models



"AIR HOSES"

When ordering, pls. specify the desired metre.

Metal structure, quick connect and for pneumatic / air distribution mounting systems. Max. Temperature: 60°C.

Quick Connect Pneumatic Fittings also can be used in cooling system of Injection Moulds, it is recommended to keep the environment temperature and water temperature circulating - max. 60°C. Thermometers may be used for temperature measurement (code: IR550 or code: DT610C).

Attention: Possible temperature increases (over 60°C. max.) may cause water leakages in time !

"POLB" or "TEF" Air Hoses are recommended for installation of cooling system.

Metal, Fitting - External Thread IPCT
Order: IPCT. d x d1



d	d1
1/8"	4 mm
1/8"	6 mm
1/8"	8 mm
1/4"	6 mm
1/4"	8 mm
1/4"	10 mm
1/4"	12 mm
3/8"	10 mm
3/8"	12 mm

Metal, Elbow Fitting - 90° IPLT
Order: IPLT. d x d1



d	d1
1/8"	4 mm
1/8"	6 mm
1/8"	8 mm
1/4"	6 mm
1/4"	8 mm
1/4"	10 mm
1/4"	12 mm
3/8"	10 mm
3/8"	12 mm

Metal, "T" Fitting IPBT
Order: IPBT. d x d1



d	d1
1/8"	4 mm
1/8"	6 mm
1/8"	8 mm
1/4"	6 mm
1/4"	8 mm
1/4"	10 mm
1/4"	12 mm
3/8"	10 mm
3/8"	12 mm

Metal, Hose Nipple IPUT
Order: IPUT. d1



d1
4 mm
6 mm
8 mm
10 mm
12 mm
14 mm
16 mm

Metal, "T" Hose Fitting IPET
Order: IPET. d1



d1
4 mm
6 mm
8 mm
10 mm
12 mm
14 mm
16 mm

Metal, Hose Reduction Fitting IPUT
Order: IPUT. d1 x d2



d1	d2
8	6 mm
10	8 mm

Metal, Hose Fitting with Valve IPCV
Order: IPCV. d x d1



d	d1
1/8"	6
1/4"	8
1/4"	10
3/8"	12

Metal, Elbow Hose Fitting IPVT
Order: IPVT. d1



d1
4 mm
6 mm
8 mm
10 mm
12 mm
14 mm
16 mm

Metal, Pipe Cross Hose Fitting IPZT
Order: IPZT. d1



d1
4 mm
6 mm
8 mm
10 mm
12 mm
14 mm
16 mm

Metal, "Y" Hose Fitting MPY
Order: MPY. d1



d1
4 mm
6 mm
8 mm
10 mm
12 mm
14 mm
16 mm

Metal, Reduction Fitting IBDG
Order: IBDG. d x d3



d	d3
1/8"	1/4"
1/8"	3/8"
1/8"	1/2"
1/4"	3/8"
1/4"	1/2"
3/8"	1/2"

Metal Nipple IBBG
Order: IBBG. d x d3



d	d3
1/8"	1/4"
1/8"	3/8"
1/4"	3/8"
1/4"	1/2"
3/8"	1/2"

Detent Plug IBP
Order: IBP. d



d	L
1/8"	8
1/4"	10
3/8"	10
1/2"	10

Detent Plug with O-Ring IBPG
Order: IBPG. d



d	L
1/8"	10
1/4"	11
3/8"	12
1/2"	13

Air Hose - Polyamide (Max. 100°) POLB
Air Hose - Teflon (Max. 180°) TEF



POLB



TEF

Order Example	Ø In / Out
Code x 04	2 x 4
Code x 06	4 x 6
Code x 08	6 x 8
Code x 10	8 x 10
Code x 12	10 x 12

Air Hose - Polyurethane (Max. 60°) PH



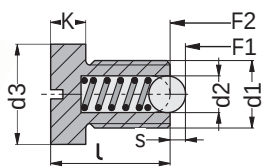
Order	Ø In / Out
PH4	2 x 4
PH6	4 x 6
PH8	6 x 8
PH10	7 x 10
PH12	9 x 12

Spiral Air Hose T186



Order	Ø In / Out	Mt. Length
T18604	4 - 6	4
T18605	5 - 8	5
T18607	5 - 8	7.5
T18615	5 - 8	15
T18610	12 - 8	10

with fitting



Mounting:
Fixing with
screwdriver.

Heat Resistance
Max.: 250°C.

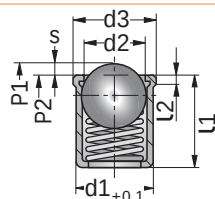
Spring Plunger with Slotted Head

Code: **SBS**

d1	l	s	d2	d3	K	F1(N)	F2(N)
M6	14	1	3.5	10	5	11	18
M8	16.5	1.5	4.5	13	5	18	31
M10	20	2	6	16	6	24	45
M12	22	2.5	8	18	7	24	49

Order:
SBS. d1

Material: Steel
quality 5.8



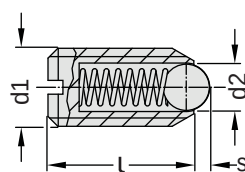
Spring Plunger with Bushing

Code: **KBS**

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. d1

Material: Steel
quality 5.8



Spring Plunger

Code: **BSM**

It is used as core / slide lock etc. in injection mould. As stamp extractor in die and also can be used for bushing of threaded shafts, limiting the torque tools and positioning of level adjuster.
Material structure; machinable steel bushing - hardened bearing steel ball - winding steel spring.

Heat Resistance Maximum: 250°C.

Mounting: Fixing with screwdriver.

Usage Area:

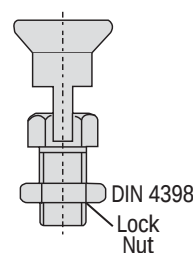
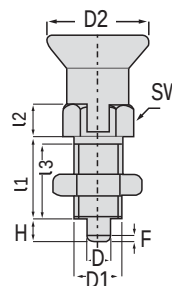
- Locating - Pulling, pushing - Extractor - Clamping

d1 (thread)	l mm	S mm	d2 mm	Initial Force	Final Force
M4	9	0.8	2.5	6 Nw	12 Nw
M5	12	0.9	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



Order:
BSM. d1

Material: Steel
quality 5.8



Indexing Plunger with Lock Nut

Code: **MM102ST**

Movable Support Pin

Material Structure:

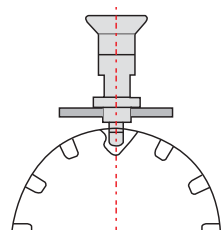
Coated steel material
(or stainless steel - 304)

Locking Pin:

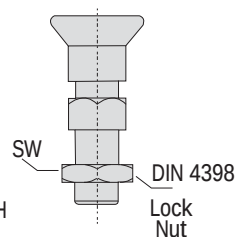
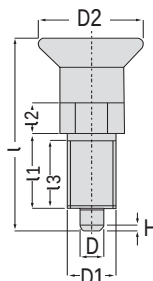
Hardened steel
(or stainless steel - 304)

Handle:

Plastic (PA6) black
non-demountable head



Order Code	D -0.02 / -0.04	D1	D2	L	L1	L2	L3	H	SW
MM102ST05	5	M10x1.0	21	43.7	17	7	15	5	12
MM102ST06	6	M12x1.5	25	51.7	20	7	17	6	14
MM102ST08	8	M16x1.5	33	68.7	26	10	23	8	19
MM102ST10	10	M20x1.5	33	74	28	12	25	10	22
MM102ST12	12	M20x1.5	33	78	28	14	25	12	22



Indexing Plunger

Code: **MM101ST**

Fixed Support Pin

Material Structure:

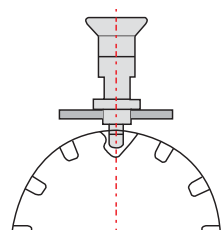
Coated steel material
(or stainless steel - 304)

Locking Pin:

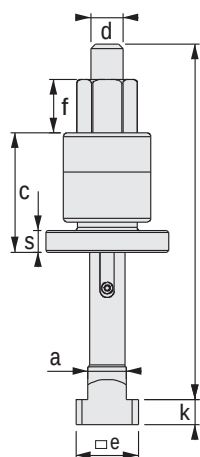
Hardened steel
(or stainless steel - 304)

Handle:

Plastic (PA6) black
non-demountable head

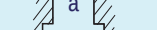


Order Code	D -0.02 / -0.04	D1	D2	L	L1	L2	L3	H	SW
MM101ST05	5	M10x1.0	21	43.7	17	7	15	5	12
MM101ST06	6	M12x1.5	25	51.7	20	7	17	6	14
MM101ST08	8	M16x1.5	33	68.7	26	10	23	8	19
MM101ST10	10	M20x1.5	33	74	28	12	25	10	22
MM101ST12	12	M20x1.5	33	78	28	14	25	12	22

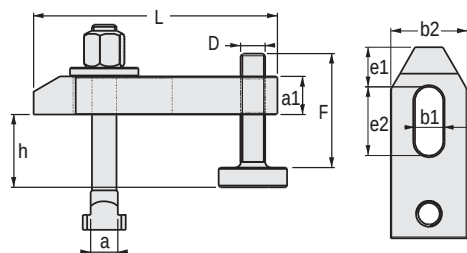


Code: 1630

Technical drawing of a hexagonal bolt head. The drawing shows a hexagonal head with a central circular hole. The dimensions are labeled as follows: $e1$ is the distance from the center of the hole to the top edge of the hexagon; $e2$ is the distance from the center of the hole to the bottom edge of the hexagon; and SW is the width of the hexagon across its flats.

Order Code		a mm	e mm	k mm	h - H mm	e1 mm	e2 mm	c mm	s mm	f mm	SW	Clamping Forces		Weight (g)
		Nm		kN										
1630-20.22.200	M20 x 22 x 200	21.7	35	14	25 - 75	49	69	92	12	30	30	679	215	1635
1630-20.22.250	M20 x 22 x 250	21.7	35	14	70 - 120	49	69	92	12	30	30	679	215	1720
1630-24.24.200	M24 x 24 x 200	23.7	40	16	25 - 75	53	74	92	12	30	36	1163	310	2075
1630-24.24.250	M24 x 24 x 250	23.7	40	16	70 - 120	53	74	92	12	30	36	1163	310	2250
1630-24.28.200	M24 x 28 x 200	27.7	44	18	25 - 75	53	74	92	12	30	36	1163	310	2180
1630-24.28.250	M24 x 28 x 250	27.7	44	18	70 - 120	53	74	92	12	30	36	1163	310	2340
1630-30.36.200	M30 x 36 x 200	35.6	54	22	25 - 75	68	88	94	14	30	46	2258	493	3660
1630-30.36.250	M30 x 36 x 250	35.6	54	22	70 - 120	68	88	94	14	30	46	2258	493	3910

Code: 1170



Heights can be adjusted with support screw.
Product is suitable to DIN 650 T-Slot.



Order Code		L mm	Code: 1330 		e1 mm	e2 mm	b1 mm	Code: 1610 	h mm	Code: 1490	Weight (g)
			a1 mm	b2 mm						D x F 	
1170-1010080	10	80	15	30	15	30	11	M10 x 10 x 80	10 - 35	M10 x 42	370
1170-1212100	12	100	20	40	21	40	14.5	M12 x 12 x 100	12 - 40	M12 x 50	740
1170-1212125	12	125	20	40	21	50	14.5	M12 x 12 x 125	12 - 85	M12 x 95	940
1170-1214100	14	100	20	40	21	40	14.5	M12 x 14 x 100	12 - 40	M12 x 50	705
1170-1214125	14	125	20	40	21	50	14.5	M12 x 14 x 125	12 - 85	M12 x 95	965
1170-1616125	16	125	25	50	26	45	18.5	M16 x 16 x 125	15 - 50	M16 x 62	1115
1170-1616160	16	160	25	50	26	65	18.5	M16 x 16 x 160	15 - 85	M16 x 97	1870
1170-1618125	18	125	25	50	26	45	18.5	M16 x 18 x 125	15 - 50	M16 x 62	1540
1170-1618160	18	160	25	50	26	65	18.5	M16 x 18 x 160	15 - 85	M16 x 97	1900
1170-2020160	20	160	30	60	30	60	22.5	M20 x 20 x 160	15 - 45	M20 x 62	1675
1170-2020200	20	200	30	60	30	80	22.5	M20 x 20 x 200	15 - 80	M20 x 97	3295
1170-2022160	22	160	30	60	30	60	22.5	M20 x 22 x 160	15 - 45	M20 x 62	2730
1170-2022200	22	200	30	60	30	80	22.5	M20 x 22 x 200	15 - 80	M20 x 97	3340
1170-2424160	24	160	30	70	35	60	26.5	M24 x 24 x 160	16 - 60	M24 x 81	3465
1170-2424200	24	200	30	70	35	80	26.5	M24 x 24 x 200	16 - 95	M24 x 116	4660
1170-2428160	28	160	30	70	35	60	26.5	M24 x 28 x 160	16 - 60	M24 x 81	5560
1170-2428200	28	200	30	70	35	80	26.5	M24 x 28 x 200	16 - 95	M24 x 116	4755

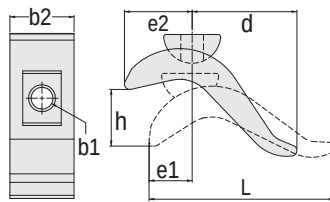
Stepless Height Adjustable Clamp

Code: 1200

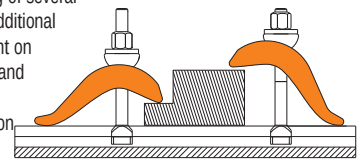
Material: Forged and hardened steel / zinc coated



Please check our "Volume-2" catalogue for all other Clamping Tools.



Stepless clamp for fast adjusting of several ranges of work height without additional supports. Low space requirement on machine table. Heavy duty type and especially suitable for clamping dies & moulds to press & injection and milling machines.



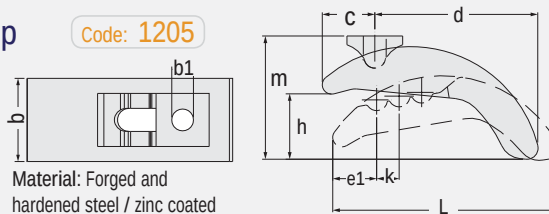
Order Code	a	DIN 787	b1 mm	b2 x L	d mm	e1 mm	e2 mm	h	Weight (g)
1200-50.140	-	-	17	50 x 140	60	30	55	75	900
1200-60.175	-	-	21	60 x 175	80	40	70	85	1600
1200-12.125	12	M12 x 12 x 125	17	50 x 140	60	30	55	0 - 50	1070
1200-14.125	14	M12 x 14 x 125						0 - 55	1080
1200-16.160	16	M16 x 16 x 160						0 - 75	1270
1200-18.160	18	M16 x 18 x 160						0 - 75	1280
1200-20.200	20	M20 x 20 x 200						0 - 85	2300
1200-22.200	22	M20 x 22 x 200	21	60 x 175	80	40	70	0 - 85	2370

Stepped Height Adjustable Clamp

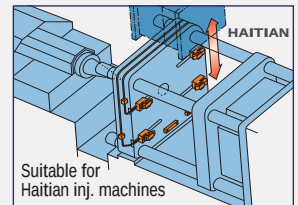
Code: 1205



It provides using between 15-85 mm without supporting.



Material: Forged and hardened steel / zinc coated



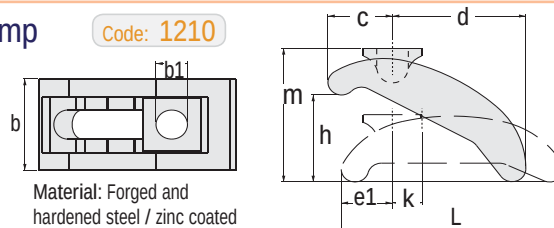
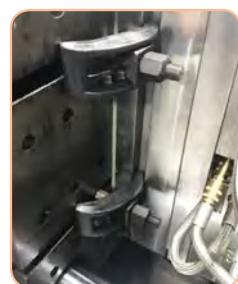
Order Code	b1 mm	a	DIN 787	m mm	h	b x L	c mm	d mm	k x3	Weight (g)
1205-017	17	16 - 18	-	93	15 - 50	65 x 165	39	128	17	2100
1205-021	21	20 - 22	-	111	20 - 65	75 x 189	43	146	19	3200
1205-025	25	24 - 28	-	126	20 - 75	85 x 213	49	164	21	4500
1205-031	31	36	-	143.5	20 - 85	95 x 238	56	182	23	6300
1205-016	17	16	M16 x 16 x 125	93	15 - 50	65 x 165	39	128	17	2500
1205-018	17	18	M16 x 18 x 125	93	15 - 50	65 x 165	39	128	17	2500
1205-020	21	20	M20 x 20 x 160	111	20 - 65	75 x 189	43	146	19	3900
1205-022	21	22	M20 x 22 x 160	111	20 - 65	75 x 189	43	146	19	3900
1205-024	25	24	M24 x 24 x 200	126	20 - 75	85 x 213	49	164	21	5700
1205-028	25	28	M24 x 28 x 200	126	20 - 75	85 x 213	49	164	21	5700
1205-036	31	36	M30 x 36 x 250	143.5	20 - 85	95 x 238	56	182	23	8800

Stepped Height Adjustable Clamp

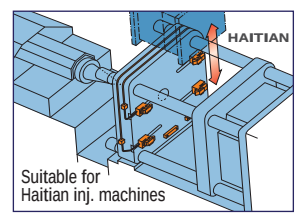
Code: 1210



It provides using between 0-75 mm without supporting.

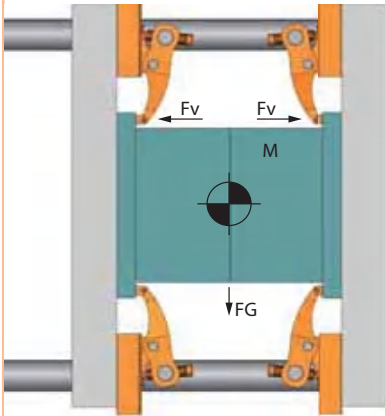


Material: Forged and hardened steel / zinc coated



Order Code	b1 mm	a	DIN 787	m mm	h	b x L	c mm	d mm	e1 mm	k x4	Weight (g)
1210-013	13	12 - 14	-	52	0 - 40	40 x 90	28	48	23	17	340
1210-017	18	16 - 18	-	80	0 - 60	58 x 130	38	74	29	19	990
1210-021	22	20 - 22	-	98	0 - 75	68 x 140	46	80	32	21	1450
1210-025	26	24 - 28	-	110	0 - 90	78 x 175	52	100	39	23	2360
1210-012	13	12	M12 x 12 x 100	52	0 - 40	40 x 90	28	48	23	17	400
1210-014	13	14	M12 x 14 x 100	52	0 - 40	40 x 90	28	48	23	17	420
1210-016	18	16	M16 x 16 x 160	80	0 - 60	58 x 130	38	74	29	19	1140
1210-018	18	18	M16 x 18 x 160	80	0 - 60	58 x 130	38	74	29	19	1145
1210-020	22	20	M20 x 20 x 200	98	0 - 75	68 x 140	46	80	32	23	1560

Clamping Templates



For Injection Moulds:

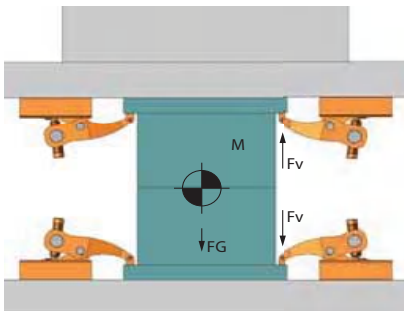
Formula Calculator

$$\frac{M \times FG}{1000} = \text{kN} \quad \frac{2500 \times 9.81}{1000} = 24.52 \text{ kN}$$

$$\frac{\text{kN}}{\mu} = \text{Result} \quad \frac{24.52}{0.14} = 175.14 \text{ kN}$$

$$\frac{\text{Result}}{F_v} = \text{Number of Clamp} \quad \frac{175.14 \text{ kN}}{25 \text{ kN}} = 7 \text{ Clamp}$$

Use 8 pcs.



For Press Dies:

Formula Calculator

$$\frac{M \times FG}{1000} = \text{kN} \quad \frac{5000 \times 9.81}{1000} = 49.050 \text{ kN}$$

$$\frac{\text{kN}}{\mu} = \text{Result} \quad \frac{49.05}{0.14} = 350.35 \text{ kN}$$

(Upper Die 60 %) (Lower Die 40 %) (60 % Upper Die = 210.21) (40 % Lower Die = 140.14)

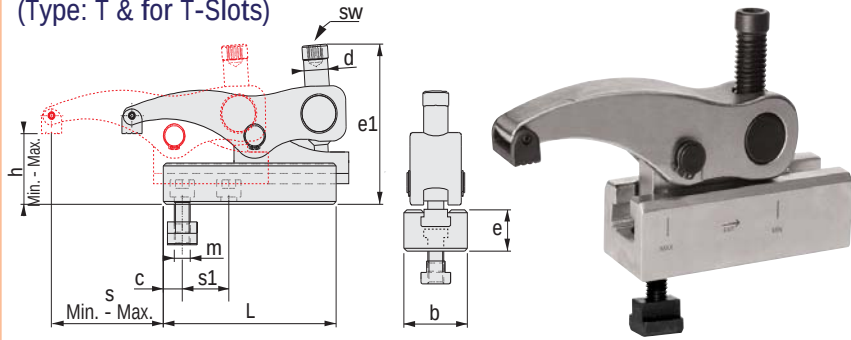
$$\frac{\text{Result (Upper Die)}}{F_v} = \text{Number of Clamp} \quad \frac{210.21 \text{ kN}}{25 \text{ kN}} = 8 \text{ Number of Clamp}$$

$$\frac{\text{Result (Lower Die)}}{F_v} = \text{Number of Clamp} \quad \frac{140.14 \text{ kN}}{25 \text{ kN}} = 5.6 \text{ Clamp}$$

Use 6 pcs.

Combined Power Sliding Clamp (Type: T & for T-Slots)

Code: 1120 / 1130 / 1150 / 1160 - T



Area of Usage:

Injection machines, presses, milling machines, drilling machines and various industrial machines.

Code: 1120 - T / Standard Type (t-slot: 14-16-18)

- * M12 hex-socket screw is used with DIN 508 T-Nut.
- * Height Clamping Gap of Part: 0 - 50 mm
- * Back and Forth Movement Distance: 54 mm
- * Clamping Force: 1600 Kgf

Code: 1130 - T / Standard Type (t-slot: 14-16-18-20-22)

- * M12 hex-socket screw is used with DIN 508 T-Nut.
- * Height Clamping Gap of Part: 0 - 60 mm
- * Back and Forth Movement Distance: 68 mm
- * Clamping Force: 2000 Kgf

Code: 1150 - T / Heavy Duty Type (t-slot: 18-20-22-24-28)

- * M16 hex-socket screw is used with DIN 508 T-Nut.
- * Height Clamping Gap of Part: 0 - 65 mm
- * Back and Forth Movement Distance: 78 mm
- * Clamping Force: 2500 Kgf

Code: 1160 - T / Heavy Duty Type (t-slot: 22-24-28-36)

- * M20-24 hex-socket screw is used with DIN 508 T-Nut.
- * Height Clamping Gap of Part: 20 - 80 mm
- * Back and Forth Movement Distance: 75 mm
- * Clamping Force: 5500 Kgf

Order Code	T-Slot	m	h	s	s1	e1	d	sw	L	e	b	c	Weight (g)
1120-014-T	14	M12	Min. - Max. 0 - 50	12 - 66	25	100	M14	8	104	35.5	38	13	1740
1120-016-T	16												1755
1120-018-T	18												1785
1130-014-T	14	M12	Min. - Max. 0 - 60	15 - 83	30	113	M18	10	130	39	48	17.5	3040
1130-016-T	16												3055
1130-018-T	18												3085
1130-020-T	20												3135
1130-022-T	22												3150

Heavy Duty Types

1150-118-T	18	M16	Min. - Max. 0 - 65	18 - 96	35	125	M20	12	140	43	55	19.5	4410
1150-120-T	20												4460
1150-122-T	22												4515
1150-124-T	24												4620
1150-128-T	28												4725
1160-222-T	22	M20	Min. - Max. 20 - 80	17 - 92	41.5	175	M24	12	178	55	74	24	9030
1160-224-T	24												9120
1160-228-T	28	M24											9180
1160-236-T	36												9600

Position and fasten carrier component on the tool table.



Push the base component into the desired position on the carrier component.



Adjust the height of the bar with the adjusting screw and clamp the workpiece.

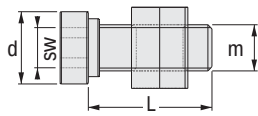


The powerful design enables rapid and easy clamping.



Accessories for Power Clamps

Fixing Screw and T-Nut



* For 14-28 T-Slots.
* T-Nut DIN 508.

Order Code	a	m	L	d	SW
1120-512	12	M10	29	16.5	8
1120-514	14	M12			
1130-614	14	M12	30	20.5	10
1130-616	16				
1130-618	18				
1130-620	20		36		
1130-622	22				
1150-718	18	M16	34	24.5	12
1150-720	20				
1150-722	22		42		
1150-724	24				
1150-728	28				
1160-822	22	M20	45	34	12
1160-824	24				
1160-826	28	M24	55		
1160-828	28		61		
1160-832	32				
1160-836	36		66	38.5	

Pressure Pad



DP: Straight part clamping.



BSP: Lengthwise cylinder clamping.



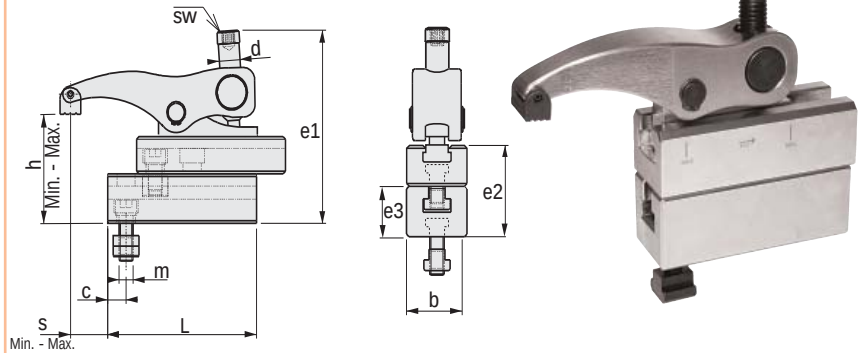
ESP: Transverse cylinder clamping.

Order Code	a mm	b mm	c mm	Weight (g)
1120-DP	13.5	26.5	12	15
1120-BSP	15.5			18
1120-ESP	18			21
1130-DP	17	32	15	20
1130-BSP	19			30
1130-ESP	22			
1150-DP	19	38	18	40
1150-BSP	21			50
1150-ESP	25			
1160-DP	22	44	22	55
1160-BSP	25			70
1160-ESP	28			80

Combined Power Sliding Clamp

Code: 1120 / 1130 / 1150 / 1160 - DT

(Type: DT / with Base Support & for T-Slots)



Area of Usage:

Injection machines, presses, milling machines, drilling machines and various industrial machines.

Code: 1120 - DT / Standard Type

(t-slot: 14 - 16 - 18)

- * M12 hex-socket screw is used with DIN 508 T-Nut.
- * Height Clamping Gap of Part: 36 - 86 mm
- * Back and Forth Movement Distance: 54 mm
- * Clamping Force: 1600 Kgf

Code: 1130 - DT / Standard Type

(t-slot: 14 - 16 - 18 - 20 - 22)

- * M12 hex-socket screw is used with DIN 508 T-Nut.
- * Height Clamping Gap of Part: 45 - 105 mm
- * Back and Forth Movement Distance: 68 mm
- * Clamping Force: 2000 Kgf

Code: 1150 - DT / Heavy Duty Type

(t-slot: 18 - 20 - 22 - 24 - 28)

- * M16 hex-socket screw is used with DIN 508 T-Nut.
- * Height Clamping Gap of Part: 48 - 113 mm
- * Back and Forth Movement Distance: 78 mm
- * Clamping Force: 2500 Kgf

Code: 1160 - DT / Heavy Duty Type

(t-slot: 22 - 24 - 28 - 36)

- * M20-24 hex-socket screw is used with DIN 508 T-Nut.
- * Height Clamping Gap of Part: 79 - 139 mm
- * Back and Forth Movement Distance: 75 mm
- * Clamping Force: 5500 Kgf

Order Code	T-Slot a	m	h	s	e1	e2	d	SW	L	b	e3	c	Weight (g)
1120-014-DT	14	M12	Min. - Max. 36 - 86	12 - 66	136	71.5	M14	8	104	38	38	13	2540
1120-016-DT	16												
1120-018-DT	18												
1130-014-DT	14	M12	Min. - Max. 45 - 105	15 - 83	158	83	M18	10	130	48	45	17.5	4750
1130-016-DT	16												4775
1130-018-DT	18												4805
1130-020-DT	20												4855
1130-022-DT	22												4905

Heavy Duty Types

1150-118-DT	18	M16	Min. - Max. 48 - 113	18 - 96	173	90	M20	12	140	55	48	19.5	6625
1150-120-DT	20												6690
1150-122-DT	22												6750
1150-124-DT	24												6840
1150-128-DT	28												6960

1160-222-DT	22	M20	Min. - Max. 79 - 139	17 - 92	235	114	M24	12	178	74	59	24	13330
1160-224-DT	24												13465
1160-228-DT	28	M24											13580
1160-236-DT	36												13890

Position and secure the base support on the tool table.



Desired distance is reached by increasing base supports.



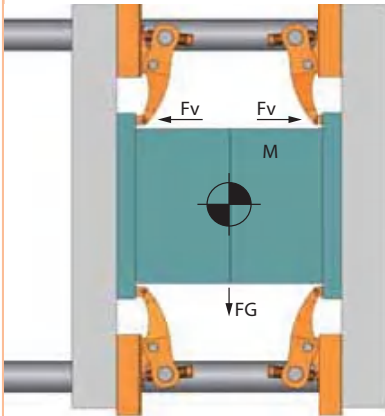
Base support is applied in T-Slot with hex-socket screw against T-Nut.



Workpiece is fixed with the hex-socket screw of the clamp.



Clamping Templates



For Injection Moulds:

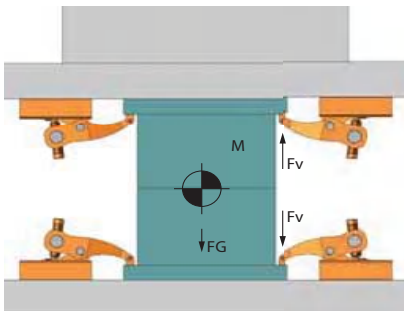
Formula Calculator

$$\frac{M \times FG}{1000} = \text{kN} \quad \frac{2500 \times 9.81}{1000} = 24.52 \text{ kN}$$

$$\frac{\text{kN}}{\mu} = \text{Result} \quad \frac{24.52}{0.14} = 175.14 \text{ kN}$$

$$\frac{\text{Result}}{F_v} = \text{Number of Clamp} \quad \frac{175.14 \text{ kN}}{25 \text{ kN}} = 7 \text{ Clamp}$$

Use 8 pcs.



For Press Dies:

Formula Calculator

$$\frac{M \times FG}{1000} = \text{kN} \quad \frac{5000 \times 9.81}{1000} = 49.050 \text{ kN}$$

$$\frac{\text{kN}}{\mu} = \text{Result} \quad \frac{49.05}{0.14} = 350.35 \text{ kN}$$

(Upper Die 60%) (Lower Die 40%) (60% Upper Die = 210.21) (40% Lower Die = 140.14)

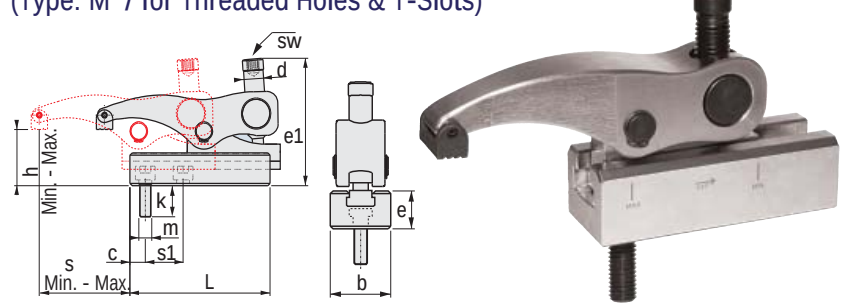
$$\frac{\text{Result (Upper Die)}}{F_v} = \text{Number of Clamp} \quad \frac{210.21 \text{ kN}}{25 \text{ kN}} = 8 \text{ Number of Clamp}$$

$$\frac{\text{Result (Lower Die)}}{F_v} = \text{Number of Clamp} \quad \frac{140.14 \text{ kN}}{25 \text{ kN}} = 5.6 \text{ Clamp}$$

Use 6 pcs.

Combined Power Sliding Clamp (Type: M / for Threaded Holes & T-Slots)

Code: 1120 / 1130 / 1150 / 1160 - M



Area of Usage:

Injection machines, presses, milling machines, drilling machines and various industrial machines.

Advantages:

"11.-M" offers a clamping force between 1600 - 5500 Kgf. Using in hole and T-Slot. Ability to be fixed in various positions by sliding on the tool table. It clamps high and low distances without support with hex-socket screw. It provides rapid and easy clamping due to its practical structure.

Code: 1120 - M / Standard Type (hole: M10-M12)

- * In the threaded holes M10 / M12 are used with the "order codes: 1120-310 / 1120-312" screws.
- * Height Clamping Gap of Part: 0 - 50 mm
- * Clamping Force: 1600 Kgf

Code: 1130 - M / Standard Type (hole: M12-M16)

- * In the threaded holes M12 / M16 are used with the "order codes: 1130-412 / 1130-416" screws.
- * Height Clamping Gap of Part: 0 - 60 mm
- * Clamping Force: 2000 Kgf

Code: 1150 - M / Heavy Duty Type (hole: M16-M18-M20)

- * In the threaded holes M16 / M18 / M20 are used with the "order codes: 1150-516 / 1150-518 / 1160-520" screws.
- * Height Clamping Gap of Part: 0 - 65 mm
- * Clamping Force: 2500 Kgf

Code: 1160 - M (hole: M20-M22-M24-M30)

- * In the threaded holes M20 / M22 / M24 / M30 are used with the "order codes: 1160-620 / 1160-622 / 1160-624 / 1160-724 / 1160-730" screws.
- * Height Clamping Gap of Part: 20 - 80 mm
- * Clamping Force: 5500 Kgf

Order Code	m	h	s	s1	e1	d	sw	L	e	b	c	k	Weight (g)
1120-010-M	M10	Min. - Max. 0 - 50	12 - 66	25	100	M14	8	104	35.5	38	13	20	1700
1120-012-M	M12												
1130-012-M	M12	Min. - Max. 0 - 60	15 - 83	30	113	M18	10	130	39	48	17.5	22	3000
1130-016-M	M16											26	3030

Heavy Duty Types

1150-116-M	M16	Min. - Max. 0 - 65	18 - 96	35	125	M20	12	140	43	55	19.5	26	4340
1150-118-M	M18											30	4360
1150-120-M	M20												4370
1160-220-M	M20	Min. - Max. 20 - 80	17 - 92	41.5	175	M24	12	178	55	74	24	34	8880
1160-222-M	M22											38	8900
1160-224-M	M24											44	8920
1160-230-M	M30											51	9110

Position and fasten carrier component on the tool table.



Push the base component into the desired position on the carrier component.



Adjust the height of the bar with the adjusting screw and clamp the workpiece.



The powerful design enables rapid and easy clamping.



Accessories for Combined Power Sliding Clamps

Upper Slide Part

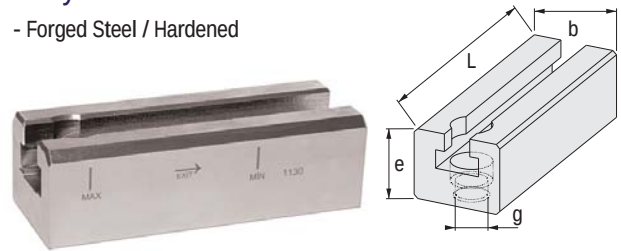
- Forged Steel / Hardened



Order Code	T-Slot 	h Min. - Max.	SW	SW	Weight (g)
1120-0050	14 - 18	0 - 50	8	-	860
1130-0060	14 - 22	0 - 60	10	-	1680
1150-0062	18 - 28	0 - 65	12	-	2565
1160-2080	22 - 36	20 - 80	12	24	5050

Body with T-Slide

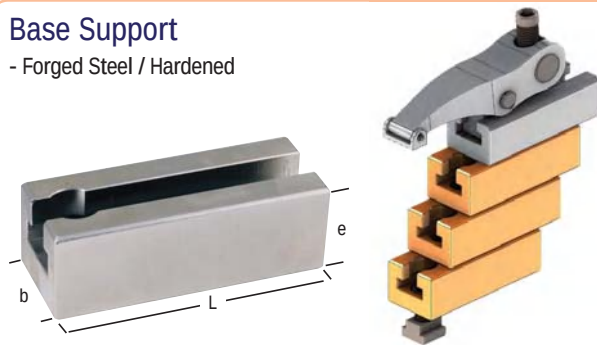
- Forged Steel / Hardened



Order Code	 g (metric)	T-Slot 	L	b	e	Weight (g)
1120-045	M10 / M12	14 - 18	104	38	35.5	750
1130-047	M12 / M16	18 - 28	130	48	39	1275
1150-053	M16 / M18 / M20	18 - 28	140	55	42	1700
1160-074	M20 / M22 / M24	22 - 28	178	74	55	3650
1160-075	M30	36	178	74	55	3650

Base Support

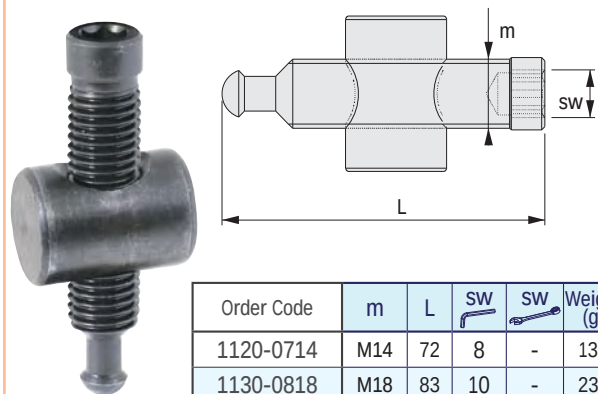
- Forged Steel / Hardened



Order Code	 g (metric)	T-Slot 	L	b	e	Weight (g)
1120-040	M10 / M12	14	104	38	38	820
1130-045	M12 / M16	14	130	48	45	1630
1150-048	M16 / M18 / M20	18	140	55	48	2070
1160-059	M20 / M22 / M24	28	178	74	59	3980

Clamping Screw Set

- Class: 10.9 / Black Coated

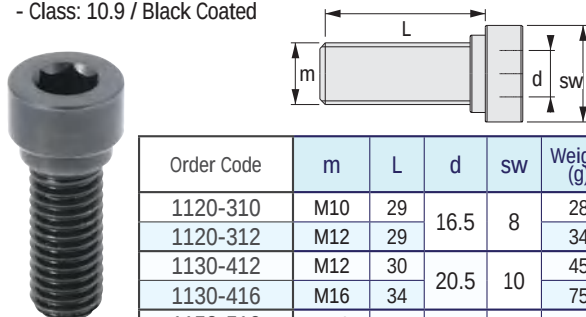


Order Code	m	L	SW	SW	Weight (g)
1120-0714	M14	72	8	-	138
1130-0818	M18	83	10	-	235
1150-0920	M20	96	12	-	360
1160-1024	M24	134	12	24	795

Hex-socket Screw for Fixing

- For M12 - M16 - M18 - M20 thread holes.

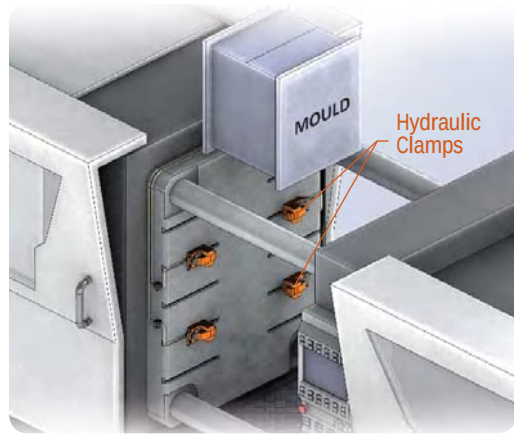
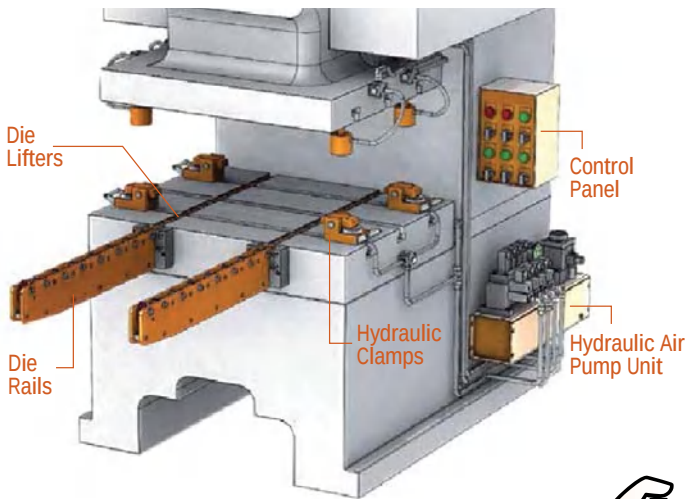
- Class: 10.9 / Black Coated



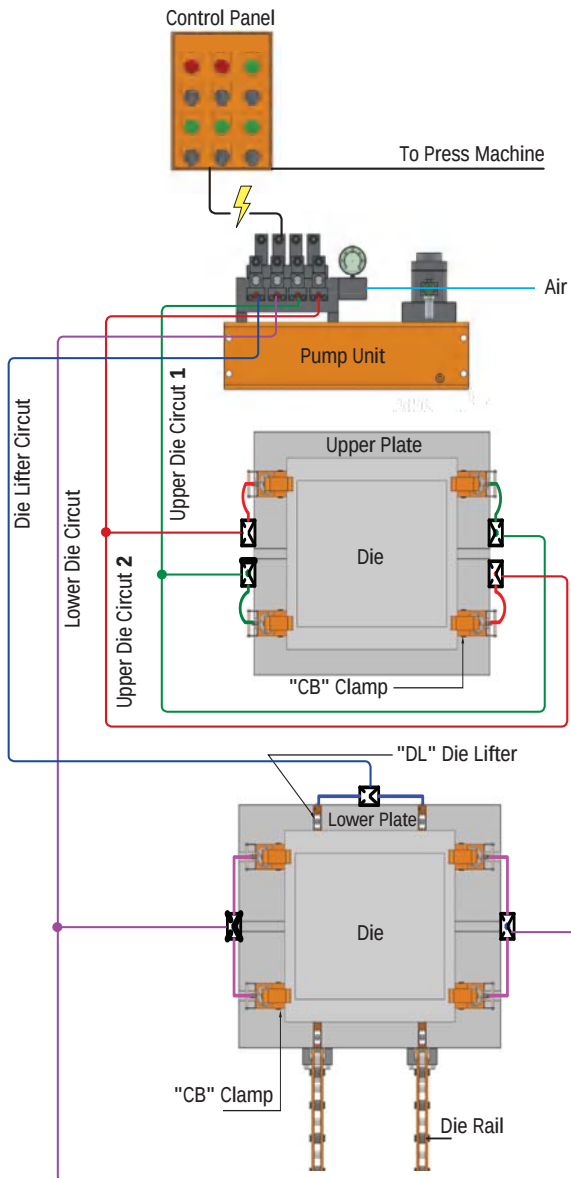
Order Code	m	L	d	sw	Weight (g)
1120-310	M10	29	16.5	8	28
1120-312	M12	29			34
1130-412	M12	30	20.5	10	45
1130-416	M16	34			75
1150-516	M16	34	24.5	12	75
1150-518	M18	38			90
1150-520	M20	38			105
1160-620	M20	45	34	12	170
1160-622	M22	49			295
1160-624	M24	45			390
1160-724	M24	55			405
1160-730	M30	66	38.5		450



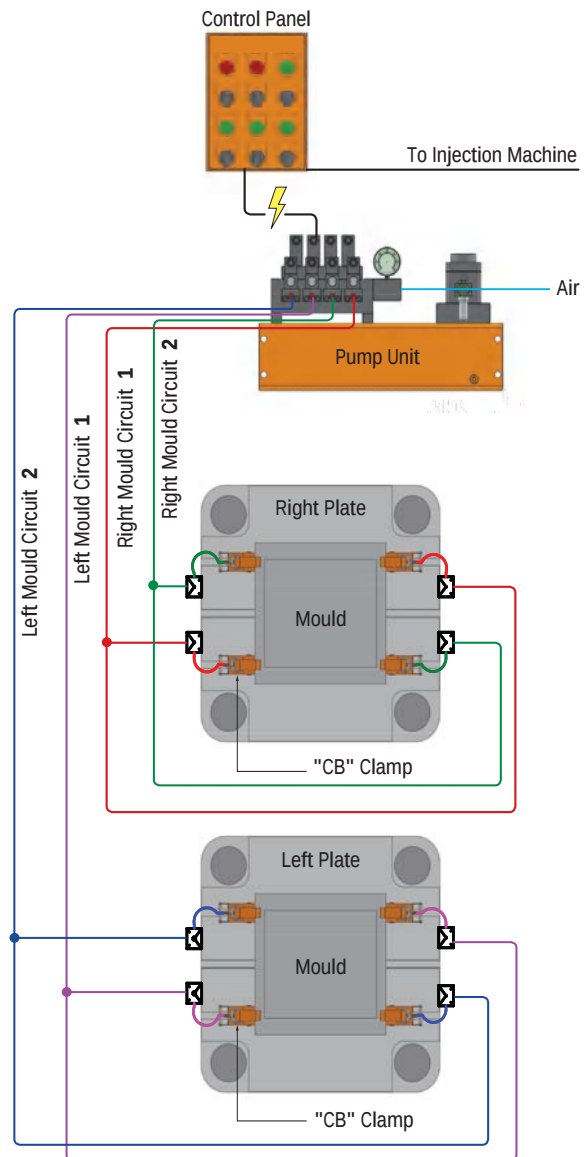
Quick Die & Mould Change Systems



Quick Die Change System



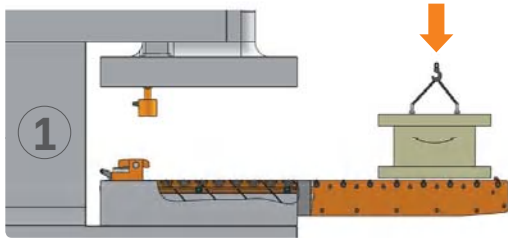
Quick Mould Change System



Quick Die Change System

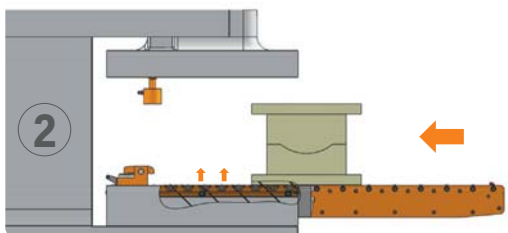
"Load the Die"

Load the die using a chain hoist or forklift.
The Die Rails enable easy loading.



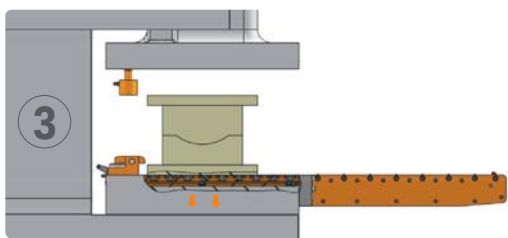
"Transfer the Die to Lower Plate (bolster)"

With the Die Rails and Die Lifters, minimal force is required to move the die. Die Lifters are set in the T - / U - slots.
Die Lifter: Hydraulic Pressure **ON**



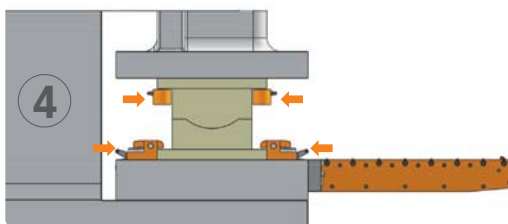
"Set the Die on the Lower Plate (bolster)"

With push-button operation (from the control unit), the Die Lifter releases and the die makes contact with the lower plate. Die Lifter: Hydraulic Pressure **OFF**



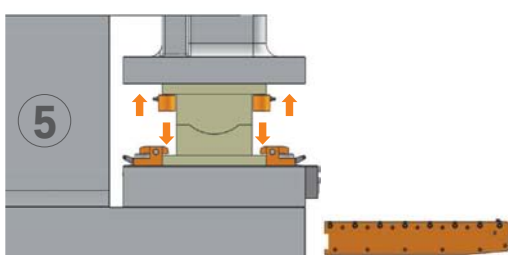
"Set the Hydraulic Clamps"

Set to clamps according to the die.
Slide clamps on the T-Slot and bring them near the die.
Hydraulic Clamp: Hydraulic Pressure **OFF**



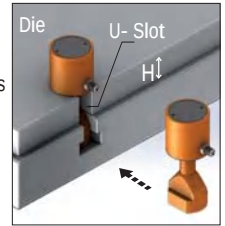
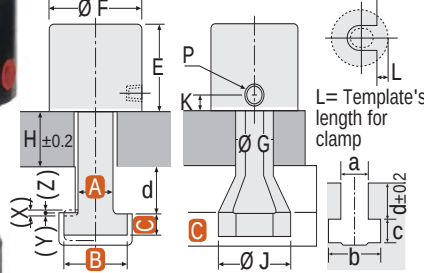
"Fasten the Die"

With push-button operation (from the control unit), Hydraulic Clamps fastening / clamping the die. After safety confirmation, the Die Rails can be removed. Hydraulic Clamp: Hydraulic Pressure **ON**



Hydraulic Clamp "CA"

Code: 1010-CA



Hydraulic Pressure:
250 Kgf / cm²

* Please indicate the dimensions of T-Slot (a-b-c-d) and the thickness of the base for the die (H) when ordering.

Type	→	CA01	CA02	CA04	CA06	CA10	CA16	CA25
Capacity of Clamp	Ton	1	2	4	6	10	16	25
Total Stroke (X)	mm	6	8	8	8	8	8	8
Stroke of Clamp (Y)	mm	3	4	4	4	4	4	4
Preserved Stroke (Z)	mm	3	4	4	4	4	4	4
Total Volume of Cylinder	cc	3	7	13	21	32	54	76

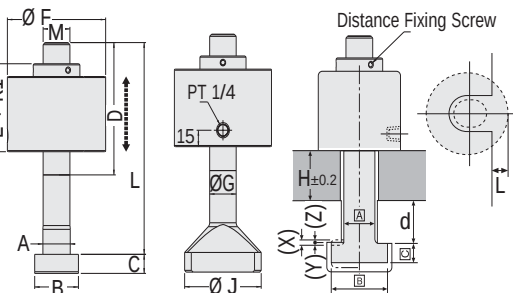
- The dimensions of clamps **A**, **B** and **C** are made based on the dimension of T-Slot.
- If the thickness of clamp "H+d" is more than the max. value listed on the table, it will be regarded as special design.

Standard Temp.: 60°
Optional Temp.: 160°

Order Code	Ø F	E	Ø G	Ø J	H+d Max.	L Max.	a Min.	K	P
1010-CA01	44	48	12	30	60	12	8	9.5	PT 1/8
1010-CA02	53	52	16	48	80	17	12	12	PT 1/8
1010-CA04	65	58	23	58	90	20	16	15	PT 1/4
1010-CA06	82	65	30	64	100	25	18	15	PT 1/4
1010-CA10	99	71	38	78	110	30	22	15	PT 1/4
1010-CA16	126	82	45	88	120	38	28	17	PT 1/4
1010-CA25	150	100	55	98	140	45	36	23	PT 1/4

Hydraulic Clamp "CV"

Code: 1010-CV



Type	→	CV04	CV06	CV10
Capacity of Clamp	Ton	4	6	10
Total Stroke (X)	mm	8	8	8
Stroke of Clamp (Y)	mm	4	4	4
Preserved Stroke (Z)	mm	4	4	4
Total Volume of Cylinder	cc	13	21	32

- Distance adjustment with fixing screw.

- Preserved Stroke (Z) must be checked when changing the settings.

Hydraulic Pressure: 250 Kgf / cm²

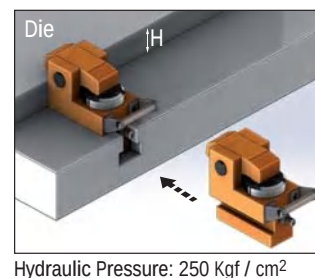
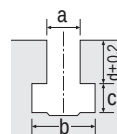
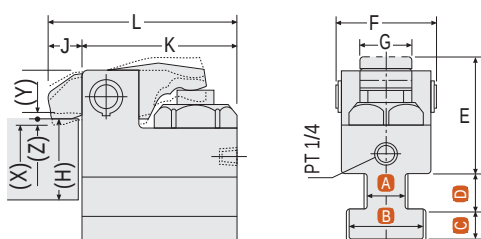
Standard Temp.: 60°

Optional Temp.: 160°

Order Code	T-Slot a	A	B	C	D	E + K1	Adjusting Distance	F	L Max.	M	Ø G	Ø J
1010-CV04.20125	20	19.6	32	12	85	70	15	65	125	M20	20	58
1010-CV04.20160	20	19.6	32	12	110	70	40	65	160	M20	20	58
1010-CV04.22125	22	21.6	35	14	85	70	15	65	125	M20	20	58
1010-CV04.22160	22	21.6	35	14	110	70	40	65	160	M20	20	58
1010-CV06.24125	24	23.6	40	16	85	77	8	82	125	M24	24	64
1010-CV06.24160	24	23.6	40	16	110	77	33	82	160	M24	24	64
1010-CV06.28125	28	27.6	44	18	85	77	8	82	125	M24	24	64
1010-CV06.28160	28	27.6	44	18	110	77	33	82	160	M24	24	64
1010-CV10.27160	27	26.6	46	18	110	83	27	99	160	M27	27	78
1010-CV10.27200	27	26.6	46	18	125	83	42	99	200	M27	27	78
1010-CV10.32160	32	31.6	50	20	110	83	27	99	160	M27	27	78
1010-CV10.32200	32	31.6	50	20	125	83	42	99	200	M27	27	78

Hydraulic Clamp "CB"

Code: 1015-CB



Type	→	CB01	CB02	CB04	CB06	CB10	CB16	CB25
Capacity of Clamp	Ton	1	2	4	6	10	16	25
Total Stroke (X)	mm	6	8	8	8	8	8	8
Stroke of Clamp (Y)	mm	2.5	3	3	3	3	3	3
Preserved Stroke (Z)	mm	3.5	5	5	5	5	5	5
Total Volume of Cylinder	cc	3	7.5	13	21	38	55	98

* Please indicate the dimensions of T-Slot (a-b-c-d) and the thickness of the base for the die (H) when ordering.

- The dimensions of clamps A, B, C and D are made based on the dimension of T-Slot.

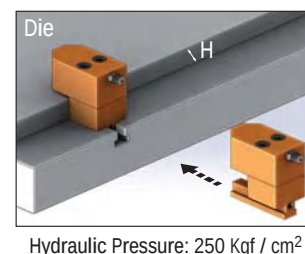
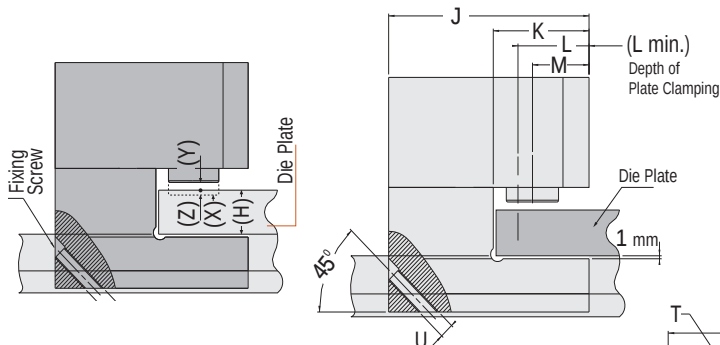
Standard Temperature: 60°

Optional Temperature: 160°

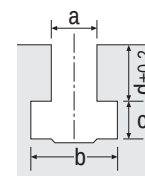
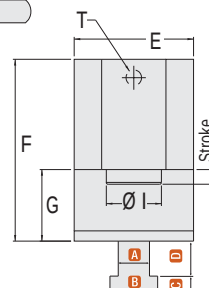
Order Code	L	K	J	H	H + d Min. Max.	E Min.	F	G	a Min.	c Min.	P
1015-CB01	74.5	60	14.5	25	100	42	44	20	10	6.5	PT 1/8
1015-CB02	110	90	20	25	100	73	68	32	14	10	PT 1/4
1015-CB04	134	110	24	25	130	77	79	40	18	12	PT 1/4
1015-CB06	159	130	29	30	150	92	96	46	22	14	PT 1/4
1015-CB10	189	159	30	40	140	114	117	54	24	16	PT 1/4
1015-CB16	230	200	30	40	130	126	129	58	28	20	PT 1/4
1015-CB25	265	235	30	45	120	148	156	70	36	23	PT 1/4

Hydraulic Clamp "CC"

Code: 1015-CC



Type	→	CC01	CC02	CC04	CC06	CC10
Capacity of Clamp	Ton	1	2	4	6	10
Total Stroke (X)	mm	9	9	9	12	12
Stroke of Clamp (Y)	mm	4	4	4	4	4
Preserved Stroke (Z)	mm	5	5	5	8	8
Total Volume of Cylinder	cc	3	7.5	13	21	38



Order Code	H Min. - Max.	A Min.	C Min.	E	F	G	I	J	K	L Min.	M	T	U (metric)
1015-CC01	20 - 35	10	6.5	43	G+43	H+9	16	75	33	27	21.5	1/8	M5
1015-CC02	25 - 40	14	10	50	G+50	H+9	18	91	43	30	25	1/8	M5
1015-CC04	25 - 40	18	12	65	G+60	H+9	30	115	55	40	32.5	1/8	M8
1015-CC06	35 - 55	22	14	80	G+65	H+12	37.5	130	65	48	40	1/4	M10
1015-CC10	40 - 60	24	16	100	G+82	H+12	50	160	85	60	49	1/4	M12

* Please indicate the dimensions of T-Slot (a-b-c-d) and the thickness of the base for the die (H) when ordering.

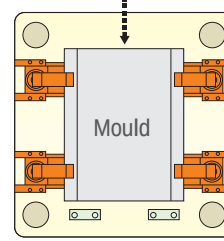
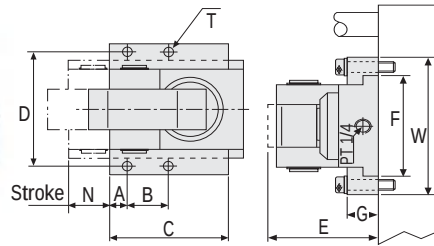
- The dimensions of clamps A, B, C and D are made based on the dimension of T-Slot.

Standard Temperature: 60°

Optional Temperature: 160°

Hydraulic Clamp "CD"

Code: 1015-CD



Type		CD02	CD04	CD06	CD10	CD16	CD25
Capacity of Clamp	Ton	2	4	6	10	16	25
Total Stroke (X)	mm	8	8	8	8	8	8
Stroke of Clamp (Y)	mm	3	3	3	3	3	3
Preserved Stroke (Z)	mm	5	5	5	5	5	5
Total Volume of Cylinder	cc	7.5	13	21	38	55	98

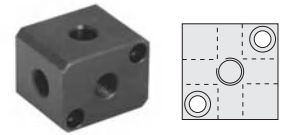
Hydraulic Pressure:
250 Kgf / cm²

- It can be used in machines
with holes on the plate.

Standard Temperature: 60°
Optional Temperature: 160°

Order Code	A	B	C	D	E Min.	F	G	W	N Max.	T
1015-CD02	12	20	80	98	90	76	30	124	124	M10 x 20D
1015-CD04	12	25	100	109	93	87	30	135	135	M12 x 24D
1015-CD06	15	30	120	126	109	104	30	152	152	M12 x 24D
1015-CD10	15	35	150	148	131	124	36	174	174	M14 x 28D
1015-CD16	20	40	200	166	142	138	44	200	200	M18 x 36D
1015-CD25	20	45	235	200	163	168	48	240	240	M22 x 45D

Tube Connector / Order Code: 1036BT



Rotary Joint / Order Code: 1036DE



Clamp Bracket / Order Code: 1036CA



Clamp Bracket / Order Code: 1036CB

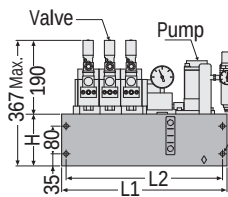


Accessories for Quick Die & Mould Change System



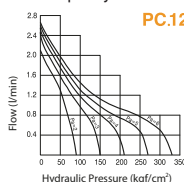
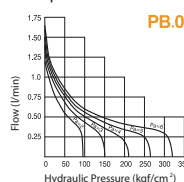
Air Powered Hydraulic Pump Unit

Code: 1040-PB & 1040-PC



Order Code	L1	L2
PB.0801P1V	250	225
PB.0801P2V	310	285
PB.0801P3V	428	403
PB.0801P4V	487	462
PC.1201P3V	-	397

- The Hydraulic Pump is driven by air. Once the hydraulic pressure reaches the pressure setting, it stops pumping which is energy saving.
- The circuit control system is designed with the function of checking and avoiding oil leakage. If pneumatic pressure out, the hydraulic pressure still maintains.
- It is suggested to adopt pump code: 1040-PC1201P3V when used with Hydraulic Clamp type CA16-CB16 or CA25-CB25.
- With pressure control valve.
- Capacity 400 bar max.



Electrical Hydraulic Pump Unit

Code: 1040-VD



- It is suitable for direct connection system.
- Please specify flow speed (l/min.) before ordering.

Order Code	Valve	Flow		Bar
		(l/min)	(l/min)	
1040-1P1VD	1	6	14	150
1040-1P2VD	2	6	14	150
1040-1P3VD	3	6	14	150
1040-1P4VD	4	6	14	150

Air Powered Hydraulic Pump Unit

Code: 1040-V



- It is suitable for quick coupling system.
- Please specify flow speed (l/min.) before ordering.

Order Code	Valve	Flow		Bar
		(l/min)	(l/min)	
1040-1P1V	1	6	14	150
1040-1P2V	2	6	14	150
1040-1P3V	3	6	14	150
1040-1P4V	4	6	14	150

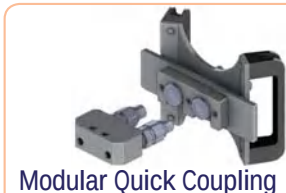
Control Unit



Order Code	Circuit
1041-QDC1	1
1041-QDC2	2
1041-QDC3	3
1041-QDC4	4

Hydraulic Hand Pump

Order Code:
1040-PB0101



Modular Quick Coupling

Order Code: 1042-02

- Provides distribution between units in hydraulic system installation.





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