Balambigai Enterprises

Everything is possible

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STANDARD MOULD ACCESSORIES

Balambigai
Enterprises
Everything is possible

Our Products / Innovative Solutions for Your Moulds

JIS HDS Ejector Pins

Air Ejector Pins

JIS Step Ejector Pins

JIS Step Ejector Sleeves

Our Products / Innovative Solutions for Your Moulds

Guide Bushings

Straight Collar Punches

Guide Post Pillar Sets

Guide Pin Bush

Our Products / Innovative Solutions for Your Moulds

Core Pins

(High Precision & High Hardness)

Oil Less Guide Bushes

Brass Ball Cage

Aluminium Ball Cage

Our Products / Innovative Solutions for Your Moulds

Sprue Bush Hardened

Combined Date Indicator

Double Date Indicator

JIS Standard Die Spring

SF , SL , SM , SH , SB

Our Products / Innovative Solutions for Your Moulds

Black Head HSS Steel Punches

Gas Vent

Air Vent

Brass Cooling Plug

Our Products / Innovative Solutions for Your Moulds

Mould Clamps

Core Inclined Ejectors

Core oil free slide units

Plate Accelerator

Our Products / Innovative Solutions for Your Moulds

Inter Lock Square Block Set

Inter Lock Straight Block Set

Inter Lock Tapper Block Set

All Type of Interlocks

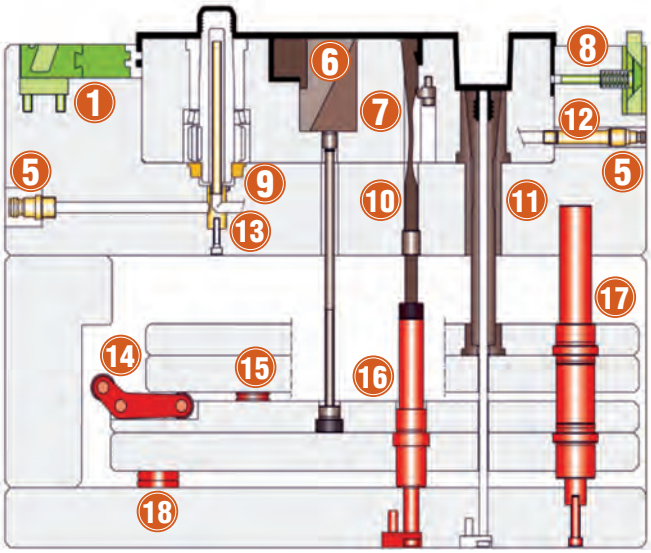
Our Products / Innovative Solutions for Your Moulds

Diamond Coated File

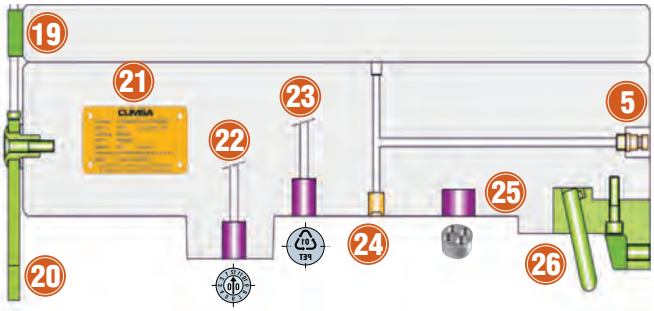
Diamond Mounted Cutter

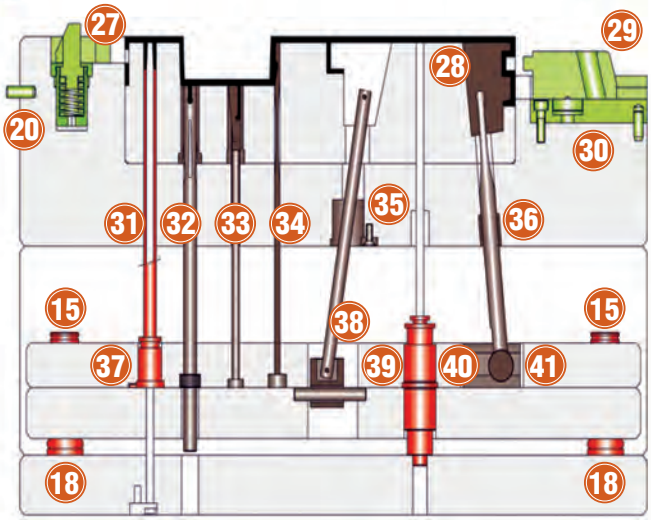
Simichorome Metal Polishing Paste

UPCOMING PRODUCTS



For products not available in our catalogue, please request technical information





1	Slide Unit	10	Xtra Sprung Core
2	Double Date Stamp	11	Expandible Core
3	Color Plate	12	Hex Key Extension Tube
4	Date Stamp Plus	13	Seal Bearing Tube
5	Hex Key Conector Plug	14	Ejector Plate Accelerator
6	Optional Insert for Undercuts	15	Magnetic Safety Stopper
7	Outer Undercut Lifter	16	Threaded Limiter
8	Compact Coring Unit	17	Superior Double Ejector
9	Seal Bearing	18	Shock Absorber Disc
19	Strap Extender		
20	Safety Strap	30	Slide Base
21	Identification Plate	31	Headless Ejector Pin
22	Date Stamp Plus	32	Tulip Ejetor
23	Recycle Insert	33	Standard Lifter
24	Air Poppet Valve	34	Flexible Sprung Core
25	Block Base Insert	35	Angled Guide Bush
26	Adjustable Wedge Assembly	36	Lifter Shaft
27	Core Cam	37	Ejector Pin Base
28	Lifter Head	38	Undercut Base Unit
29	Adjusted Slide	39	Horizontal Base
39	Accelerated Ejector	40	Fixed Lifter Base

UPCOMING PRODUCTS

18 Shock Absorber Disc

42 Internal Latch Lock

43 Stroke Limiter

44 Plate Retainer

45 Undercut Unit

46 Vacuumjet Seal

47 Air Valve for High Pressure

49 Special Angular Undercut

50 Spiral Sleeve

51 Spiral Ejector

52 Vacuumjet Valve Tube

54 Vacuumjet Plug

55 Pneumatic Piston

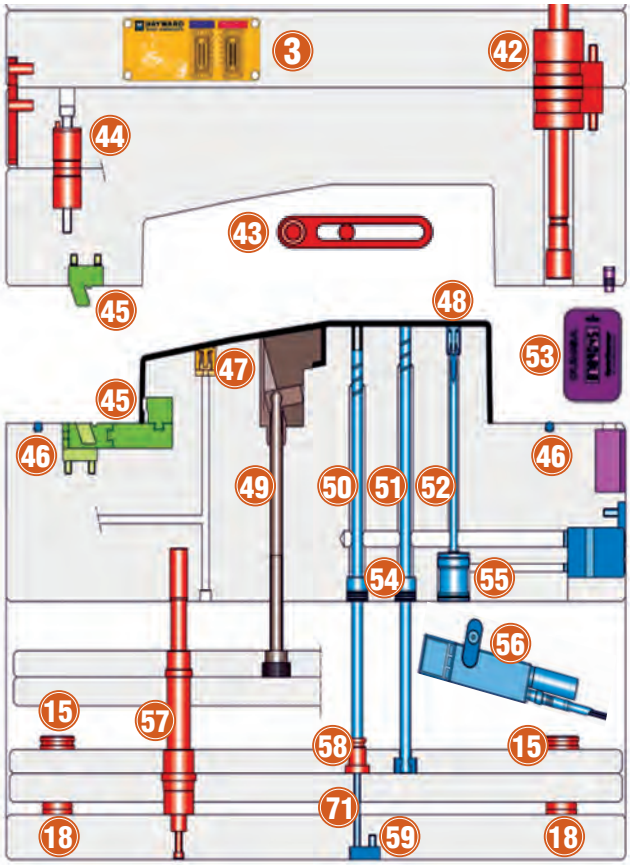
56 Automatic Vacuumjet System

57 Rear Double Ejector

58 Ejector Pin Base

59 No - rotating head for

71 Ejector



48 Vacuumjet Valve

53 High Speed Cycle Counter

60 Cable Retainer

66 Dog Lifter Limiter

61 Adjustable Wedge

67 Automatic Retainer

62 Angle Pin Housing

68 Compact Double Ejection

63 Square Angle Pin Housing

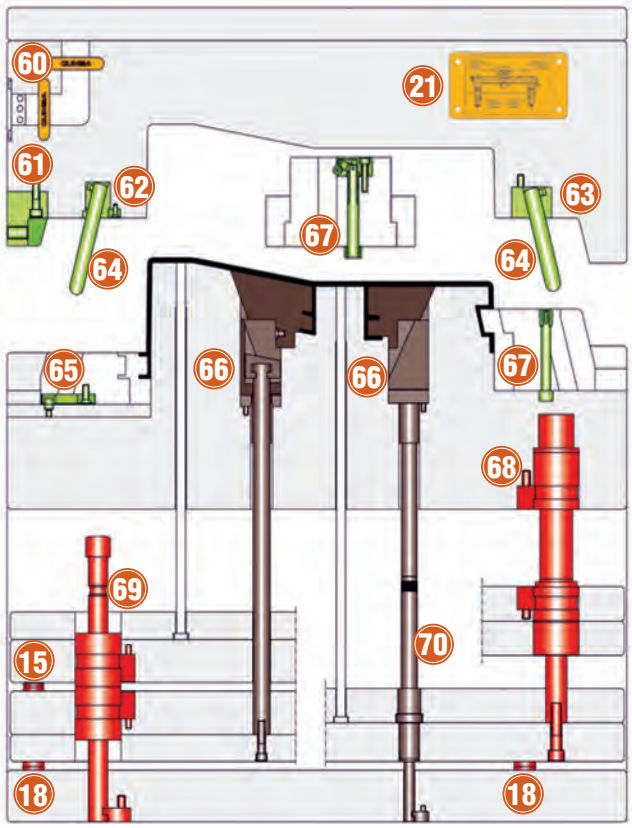
69 Superior Double Ejector

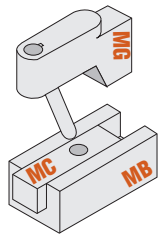
64 Angle Pin

70 Dog Lifter Limiter

65 Slide Retainer

15 Magnetic Safety Stopper



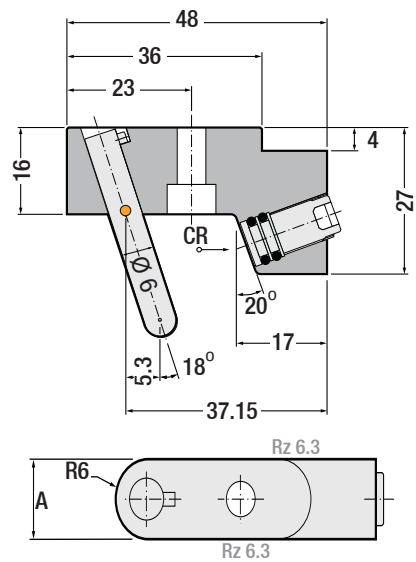


Mini Guide

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.

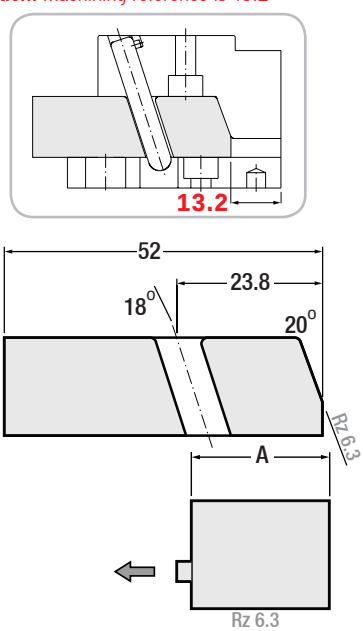


A mm	CR (N)
12	50.000
20	90.000

Mini Slide

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

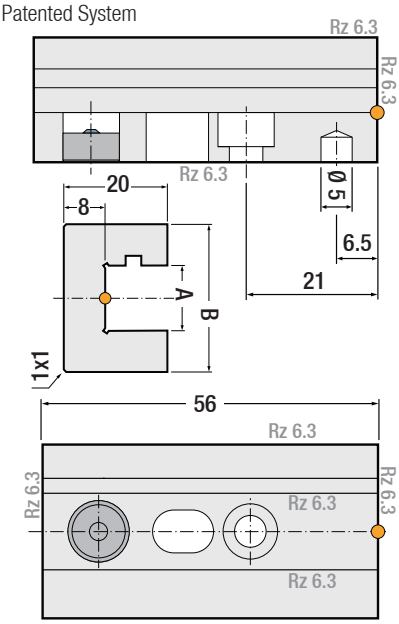


A mm	B mm
12.5	12
12.5	16
20.5	12
20.5	16

Mini Base

An unique unit hardened and ground with the adjustment tolerances. Has various assembly posibilities and it is also easy to change, with magnetic retainer. Minimum space required for installation.

Material: 1.2510
Hardness: 54 ± 2 HRC
Patented System

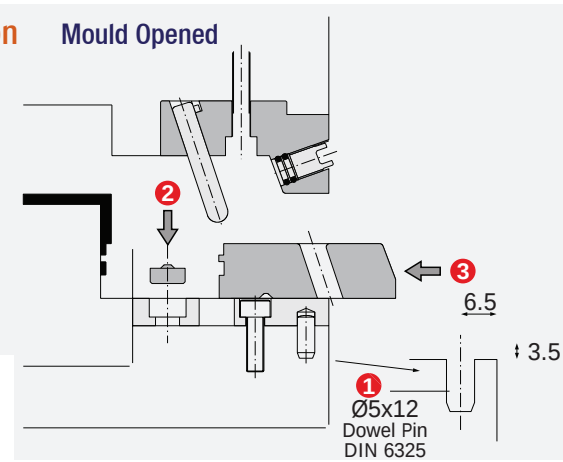


A mm	B mm
12.5	28
20.5	36

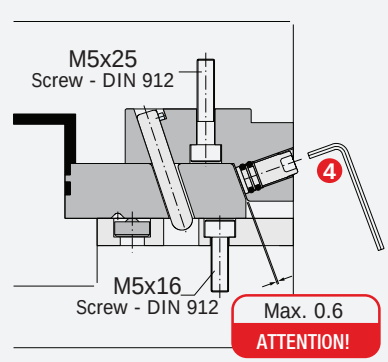
Installation & Operation Examples

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.

Mould Opened



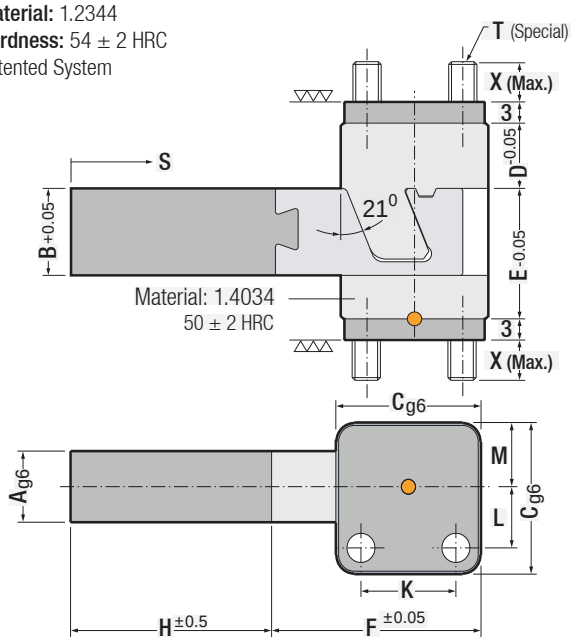
Mould Closed



Slide Unit

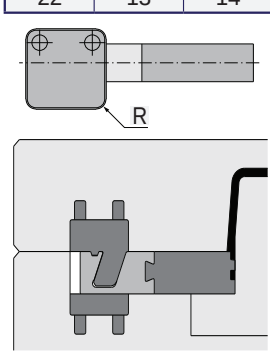
Ideal to de-mold external details. Compact unit with strokes up to 5mm. Slider is made from two different inserts, allowing flexibility regarding the molding feature. All machining can be made 90° to parting line. Easy to change molding inserts due to fixing method. Incorporates a slide retainer and an angle pin.

Material: 1.2344
Hardness: 54 ± 2 HRC
Patented System

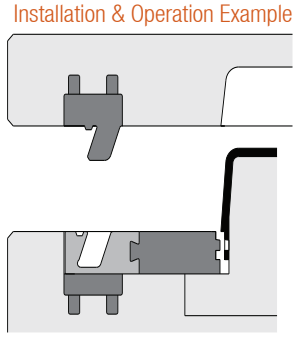


A	B	C	D	E	F	H
8.2	12	20	10	18	28	32
12.2	16	26	12	24	37.5	36
16.2	20	32	16	30	46.5	40

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



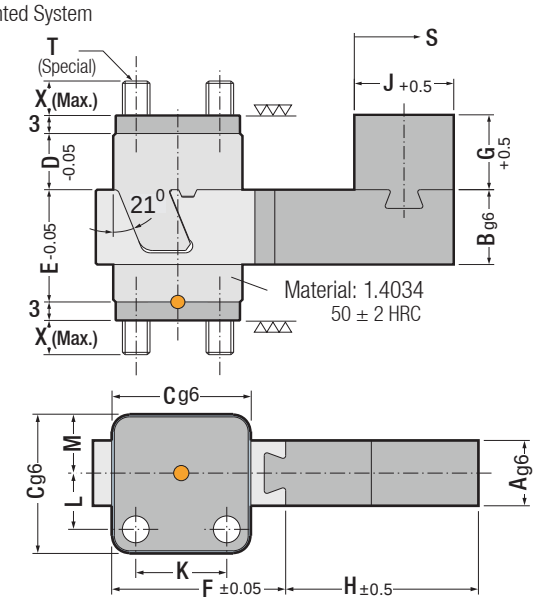
Installation & Operation Example



Undercut Unit

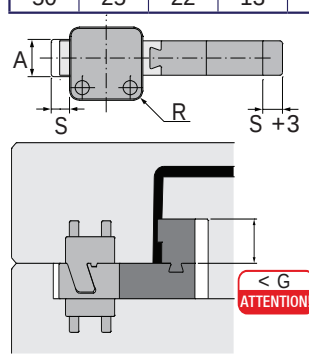
Inverse movement regarding normal units, ideal for de-moulding internal detail. Compact unit with strokes up to 5mm. Slider is made from two different inserts, allowing flexibility regarding the molding feature.
All machining can be made 90° to parting line.
Incorporates a slide retainer and an angle pin.

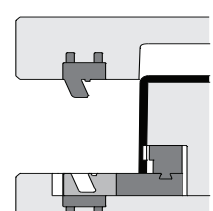
Material: 1.2344
Hardness: 54 ± 2 HRC
Patented System



A	B	C	D	E	F	G
8.2	12	20	10	18	24.5	12
12.2	16	26	12	24	32.5	16
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



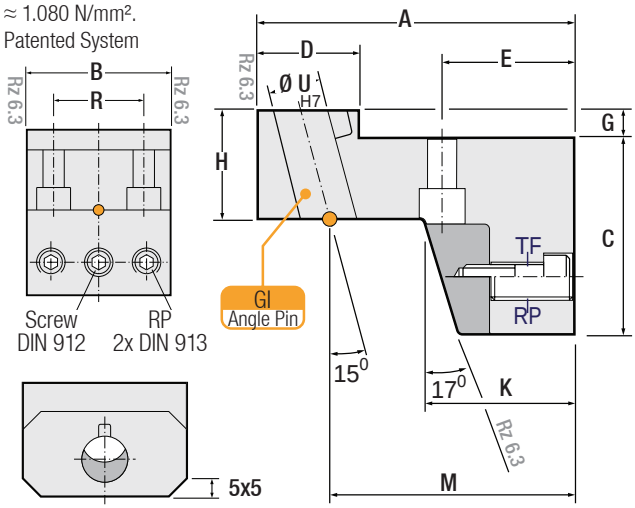


Adjustable Wedge Assembly

(Heel Unit)

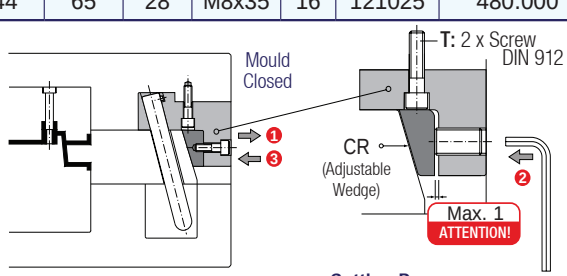
It is unit of core / slide system starting motion. Adjustable with the mold closed. All machining is made 90° to the parting line. Parts can be replaced from the Parting Line. Hardened steel pre-adjusted for immediate use. Hardened wear plate. Two outer screws force the heel against the slide forming 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



A	B	C	D	E	G	H
60	30	35	25	23	6	23
60	40	35	25	23	6	23
75	40	49	30	32	7	27
86	48	57	35	36	8	32

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



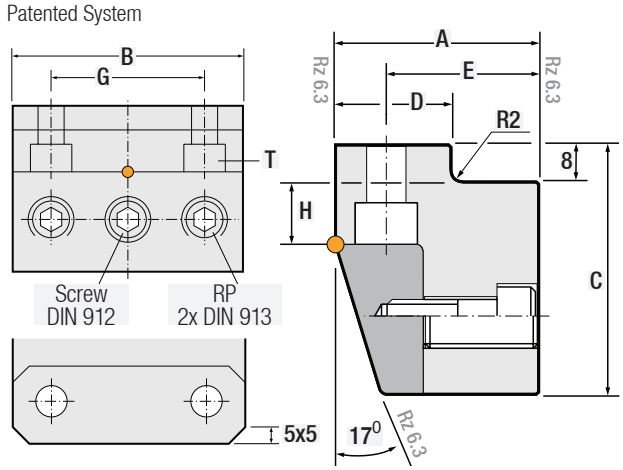
Setting Process:
1- Unbolt "**TF**" (screw)
2- Tighten "**RP**" (screw)
3- Lock "**TF**"

Adjustable Wedge

(Heel Unit)

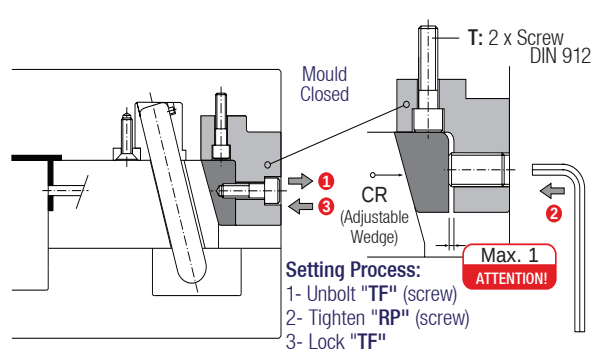
Adjustable with the mold closed. All machining is made 90° to the parting line. Parts can be replaced from the Parting Line. Hardened steel pre-adjusted for immediate use. Hardened wear plate. Interchangeable parts. Allows the slide to be adjusted with the mold closed. Two outer screws force the heel 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

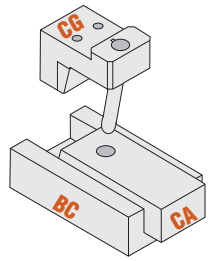


A	B	C	D
40	38	40	25
45	48	49	28
52	60	52	32
52	68	52	32
52	75	56	32

E	G	H	T	RP	CR (N)
30	22	12	M8x30	101020	320.000
35	28	16	M10x35	121025	480.000
40	35	16	M10x35	141030	750.000
40	45	16	M10x35	141030	750.000
40	50	16	M10x35	141030	750.000



Setting Process:
1- Unbolt "**TF**" (screw)
2- Tighten "**RP**" (screw)
3- Lock "**TF**"



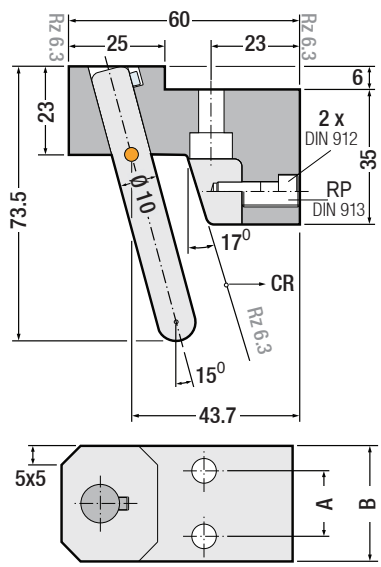
Adjustable Wedge Assembly

(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.



A	B
17	30
22	40

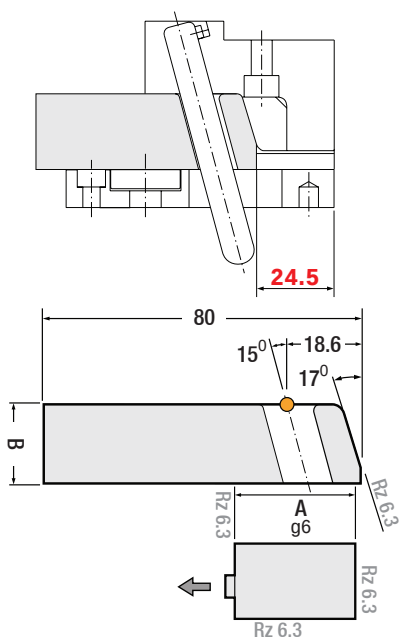
CR (N)	RP (Screw)	Angle Pin
180.000	081015	GI.010075
320.000	101015	GI.010075

Adjusted Slide

Interchangeable and completly 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

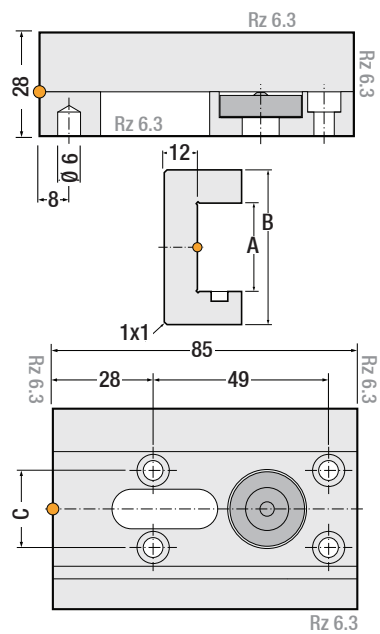


A	B
32	20
32	24
42	20
42	24

Slide Base

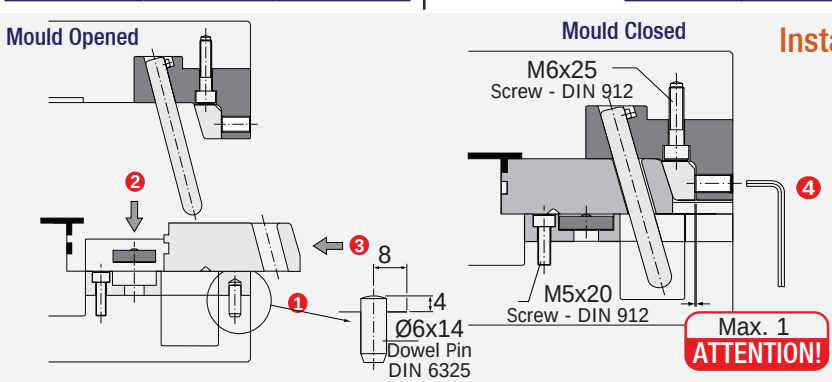
The slide retainer is built into the set.
Different hardness and materials between CA and BC to guarantees smooth movements.
Interchangeable parts. Parts can be replaced from the Parting Line. Hardened and ground, with the correct adjusting tolerances. Incorporates a magnetic Retainer (RM) which must 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



A	B	C
32	56	21.5
42	66	26.5

Installation



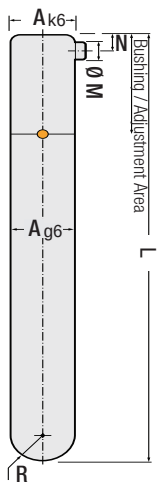
1- Determine the position of BC (slide base) and mount it.
2- Place the magnetic retainer into hole.
3- Determine the position of CA (adjusted slide).
4- While mould is closed, please adjust CA (adjused slide) up to 1 mm maximum.

Angle Pin

This item can be fitted to any of the corresponding Cumsa sets (CG, GR & BG). Several diameters and lengths of angle pins.

Attention! When ordering, indicate the desired "L" dimension

Material: 1.7242
Hardness: 60 ± 2 HRC



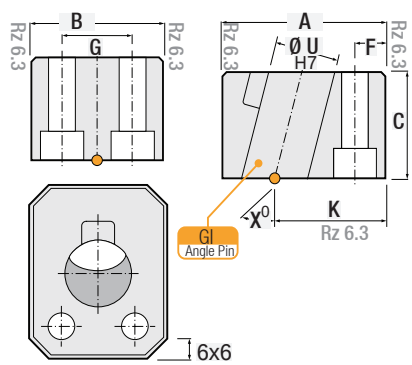
A	Bushing / Adjustment Area
10	≈ 25
12	≈ 30
16	≈ 35
20	≈ 40
24	≈ 45
28	≈ 50

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

Square Angle Pin Housing

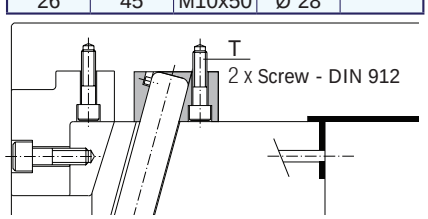
This is similar to the round Angle Pin Housing (GR) but allows the fitting of angle pins from 15°or 20°. This unit is bigger than the GR to allow for the greater angles and it requires a square pocket to be machined in the mould base. All machining is made 90° to the parting line. Parts can be replaced from the Parting Line. Minimum space required for installation.

Material: 1.2312
≈ 1.080 N/mm².
Patented System



A	B	C	F
42	30	30	7.5
50	40	36	9
55	40	40	9
65	50	45	12
42	30	30	7.5
50	40	36	9
55	40	40	9
65	50	45	12

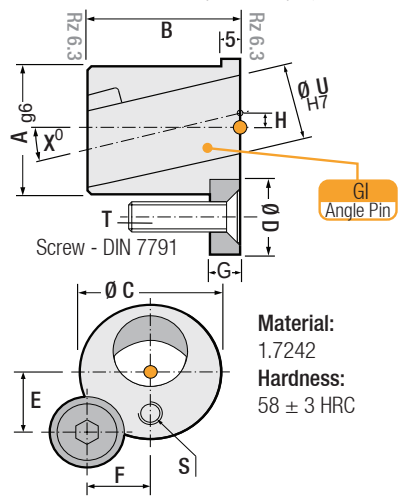
G	K	T	U	X
15	28	M6x35	Ø 16	15⁰
22	34	M8x40	Ø 20	
22	38	M8x45	Ø 24	
26	45	M10x50	Ø 28	
15	28	M6x35	Ø 16	20⁰
22	34	M8x40	Ø 20	
22	38	M8x45	Ø 24	
26	45	M10x50	Ø 28	



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 replaced from the Parting Line.
Minimum space required for installation.
Several diameters and lengths of angle pins.



Material:
1.7242
Hardness:
58 ± 3 HRC

A	B	C	D	E
18	26	22	12	10.8
22	28	26	16	11
28	34	32	16	13
34	40	38	20	17
42	45	46	20	19.5
46	50	50	20	21
18	26	22	12	10.8
22	28	26	16	11
28	34	32	16	13
34	40	38	20	17
42	45	46	20	19.5
46	50	50	20	21

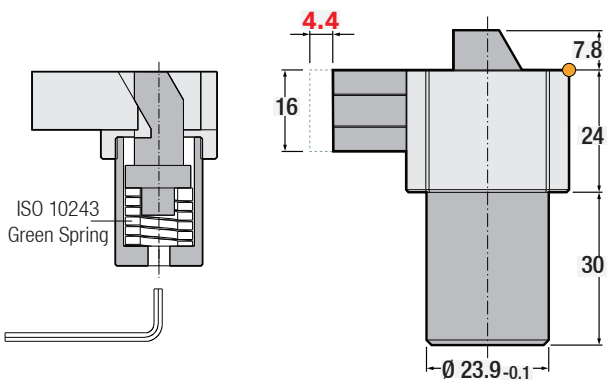
F	G	H	S	T	U	X⁰
7.5	6	3.8	M5x5	M5x16	10	10⁰
11		4	M6x6	M6x16	12	
13		5			16	
17	8	5.5	M8x6	M8x20	20	
19.5		6			24	
21		7			28	
7.5	6	3.8	M5x5	M5x16	10	15⁰
11		4	M6x6	M6x16	12	
13		5			16	
17	8	5.5	M8x6	M8x20	20	
19.5		6			24	
21		7			28	

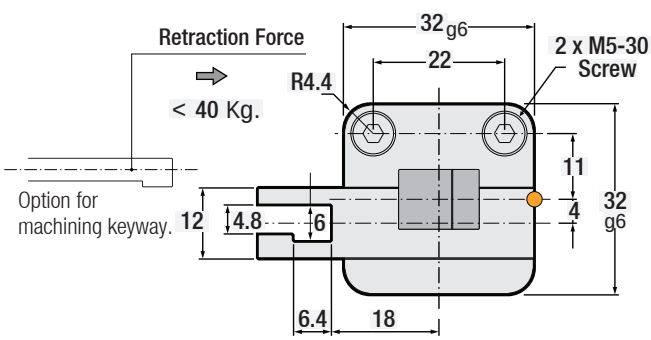
Core Cam

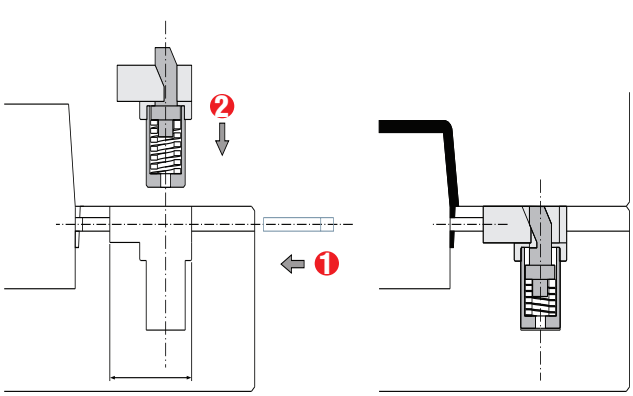
Mechanism to make lateral holes, automatic retention for the core insert. Requires very small area for installation. Reduces costs in machining and fitting. Reduces mould production time. Machining for installation is easier due to always being at 90° to parting line. Offers a standard solution to the mould makers.

Material: 1.2344
Hardness: 52 - 54 HRC
Max. working temperature: 150°.

Attention! Standard stroke of 4.4mm.





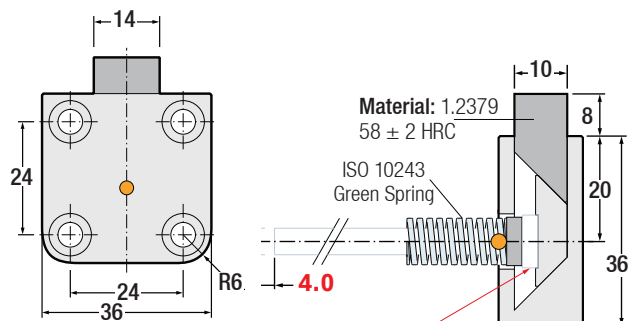


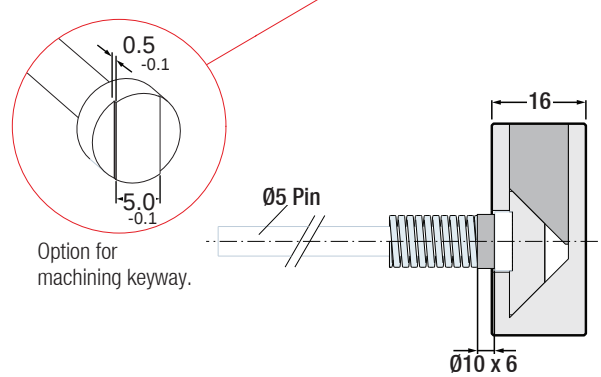
Compact Coring Unit

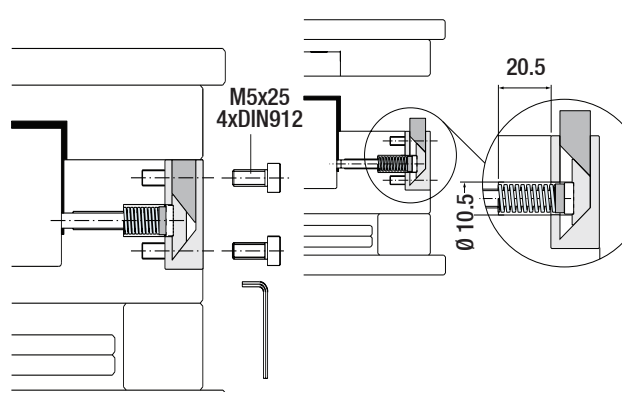
This unit uses the open and close movement of the mould to make lateral holes in wall sections of plastic parts. Easy to assemble and remove from the mould.Reduces costs in machining and fitting.Reduces mould production time. Machining for installation is easier due to always being at 90° to parting 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.





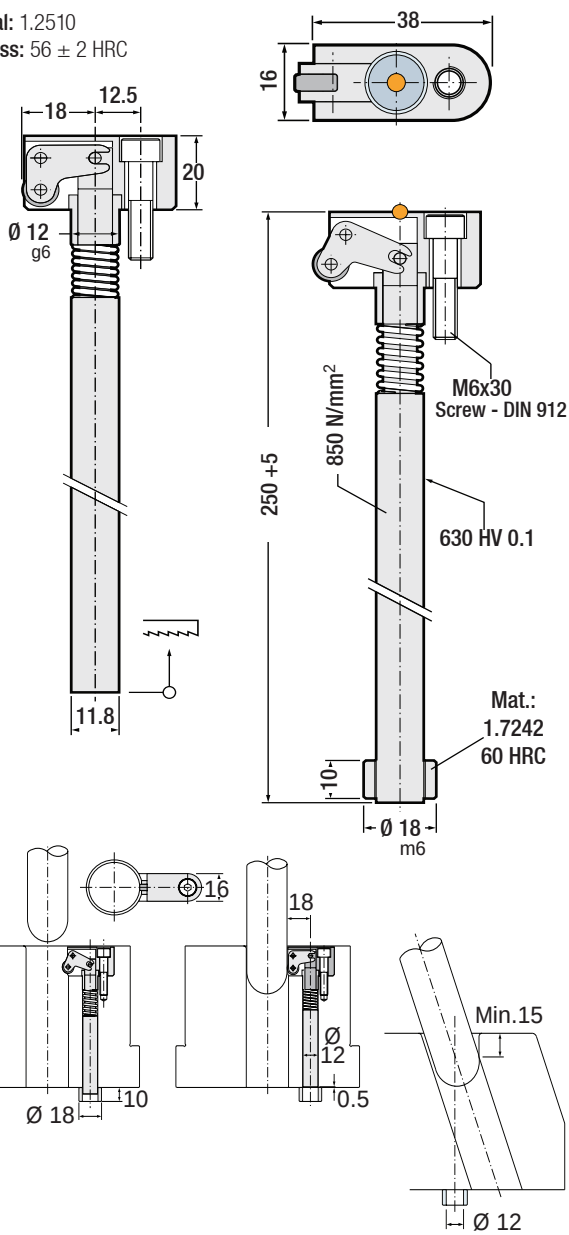


Automatic Retainer

This retainer for large slides is actuated by the angle pin, ensuring smooth and easy movement with no excess force required.
Reduces costs in machining and fitting. No need for complex retaining systems or expensive hydraulic systems. Retention of cam slides up to 2000 Kg. Offers a standard solution to the mould makers.

Attention! Cut the rod 0.5mm shorter than the slide height.

Material: 1.2510
Hardness: 56 ± 2 HRC

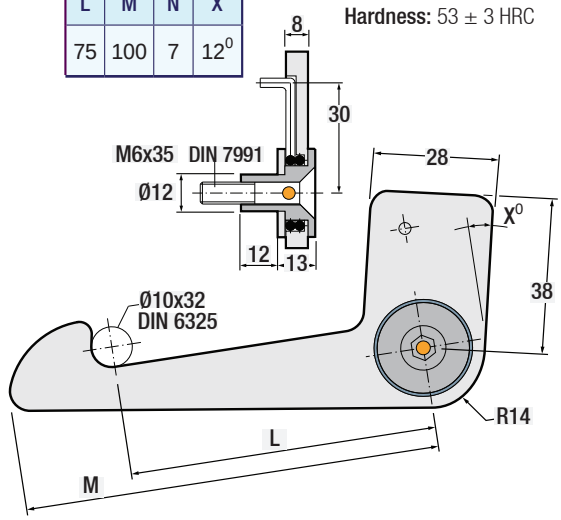


Safety Strap

Keeps the mould closed when it is not in the machine.
The mould is unlocked automatically, when mounted on the machine.
Minimum space required for installation. Guarantees automatic opening and closing of the mould when loaded or unloaded from the machine.

L	M	N	X
75	100	7	12°

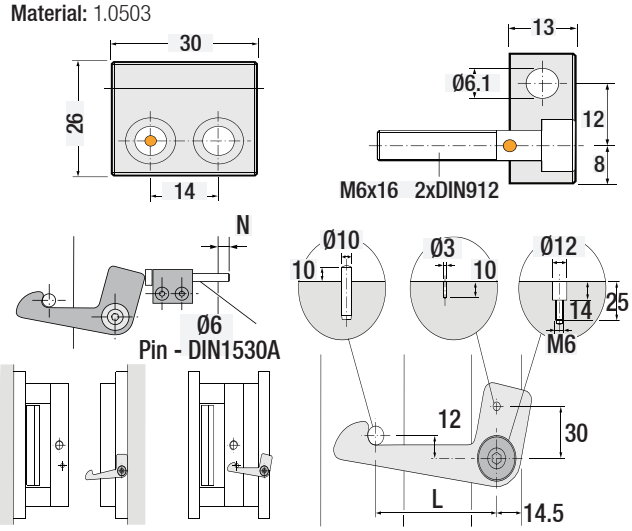
Material: 1.0503
Hardness: 53 ± 3 HRC



Strap Extender

Used where the cavity plate is thicker than 120 mm.

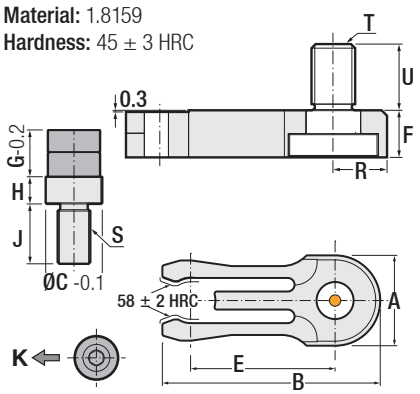
Material: 1.0503



Slide Retainer

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.

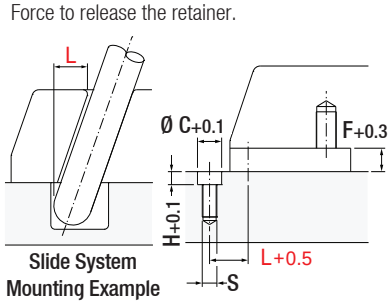
Material: 1.8159
Hardness: 45 ± 3 HRC



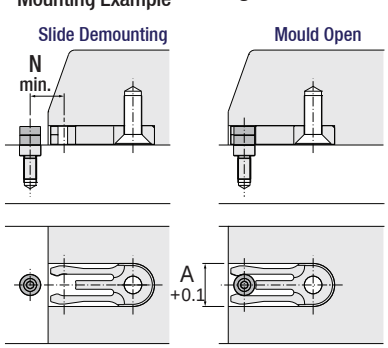
A	B	C	E	F	G
16	38	8	25	7.6	7.6
20	48	10	32	8.7	8.6
24	57	12	37.5	9.6	9.6

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.



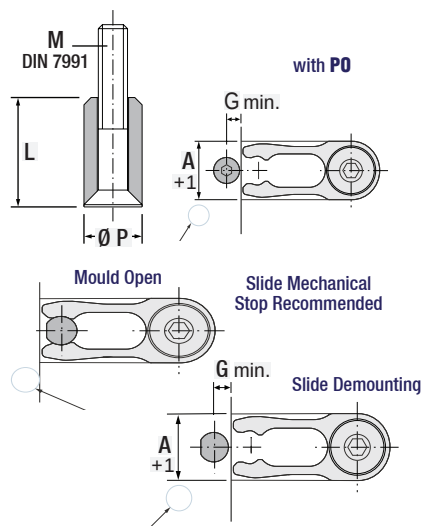
Slide System Mounting Example



Optional Dowel Pin for Slide Retainer

Optional method for holding the Slide Retainer, that simplifies the disassembling.
This item must be ordered separately.

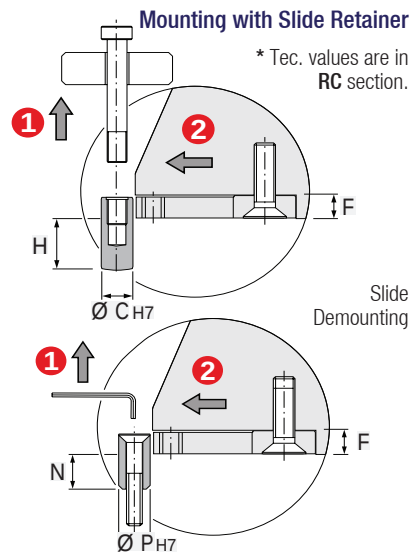
Material: 1.3505
Hardness: 60 ± 2 HRC



L	M	N	P
12	M3x20	7.5	6
15	M4x25	10	8
20	M5x30	13	10
25	M6x35	16	12
34	M8x50	23	16

Mounting with Slide Retainer

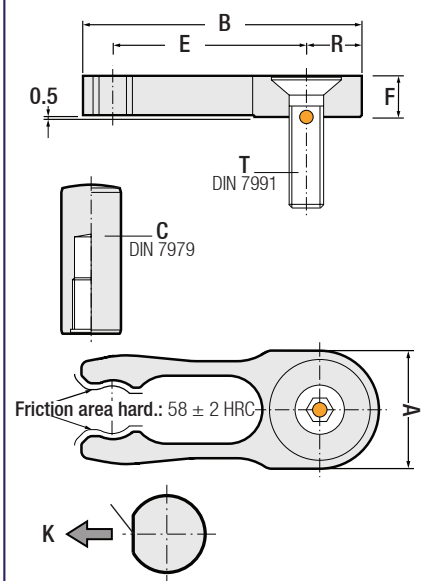
* Tec. values are in **RC** section.



Slide Retainer

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

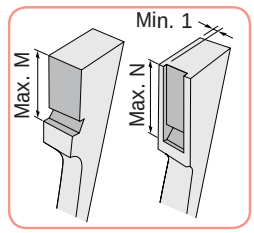


K: Force to release the retainer.
Slot depths should be: F = +0.30mm.

A	B	C	E	F
12	30	6x20	21	4.7
16	40	8x20	28	5.7
20	50	10x24	34	7.7
24	60	12x32	42	9.7
32	80	16x40	56	11.7
32	80	16x40	56	15.7

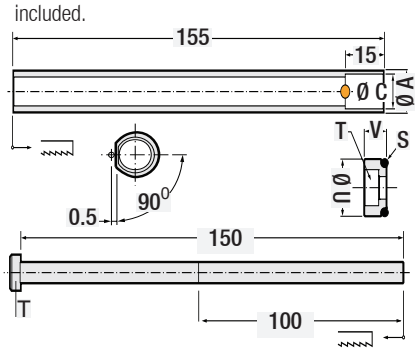
G	H	K	R	T
4	16	5 Kg.	6	M5x16
5	15	7 Kg.	8	M6x20
6	17	14 Kg.	10	M8x25
7	23	21 Kg.	12	M10x30
9	27	28 Kg.	16	M12x35
9	25	38 Kg.	16	M12x50

After setting core, please machining 0.1mm from end section to make ejector effortlessly.



Retractable Core Extension

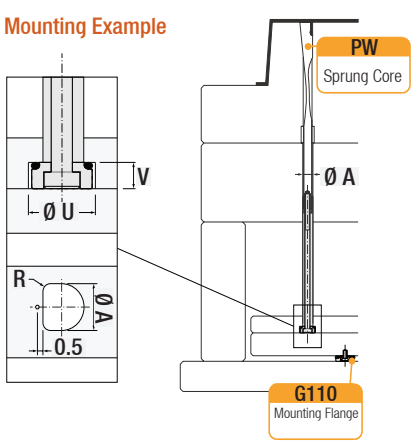
Standard extension. Flat for key position included. Hardened and ground to size. Enables a standard length of the PW up to 315mm. Keyed pocket included.



A	C	R
8	6	1.25
10	8	2.0
12	10	2.5

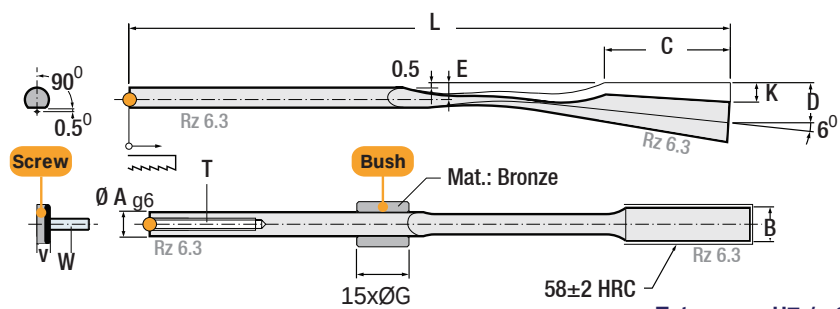
S	T	U	V
9.5 x 2	M4	14	5
11.5 x 2	M5	16	6
14.5 x 2.5	M6	20	8

Mounting Example



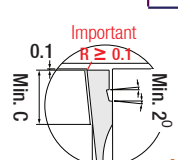
Sprung Core

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°.

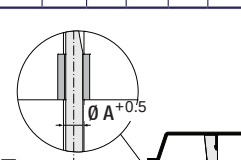


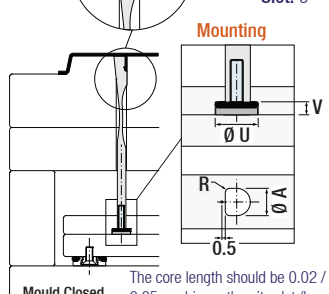
Tolerance: H7 / g6

A	B	C	D	E	G	K	L	M	N	R	T	U	V	W
6	6.2	22	9	3.5	-	3.5	125	16	18	1.25	M4 x 36	12	5	M4 x 16
		30	10		12	4.5	175	20	26					
	8.2	22	9		-	3.5	125	16	18					
		30	10		12	4.5	175	20	26					
8	8.2	25	11.5	4.5	-	4.5	140	18	21	2.0	M5 x 36	14	6	M5 x 16
	10.2				-									
		30	11.2		12		175	20	26					
	12.2	25	11.5		-		140	18	21					
		30	11.2		12		175	20	26					
10	14.2	30	13.6	5.5	16	5.5	175	20	26	2.5	M6 x 36	18	8	M6 x 16
	16.2													
	18.2													

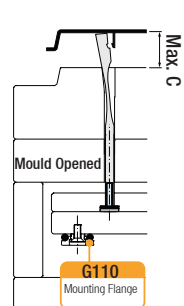


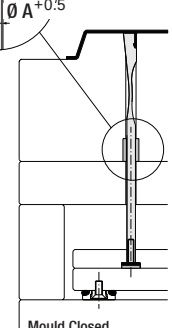
"D" gap (6mm): Up to < 3 mm.
"B" width: Min. 2° can be slepped
6° surface / bushing: Min. 5 mm
Core can be adjusted with mould cavity.
Slot: 6°





The core length should be 0.02 / 0.05mm bigger than its slot (housing).





"PX" Cutting Jig

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.

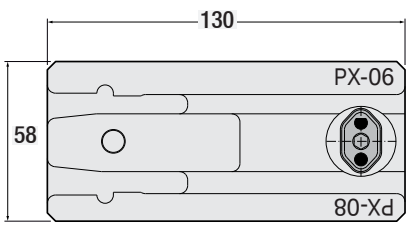
How to use the PX Cutting Jig ?

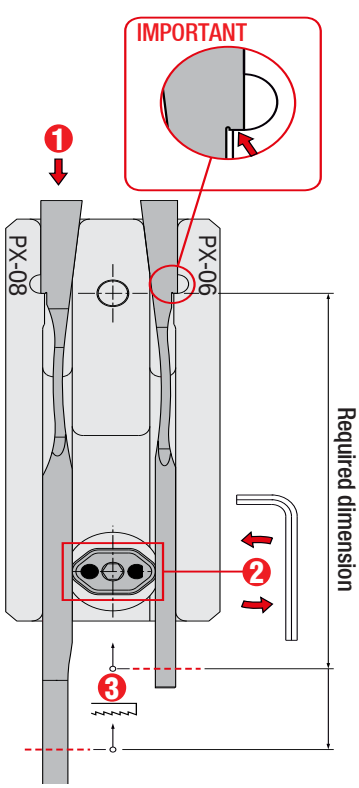
1- Insert the PX into the corresponding slot, for 6 or 8mm. shank. Ensure that the shape of the PX head is adjusted in the housing support.

2- Use an allen key to select the correct option: flat ● or ● round.

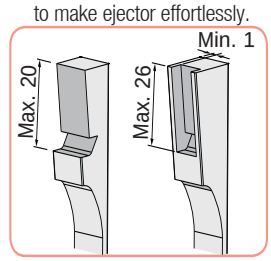
3- Cut the PX to the required dimension.

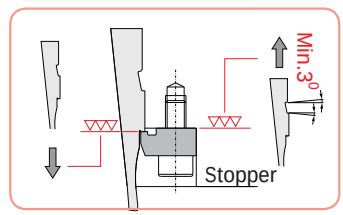
Material: INOX / 1.4034





After setting core, please machining 0.1mm from end section to make ejector effortlessly.



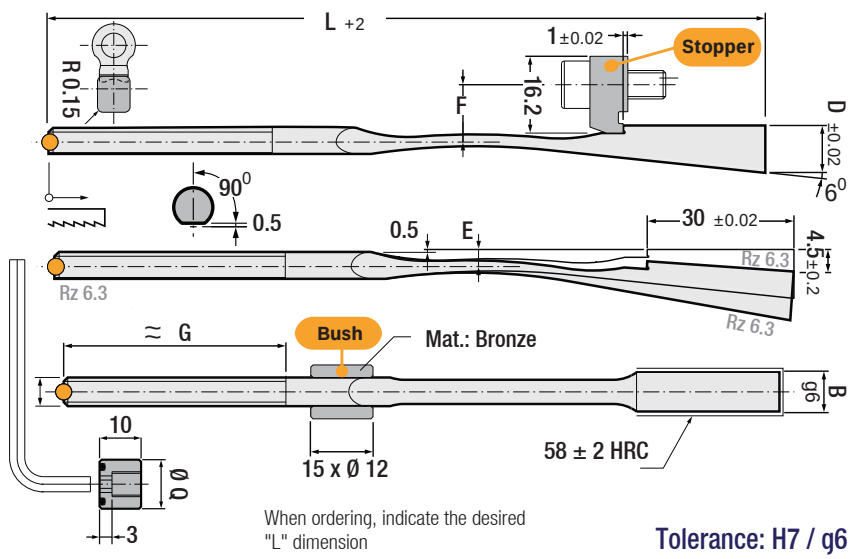


Xtra Sprung Core

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°.

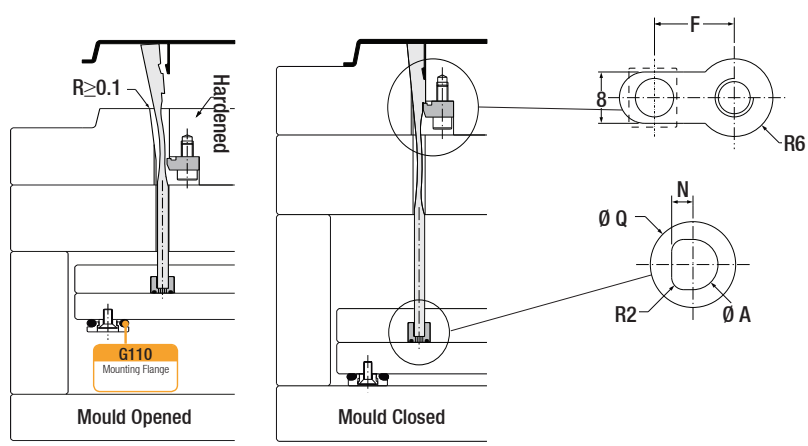


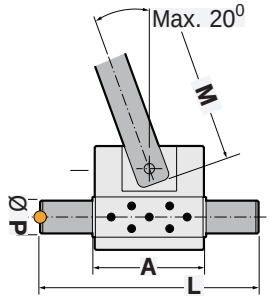
When ordering, indicate the desired "L" dimension

Tolerance: H7 / g6

A	B	D	E	F	L=175		L=250		L=325		N	Q
					G	Bush	G	Bush	G	Bush		
6	6.2	10	3.5	12.5	60	-	80	-	80	-	2.5	12
6	8.2	10	3.5	12.5	60	-	80	-	80	-	2.5	12
8	10.2	11.2	4.5	13.5	60	-	80	-	80	-	3.5	14
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.

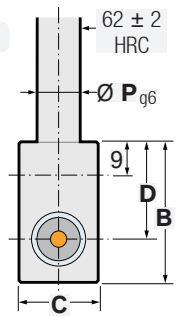




Undercut Base Unit

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 ≈1.080.N / mm²

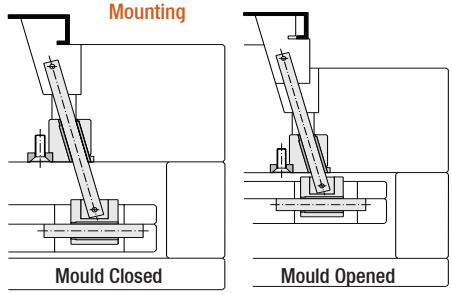


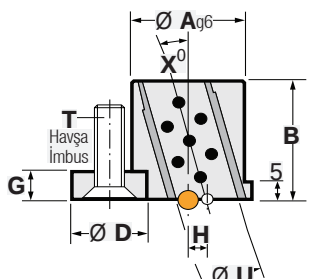
A	B	C	D	L	M	P
32	37	20	27	80	180	10
38	40	24	28	80	210	12
45	44	28	30	100	250	16

Attention: The unit and the rod are delivered separately.

The maximum weight that the Undercut Base

Mounting

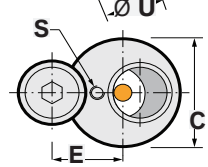




Angled Guide Bush

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 ± 3 HRC

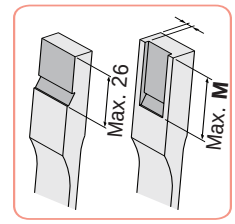


A	B	C	D	E	G	H	T	U	X⁰
30	34	34	16	20	6	0	M6x16	10	5⁰
34	38	38	20	24	8	0	M8x20	12	
40	40	44	20	27	8	0		16	
30	34	34	16	20	6	7	M6x16	10	10⁰
34	38	38	20	24	8	8.5	M8x20	12	
40	40	44	20	27	8	8.5		16	
30	34	34	16	20	6	7	M6x16	10	15⁰
34	38	38	20	24	8	8.5	M8x20	12	
40	40	44	20	27	8	8.5		16	
30	34	34	16	20	6	7	M6x16	10	20⁰
34	38	38	20	24	8	8.5	M8x20	12	
40	40	44	20	27	8	8.5		16	

"S": Demounting screw hole.

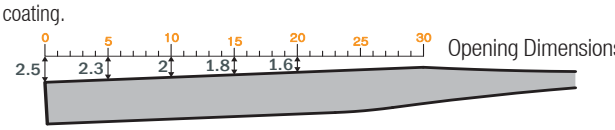
After setting core, please machining from end section to "P" due to make ejector effortlessly.

Min. **P**



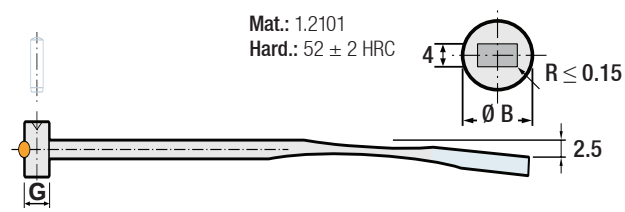
Flexible Sprung Core

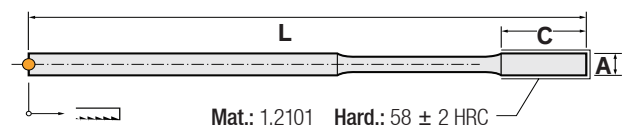
Thanks to its parallel walls, this core allows undercuts to be released in compact areas (only 4mm. thickness). Include a simple system for adjustment. A new feature to this product is that it ejects first then releases the undercut. Minimum space required for installation,only needs the space of an 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").

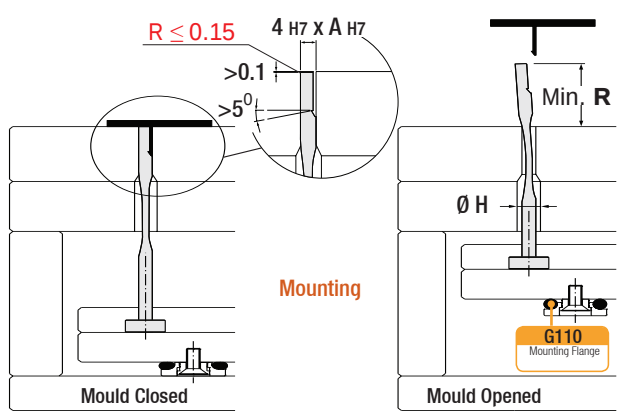
Mat.: 1.2101
Hard.: 52 ± 2 HRC

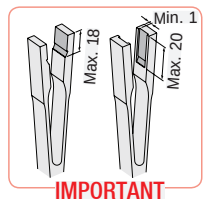




Mat.: 1.2101 **Hard.:** 58 ± 2 HRC

A	B	C	G	H	L	M	N	P	R	Balinit C
4	8	24	6	6	150	12	14	0.8	30	•
5				6						•
6	12	30	8	7	200	18	20	1.0	36	•
8	14			9						•
10	16			11						•
12	18			13						•
6	12	30	8	7	200	18	20	1.0	36	-
8	14			9						-
10	16			11						-
12	18			13						-



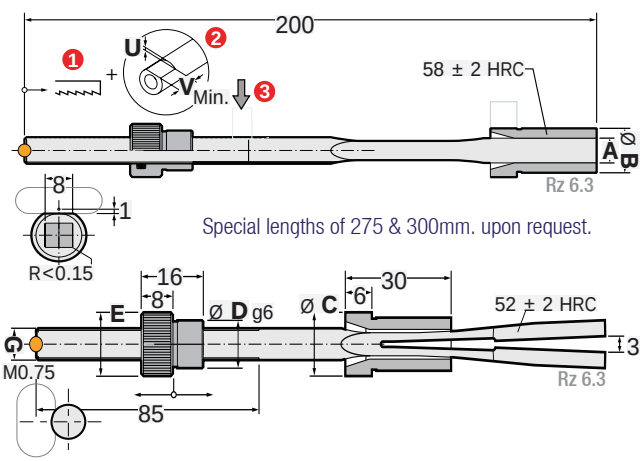


Double Ejector

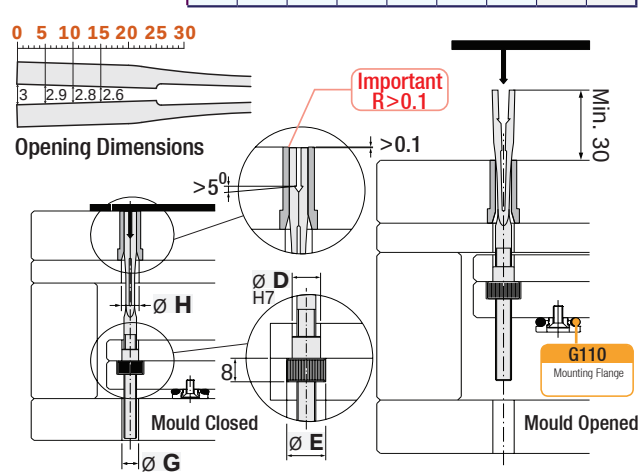
Two separte movements in one component. Minimum space required for installation, only needs the space of an ejector.
No milling, grinding or hardening other than the machining of detail needed. No need for complex mechanical systems. Useful to release small undercuts, this ejector is pre-adjusted and 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 2.5mm.



A	B	C	D	E	G	H	U	V
6	12	14	10	14	6	10	0.5	10
8	14	16	12	16	8	12		
10	16	18	14	18	8	14		15
12	16	18	16	20	8	15		

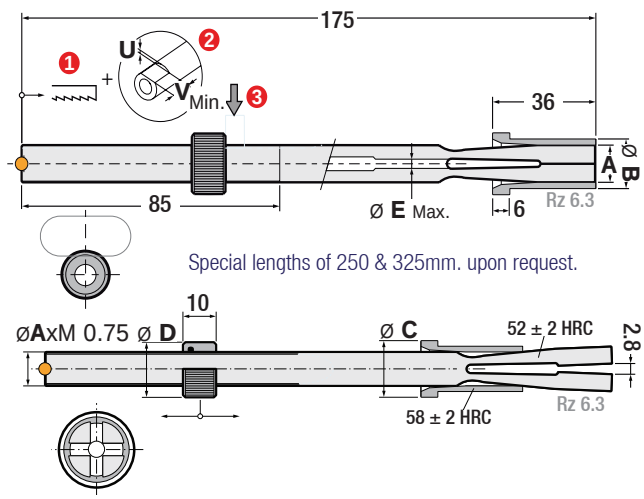


Tulip Ejector

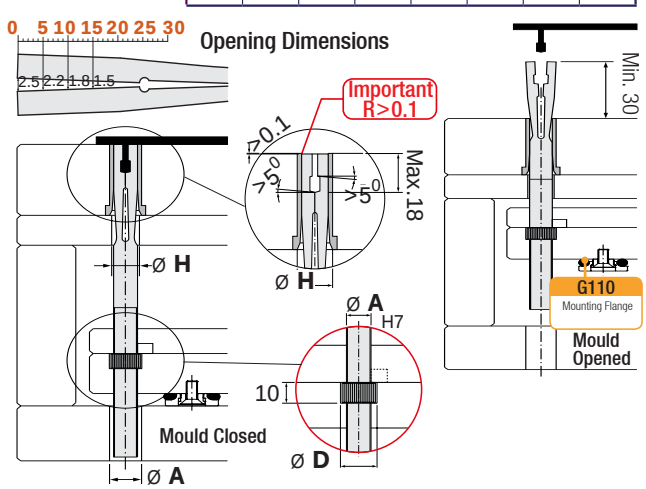
Four separte movements in one component. Useful to release small undercuts, this ejector is pre-adjusted and height adjustable. Cilindrical machining and made 90° regarding the parting line. No milling, grinding or hardening other than the machining of detail needed. The Balinit C® coating offers smooth 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").



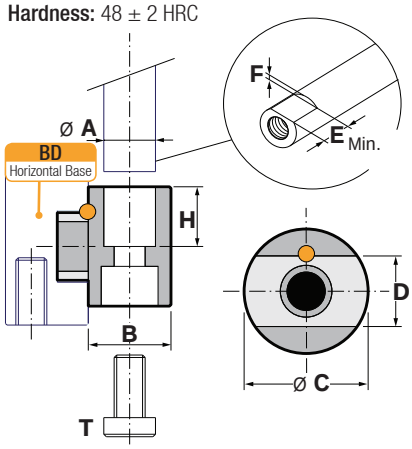
A	B	C	D	E	H	U	V
6	10	12	12	-	9	0.5	10
8	12	14	14	2	11		
10	14	16	16	3	13		15
12	16	18	18	4	15		
16	20	22	22	8	19	1.0	20



Fixed Lifter Base

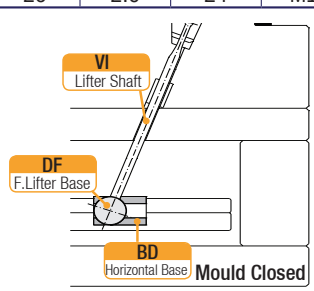
Keyed pocket for the lifter shaft. Minimum space required in the ejector plates.
"DA" Allows easy adjustment of the lifter shaft height. **"VI"** (Lifter Shaft) may be used as ejector.

Material: INOX 1.4034
Hardness: 48 ± 2 HRC



A	B	C	D
6	12	20	11.5
8	12	20	11.5
10	16	24	13.5
12	16	24	13.5
16	20	32	19
20	25	38	21
25	31	48	28

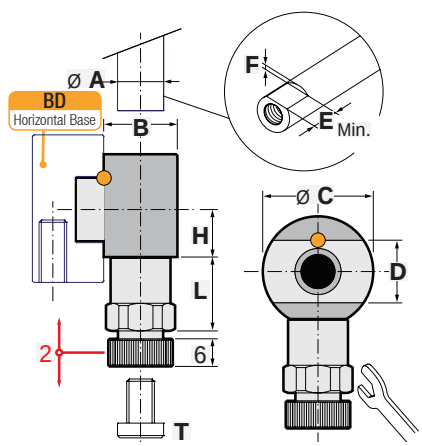
E	F	H	T
12	0.5	10	M4 x 12
12	0.5	10	M5 x 12
14	0.5	12	M6 x 16
14	1.0	12	M8 x 16
18	1.5	16	M8 x 22
21	1.5	19	M10 x 25
26	2.0	24	M12 x 35



Adjustable Lifter Base

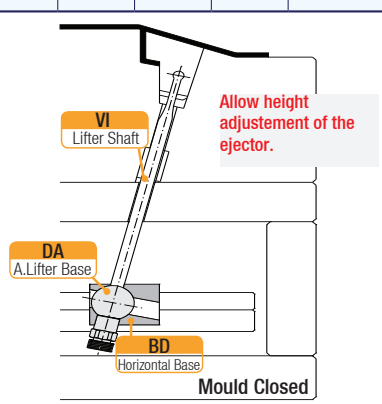
Keyed pocket for the lifter shaft.
Minimum space required in the ejector plates.
Allows easy adjustment of the lifter shaft height.

Material: INOX 1.4034
Hardness: 48 ± 2 HRC



A	B	C	D
6	10	20	11.5
8	12	20	11.5
10	16	24	13.5
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

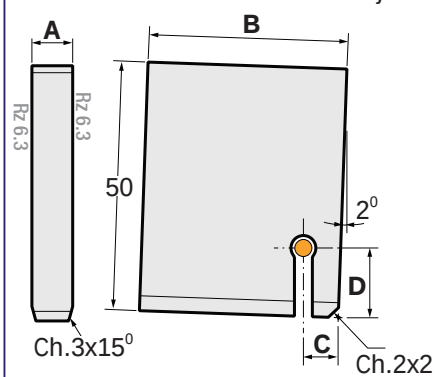


Lifter Head

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.

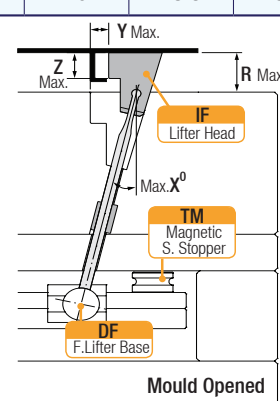
Material: 1.2344
Hardness: 45 ± 2 HRC

Patented System



A	B	C	D
6.2	40	6	12
8.2	40	7	14
10.2	44	8	16
12.2	44	9	18

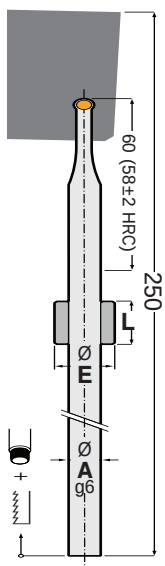
R	X	Y	Z
40	5	3.5	36
38	10	6.7	35
38	15	10.2	34
37	20	13.5	32



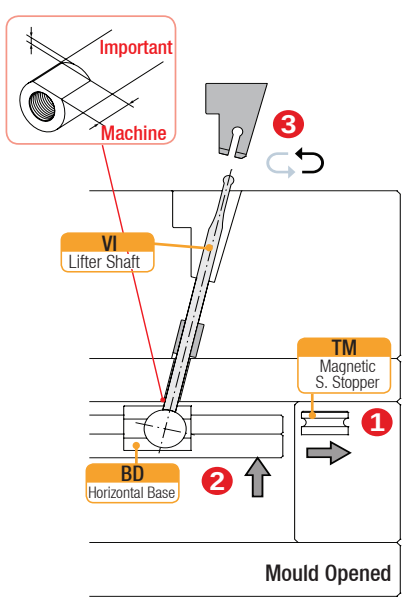
Lifter Shaft

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.

Material: 1.3505
Patented System



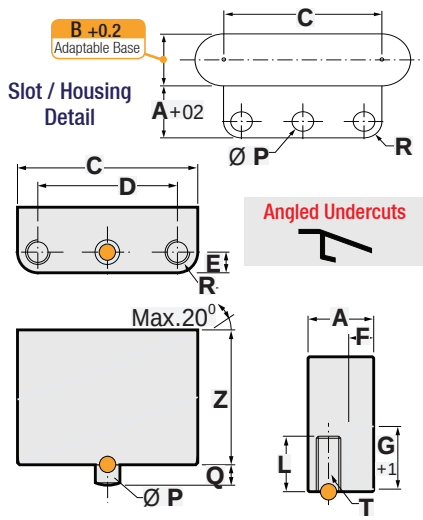
A	E	L	U	V
6	10	15	0.5	12
8	12	20	0.5	12
10	14	20	0.5	14
12	16	20	1.0	14



Adaptable Base

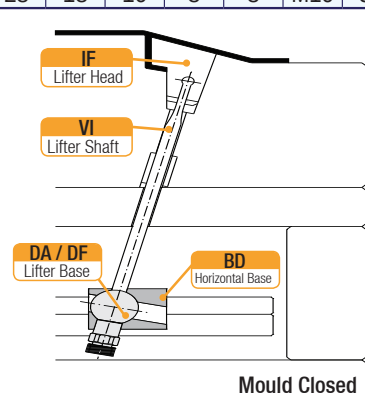
Cam slide for internal lifters.
Different hardness and materials between base and limiter guarantees smooth movements.
Minimum space required for installation.

Material: 1.2311 **Hardness:** 45 ± 2 HRC



A	C	D	E	F
12	36	28	4	4.8
14	66	42	4	6.3
16	40	30	5	6.3
20	60	44	5	8.3
25	72	56	7	10.3
31	90	74	8	13.3

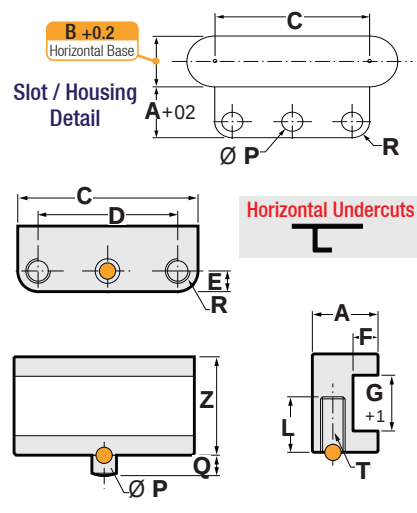
G	L	P	Q	R	T	Z
11.5	10	5	5	4	M5	28
11.5	10	5	5	4	M5	38
13.5	12	6	5	5	M6	32
19	15	6	5	5	M6	40
21	18	8	5	6	M8	46
28	18	10	8	8	M10	58



Horizontal Base

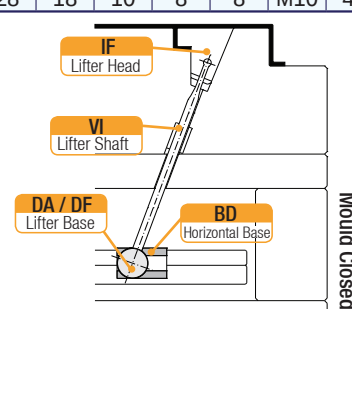
Cam slide for internal lifters.
Different hardness and materials between base and limiter guarantees smooth movements.
Minimum space required for installation.

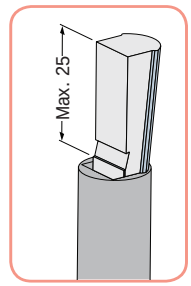
Material: 1.2311 **Hardness:** 45 ± 2 HRC



A	C	D	E	F
12	36	28	4	4.8
14	66	42	4	6.3
16	40	30	5	6.3
20	60	44	5	8.3
25	72	56	7	10.3
31	90	74	8	13.3

G	L	P	Q	R	T	Z
11.5	10	5	5	4	M5	20
11.5	10	5	5	4	M5	22
13.5	12	6	5	5	M6	24
19	15	6	5	5	M6	32
21	18	8	5	6	M8	38
28	18	10	8	8	M10	48



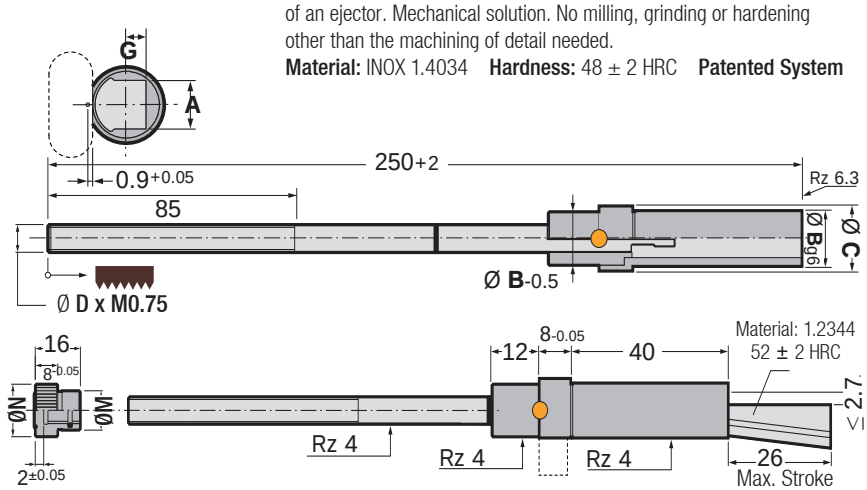


Important
Max. Operation Length

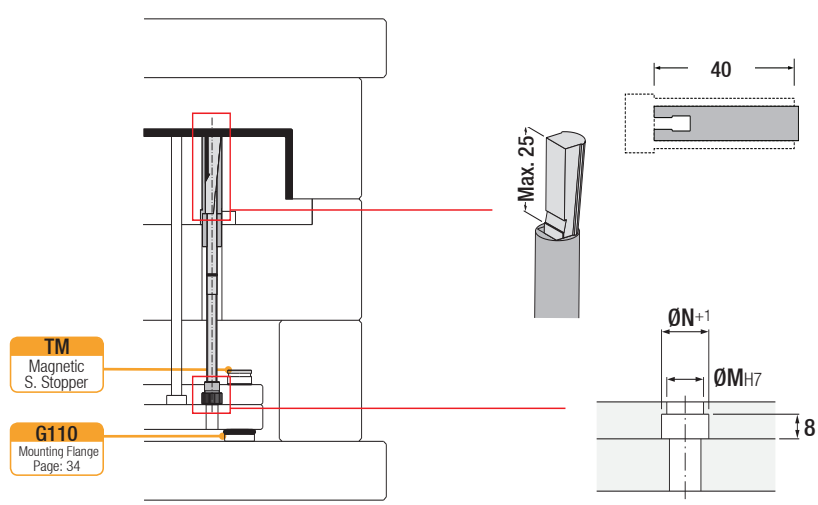
Standard Lifter

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**



A	B	C	D	G	M	N	R
6.2	10	12	6	3.4	12	16	1.25
8.2	12	14	6	4	12	16	1.25
10.2	14	16	8	4.2	14	18	2
12.2	16	18	8	4.2	14	18	2



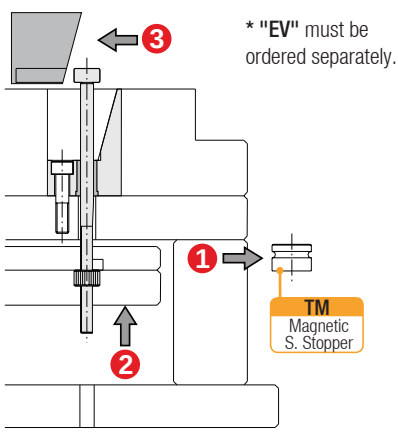
Vertical Lifter Block

They are used along with mechanic Vertical Lifters, in profile block vertical lifting.

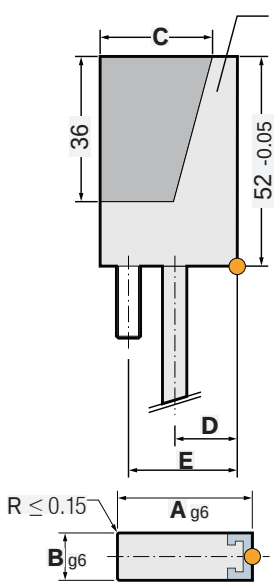
Material: 1.2842 **Hardness:** 56 ± 2 HRC

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.



* **"EV"** must be ordered separately.

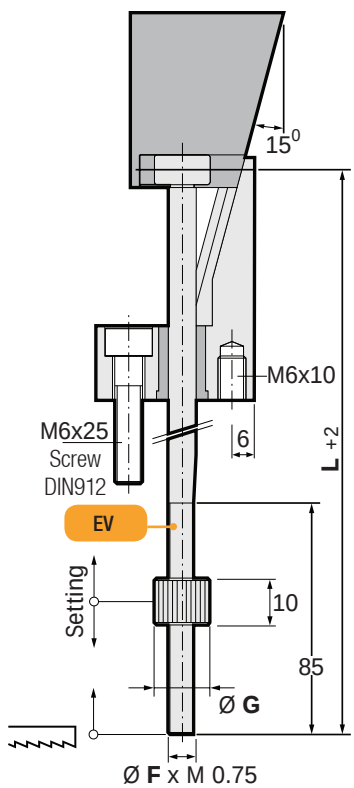


A	B	C	D	E
34	12	28	15.5	27
40	24	34	18.5	33

Vertical Lifter

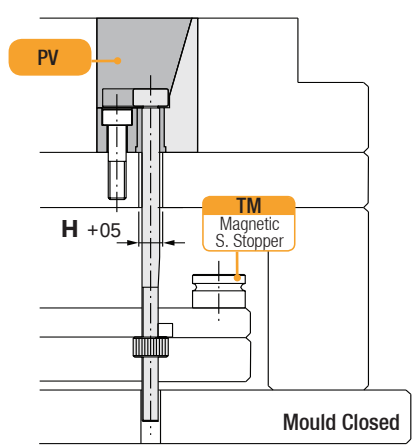
Reduces costs in machining and fitting. Reduces costs in tool downtime.
All machining are made in a 90° position. Less space required compared to conventional solutions.
Offers a standard solution to the mould makers.

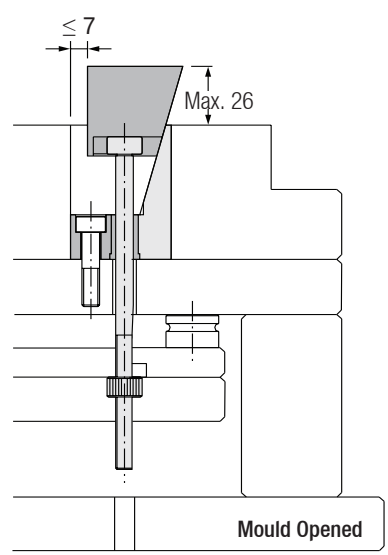
Material: 1.2344 **Hardness:** 50 ± 2 HRC **Patented System**



* **"PV"** must be ordered separately.
* When ordering, indicate the desired "L" dimension after the reference.

F	G	H	L	
6	12	6.5	150	225
12	18	12.5	150	225

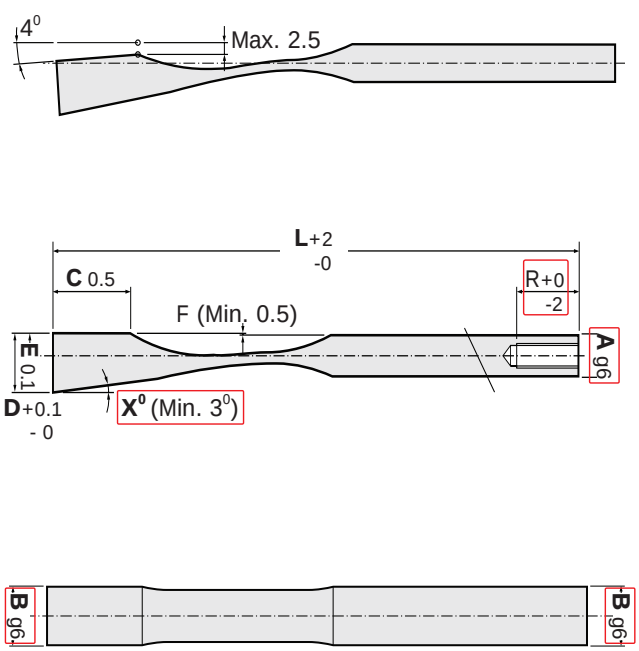




Custom-Made Sprung Cores

Special sprung cores to suit your dividual requirements.
If no other Cumsa 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 Cumsa depending on the head dimensions required by the customer.

Custom-Made Sprung Cores

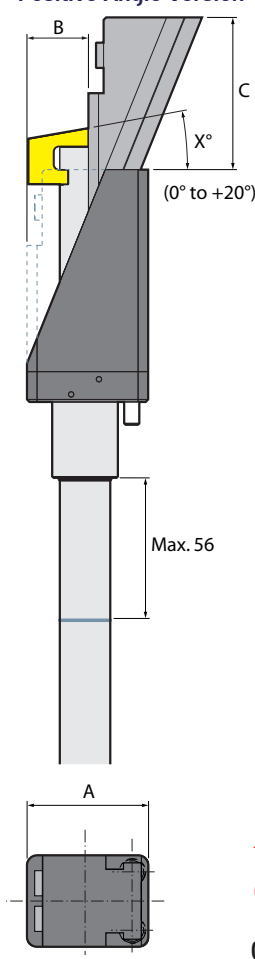
	B	C	D	E	F	L	Pcs.
Custom-made production							

Custom-Made Angular Dog Lifters

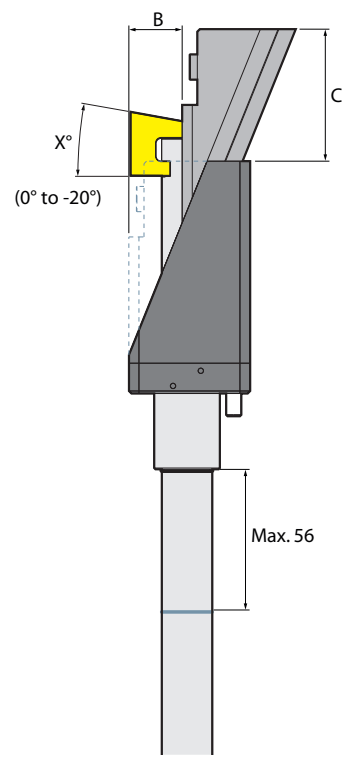
This unit allows to use the advantages of the DB reference in angled parts.
To order this part just fill the Ordering Table provided. Once we receive the required dimensions we will send to you a 3D file for your approval.

Material: 1.2311 Gas Nitrided ≈ 840Hv.

Positive Angle Version



Negative Angle Version

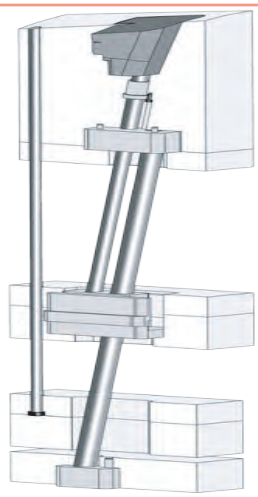


The other dimensions will be determined by BE

Custom-Made Angular Dog Lifters

	A	B	+X⁰	-X⁰	Pcs.
Custom-made production	44				
	48				
	54				

Traditional Mounting



Single Ejector System

Automatic Dog Lifter

Designed to function with just one set of ejector plates, saving machining costs and reducing the size of the mould. Undercuts of up to 26mm with just 56mm stroke. This innovative system gives the capability of designing their own insert.

Material: PKT-117 **Hardness:** 42 ± 2 HRC.
Gas Nitrided ≈ 840Hv.

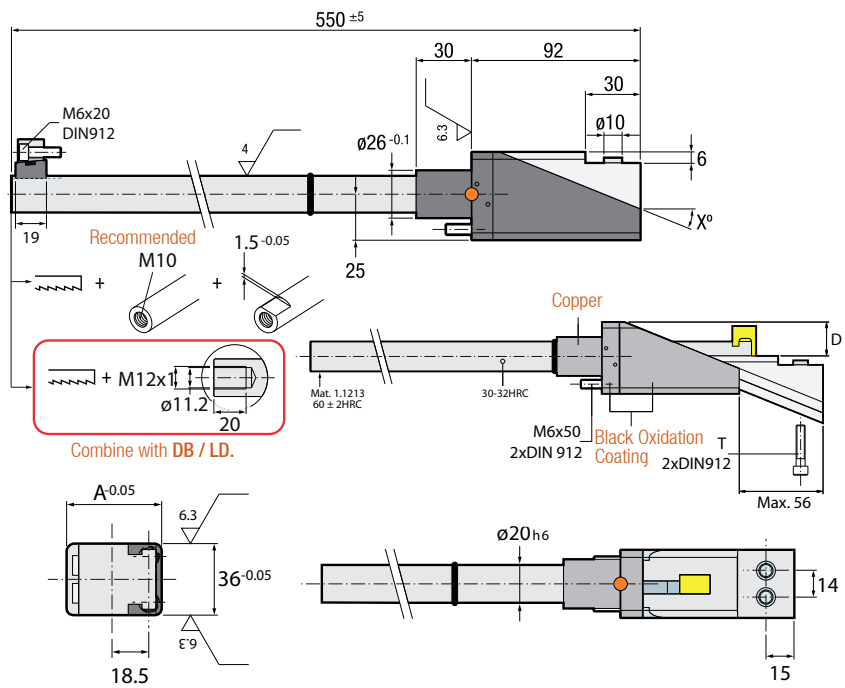
Dog Lifter Limiter

In single ejector plate systems.
Limits the stroke of a lifter with respect to the ejector stroke. Enables two stage ejection with only one ejector plate. All movements are 90° to the parting line.
Minimum space required for installation.

Material: 1.2311 Gas Nitrided ≈ 840Hv.

90° Machining and mould area

Dual Ejector System

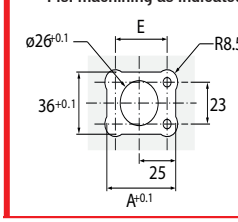


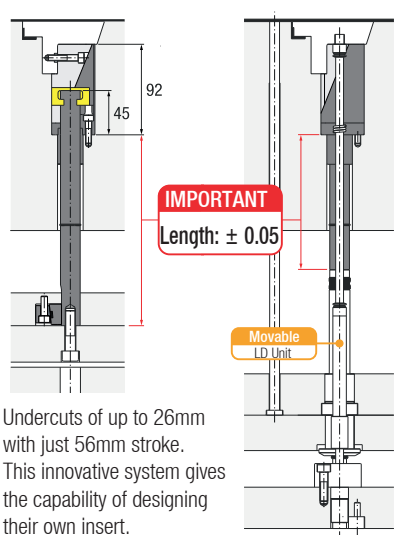
Complicated Mounting and Setting

A	D	E	T	X
48	22	35	6x40	22
54	26	41	6x45	26

Pocket Detail

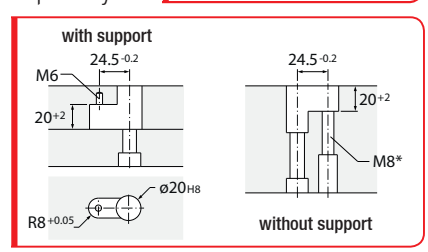
Pls. machining as indicated.

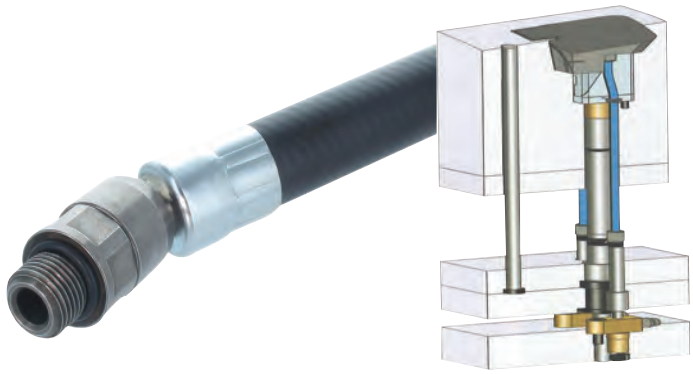




Undercuts of up to 26mm with just 56mm stroke. This innovative system gives the capability of designing their own insert.

separately

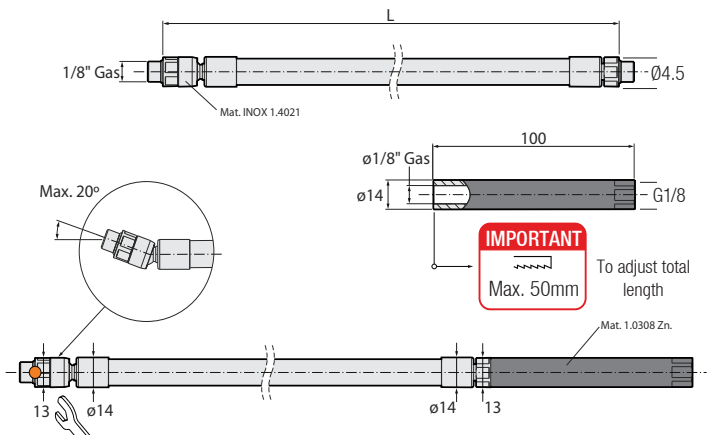




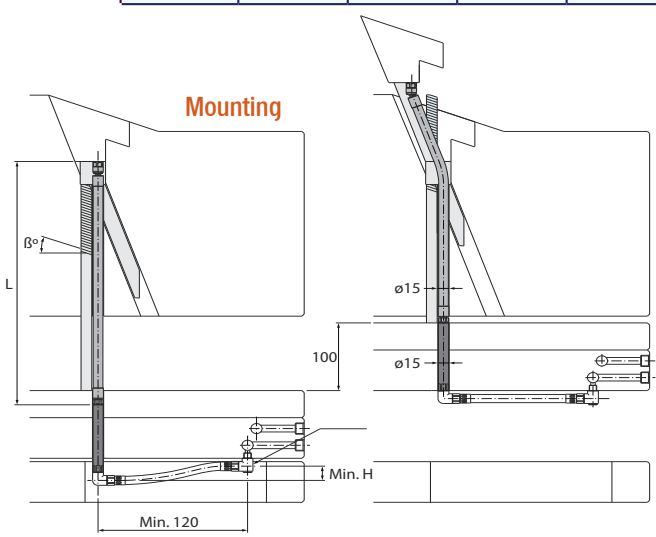
"DR" Cooling Hose

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.

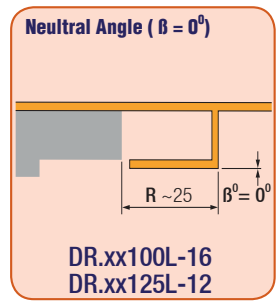


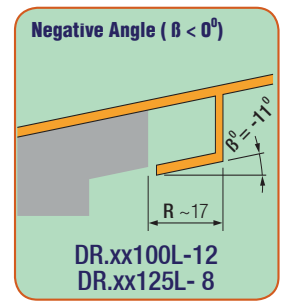
ß⁰	H			
	DR.xx-8	DR.xx12	DR.xx16	DR1.xx20
0⁰	10	10	10	10
+1⁰ ~ +9⁰	10	10	10	15
+10⁰ ~ +20⁰	10	15	20	25
>+20⁰	15	20	25	30



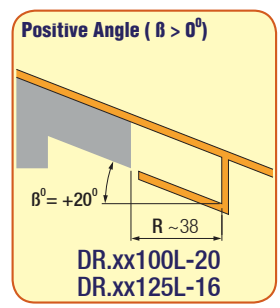
Important
Please indicate the required L dimension when ordering; the length will be rounded up to the next multiple of 25mm.

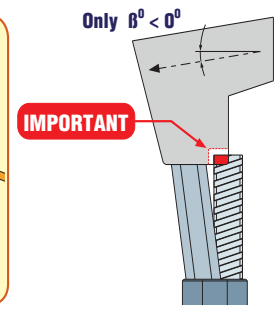
Double Rack Lifter (DR) Selection Table





Designed according to the colour system in the table!





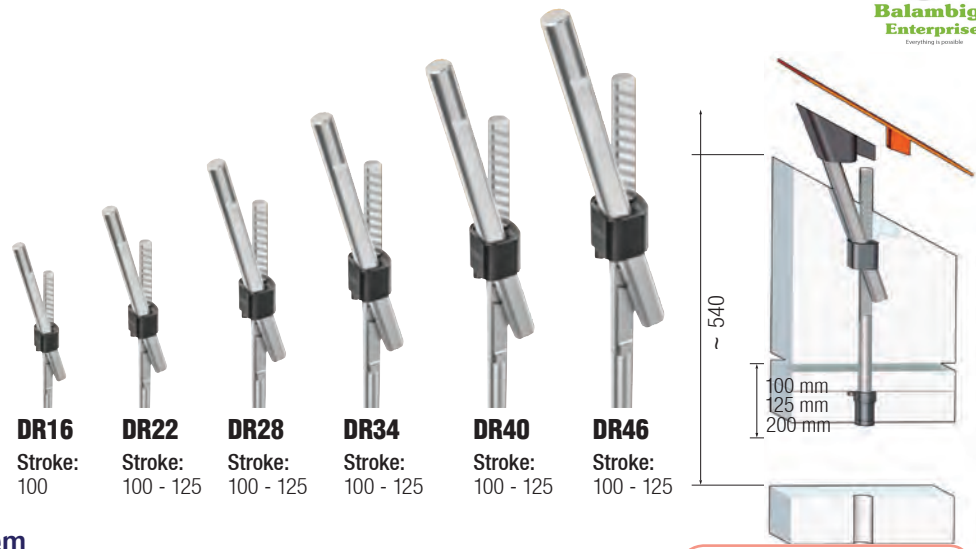
ß⁰	DR.xx-100L - 8		DR.xx-100L-12		DR.xx-100L-16		DR.xx-100L-20	
	S (-ß⁰)	S (+ß⁰)	S (-ß⁰)	S (+ß⁰)	S (-ß⁰)	S (+ß⁰)	S (-ß⁰)	S (+ß⁰)
0	14.0		21.2		28.6		36.4	
1	14	14	21.1	21.3	28.5	28.8	36.1	36.6
2	13.9	14.1	21.1	21.4	28.3	28.9	25.9	36.8
3	13.9	14.1	21	21.5	28.2	29.1	35.7	37.1
4	13.9	14.1	20.9	21.5	28.1	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

Balambigai Enterprises
Everything is possible

Locating and Rack Combination



DR16 Stroke: 100

DR22 Stroke: 100 - 125

DR28 Stroke: 100 - 125

DR34 Stroke: 100 - 125

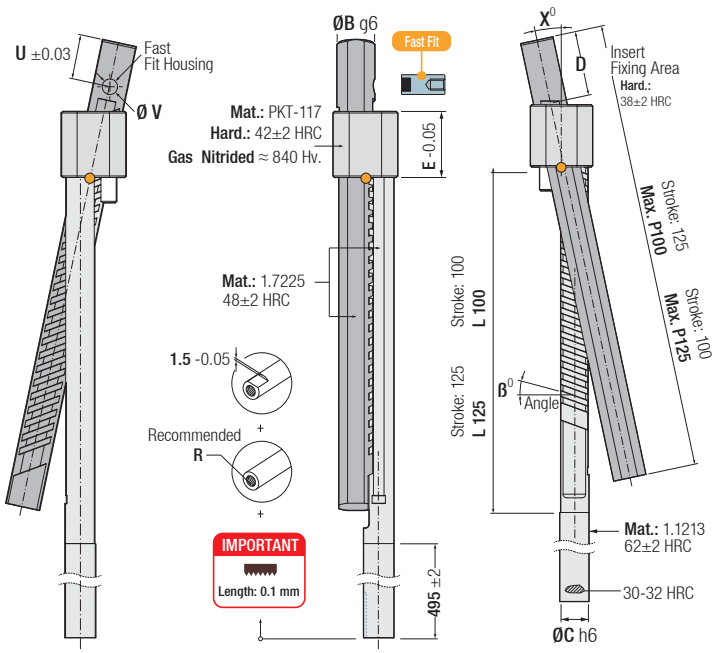
DR40 Stroke: 100 - 125

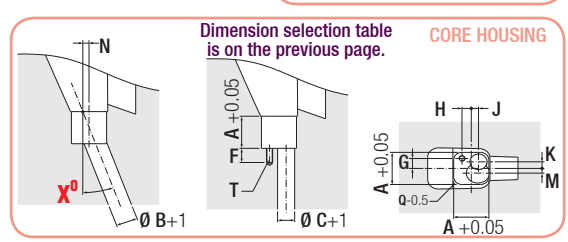
DR46 Stroke: 100 - 125

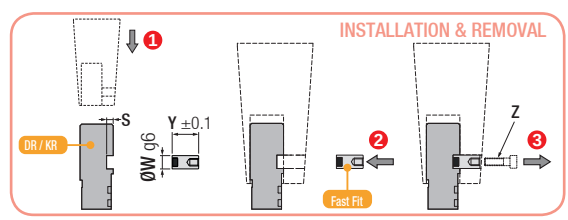
Double Rack Lifter System

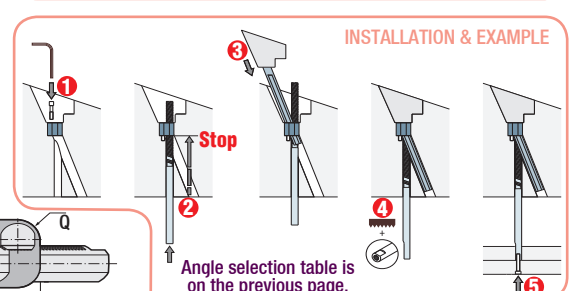
De-moulding strokes from 14mm to 60mm. Significant reduction to the ejection stroke.
"Mirror" parts available for 1+1 cavities moulds.
In Mounting: Fast delivery of the required draft. Vertical function maximizing strength. Complete flexibility for the moulding insert dimension. Eliminates the need for high-precision angled housings in the core plates. Smaller and less expensive injection machine required. Possibility to produce angles bigger than ±20º upon request.Eliminates the need for high-precision angled housings in the core plates. 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: +35º
Min. Undercut Degrees: -55º

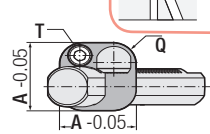




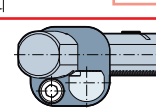




X⁰				A	B
8			-	16	9
	12			22	12
		16		28	16
			20	34	20
				40	22
				46	24



IMPORTANT
Mirror Part

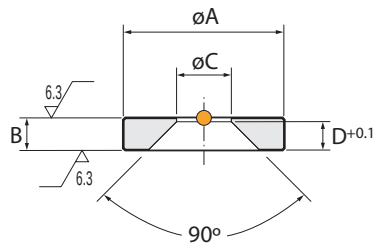


"S" letter is added to the end of order code for Mirror Part.

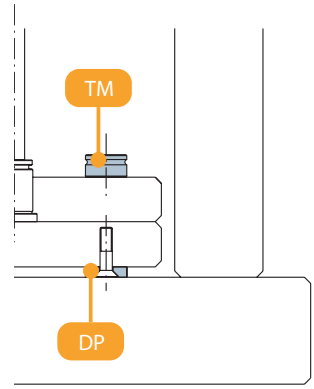
C	D	E	L100	P100	L125	P125	Q	R	T	U	V
8	20	20	142	178	-	-	4	M4	M5	10	6
12	30	22	148	202	202	261	6.5	M6	M6	17	8
14	36	28	152.5	214	194.5	266	8.5	M8	M8	23	8
16	36	34	160.5	227	188.5	264	10.5	M10	M8	23	8
20	36	40	170	244	204	284	10.5	M12	M10	20	10
24	42	46	175	258	201	289	10.5	M16	M12	26	10

IMPORTANT!
When ordering, replace the x in the reference with the required X° dimension (8°, 12°, 16° or 20°) and indicate the required ß°.

Ejector Foot

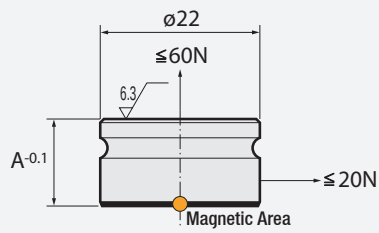


A	B	C	D
20	5	6.5	3.5
25	5	8.5	4.4
28	6	12	5.5

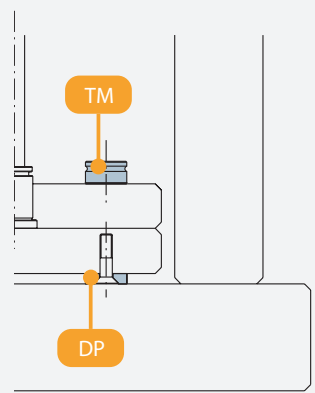


This unit is fixed through both ejector plates in conjunction with the spacer discs to provide support to the plates. These are fixed to the ejector plates so eliminating machining in the back plates.
Easy installation by using just one screw.

Magnetic Safety Stopper

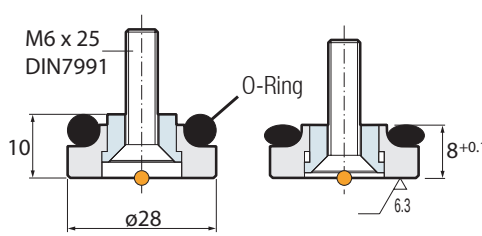


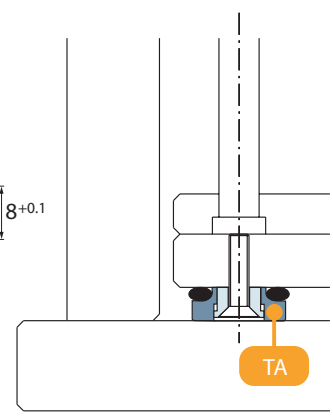
A
10
12.5
15
20



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

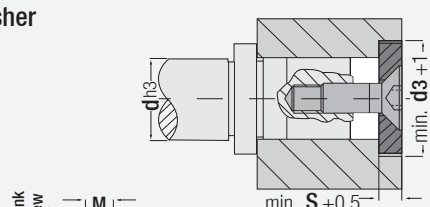


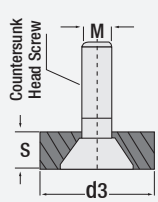


Used to minimize the vibrations caused by the ejector plates returning to position. The main advantage is the increase in the life of parts within the ejector frame through the reduction of damage and wear.

Mounting Flange

Guide pillar fixation & Support washer

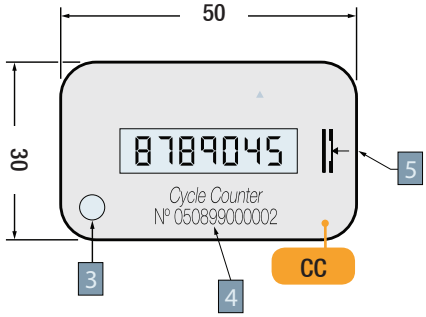


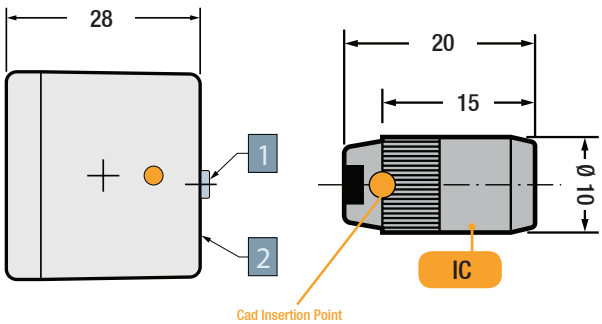


Usage: Guide pillar fixation (Die)
Support washer (Mould)

* 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





High Speed Cycle Counter

The Counter is expected to last 3 to 5 years, if it worked 24hour 7day / 12 month. The Counter battery starts working when it is installed in the mould. When the Counter is removed from its placement, a capital "E" (error) is shown on the screen, which you cannot delete.
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:

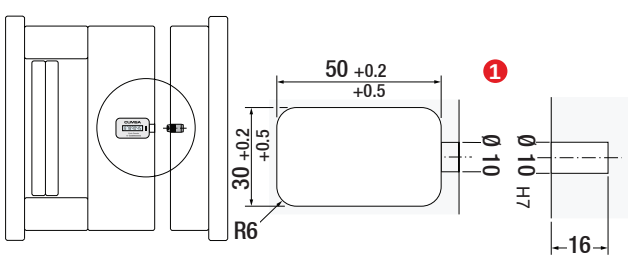
1 - Please machine housing in a way that as determined in technical drawing.
2 - Please hammer Counter Pin **(IC)** of Counter to housing with bronze hammer.
3 - Please insert Counter unit **(CC)** its housing.

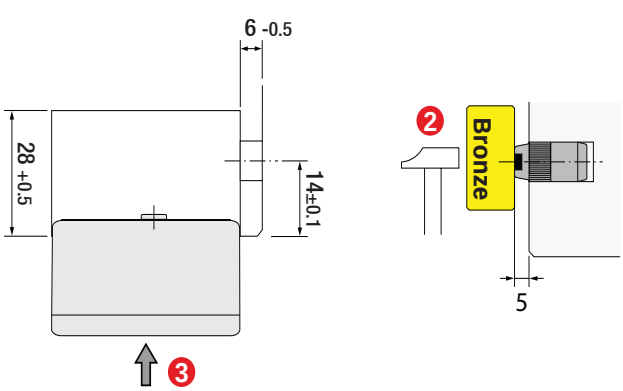
Working temperature:

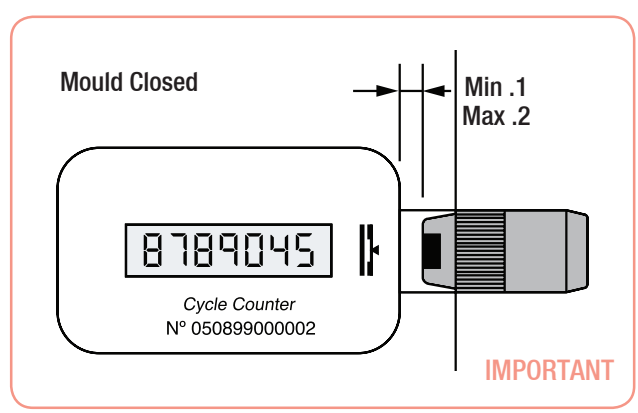
We recommend the Cycle Counter be placed at zones under 60 °C (140°F).

1 Security Switch
2 Magnetic Fixing
3 Total + Partial (Reset & Setting Up)
4 Unique Part Number
5 IC Position Indicator

Reset & Setting Up	Cycles / Min.
Suitable	Up to 500

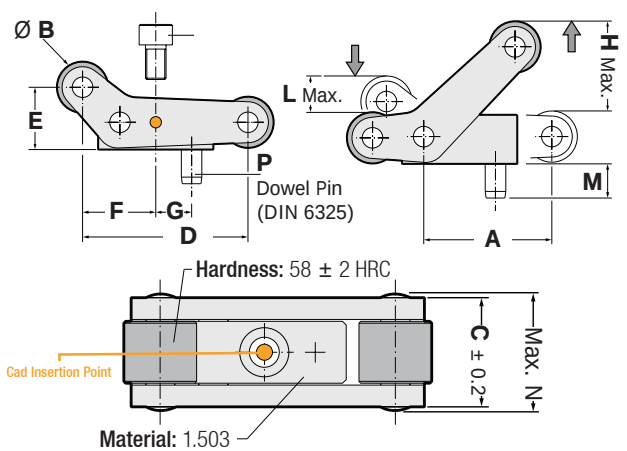






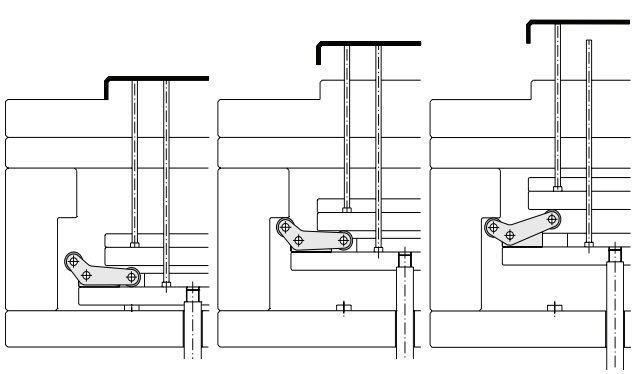
Ejector Plate Accelerator

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.



A	B	C	D	E	F	G
20	8	13.2	25.8	9.4	11.4	6
25	10	16	32.3	11.8	14.3	7
37.5	15	22	48.5	17.7	21.5	10.5
50	20	30	64.6	23.6	28.6	14

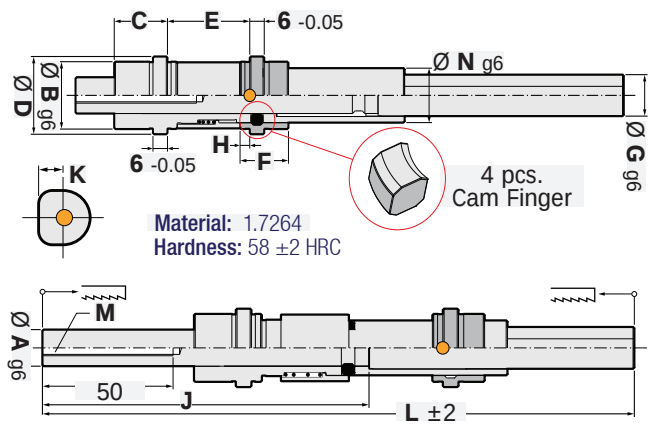
H Max.	L Max.	M	N	Ø P	T	Max. Force
11.6	4.4	5	15	2.5 x10	M3 x12	125 Kg.
15	5.7	6	18.5	3 x12	M4 x16	250 Kg.
23.5	9.1	8	25	4 x16	M6 x25	350 Kg.
32	12.5	10	34	5 x20	M8 x30	800 Kg.



NOTE: It is recommended two piece to be used reciprocatively in ejector system in mould applications.

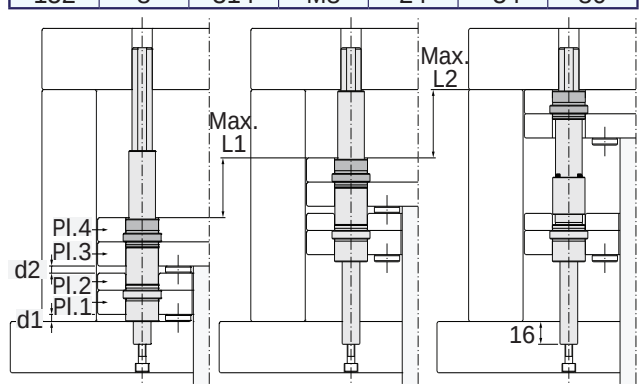
Superior Double Ejector

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.



A	B	C	D	E	F	G	H
14	26	22	30	34	20	16	4
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

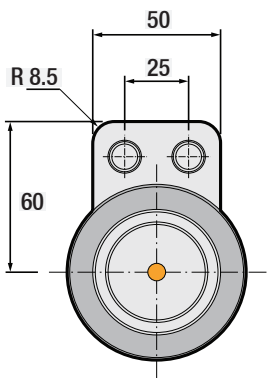


Standard Ejector Plate Combination

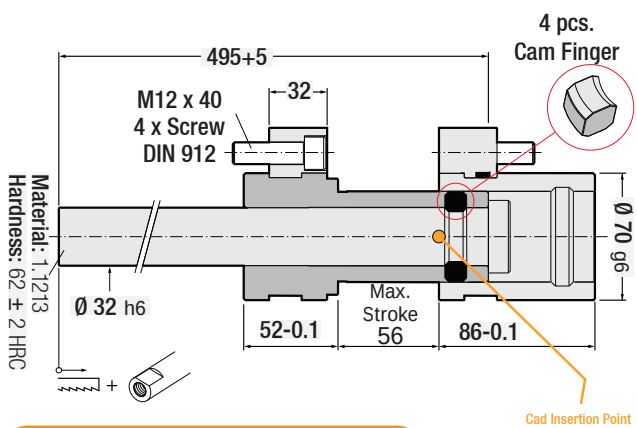
Size mm	DX.142622			
	1	2	3	4
d1	5	5	5	5
Pl.1	17	17	17	17
Pl.2	9	12	12	12
d2	13	10	5	5
Pl.3	12	12	17	17
Pl.4	9	9	9	12

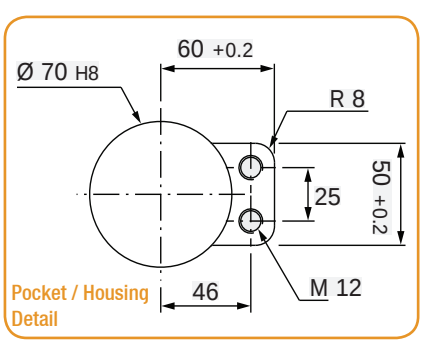
Size mm	DX.163027								
	1	2	3	4	5	6	7	8	9
d1	5	5	5	5	0	0	0	0	0
Pl.1	22	22	22	22	27	27	27	27	27
Pl.2	12	12	17	17	17	17	17	22	22
d2	5	5	5	5	5	5	10	0	0
Pl.3	27	27	22	22	22	22	17	22	22
Pl.4	17	22	12	17	12	17	12	12	17

Compact Double Ejection

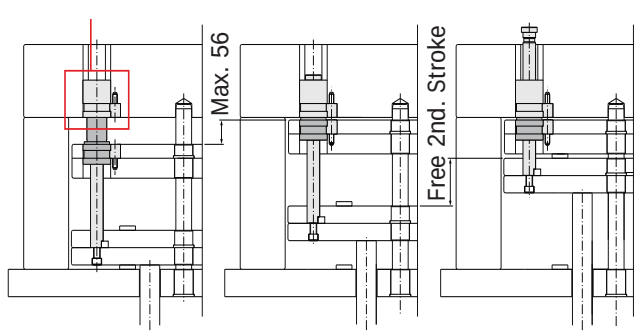


Developed for medium / large moulds.
The upper ejector plate stops when reaching the core plate, and the rear plate continues until it reaches the upper plate. As the assembly of the units is not in the center of the mold, but within the ejector frame, the space required for installation is drastically reduced.
Double ejection up to 56mm.





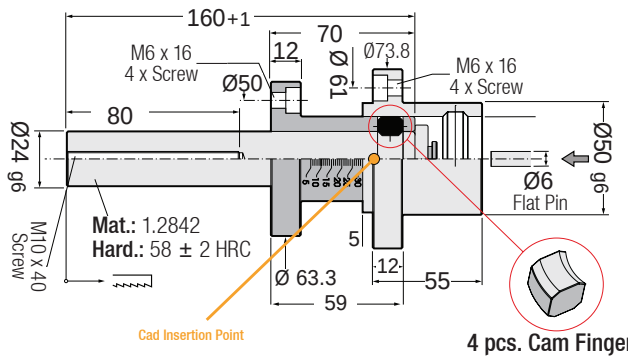
Material: 1.7242
Hardness: 56 ± 2 HRC
Patented System



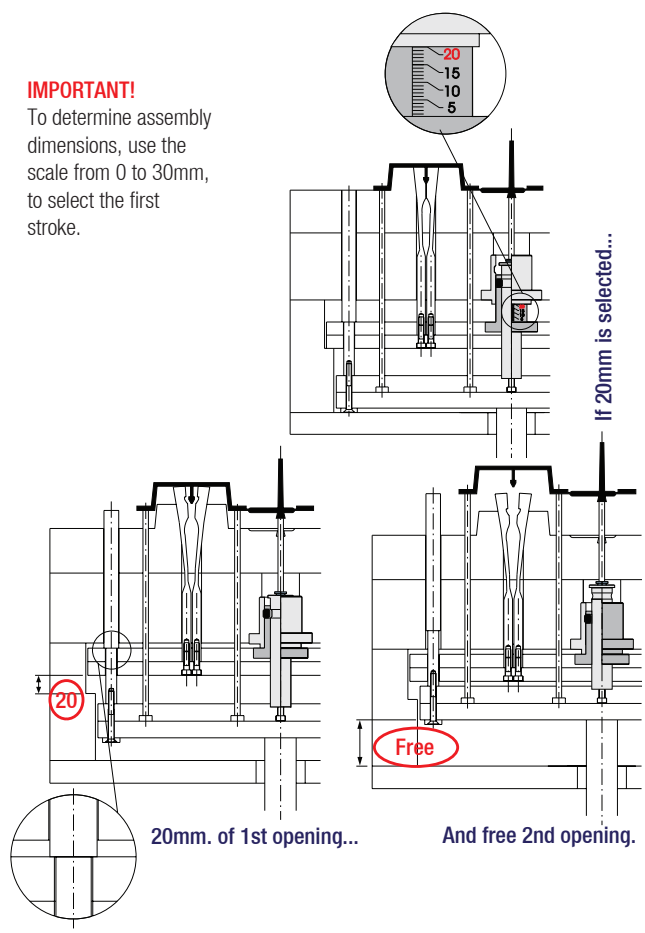
Two-Stage Ejector System

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



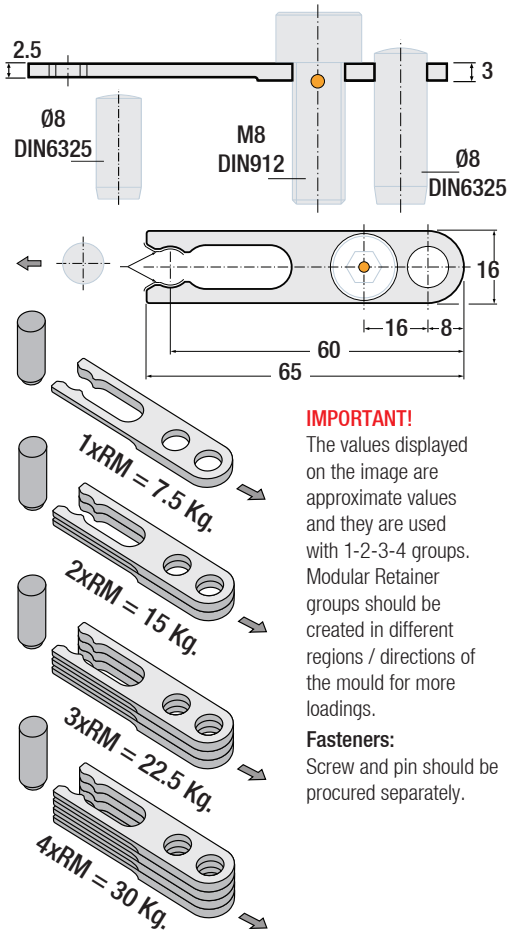
IMPORTANT!
To determine assembly dimensions, use the scale from 0 to 30mm, to select the first stroke.



Modular Retainer

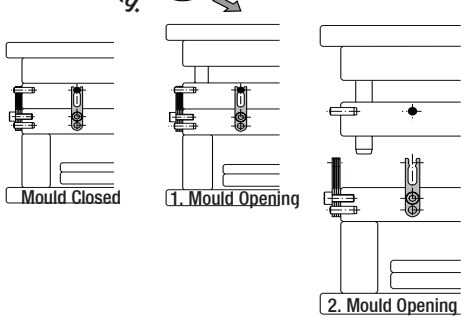
Useful for moulds that require delayed opening of parting line. Resistance can be increased by adding clips. No pocket machining required as needed with other similar products on the market. Minimum space required for installation. Reduces costs compared to conventional mechanisms. 4 pieces can be used 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°.



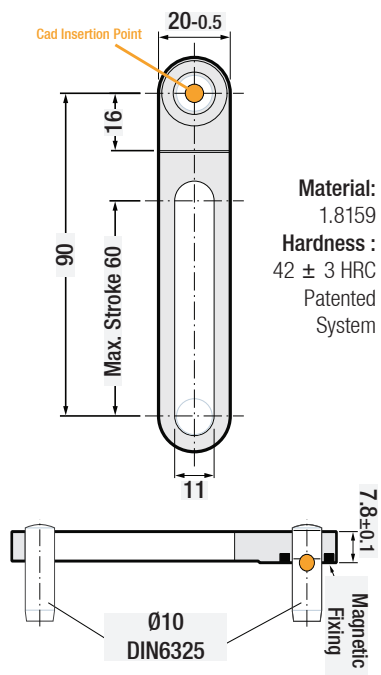
IMPORTANT!
The values displayed on the image are approximate values and they are used with 1-2-3-4 groups. Modular Retainer groups should be created in different regions / directions of the mould for more loadings.

Fasteners:
Screw and pin should be procured separately.



Stroke Limiter

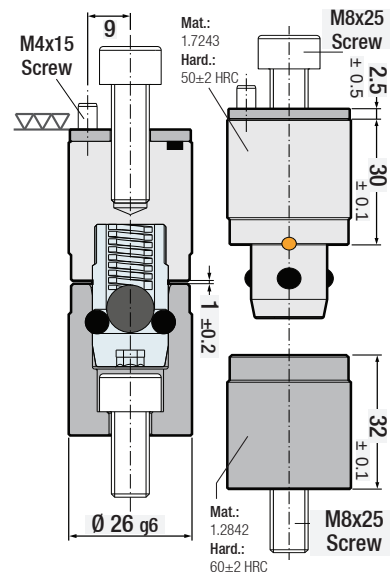
Stroke mechanical limiter for PR - Plate Retainer. When PR coded product is used dual opening systems with stripper limit stroke of bearing plate which is opened first in 1st group. Possibility to reduce the max. opening - 60mm. Then 2nd group's opening is engaged.

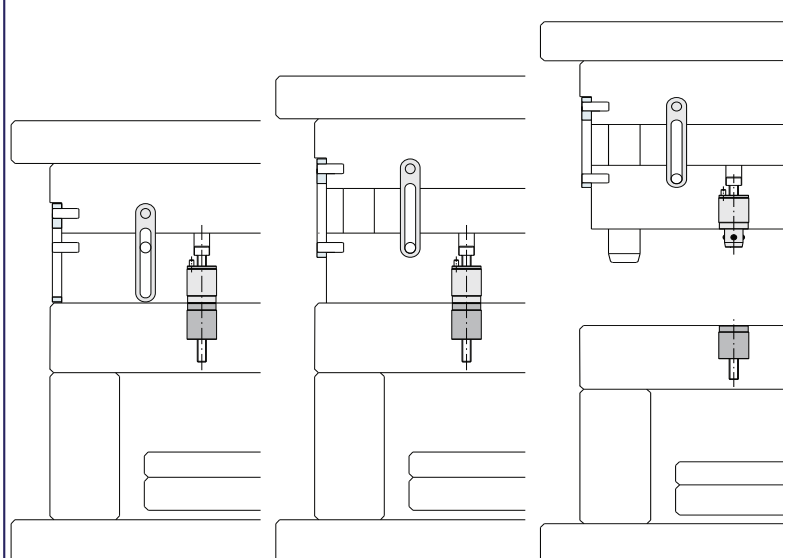


Material:
1.8159
Hardness :
42 ± 3 HRC
Patented
System

Plate Retainer

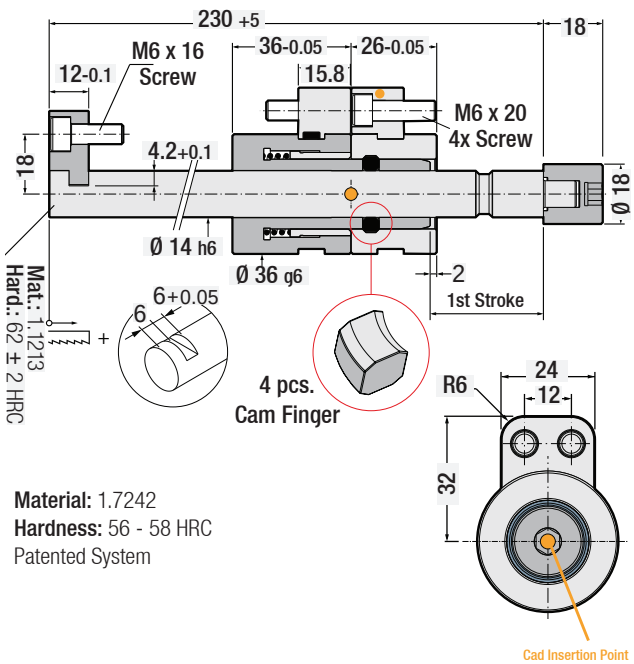
PR - Guarantees that the second opening stays closed until the first is completely open. 50 Kg. opening load required per unit (Minimum of 2 parts required).
Possibility to change inner spring from the parting line. Also protects mould affecting from vibrations and impacts by reducing speed tension and absorbing pinking during opening. The most important advantage of it is to extent life time of mould parts.



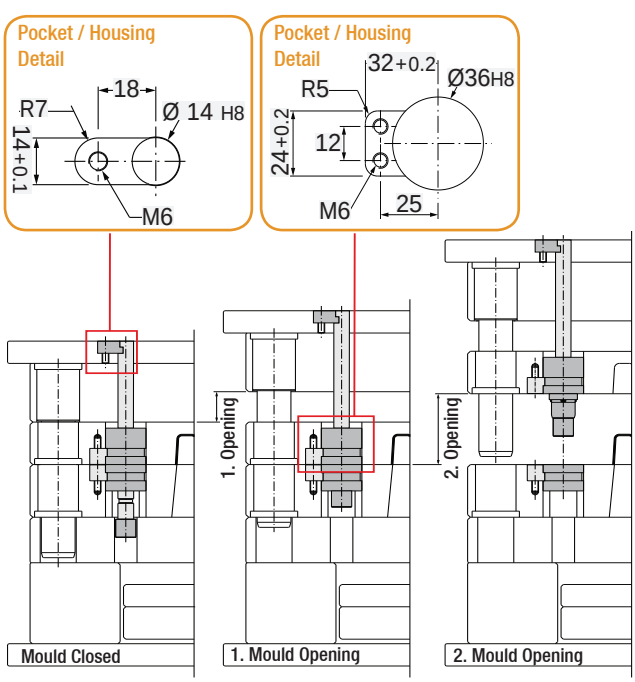


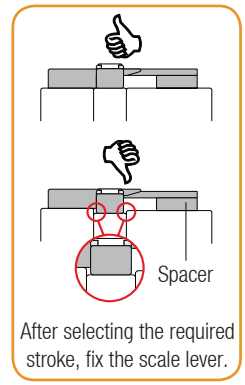
Internal Latch Lock

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.



Material: 1.7242
Hardness: 56 - 58 HRC
Patented System



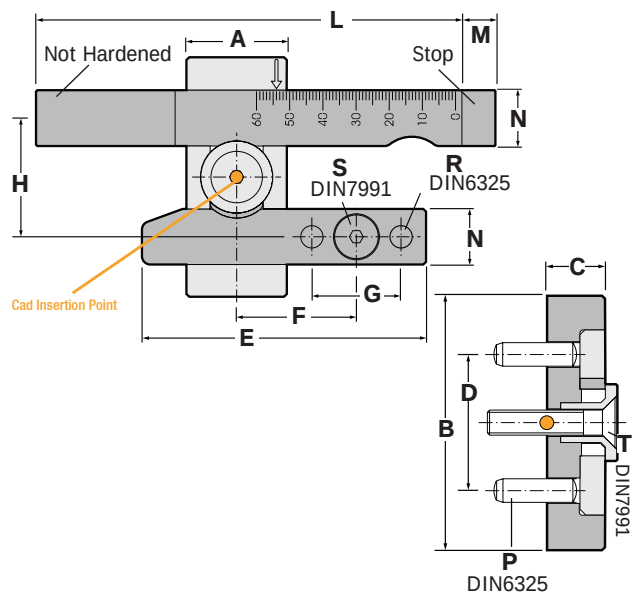


After selecting the required stroke, fix the scale lever.

Latch Lock

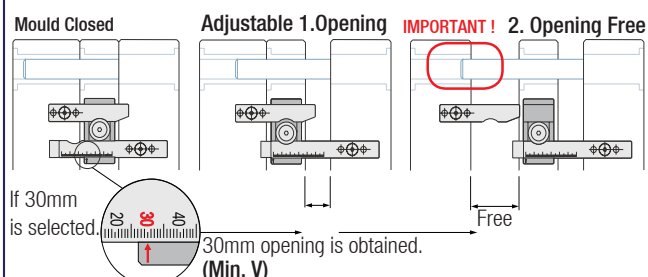
Designed for two steps opening moulds. The gradual scale allows selection of the first opening. The priority of opening depends on position of assembly.
More accurate first plate opening compared to other conventional systems.
Scale lever indicates opening of the first plate. Reduces costs compared to conventional mechanisms.

Material: 1.2842 **Hardness:** 55 ± 3 HRC (friction area) Patented System



A	B	C	D	E	F	G	H	L
22	66	16	38	75	30	25	32	105
36	86	19	46	102	43	32	42.7	153
42	106	24	56	124	51	40	50.2	190

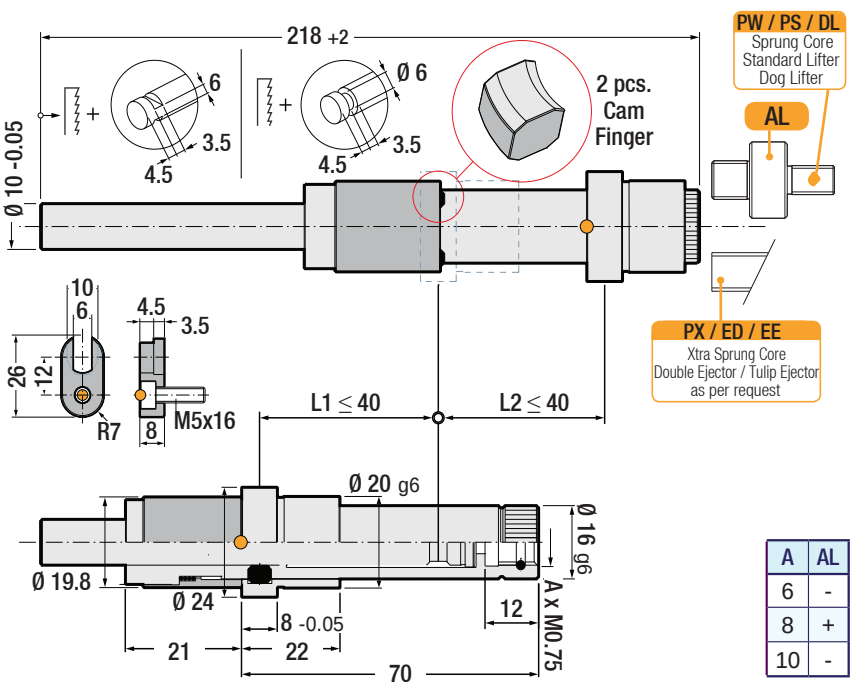
M	N	P (x2)	R (x4)	S (x2)	T	V	Scale
10	15	6x20	6x30	M6x30	M6x35	10	40
12	20	8x24	8x36	M8x35	M8x40	11.5	60
15	24.5	10x30	10x40	M10x40	10x45	14	80



Threaded Limiter

Threaded Limiter **(LR)** is mounted and fixed to mould rear mounting / bearing plate (H5 A).
Movable bush part of the unit is inserted into the ejector plates.
Limits the stroke of a threaded lifter with respect to the ejector stroke.
Enables two stage ejection with only one ejector plate. All movements are 90° to the parting line.

Material: 1.7243 **Hardness:** 58±2 HRC **Max. working temperature:** 150°



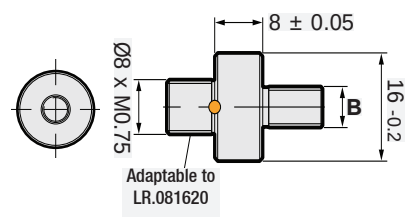
A	AL
6	-
8	+
10	-

Threaded Limiter Adapter

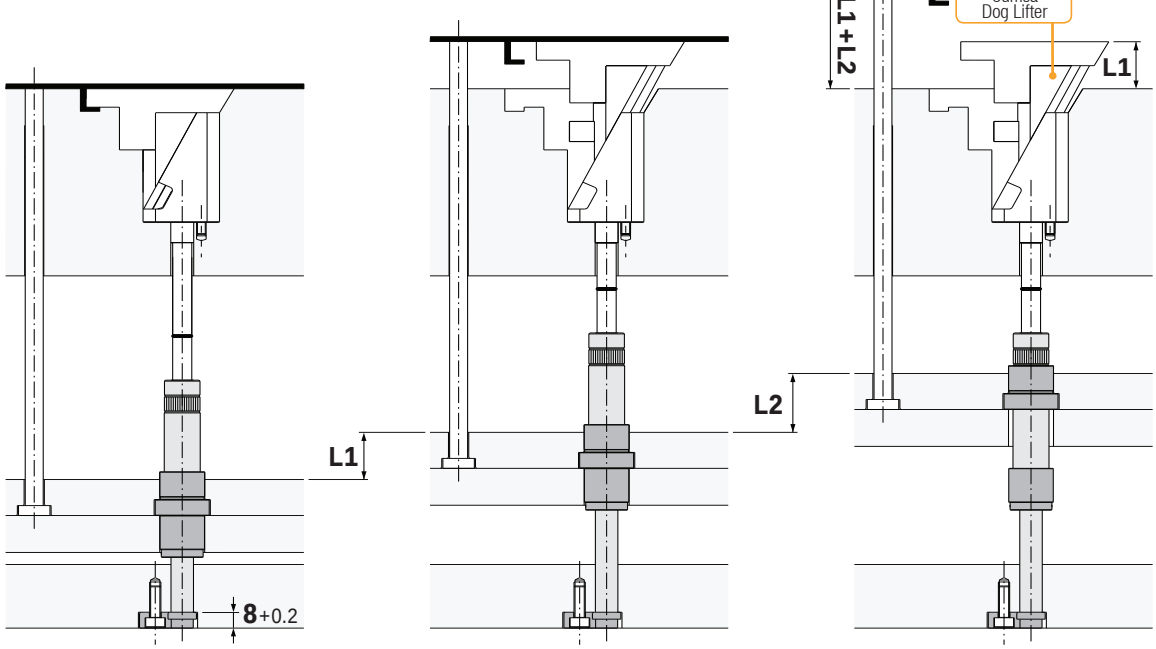
Allows the use of the **LR** for internal threads.
It is a dual different threaded adapter providing positioning of **LR**.

In Addition:

Fine tread part of **AL** also can be used as joint adapter for **PW** - Sprung Cores & **PS** - Standard Lifters.

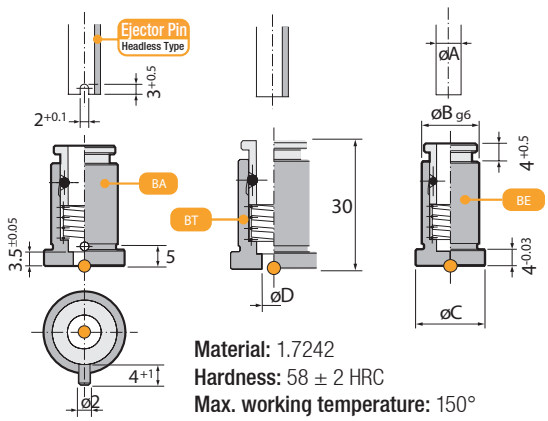


B
M4 x 10
M5 x 10
M6 x 10
M8 x 10



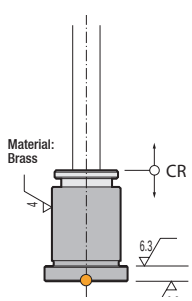
Ejector Pin Base (for headless ejector pins)

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.

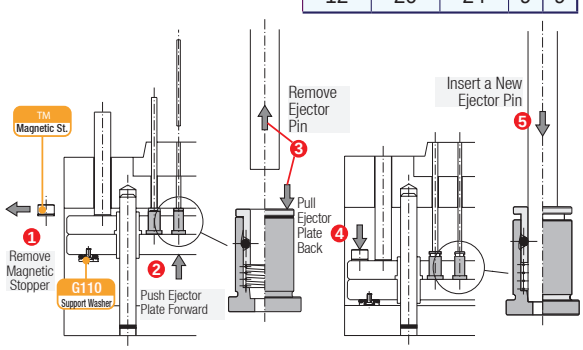


Material: 1.7242
Hardness: 58 ± 2 HRC
Max. working temperature: 150°
Ejector Pin Bases: It is only used for headless ejectors.

A	B	C	CR(N)
3	11	15	≥ 2550
4	12	16	≥ 2550
5	13	17	≥ 3800



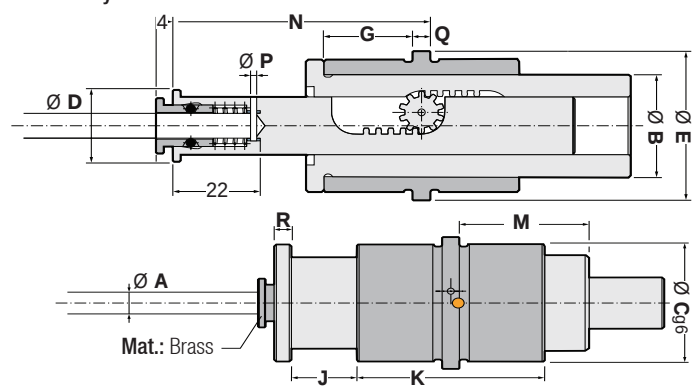
A	B	C	D	
			BA	BT
6	14	18	3.5	4.2
8	16	20	5.5	6.2
10	18	22	7	7
12	20	24	9	9



Accelerated Ejector

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.

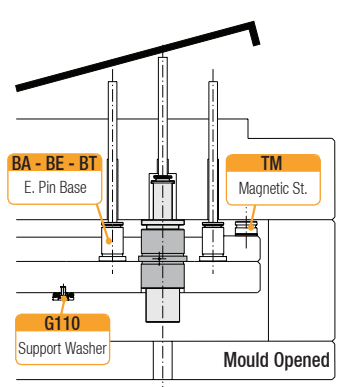
Material: 1.7225
Hardness: 54 ± 2 HRC
Max. working temperature: 150°
Patented System

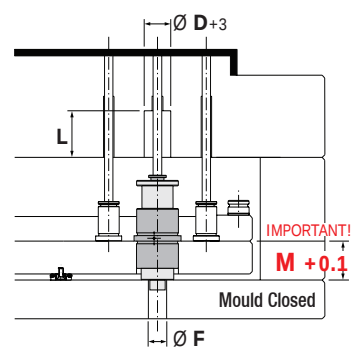


A	B	C	D	E	F	G
3	16	20	12.5	22	13	14
4	16	20	12.5	22	13	14
5	24	30	16	34	16	20
6	24	30	16	34	16	20
8	24	30	17	34	17	20
10	30	36	21.5	40	21	28
12	30	36	21.5	40	21	28

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 maximum extra is:

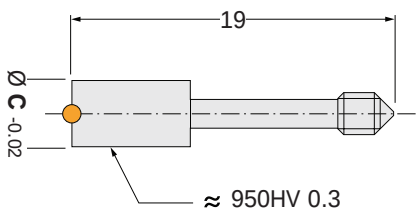


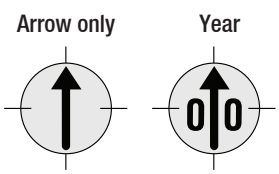


High Temperature Insert for Date Stamp

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.

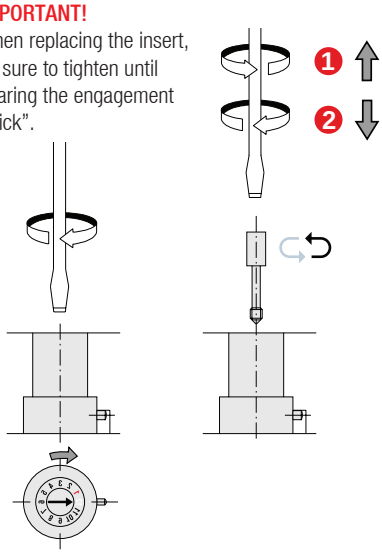
Material: 1.2344 Nitrided





C
4.7
6.7

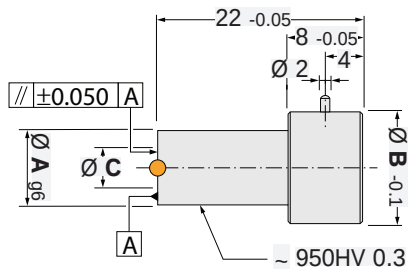
IMPORTANT!
When replacing the insert, be sure to tighten until hearing the engagement "click".



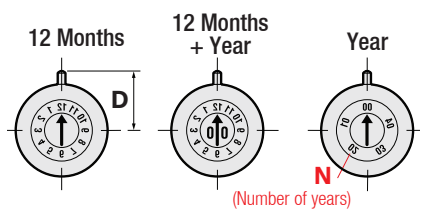
High Temperature Date Stamp

High temperature date stamp. Designed for injection mold tools which operate in high temperature environments,
like: Zamak, Zinc, Polyester, Bakelite, etc..
Possibilty to change annual insert.

Material: 1.2344 Nitrided + Inconel 2.4669
Max. working temperature: 450°



Possibilty to change annual insert.



A	B	C	D	N
8	12	4.7	11	5
12	16	6.7	12	8

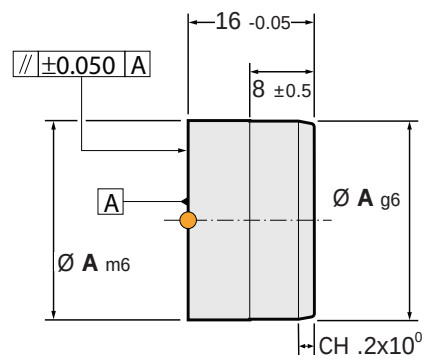
A	B	C	D	N
8	12	4.7	11	5
12	16	6.7	12	8

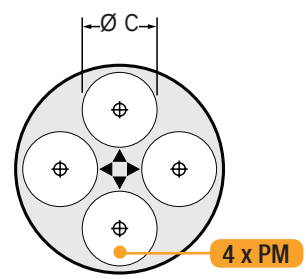
A	B	C	D	N
8	12	4.7	11	5
12	16	6.7	12	8

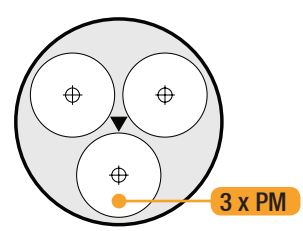
Block Base Insert

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.

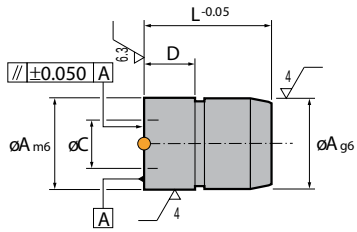
Material: INOX 1.4034
Hardness: 51 ± 3 HRC
Max. working temperature: 150°







A	C	E	#PM
16	6.5	8	3
18	6.5	8	4
22	8.7	10	3
25	8.7	10	4
28	11.5	12	3
32	11.5	12	4



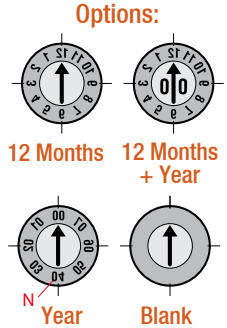
Date Stamp Plus

Possibility for cooling circuits below the date stamp as they are removed from the front (**with the EF**). Inner insert is always at the same level as the body of the date stamp. Exact outer number positioning. Ideal clamping area.

Material: INOX 1.4034 **Hardness:** 51 ± 3 HRC
Max. working temp.: 150°

A	C	D	L	N
4.0	2.2	5.5	12	4
5.0	3.0	5.5	12	4
6.0	3.2	8.0	20	5
8.0	4.7	8.0	20	5
10	5.7	8.0	20	6
12	6.7	8.0	20	8
16	8.7	8.0	20	10
20	10.7	8.0	20	10

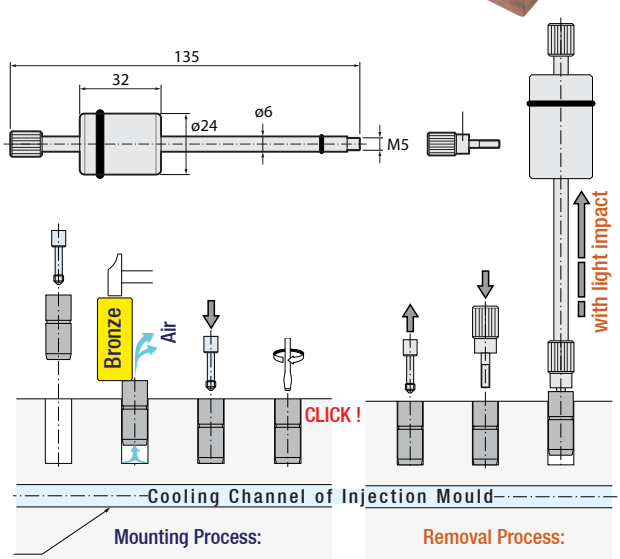
Options:

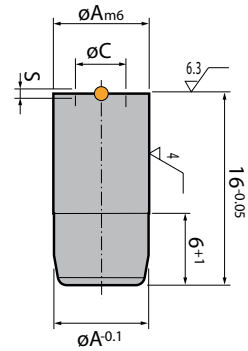


Removal Jig Set

Removal Jig Set for the Date Stamps Plus. The set includes 8 parts, one for each **FP** diameter.

Material: INOX 1.4034
Hardness: 51 ± 3 HRC





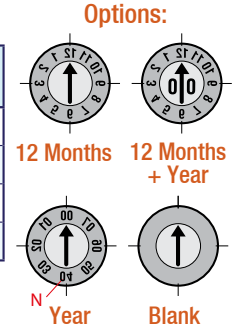
Xtra Date Stamp

This is a permanent date stamp where only the central year insert is changed. The month is changed by using a screwdriver.
Completely stainless. Only a H7 pocket required for assembly.

Material: INOX 1.4034 **Hardness:** 51 ± 3 HRC
Max. working temp.: 100°

A	C	E	N	S
6.0	3.2	4	5	0.25
8.0	4.7	6	5	0.25
10	5.7	8	6	0.35
12	6.7	10	8	0.35

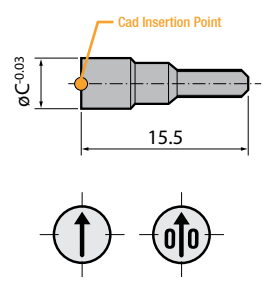
Options:



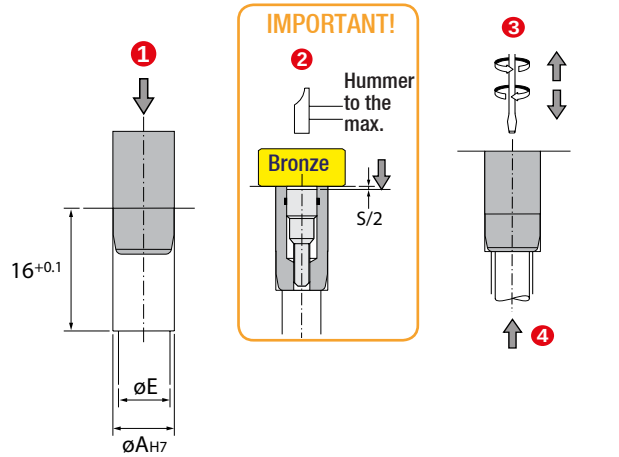
Xtra Insert for Date Stamp

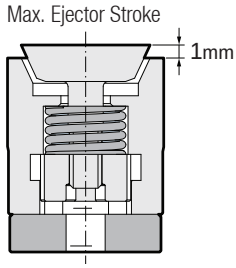
Due to fact that the insert is adjustable / removable from the front of the mold, there is no need to remove the tool from the machine or disassemble the mould.

Material: INOX 1.4034
Hardness: 51 ± 3 HRC



C
3.2
4.7
5.7
6.7

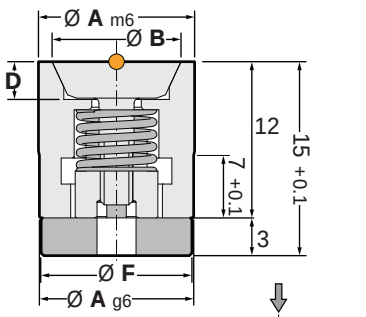




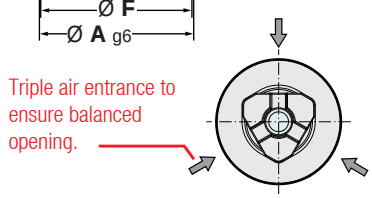
Air Valve for High Pressure

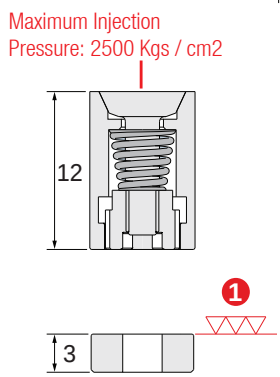
Developed for high injection pressures and high speed cycles. Incorporates an internal stopper to sustain injection loads, preventing the system to block. Keyed unit to allow the installation in angled or shaped surfaces. Easy installation thanks to its adjusting ring, as well as allowing uninstallation if needed.

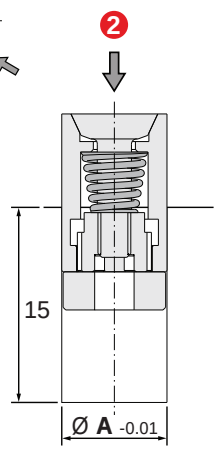
Material: INOX 1.4034
Hardness: 51 ± 3 HRC
Max. working temp.: 150°
Working pressure: 2-10 Bar
1 Bar ≃ 1 Kg. / cm²

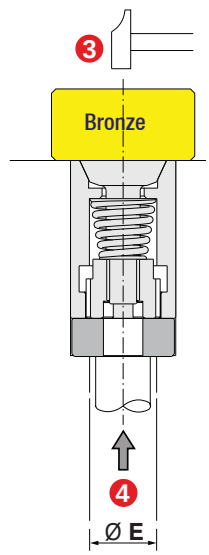


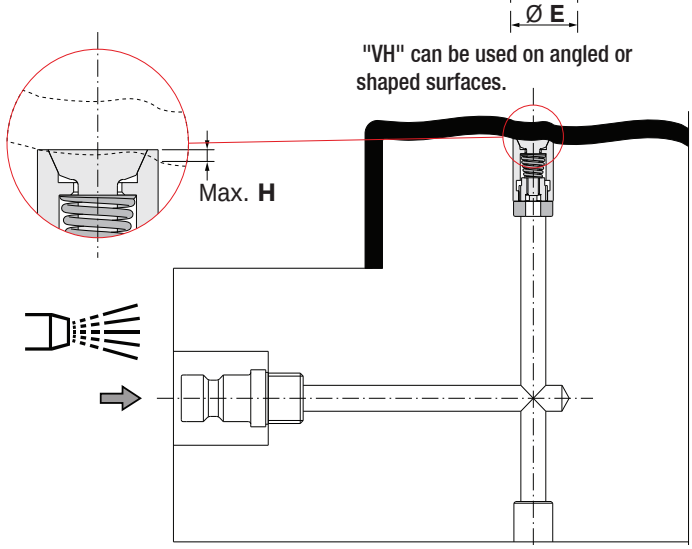
A	B	D	E	F	H
6	5.3	1.9	4	5.8	0.25
8	6.7	2.1	5	7.8	0.75
12	9.8	2.9	5	11.8	1.0











Air Poppet Valve

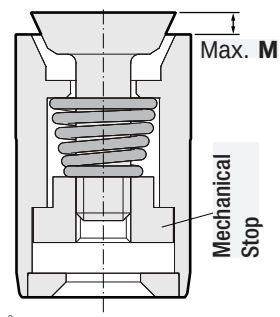
Manufactured completely from stainless steel this unit has the advantage of high airflow.
Helps part ejection with air. Recommended working under 150°C (302°F). Above that temperature, steel starts dilatation, so the resort introduced on the Air Valve would lose efficiency. If so, the plastic material could go in and the Air Valve would be damaged.

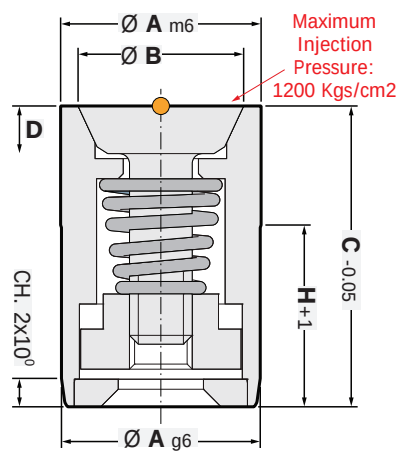
Material:
INOX 1.4034

Hardness:
51 ± 3 HRC

Max. working temp.: 150°

Min. working pressure: 3 Bar
1 Bar ≃ 1 Kg. / cm²

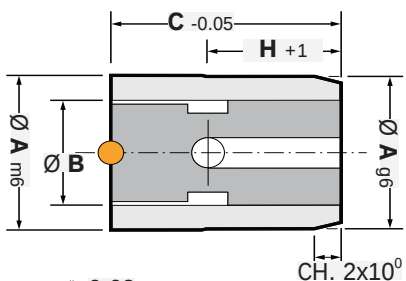


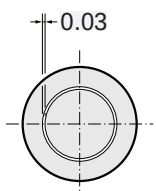


Order	A	B	C	D	E	H	M
VA.050412	5	3	12	1.5	4	7	2.5
VA.065212	6	5.2	12	1.5	4	7	0.95
VA.086512	8	6.5	12	1.5	4	7	0.95
VA.100812	10	8	12	2	8	7	0.95
VA.121012	12	10	12	2.5	10	7	0.95
VA.161320	16	13	20	3	12	12	1.55
VA.201720	20	17	20	3.5	16	12	1.55

Double Air Valve

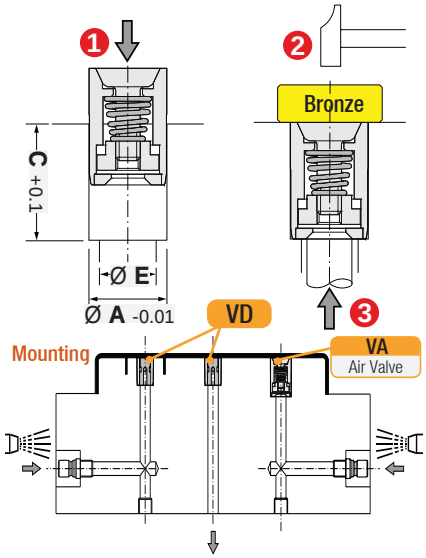
An effective method of semi pneumatic ejection, for moulds with ribs (in thin walled mould) or areas forming gas traps or vacuum conditions. Helps part ejection with air. Allows venting.





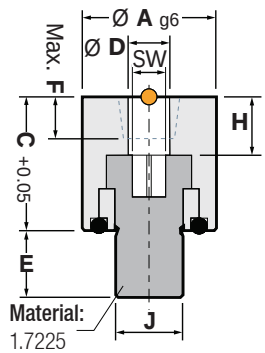
Material:
INOX 1.4034
Hardness:
51 ± 3 HRC

A	B	C	E	H
8	5	12	4	7
10	6	12	5	7
12	8	12	7	7
16	10	20	9	12

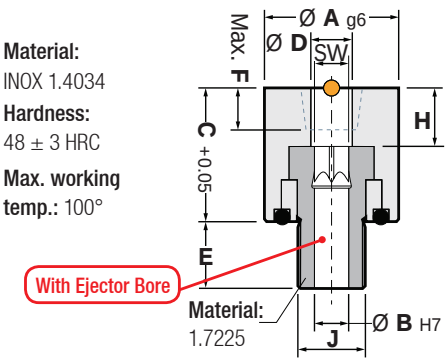


Sprue Adjuster

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.



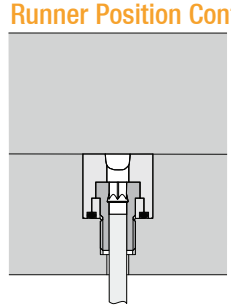
Material:
INOX 1.4034
Hardness:
48 ± 3 HRC
Max. working temp.: 100°



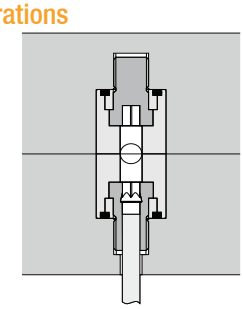
A	C	D	E	F	H	J	SW
12	14	4	6	3	5	M6	3
16	16	5	8	5	7	M8	4
20	18	6	10	6	9	M10	5

A	B	C	D	E	F	H	J	SW
12	3	14	4	6	3	5	M6	3
16	4	16	5	8	5	7	M8	4
20	5	18	6	10	6	9	M10	5

Runner Position Configurations

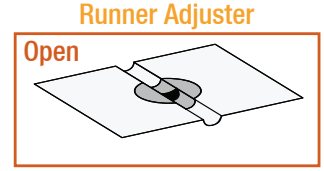


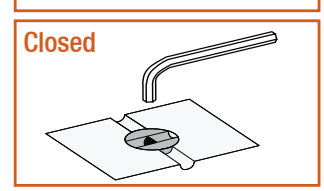
Trapezoidal Runner

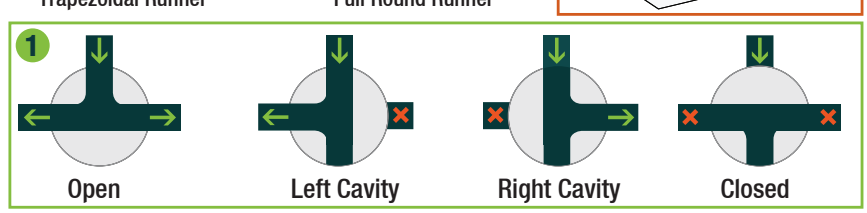


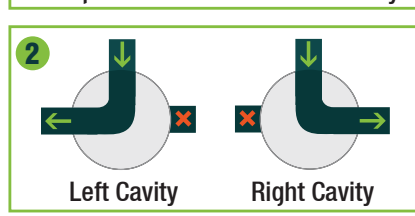
Full Round Runner

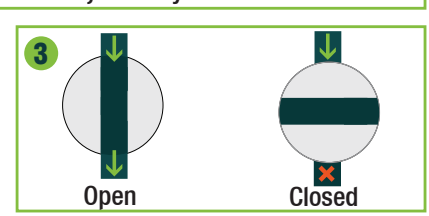
Runner Adjuster







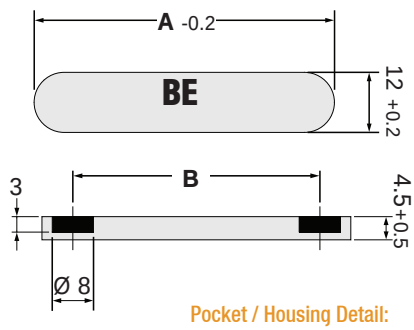




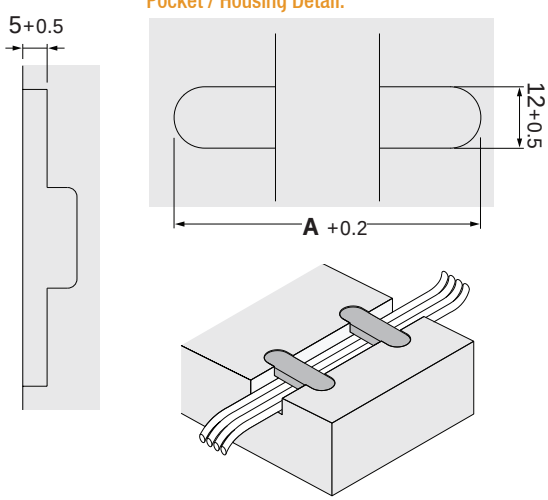
Cable Retainer Cap - Magnetic

(Magnetic & does not require extra hole)

Especially in hot runner moulds, it keeps the diffused cables clean and smooth in channel. The product is a magnetic material, it is self adhesive, and there is no need to drill and tap extra holes. We recommend keeping maximum mould temperature under 80ºC. Because, plastic and even magnets can be affected and broke down due to high temperature.

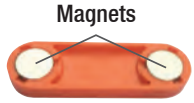


Pocket / Housing Detail:



A	B	Material	Max.Temp.
40	28	ABS + NfFeB	80ºC
60	48	ABS + NfFeB	80ºC

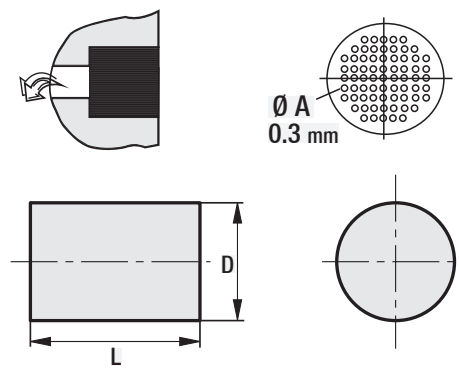
Magnets



Gas Venting Filter for Diecasting

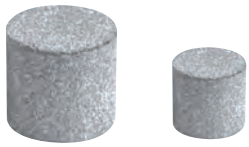
(Aluminium & Zamak moulds)

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.



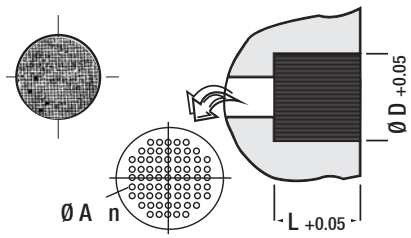
D (Ø)	L (mm)	A (Pore pcs.)
3.0	10	40
4.0	10	40
5.0	10	90
6.0	10	90
8.0	10	200
10	10	340
12	10	340
16	15	340
20	15	550

It is resistant to high temperature and pressure.



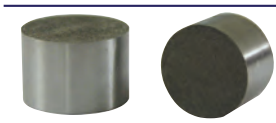
Sintered Gas Venting Filter

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.



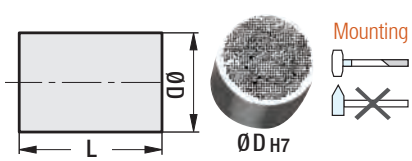
D	L	A	n
1.6	5	0.03	250 / 400
2.0			
2.5			
3.6			
4.1	9		880
5.0	10		

D	L	A	n
6.5	10	0.05	880
9.0			
10			
12.5			
15			1200
20			



Sintered Gas Venting Filter with Steel Casing

- External surface grinded.
- Sintered structure.



Material: Stainless Sintered Steel
Filter Fineness: 10 Microns
Tension: 300 N / mm²
Resistance: Weak bases - Organic acids, Plastic melts - Synthetic resins

D	L
4	10
6	
8	
10	12

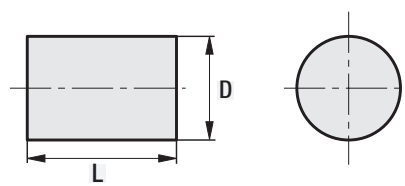
D	L
12	12
16	14
20	15
28	

Gas Venting Filter - Yellow Wired

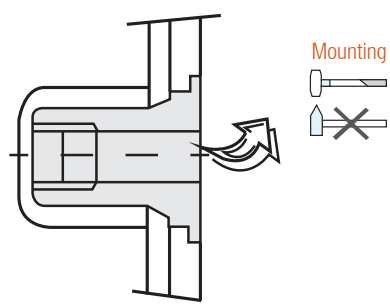
In injection moulds, it drains unwanted gas created by melted raw material fast via wide channels.
Does not resist to very high pressures, can dent.
It can leave a mark on objects in stamp. It is mostly suitable to be used inner parts. It can be used in metal injection moulds which do not require very high temperature. **It is an economical product.**

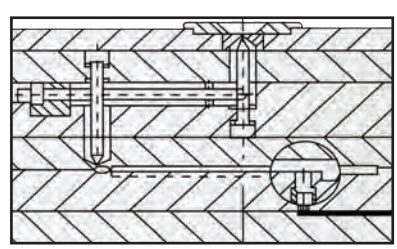
In Mounting: Please use copper / rubber hammer. Do not make any mechanic or polishing / levelling process on filter unit, since this would clog up the pores.

In Production: Never touch Venting Filters on operating moulds by hand.



D	L
3.0	8
4.0	10
5.0	10
6.0	10
8.0	10
10	10
12	10
16	10

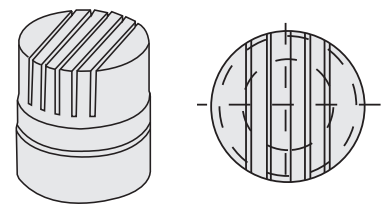


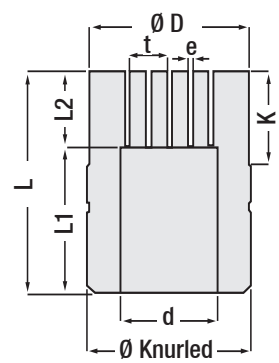


Air Venting Valve for Blow Moulding

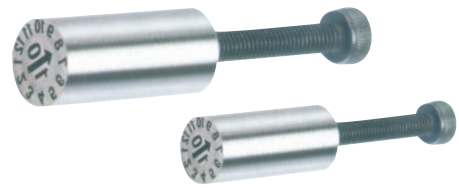
It is used in blow mouldings for optimum ventilation to mould cavity. Due to the air channels of valve being parallel and wide, it drains the air in mould rapidly, also air chamber inside of the unit acts as a pool in drainage of the air. If the burrs become on the product that should be cleaned instantly.
Those burrs causes adhesion to pores. For cleaning, the compressed air or cleaning spray can be used.

Mounting: It provides tight keep and inside the safe of hole thanks to its knurled outer part.





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

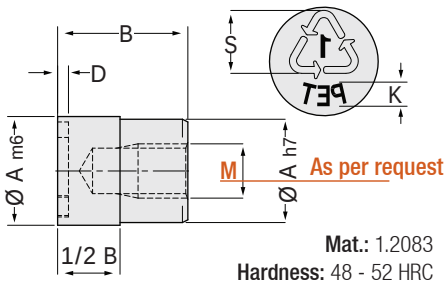
(Plastic raw material data, definition & recycling stamps)

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.

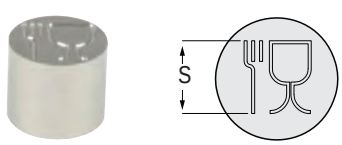
Types

	Logo
	Blank
PET	PET
HDPE	HDPE
PE-HD	PE-HD
PVC	PVC
LDPE	LDPE
PE-LD	PE-LD
PE-BD	PE-BD
PP	PP
PS	PS
OTHER	Other
0	Other (0)
	Foodmark



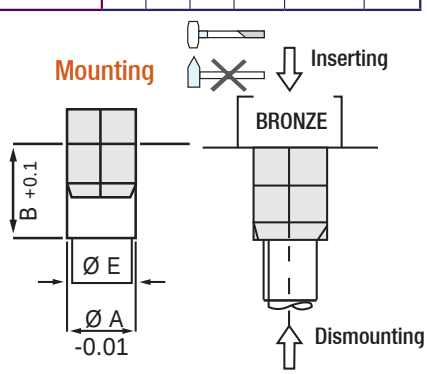
Mat.: 1.2083
Hardness: 48 - 52 HRC

A	B	D	E	K	S	M
6	10	0.3	6	-	4.0	M4
8	10		6	-	4.0	M4
10	12		8	1.6	5.6	M5
12	12		10	2.0	6.8	M6
16	14		12	2.6	9.0	M6
20	16		16	3.2	11.5	M6



Date Stamp for Food Legislation

A	B	D	E	S	M
10	12	0.3	10	6.10	M5
16	14		16	9.08	M6
20	16		20	12.30	M6



Date Stamp - Screwed

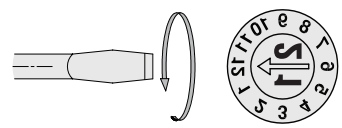
The Date Stamps which are mostly preferred for medium and small dimensional moulds.

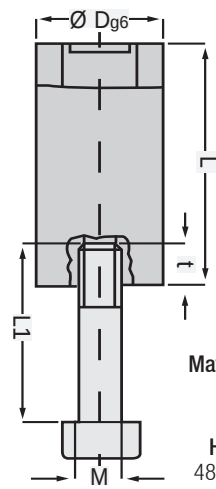
Easy to mount and can be mounted on tools such as Ejector Pins.

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
	Month + Year
	Year
	Weekly
	Daily
	Shift
	Number (figure)
	Letter from A to M
	Letter from N to Z
	Arrowed (blank)
	Custom-Made

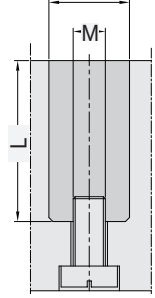




Mat.: 1.2083 Stainless Steel
Hardness: 48 - 52 HRC

D	L	t	L1	M
4	12.5	3	4	M2
5	14	3	4	M2.5
6	16	3	4	M3
8	18	4	4	M3
10	22	4	4	M3
12	25	6	6	M4

Mounting



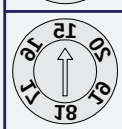
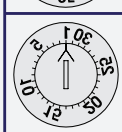
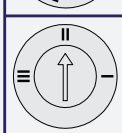
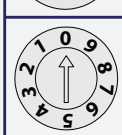
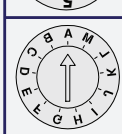
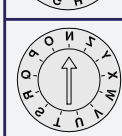
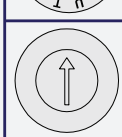
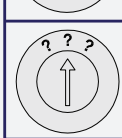
product should be selected for metal injection moulds which require high temp.

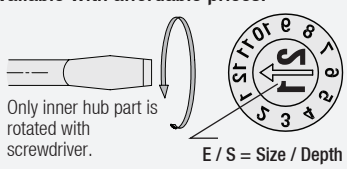
Date Stamp

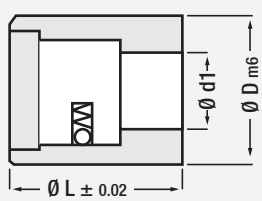
Standard Models

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.
Wide varieties of options are available with affordable prices.

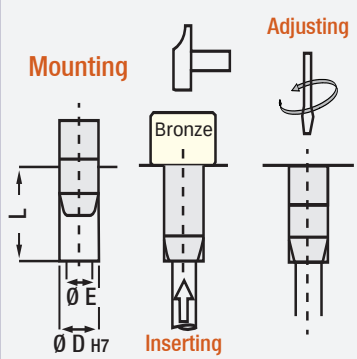
Types

	Month
	Month + Year
	Year
	Weekly
	Daily
	Shift
	Number (figure)
	Letter from A to M
	Letter from N to Z
	Arrowed (blank)
	Custom-Made





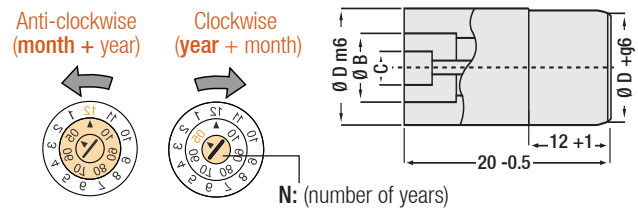
D	L	d1	S	E
4	6	2	0.2	3.5
5	8	2.5	0.2	3.5
6	8	3.5	0.2	4.0
8	10	4.5	0.2	6.0
10	10	4.8	0.2	8.0
12	12	6.0	0.25	10
16	14	7.8	0.35	12
20	14	9.7	0.35	14
25	25	12.7	0.35	16



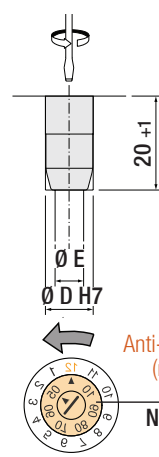
Multi-Date / Double Date Stamp

Two different Date Stamps, with a unit as months + years.

This Guvenal 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).



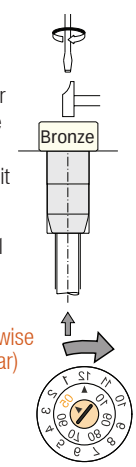
D	B	C	E	N
8	5.5	3	6	5
10	6	3	10	6
12	8	4	10	6
16	10.5	5.3	12	10
20	12	6	16	12



Important:
To change the month; the hub arrow on the unit is turned counter clockwise (anti-clockwise) and the inner two parts are rotated.
To change the year; please turn it clockwise.

Material: 1.2083 / Stainless Steel

Hardness: 48 - 52 HRC



Mini Screwdriver Set

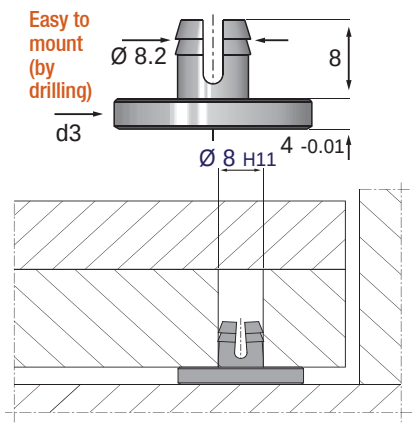
Date Stamp Adjusting Kit

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.

Ejector Plate Thrust - Support

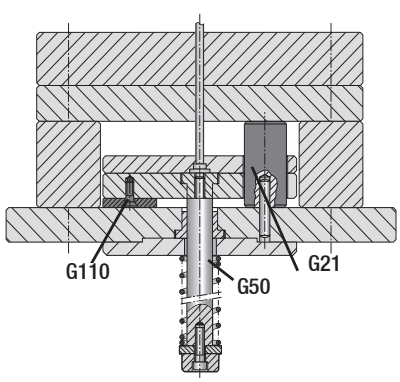
For using inside of the mould, this supports can be put under the plates. By drilling a hole (8mm / H11), flexible claws on product are opened inside of the hole and is retained.
It can be easily removed during an impact.
Thus, symmetry is provided in mounting and repetition of plates.



d3
20
30

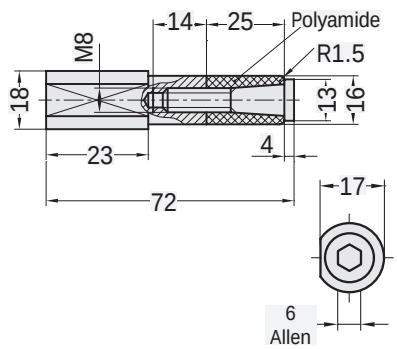
Mounting Flange

In-mould mounting kit & Support washer

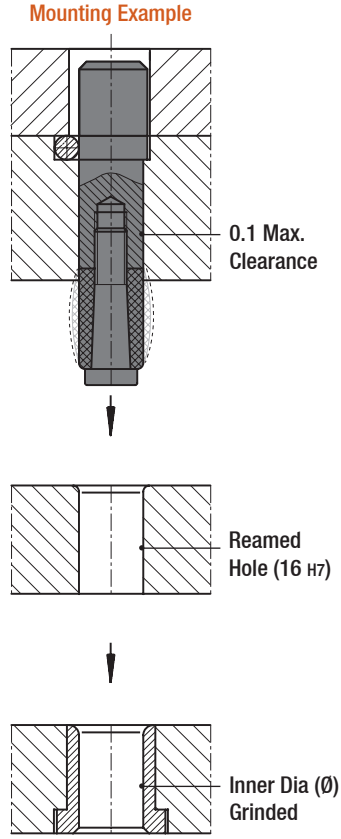


Friction Puller (Parting Locks)

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^{0}C
Polyamide extrusion (tightening) holes ends should be left with radius. Please do not lubricate the extrusion surfaces.



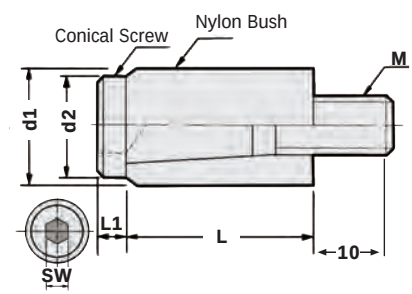
Mounting Example



Friction Puller (Parting Locks)

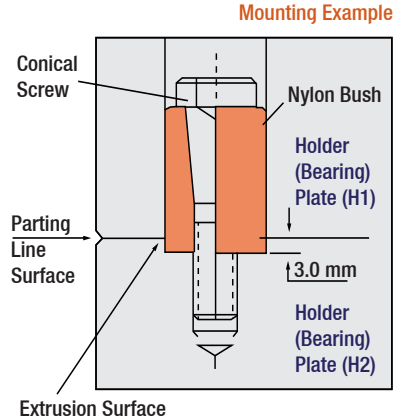
You can provide optimal parting line control to desired plate group in mould with this simple part.
Life time is approx. 50.000 stamps.
It provides mounting and dismantling easiness and being cost effective.
It is also used in small / medium dimensional moulds, beside two stepped moulds or side cores.
According to Mould Weights:
- BE.12 - 4pcs / up to 100 kg.
- BE.16 - 4pcs / up to 500 kg.
- BE.20 - 4pcs / up to 1000 kg.
- Over 1000 kg; BE.20 - 6pcs should be used minimum.

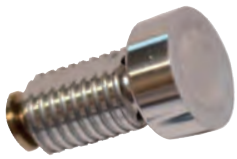
Polyamide puller holes in moulds should be reamed and hole tolerance should be ±0.1mm.
Polyamide extrusion (tightening) holes ends should be left with radius. Please do not lubricate the extrusion surfaces.
Maximum operating temperature: 80^{0}C



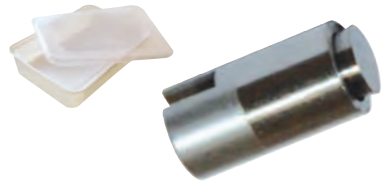
Order	d1	d2	M	SW	L1	L
BE.10	10	8.5	M5	4	3	18
BE.12	12	11	M6	5	3.5	20
BE.13	13	11	M6	5	3.5	20
BE.16	16	14	M8	6	4	25
BE.20	20	16	M10	8	5	30

Mounting Example

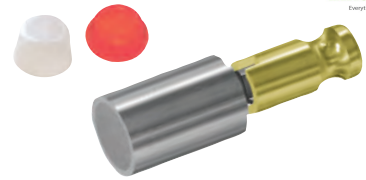




"in vacuumed objects"



"in high and deep objects"



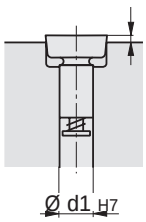
Venting Valve for High Pressure

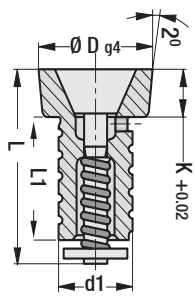
- **Metal Injection gas venting & pneumatically activated ejector.**
- **2^0 conical head / mounting with special reamer.**

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.

Please use copper hammer!

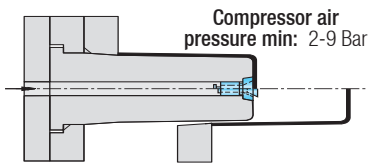
Material: 1.4301 INOX
Max. temp.: 250^{0}C



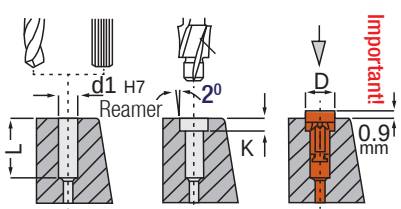


Mounting: should be approx. 0.9mm out / above from mould parting line.

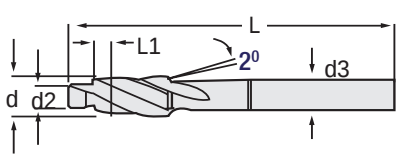
D	d1	K	L1	L
8	6	5	8	16
12	8	5	13	21
16	10	6	14	22



Compressor air pressure min: 2-9 Bar



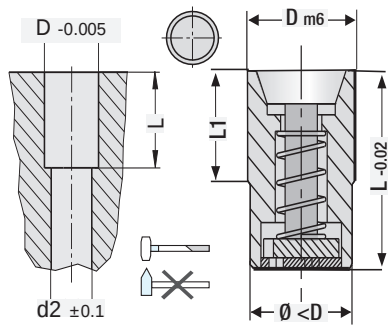
Special Reamer for "VHV" Valve



d	d2	d3	L1	L
8	6	10	5	69
12	8	12	5	100
16	10	12	6	122

Air Venting Valve

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.

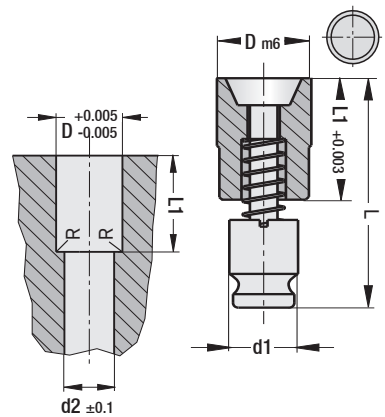


Compressor air pressure min: 3-10 Bar
Mat.: 1.4034 **Hardn.:** 52-55 HRC **Max. temp.:** 150^0

D	L	L1	d2
6	12	7	3.5
8	15	9	5
10	20	13	6
12	25	15	8
16	30	17.5	8
20	30	19	10
25	30	19	12
30	30	27.5	15

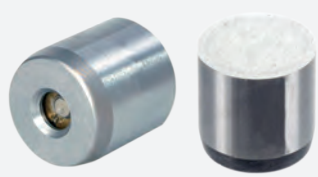
Air Venting Valve with Pin

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.



Compressor air pressure min: 2-9 Bar
Mat.: 1.4031 **Hardn.:** 52-55 HRC **Max. temp.:** 150^0

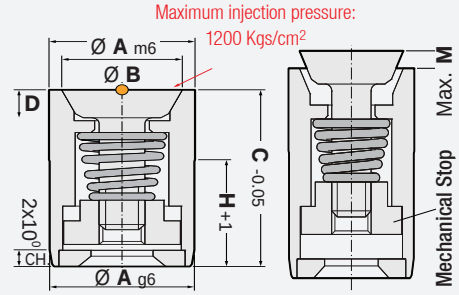
D	L	L1	d1	d2	R
8	28	11	6	7	01
10	28	11	7	8	01
12	30	11	8	9	02
16	43	20	10	14	02
18	43	20	10	14	03
20	43	20	10	16	03
25	60	20/28	16	16	04



Air Venting Valve

Material: INOX 1.4034
Operating air pressure: 1.5 - 6 Bar
1 BAR ≃ 1 Kg. / cm^2

Maximum injection pressure: 1200 Kgs/cm^2

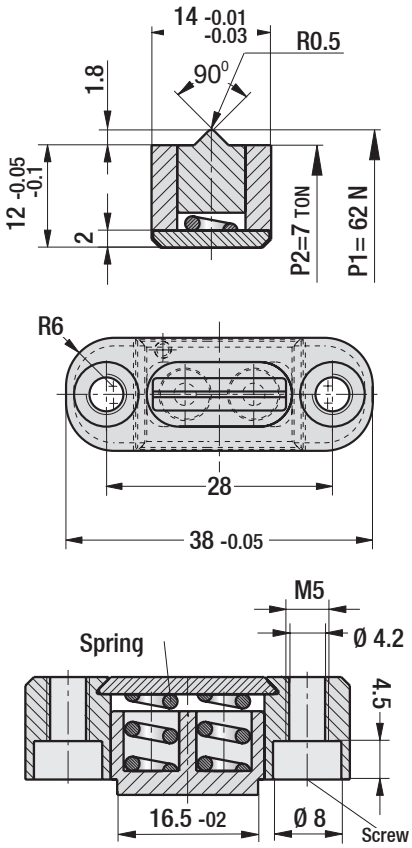


A	B	C	D	H	M
5	3	12	1.5	7	2.5
6	5.2	12	1.5	7	0.95
8	6.5	12	1.5	7	0.95
10	8	12	2	7	0.95
12	10	12	2.5	7	0.95
16	13	20	3	12	1.55
20	17	20	3.5	12	1.55

"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 150ºC is recommended. **In higher temperature than 150ºC; steel starts to expand and melt plastic raw material gets into valve and prevents operation.**

Slide Retainer

Contact linkage line in core / slide systems

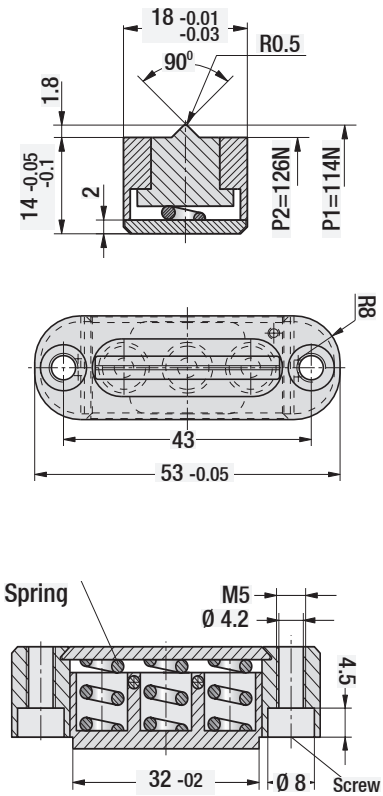


Maximum temperature: 100°C

Material: 1.2343 **Hardness:** 54 ± 2 HRC

Slide Retainer

It lifts the core / slide without the holder in slide system, self-contained unit



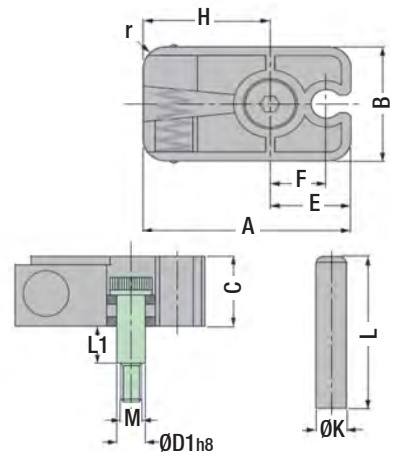
Maximum temperature: 100°C

Material: 1.2343 **Hardness:** 54 ± 2 HRC

Slide Retainer Pinned & Lock

Precise, with lock, align and pin

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.



A	B	C	E	F	H
38	19	16	16	**9.1**	22
54	32	20	21	**12.7**	33
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.

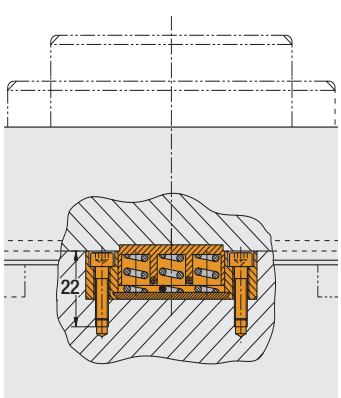
When slide / core is opened, pin gets into the retainer. "MTS..M" designed with over-travel, to avoid the damage by the wrong settle of the travel. Operation continues even though there are mistakes (misalignments).

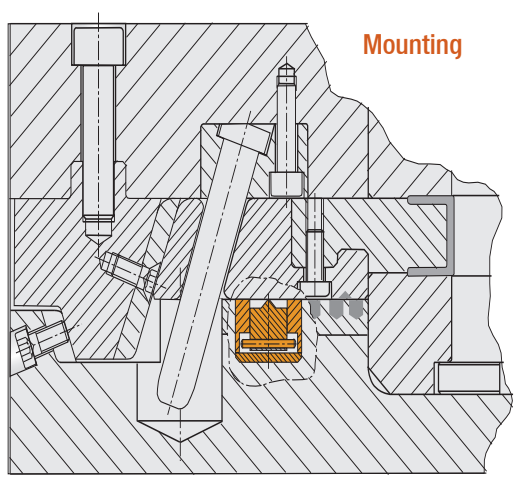
Mounting Procedure:

1. To remove Slide Retainer body from housing again, a dowel pin (extractor) hole should be opened on mould.

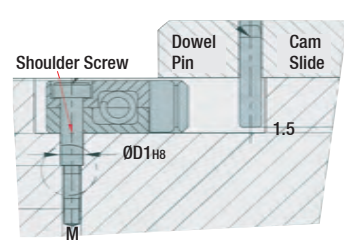
2. The distance between pin centre on the Slide Retainer and screw centre on Slide Retainer during mounting are precise **(F)**, it should be calculated and adjusted well (must be in the same direction).

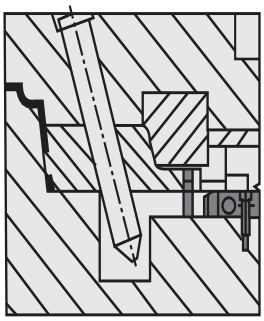
3. Please prefer a model with more force than the ultimate load requires for **MTS..M / MBT** that is suitable for your mould, this is important for safety.





Mounting



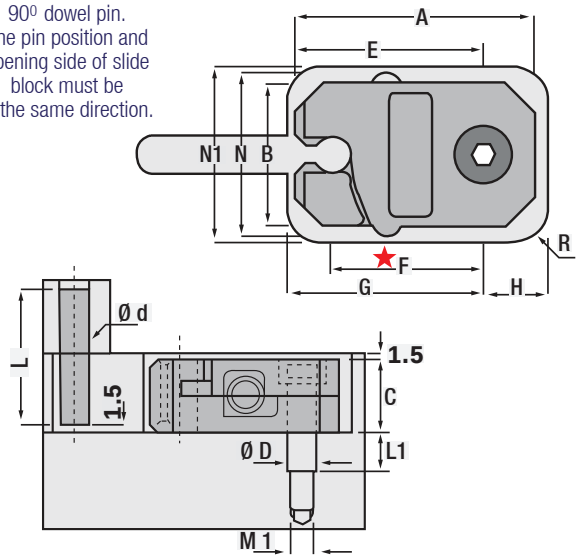


Slide Retainer - Pinned & Lock

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 90^0 dowel pin. The pin position and opening side of slide block must be in the same direction.

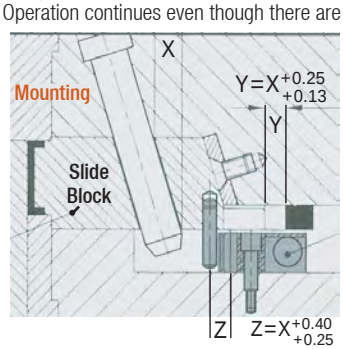


MTB can be used as "Latch Lock" mentality if there is no any special request on the system of the mould closing.

A	B	C	E	★F	N	G	H
38	19	16	31.5	24.89	24	34.5	10
54	32	20	43	34.93	36.5	46	14.5
86	45	30	67	53.98	49.5	70	22.5

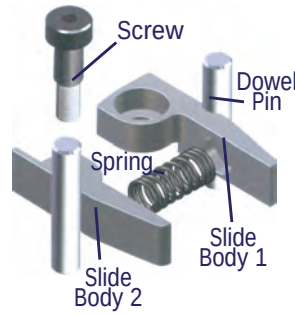
N1	R	D	L1	M1	d / L	Max. Slide Weight (kgf)
25.5	8	6	8.5	M5X11	6x30	10
38	10	8	10.5	M6X14	8x40	20
51	12	10	17	M8X18	10x60	40

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).



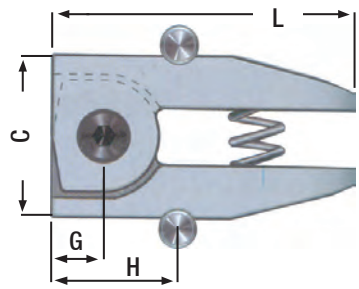
★ = Dimension is important.

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.



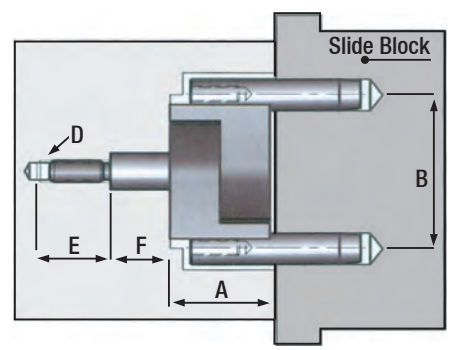
Slide Retainer with Latch

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.



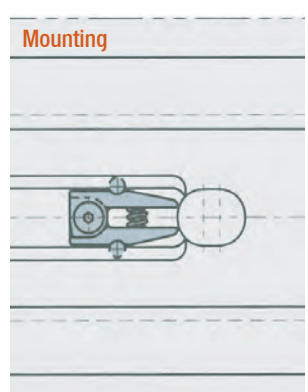
Max. temp.: 100^0

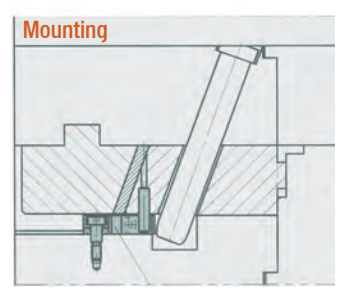
Especially, it can be preferred in alloy material moulds.



A	B	C	E	F
10	21.5	18	9.5	5.1
12	25.5	22	11	6.1
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





Core Blades are available in a wide range of standard sizes, with specials also available.

U-Coupling permits core blade to seat at any angle.

T-Gibs are available in several sizes to accommodate various travels required.

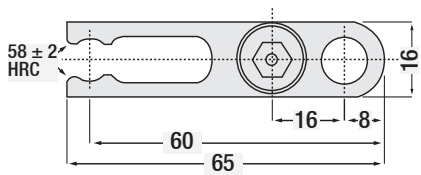
Combination:
1) Core Blade
2) U-Coupling
3) T-Gib

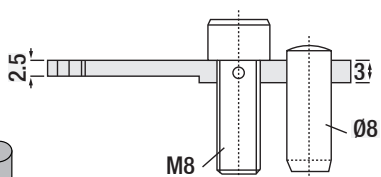
Modular Retainer

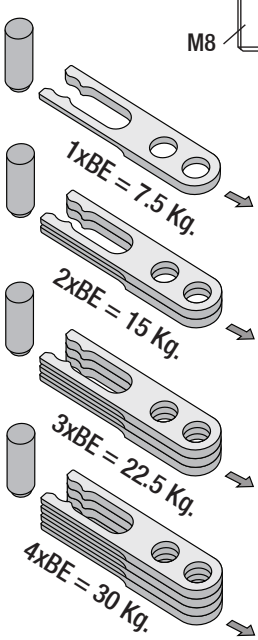
Economic Type

Useful for moulds that require delayed opening of parting line. Resistance can be increased by adding clips. There is no need to machining pocket / housing. 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°.

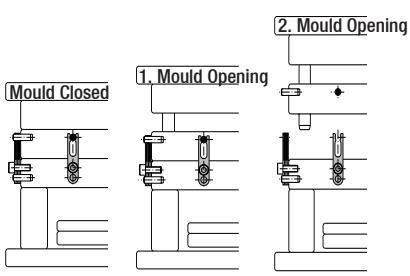






IMPORTANT!
The values displayed on the image are approximate values and they are used with 1-2-3-4 groups. Modular Retainer groups should be created in different regions / directions of the mould for more loadings.

Order:
BE 65
(1 pcs.)



Core Blade - Undercut Release System

Application Guidelines:

- Typical angle is 5-10°, though users report success at greater angles with guides installed. Contact Engineering for application review.
- Guided Ejection is recommended, and if there is less than half of the Core Blade bearing in the insert, lifter guide plates should be added.
- Recommended clearance is 0.025 - 0.038 mm where permissible.
- Core insert material should be at least 10 HRC higher in hardness than the Core Blade, and for maximum longevity consider coatings or treatments for increased lubricity or hardness.
- Locking angles can be designed to accept molding pressure, and non-standard sizes or pre-roughed Core Blades can be provided by accessing www.procomps.com.

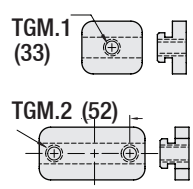
Flat Core Blades

L	T	W	D
250	10.25	10.25	10
250	10.25	20.25	15
250	15.25	15.25	
400	15.25	30.25	
250	20.25	10.25	
400	20.25	20.25	
400	30.25	15.25	

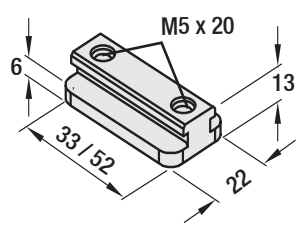
MT	MW	HT	R
10	10	5	10°
15			

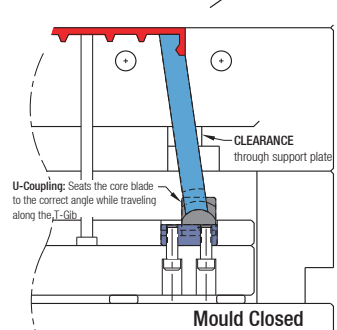
T-Gibs

"ATS" Combination-3



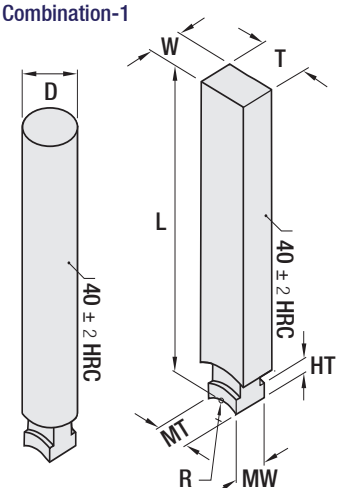
Sliding angle movement limit: 10 - (**33**) / 30 - (**52**)





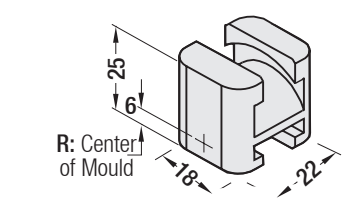
Core Blades

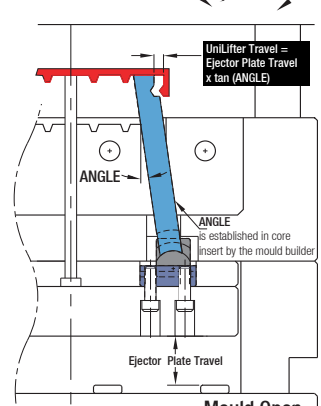
Combination-1



U-Coupling

Combination-2

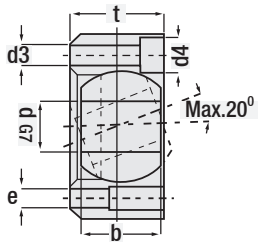


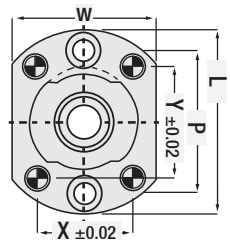


Spherical Guide Bush for Inclined Pin

Guide Bush unit transmitting angle motion. It offers easy installation for desired Inclined Pin design in large moulds. Angle adjustment can be done between 0^0 and 20^0.

Max. operating temp.: 170^0





d	L	w	t	b
8	44	28	17	14
10	46	30	20	16
12	50	32	22	18
16	58	45	29	25
20	65	50	33	28
25	78	57	38	33
30	86	65	43	37
35	98	72	49	40
40	106	77	53	44
45	118	85	57	48

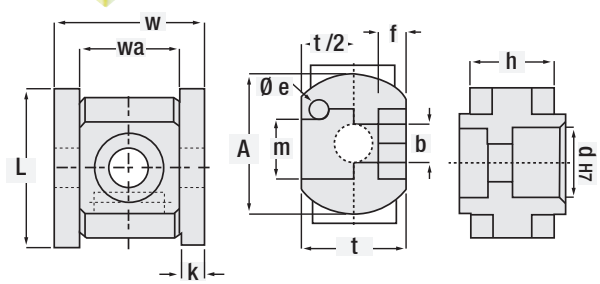
p	e	x	y	d3	d4	M
32	5	20	28	6	10	M5
34	5	22	28	6	10	M5
36	6	22	30	7	11	M6
45	6	30	35	7	11	M6
52	6	35	40	7	11	M6
62	8	40	50	9	15	M8
70	8	48	55	9	15	M8
78	8	52	60	11	18	M10
84	8	55	65	11	18	M10
96	8	59	72	11	18	M10

Inclined Pin Holder Unit

- Mountable to the ejector plate. It is mounted by machining to ejector plate of mould.
- Self-lub. system is greased up to 300^0 in unit.

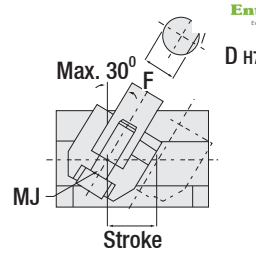
Mat.: C45

Slide parts: Bronze + Graphite



d	w	L	wa	k
8	24	25	12	6
10	28	32	14	7
12	31	40	17	7
16	36	45	21	7.5
20	43	45	28	7.5
25	48	50	33	7.5
30	55	60	38	8.5
35	64	70	44	10
40	72	80	50	11

h	A	t	f	m	b	e
13	20	16	5	7.5	5	3
17	20	16	4	8.5	6	3
20	25	20	5	10	7	4
24	30	24	6	13	9	6
24	40	30	8	17	11	6
26	45	35	9.5	22	14	6
30	50	38	9	27	14	6
34	55	40	10	31	14	8
38	60	43	11.5	36	18	8

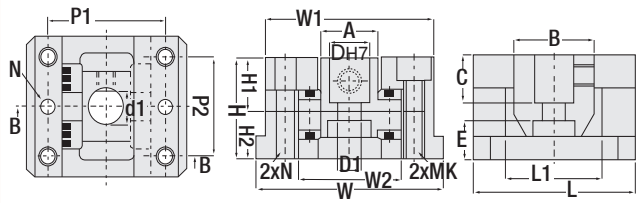


Inclined Ejector Pin Unit

It moves the Inclined / Angle Pin Systems in the desired angle.

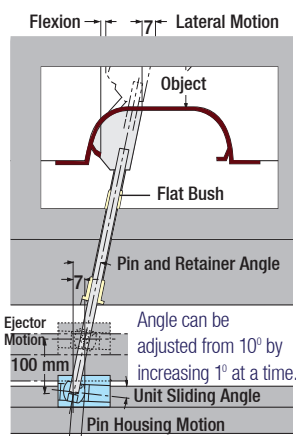
It provides important contribution to production period. The product parting from moulds with this unit is more economical compared with similar systems.

- 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 10^0 - 20^0 - 30^0C.
- 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.

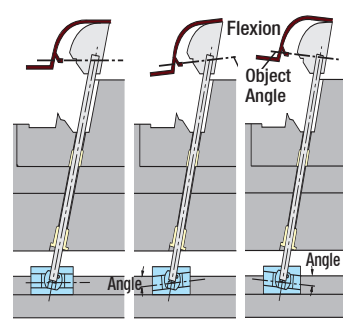


D	d1	D1	A	B	C	E	F	MJ
8	7	4.5	11	20	8	10	7	M4
10	7	5.5	15	25	10	12.5	9	M5
12	10	7	17	25	12	15	11	M6
16	12	9	22	30	16	15	14.5	M8
20	14	11	26	40	20	16	18	M10
25	16	14	32	45	25	17	22.5	M12
30	18	14	38	50	30	17	27	M12
35	20	14	45	60	35	18	32	M12
40	25	18	55	70	40	19	36	M16
45	30	18	60	80	45	24	40	M16

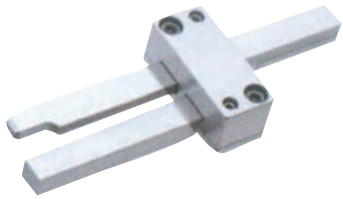
H	H1	H2	L	L1	W	W1	W2	P1	P2	MK	N	Stroke
22	12.5	5	32	20	33	30	19	24	20	M3	3	10
27	15.5	5	45	25	45	40	25	32	30	M4	4	18
32	18	7	50	30	57	51	31	39	35	M6	6	20
36	20	8	65	40	65	58	38	46	40	M6	6	25
42	23	11	80	50	80	72	44	56	55	M8	8	30
50	28	15	90	55	93	85	52	66	65	M10	10	35
55	30	15	100	60	101	93	60	74	70	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

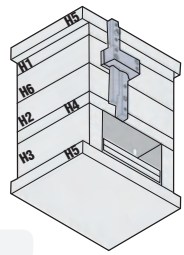


Angle can be adjusted from 10^0 by increasing 1^0 at a time.



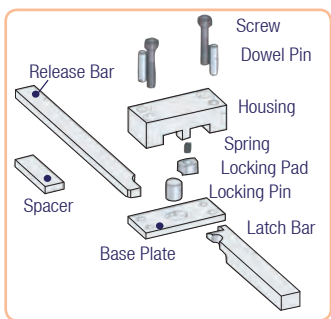
The angle of ejector pin should be determined acc. to the angle of the product in mould.

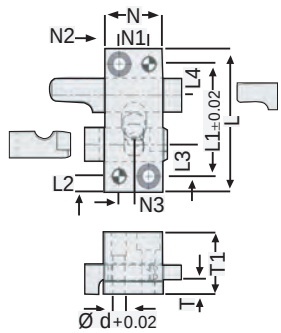


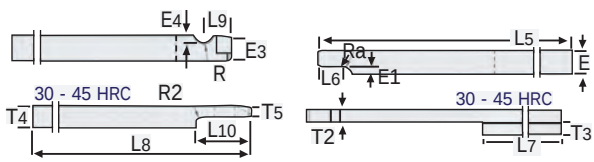


Latch Lock Unit

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.

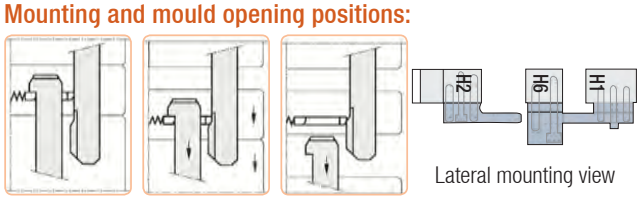
IMPORTANT:

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.

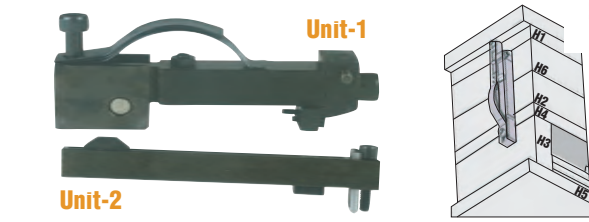
L	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	N
55	43	6	12	12	150	12	40	100	14	28	24
67	53	7	15	14	200	16	50	150	18	36	32

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:



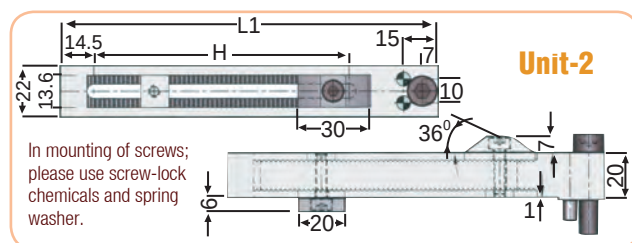
Lateral mounting view

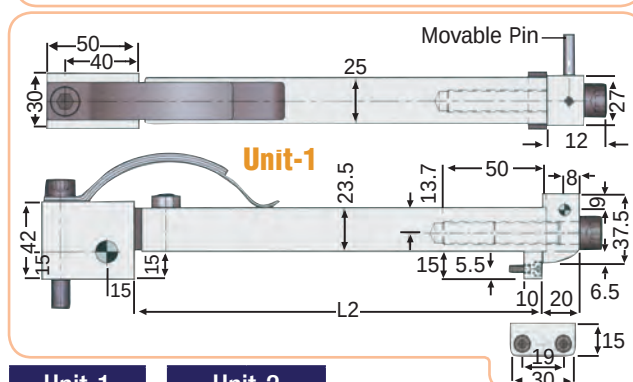


Latch Lock (Mould Plate Parting Combination)

In this combinaion system; Unit-2 consist of fixed and Unit-1 is 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.

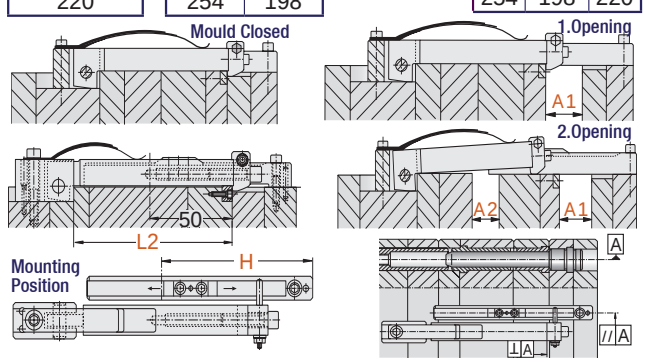
Both units should be parting well-timed. Incorrect mounting causes tapering and bending pf movable plate or breaking of unit lever.
Units should be adjusted before mould is closed, open mould and control movable plate and movements of levers (fine adjustment is required).
Please apply it until released / 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.

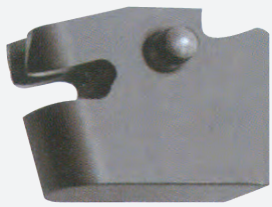


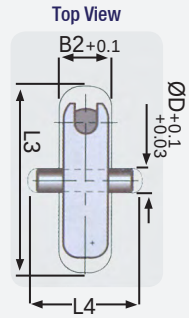


Unit-1	Unit-2	
L2	L1	H
90	140	83.5
170	204	152
220	254	198

L1	H	L2
140	83.5	90
204	152	170
254	198	220

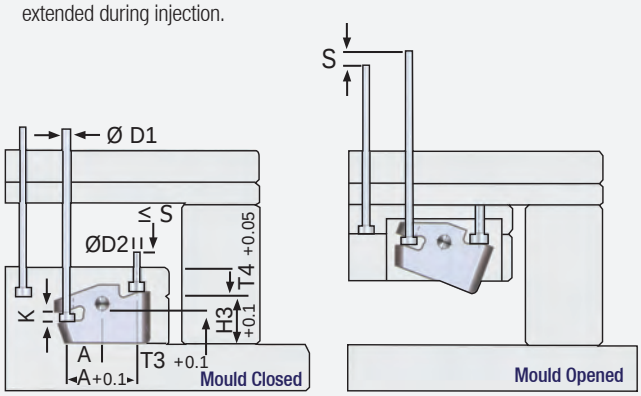




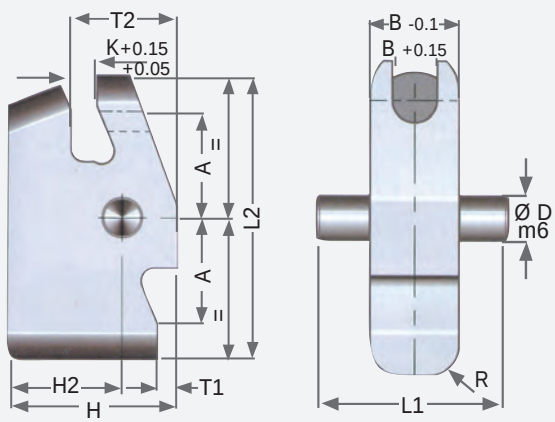


Accelaration Rocker for Ejector

- 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.

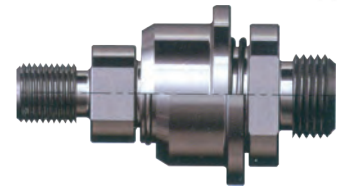


Accelaration Rocker (mechanical swing system) increasing stroke distance of ejector that it is fastened.



D	D2	B	B1	B2	B3	A	A1	T1	T2
4	4	3	8	8.5	4	10	20	2	10
8	8	6	16	16.5	8	21	42	4	21
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



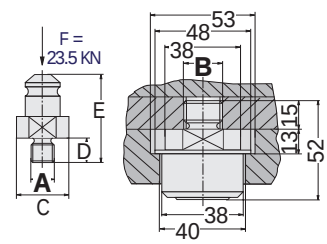
Automatic Ejector Coupling

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

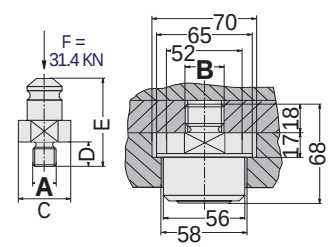
Light Duty



Light Duty / F = 23.5 KN

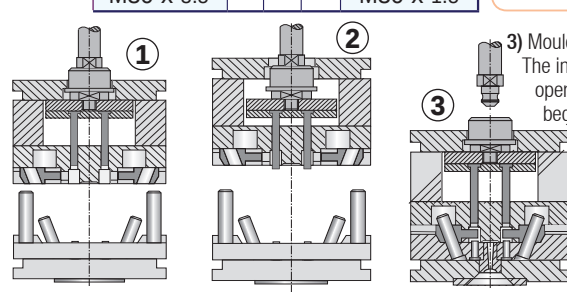
A	C	D	E	B
M10 x 1.5	26	20	55	M16 x 1.5
M12 x 1.75				
M14 x 2.0				
M16 x 2.0				

Heavy Duty



Heavy Duty / F = 31.4 KN

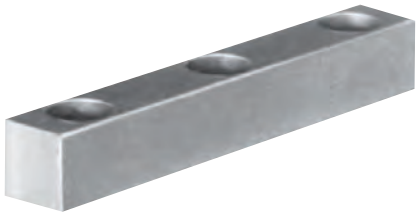
A	C	D	E	B
M16 x 2.0	35	25	68	M16 x 1.5
M18 x 2.5				M18 x 1.5
M20 x 2.5				M20 x 1.5
M24 x 3.0				M24 x 1.5
M27 x 3.0				M27 x 1.5
M30 x 3.5				M30 x 1.5

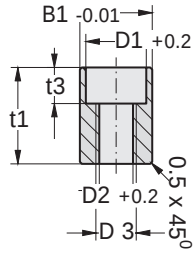


3) Mould closed. The injection operation begins.

1) The ejector plate is returned to the stop. Return screw and ejector screw disengage. Over theremainder 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 meansof balls.

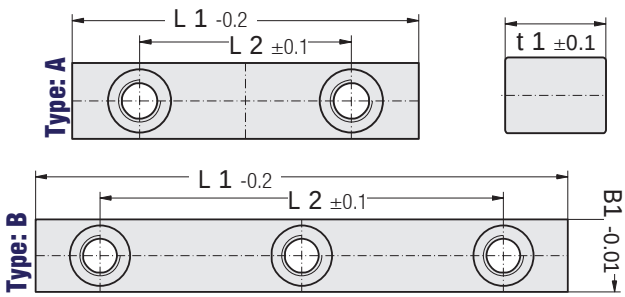




Support Slide for Core Position

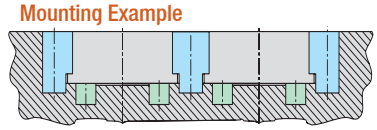
It can be used also as Bottom Support Plate for Core Guide Block or Guide Block for Inclined Ejector Pin Unit (G133).
Milled, precision ground, perpendicularity controlled and opened fitting holes.

Material: 1.2842 **Hardness:** 58 + 2 HRC

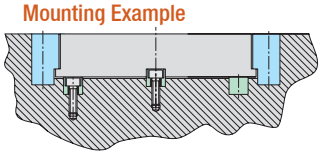


B1	t1	L1	Type	t3	L2	D1	D2	D3
12	11	50	A	5.7	30	10	5.3	M6
		60	A		40			
		70	B		50			
		75	B		60			
		80	B		60			
		90	B		70			
	16	100	B		80			
		120	B		100			
		140	B		120			
		160	B		140			
		180	B		160			
18	16	100	A	6.8	76	11	6.4	M8
		120	A		96			
		140	B		116			
		160	B		136			
		180	B		156			
24	21	140	B	6.8	116	11	6.4	M8
		160	B		136			
		180	B		156			
		200	B		176			
		220	B		196			

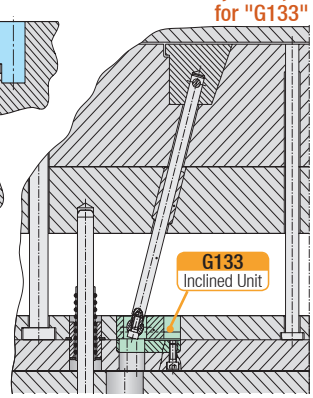
Mounting Example

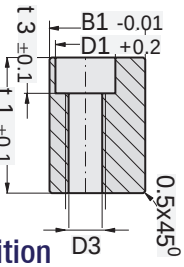


Mounting Example



Mounting Example for "G133"



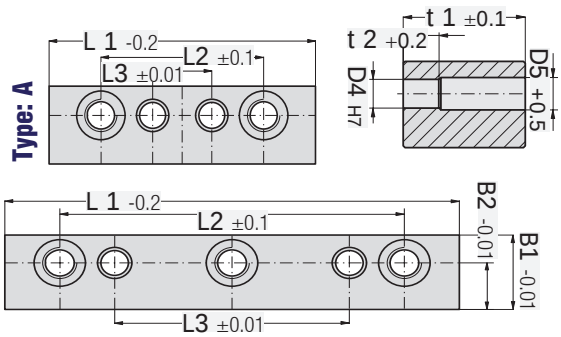


Support Slide for Core Position Side Guide

Milled, precision ground, perpendicularity controlled and opened fitting holes.

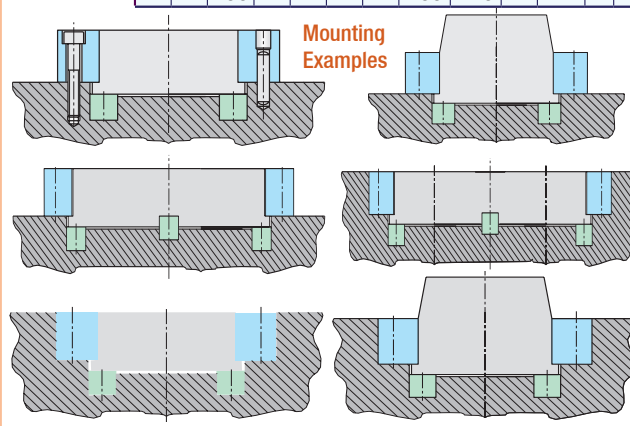
Custom-made production can be done as per request.

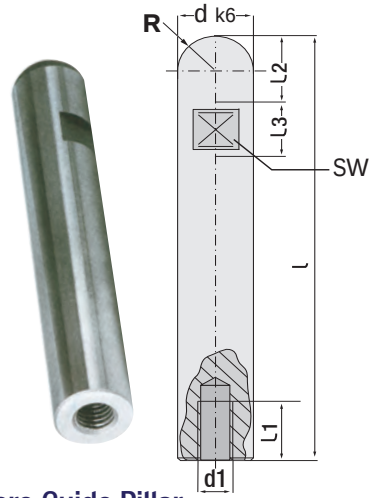
Material: 1.2842 **Hardness:** 58 + 2 HRC



B1	t1	L1	Type	B2	t2	t3	L2	L3	D1	D3	D4	D5
15	11	50	A	9	-	5.7	30	10	10	M6	4	-
		60	A		-		40	20				
		70	B		-		50	30				
		75	B		-		60	40				
		80	B		-		60	40				
		90	B		-		70	50				
18	22	80	A	11	12	6.8	56	32	11	M8	6	7
		100	B				76	52				
		120	B				96	72				
		140	B				116	92				
		160	B				136	112				
24	36	100	A	15	12	9.0	68	36	15	M10	8	9
		120	A				88	56				
		140	B				108	76				
		160	B				128	96				
		180	B				148	116				
30	50	120	A	18	18	11	80	40	18	M12	10	11
		140	A				100	60				
		160	B				120	80				
		180	B				140	100				
		200	B				160	120				

Mounting Examples





Core Guide Pillar
(Inclined & Threaded)

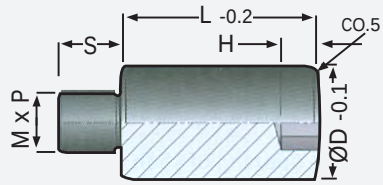
It is compatible to use at injection moulds, angled guide pillar positioning, core systems as cam pin. **GTH** mould pillars are polished with surface polishing machine at final stage of production (after grinding).

d	l	l1	l2	l3	d1	R	SW
8	40	10	10	8	M.5	4	7
	50						
	63						
	80						
	100						
10	50	12	10	9	M.6	5	8
	63						
	80						
	100						
12	50	12	12	9	M.6	6	10
	63						
	80						
	100						
	125						
16	63	15	15	12	M.8	8	13
	80						
	100						
	125						
	160						
	200						
20	63	20	16	15	M. 10	10	16
	80						
	100						
	125						
	160						
	200						
	250						
25	80	20	20	15	M. 12	12.5	21
	100						
	125						
	160						
	200						
	250						
30	100	25	25	18	M. 16	15	27
	125						
	160					16	
32	200						
	250						

Please use "Hexwrench" for clamping screw.

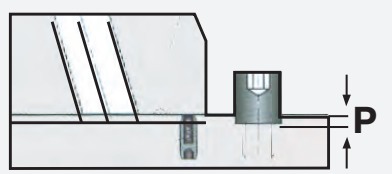
Stopping Pin for Core Slide
Core Slide, Ejector Pin

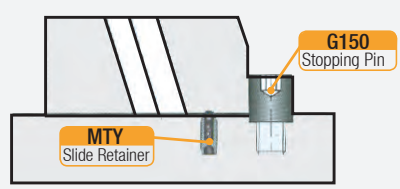
Stopping Pin is a product which is pratical and easy to mount.

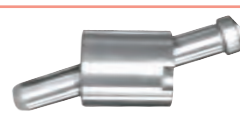


M x P	SW
M6 x 1.0	5
M10 x 1.5	8
M12 x 1.75	10
M16 x 2.0	14

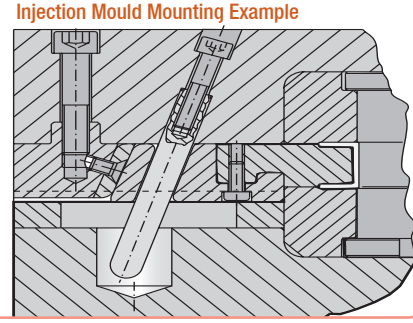
D	L	H	S	P
10	40	4	10	15
16	40	5	15	15
20	40	6	28	15
25	40	9	24	15







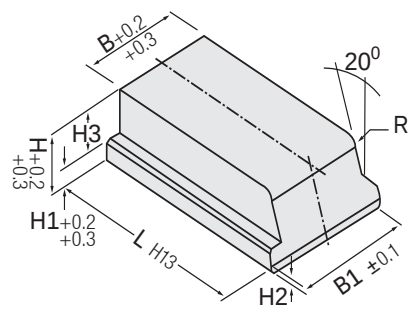
Injection Mould Mounting Example



Angular Core Slide

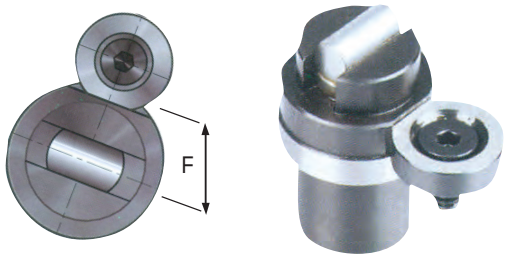
G149 ready for machining. The only thing to be done is to machine cavity surfaces.

Milled, precision ground and 20^0 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

H	L	B	B1	H1	H2	H3	R
12	40	20	26	4	1.5	8	1.5
		25	31				
		40	46				
		63	69				
16	50	20	26	4	1.5	12	1.5
		25	31				
		40	46				
		63	69				
20	63	40	46	5	2	15	2
		63	69				
		80	86				
25	71	40	46	5	2	20	2
		63	69				
		80	86				
32	100	63	71	6	3	26	3
		80	88				
		100	108				
40	100	63	71	6	3	34	3
		80	88				
		100	108				
50	112	80	90	8	4	42	4
		100	110				
		125	135				
63	112	80	90	8	4	55	4
		100	110				
		125	135				

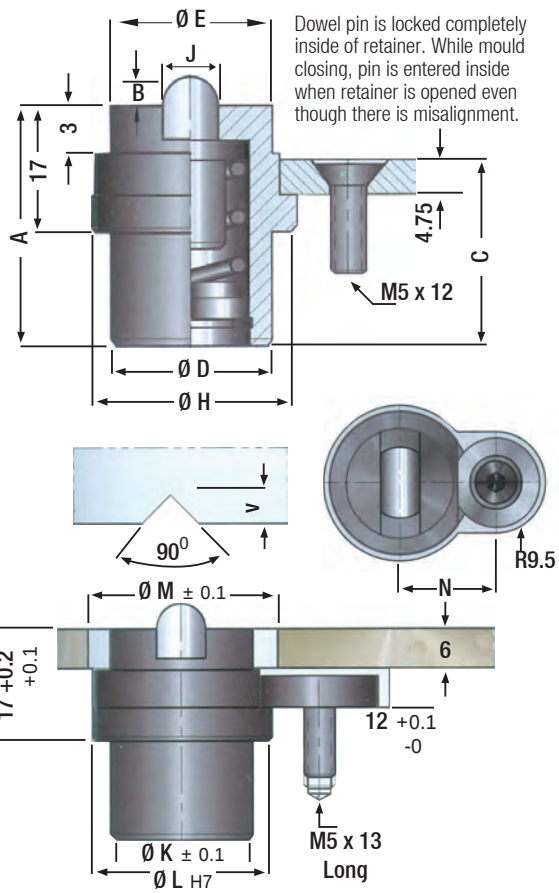


Slide Retainer - Pinned & Round

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.

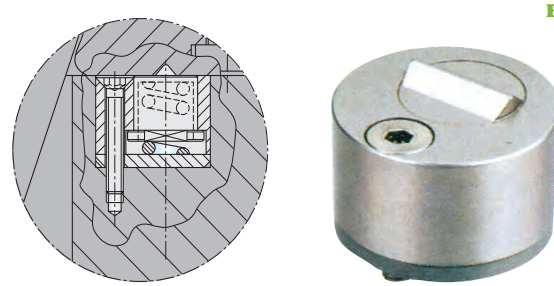
Material: 1.2767 **Hardness:** 52 HRC **Max. Temp.:** 120^{0}C



A	B	C	D	E	F
27.43	1.83	20.2	15.75	16	9.52
33.53	3.07	26.29	18.8	19	10.67
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

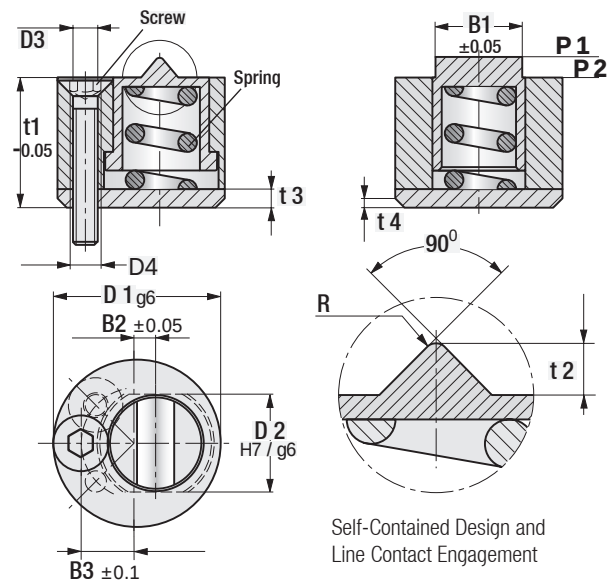
Note: It provides mounting facility to mould, thanks to its robust, small and round structure.



Slide Retainer - Round Type

MTC Slide Retainers are operated without Dowel Pin and also can lift the core / slide without Slide Retainer. Easy mounting due to round structure.

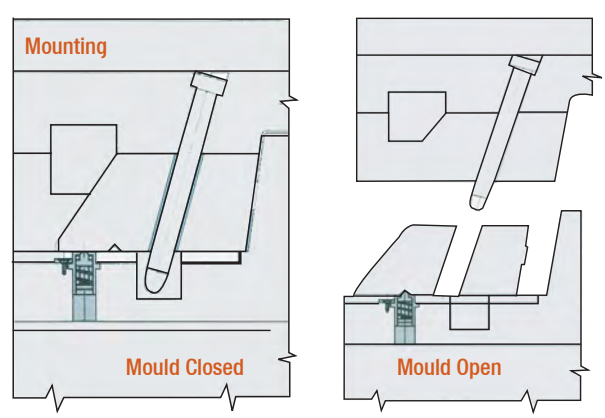
Material: 1.2767 **Hardness:** 52 HRC **Max. Temp.:** 100^{0}C

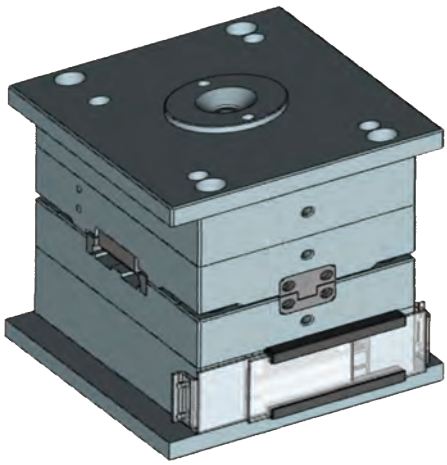


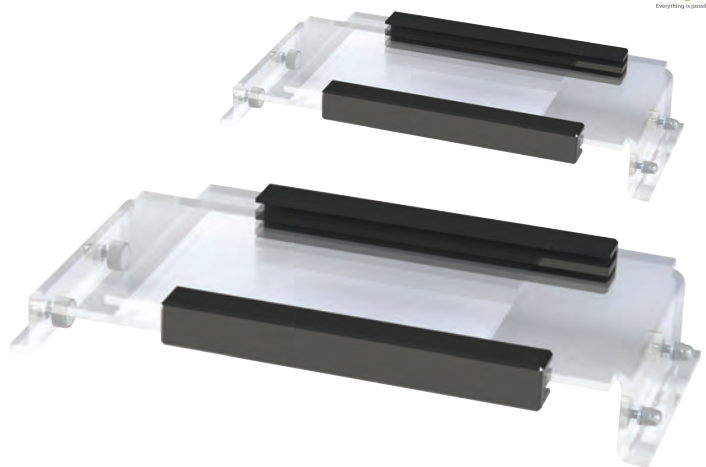
Self-Contained Design and Line Contact Engagement

D1	B1	B2	B3	t1	t2	t3
13	6.6	1.4	4.3	10	1.0	1.6
18	9.6	2.0	6.0	14	1.8	2.0
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

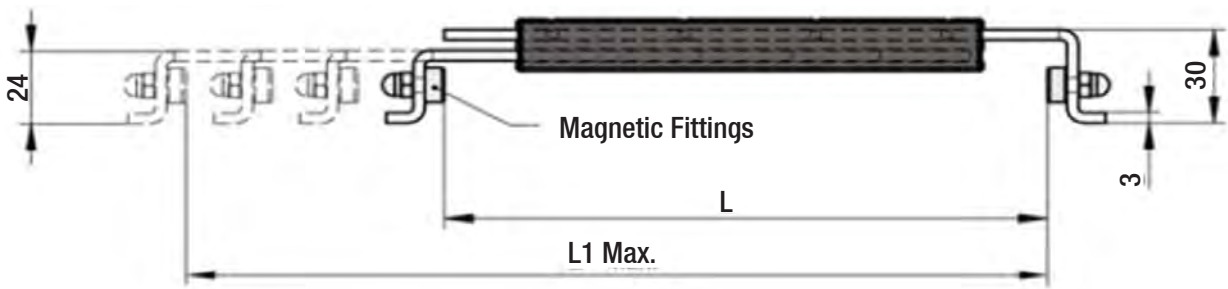


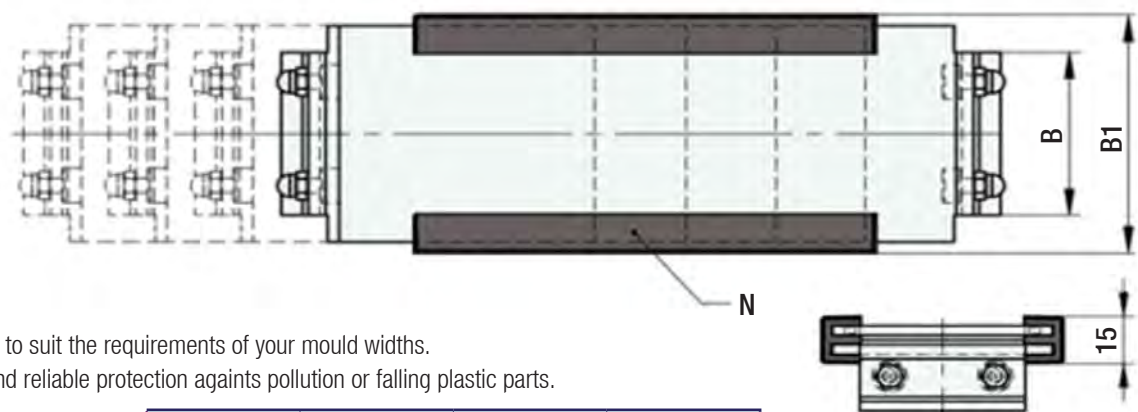




Adjustable Ejector Plate Cover

Security and Protection Mechanism for Ejector Plate





* Adjustable to suit the requirements of your mould widths.
* Efficient and reliable protection againts pollution or falling plastic parts.

L - L1 Max.	N	B1	B
156 - 218	2	78	56
		98	76
		118	96
246 - 396	2	88	66
		98	76
		108	86
		118	96
		138	116
446 - 596	2	118	96
		138	116
		158	136
		178	156

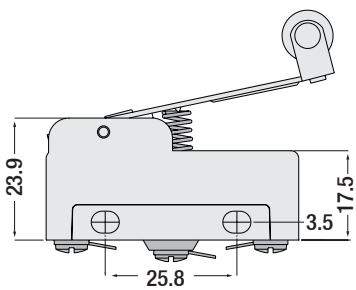
Material:
PC (Polycarbonate)

Operating Temperature:
Max. 110^0C

* Consider sizes (L - L1 max.) specified in the table for safety.

Micro Limit Switch with Long Roller

Movement Limit Switches for Ejector Plate, Stripper Plate and Side Lifters

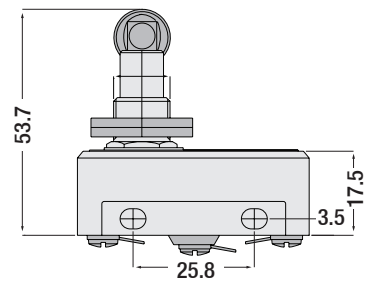


Technical Specifications / All "MN2" types have similar specifications:

Mechanical Life	:	500.000 Opening-Closing min. (60rpm)
Electrical Life	:	100.000 Opening-Closing min. (30rpm)
Operating Temperature	:	- 15 / +125^{0}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

Micro Limit Switch with Dome Roller

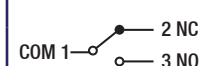
Movement Limit Switches for Ejector Plate, Stripper Plate and Side Lifters



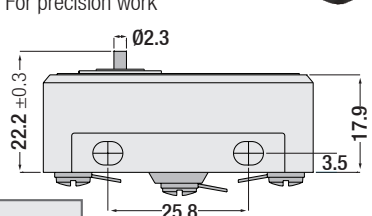
All "MN2" types have similar specifications:

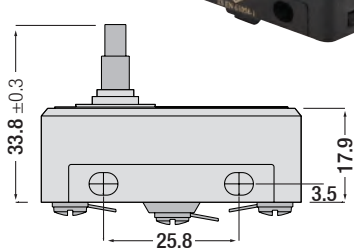
- Product variety for wide application areas.
- Long life and high contact reliability.
- Standard mounting holes.
- It ensures all movable parts such as Ejector Group / Ejector Plate, Stripper Plate, Side Lifters etc. operating with injection machine in a harmony.
- Switch cables will be provided by 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 Guvenal for different types of Limit Switch.**

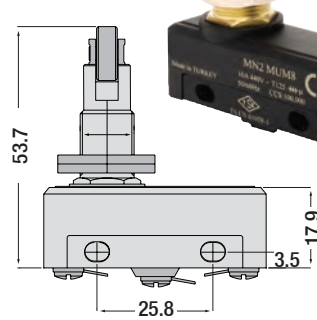
Contact Structure	Contact Scheme	Sensor Type	Sensor Material
Changable Contact		Lever Long Roller	Metal
		Dome Roller	
		Dome Roller	
		Dome	
		Dome	

Model:
- Thin & short dome
- Thin pointed
- Needle probe
- For precision work

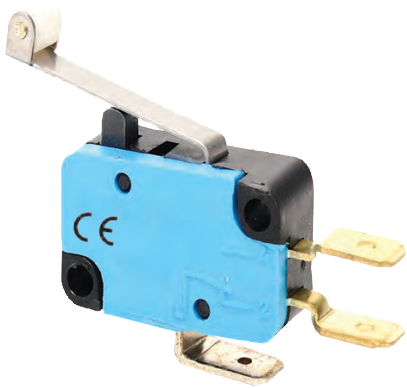




Model: Thin & long dome

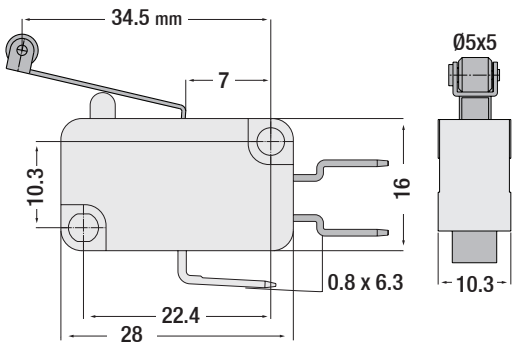


Model: Dome roller



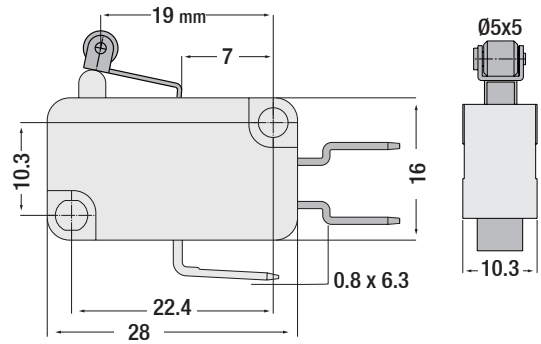
Micro Limit Switch with Long Plastic Roller

Movement Limit Switches for Ejector Plate, Stripper Plate and Side Lifters



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:

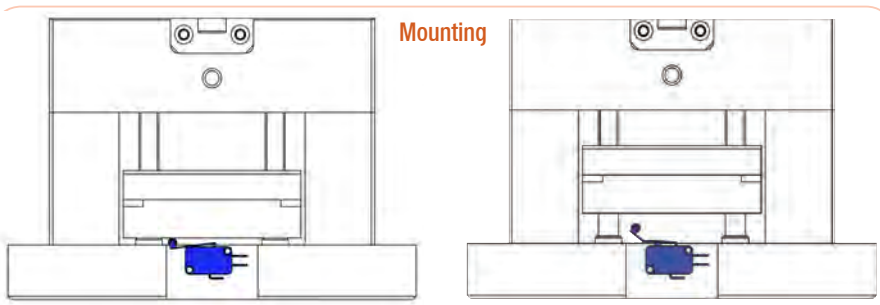
Mechanical Life ..... : 10.000.000 Opening-Closing min.(60rpm)
Electrical Life ..... : 100.000 Opening-Closing min.(30rpm)
Operating Temperature ..... : - 15 / +125^{0}C
Protection Class ..... : IP20
Operating Voltage (Ue) ..... : 250V AC
Operating Current (Ie) ..... : 10 (4) A
Isolation Voltage (Ui) ..... : 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.

Contact Structure	Contact Scheme	Sensor Type	Sensor Material
Changable Contact	NO 4 — 1 COM — NC 2	Lever Roller	Plastic

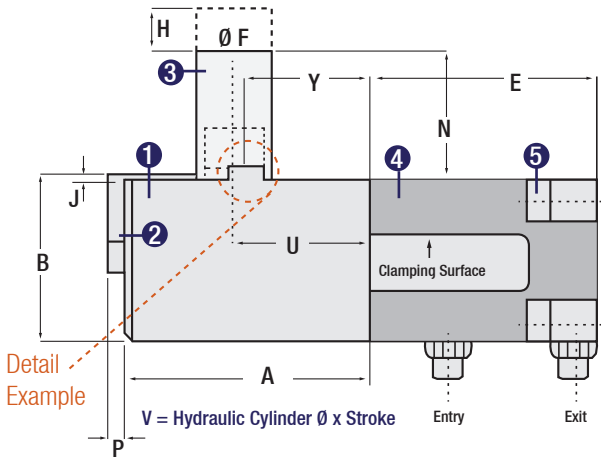
Mounting

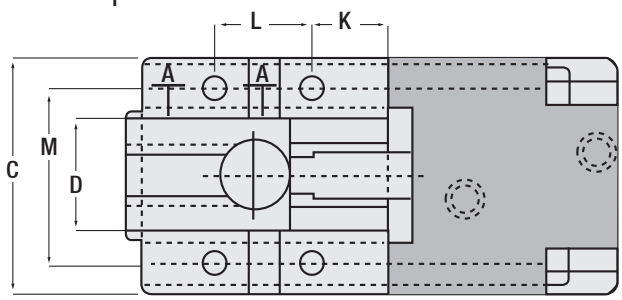


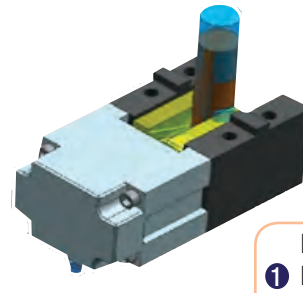
Micro Limit Switch with Plastic Bent Roller

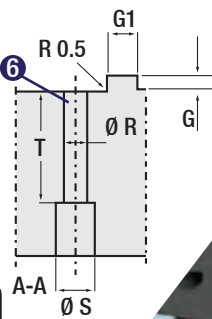
*** Please contact with Guvenal sales dept. for different types of Limit Switches**

External Side Lifter Unit with Hydraulic Piston









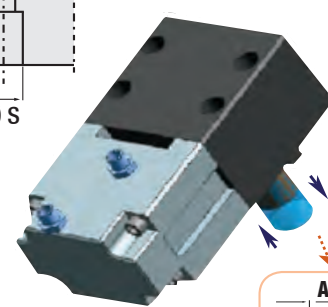
During application, in order to provide the correct combination, do not hesitate to contact engineers in our company.

Mounting and Technical Support:
balambigaienterprises@gmail.com

Material List:

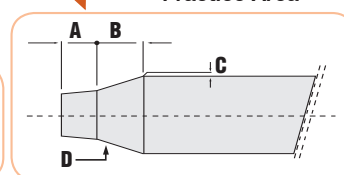
1	Lifter Body	: 1.2312 / HRC 44-46
2	Inner Lifter Body	: 1.2312 / HRC 40-42
3	Sliding Pin	: 1.2344 / Nitrided
4	Hydraulic Cylinder	: Standard Type
5	Screw	: DIN ISO 4762 (4 pcs)
6	Screw	: DIN ISO 4762 (4 pcs)

Note: Sliding pin with number 3 in Lifter System will be formed as per request by user.



If **J>0**: On mould surface which system will be mounted: A discharge will be performed in dimensions of "**D+2mm x (A+P)+3mm x J+1mm**".

"Lifter Slide Pin" Recommended Practice Area



Model	HPM.050	HPM.070		HPM.096		HPM.126	
Type → / Dim. ↓	300	100	300	100	300	100	300
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	17.9 mm	13.2 mm	22.6 mm
J	J<0	J<0		J<0		J<0	1.37 mm
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	82.1 mm	78 mm	69 mm
P (*)	6 mm	10 mm		1.5 mm	2.0 mm	9 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.

"Lifter Slide Pin" Recommended Practice Dimensions Area

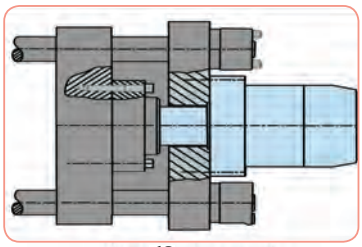
Dim.	Descriptions	Minimum	Maximum
A	Form Depth	< 5	> 20
B	Burr Cutting Practice Length	5	12
C	Form Pin Bearing Clearance	0.03	0.1
D	Burr Cutting Practice Angle	5	10

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 Guvenal GTH 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



Dimension	Formula	Unit
Force (Newton)	F	N
Length	s	m
Speed (Stroke)	v	m / s
Pressure	p	bar
Area (Piston)	A	m2
Volume	V	m3
Flow Rate	Q	m3 / s
Efficiency	η	-
Performance	P	kW

The information is advisory.

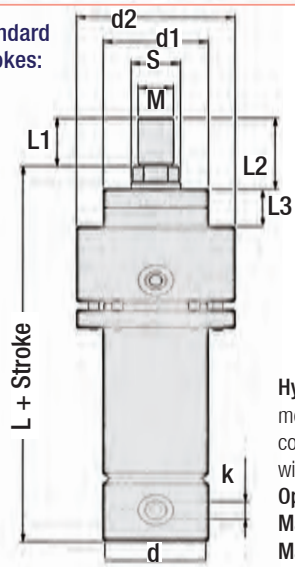
Cylinder Force:
F (N) = p (bar) x A (cm²) x 10
A = Effective piston area

Required Flow Rate:
$Q\ (L / min.) = A\ (cm^2) \times v(\frac{m}{s}) \times 6$

Repulse and Return Speed:
$v(\frac{m}{s}) = \frac{Q\ (L / min.)}{A\ (cm^2)} \times \frac{1}{6}$
Q = Flow Rate

Required Pump Capacity:
$P\ (kW) = \frac{Q\ (L / min.) \times p\ (bar)}{\eta} \times \frac{1}{600}$
η = Pump Efficiency

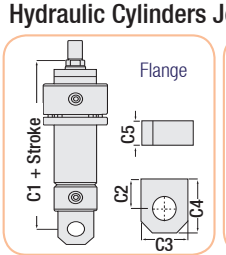
Standard Strokes:
50
100
160
200
250

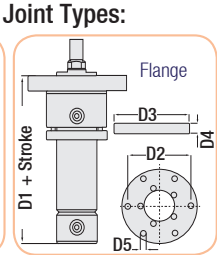


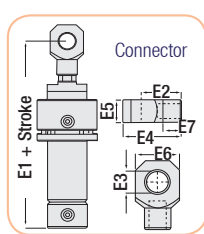
Hydraulic Cylinders: Used in injection moulds for waste water and for other cores / lifters. Piston motion is provided with joints in injection machine.
Operating: Hydraulic Oil
Max. Operating Pressure: 160 Bar
Max. Operating Temp.: -20 / +80^0
Stroke Inaccuracy : ± 0.3mm
Shaft: C45 / Hard Chrome Coated
Moution Type: Double Action
Sealing: Polyurethane + NBR

d	d1	d2	S	M	k	L	L1	L2	L3
50	50	80	22	M.16 x 1.5	1/4	160	22	35	20
60	60	95	28	M.20 x 1.5	1/4	194	31	46	25
75	70	125	36	M.27 x 2.0	3/8	208	39	55	25
95	85	130	45	M.33 x 2.0	3/8	235	47	65	30
115	109	160	56	M.42 x 2.0	1/2	244	60	80	30
145	130	195	70	M.48 x 2.0	1/2	276	67	90	37

Hydraulic Cylinders Joint Types:

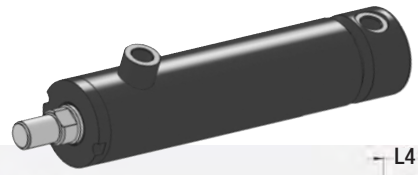




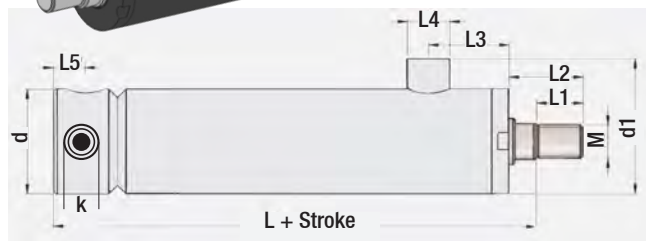


Hoses for Hydraulic Cylinder
as per request

Hydraulic Cylinder - Tube Type



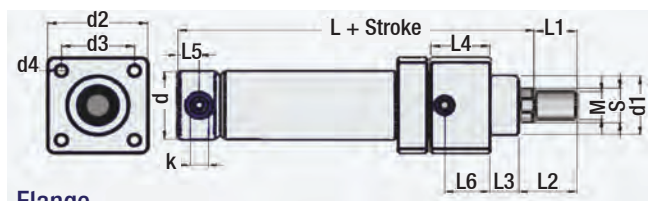
Flange joint
as per request



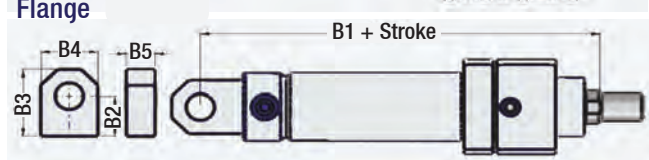
d	d1	M	k	L	L1	L2	L3	L4	L5
50	65	M.16 x 1.5	1/4	125	22	35	40	20	15
60	75	M.20 x 1.5	1/4	152	31	46	43	20	21
75	90	M.27 x 2.0	3/8	163	39	55	50	25	23
95	110	M.33 x 2.0	3/8	209	47	65	60	20	29
115	135	M.42 x 2.0	1/2	211	60	80	82	30	27
145	165	M.48 x 2.0	1/2	229	67	90	82	30	30

As per request (for all Hydraulic Cylinders):
For too hot environments (180°C), special piston with Viton Felt, single action (spring converter) and special pistons of which shaft material and dimensions can vary can be produced.

Hydraulic Cylinder Square Type

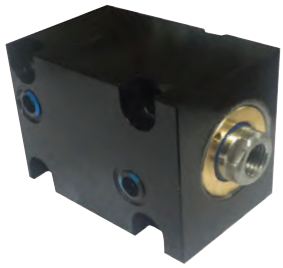


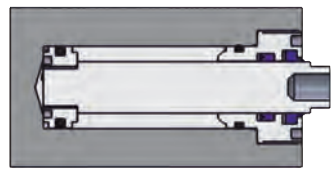
Flange

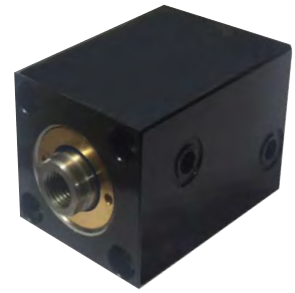


d	d1	d2	d3	d4	S	M	k
50	43	70	51	M.10	25	M.20 x 1.5	1/4
60	62	78	56	M.10	28	M.20 x 1.5	1/4
75	70	95	70	M.10	36	M.27 x 2.0	3/8
95	85	115	90	M.12	45	M.33 x 2.0	3/8

L	L1	L2	L3	L4	L5	L6	B1	B2	B3	B4	B5
170	30	41	20	42	15	31.5	200	30	50	40	20
178	26	39	25	49	21	26	208	30	55	50	25
189	39	51	30	59	22.5	28	229	40	70	60	30
235	47	65	30	68	29	41	280	45	80	70	35





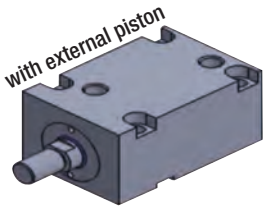


Hydraulic Piston - Square Type

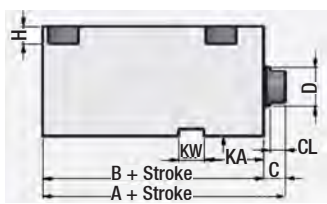
Bottom Slotted (KW type) & with 4-Fastening Holes from Upper Side

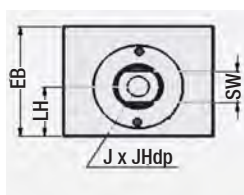
It has a compact design. It is at the forefront with strong bearing system. It has 100mm stroke maximum which displays perfect performance in narrow zones (production can be done as per request). The systems which require low stroke are delivered from our stock. **As per request:** For too hot environments (180°C), shaft dimensions can be changed.

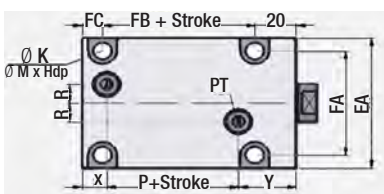
Series Ø 32 - Ø 80



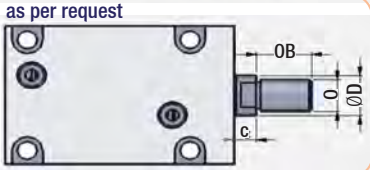
Series Ø 32 - Ø 80







as per request



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

A	B	C	CL	D	EA	EB	FA	FB	FC
64	54	10	7	20	70	56	56	24	10
65	55	10	7	25	80	62	62	23	12
71	60	11	8	28	94	74	74	27	13
80	67	13	10	36	114	89	90	32	15

H	J	JH	K	KA	KW	KT	LH	M	OB
9	M12 x1.75	15	9	28	12	3.5	25	14	25
11	M16 x 2	20	11	28	12	3.5	29	18	30
13	M20 x 2.5	25	14	29	14	4	34	20	35
15	M27 x 3	35	16	31	16	4.5	42	23	40

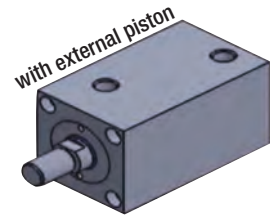
O	P	PT	R	SW	X	Y
M16 x 1.5	14	1/4"	10	17	12	28
M20 x 1.5	15	1/4"	10	22	12	28
M20 x 1.5	18	1/4"	10	22	12.5	29.5
M27 x 2	20	3/8"	10	30	16	31

Hydraulic Piston - Square Type

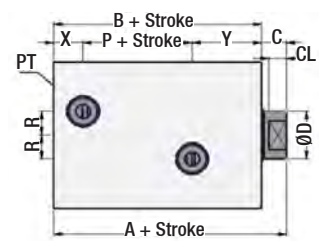
Compact Design & with 4-Fastening Holes from Front Side

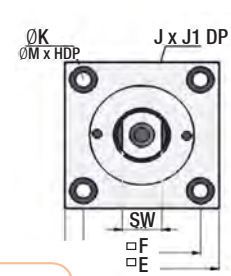
As per request: For too hot environments (180°C), shaft dimensions can be changed.

Series Ø 32 - Ø 63

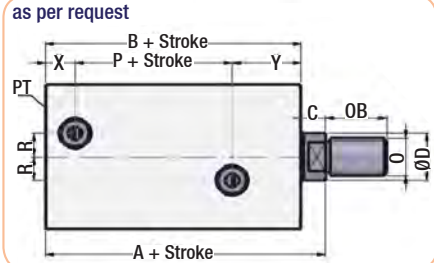


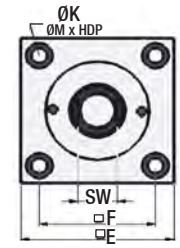
Series Ø 32 - Ø 63





as per request

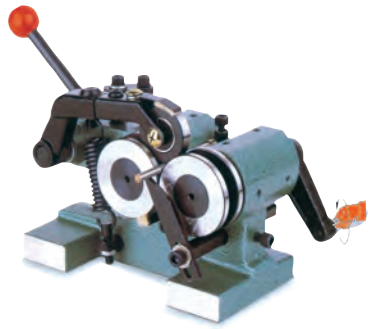




A	B	C	CL	D	E	F	H	J
64	54	10	7	20	62	47	6.5	M12 x 1.75
65	55	10	7	25	70	52	9	M16 x 2
71	60	11	8	28	80	58	11	M20 x 2.5
80	67	13	10	36	94	69	13	M 27 x 3
95	78	17	14	45	114	86	15	M 30 x 3.5

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.

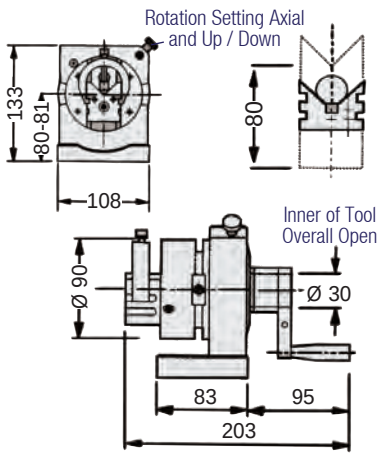


Pin & Punch Former Tool

Forming tool / apparatus for mould ejector pins and EDM tools (with mounting on the grinding machine workbench).

"V" Bearing Length: 30mm

Rotation Centreline Height: 15mm



d1: Pin clamping diameter = Ø4 - Ø30 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

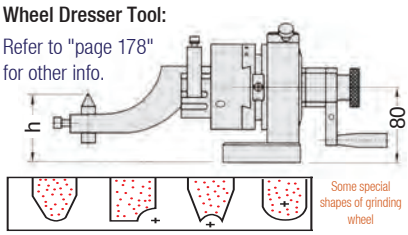
Chuck dividing head angle: 24 Pcs. $15^0 \pm 5^0$

Wheel diameter: 200 mm

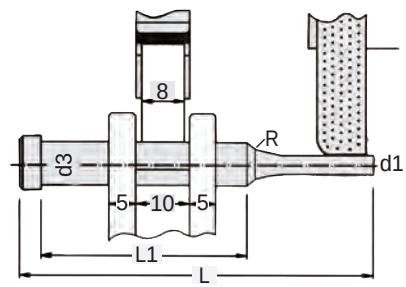
Total weight: 9 Kg.

Wheel Dresser Tool:

Refer to "page 178" for other info.



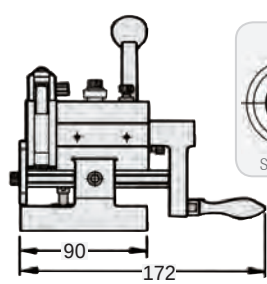
Pin & Punch Former Tool

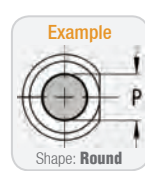


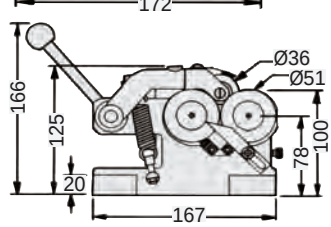
* It can be put on the grinding machine workbench for form grinding pins, punches or EDM tools.
* Pin clamping diameter: Ø1.5mm x Ø25mm
* Pins etc. can be ground by putting among precision rollers of Former Tool without checking the center, the center is determined automatically.
* Thanks to rigid clamping system, extended grinding length is within 5 - 35mm.

Total weight: 6.6 Kg.

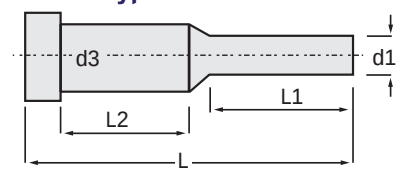
Standard Tolerances			
Round P	+0.1	◎ 0.1	From **P** to **d3**
Shape P,W	± 0.1	◎ 0.2	From **P** to **d3**





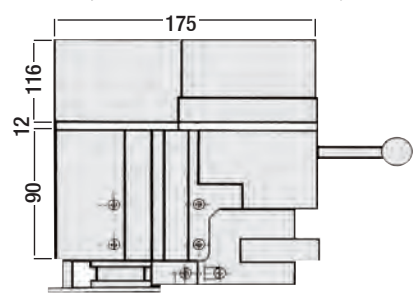


Pin & Punch Former Tool Motor Type

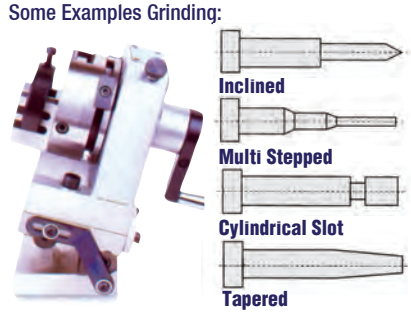


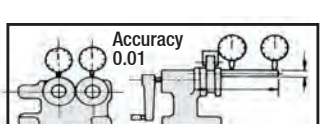
Information :

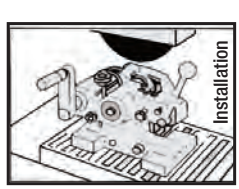
Pin clamping length **(L)** ..... : 20 - 120 mm
Minimum clamping length **(L2)** .. : 22 mm
Pin grinding length **(L1)** ..... : 5 - 35 mm
Pin clamping dia. **(d3)** ..... : Ø 2 ~ 25 mm
Pin grinding dia. **(d1)** ..... : Ø 0.5 ~ 25 mm
Grinding accuracy ..... : 0.01 mm
Motor Speed ..... : 130 RPM
Motor (1 phase) ..... : 120 V / 50 Hz / 25 W
Pin bearing roller speed ..... : 60 Hz
Step ovality accuracy ..... : 25.4 mm
Tool clamping dimensions ... : 175 x 218 x 90 mm
Total weight ..... : 7.1 Kg.



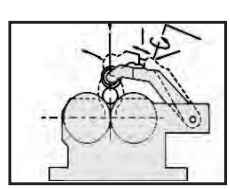
Some Examples Grinding:



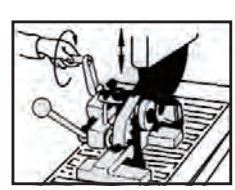




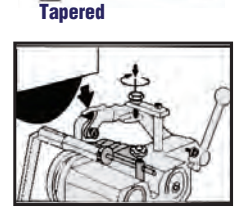
Insert pin into housing. Tighten screw of lever.



When pin is placed between precision rollers, center is found automatically.



After equipment is mounted to grinding machine, start grinding by turning lever.



Before starting grinding, ensure that all fasteners are tightened.

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