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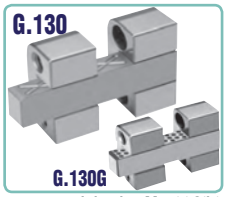

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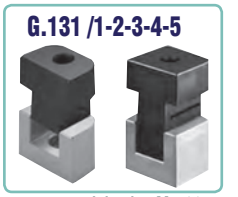

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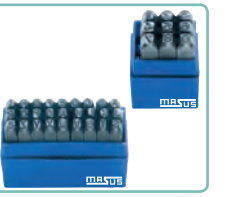
Page 78 Injection Mould Tube, Non Resettable Production Counter



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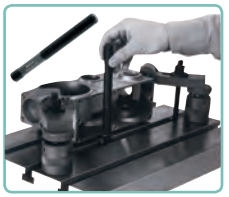

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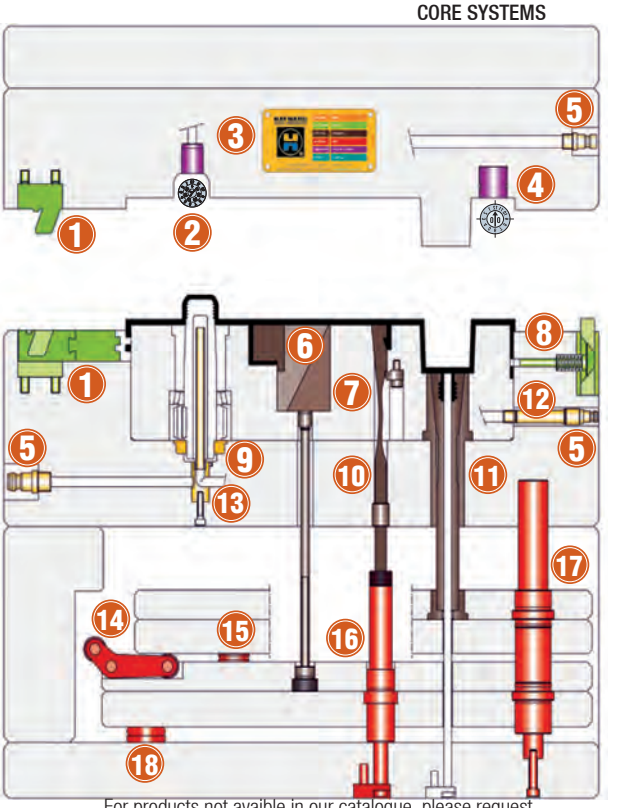
CORE SYSTEMS



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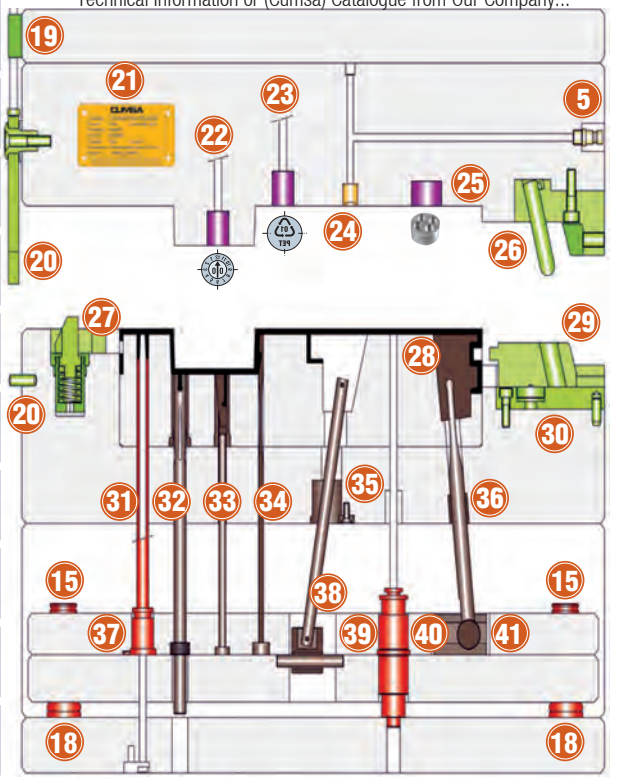

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46 Code: JV Vacuum Jet Hose (VK)

47 Code: VH High Pressure Air Valve Page 229

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50 Code: VS Spiral Ended(NP) Pipe Ejector(VP)

51 Code: VP Spiral Ended (NP) Ejector Pin

52 Code: VT Vacuum Jet Valve Pipe for (VK)

54 Code: CV Vacuum Jet Connection Socket

55 Code: PT Vacuum Jet Pneumatic Cyclinder

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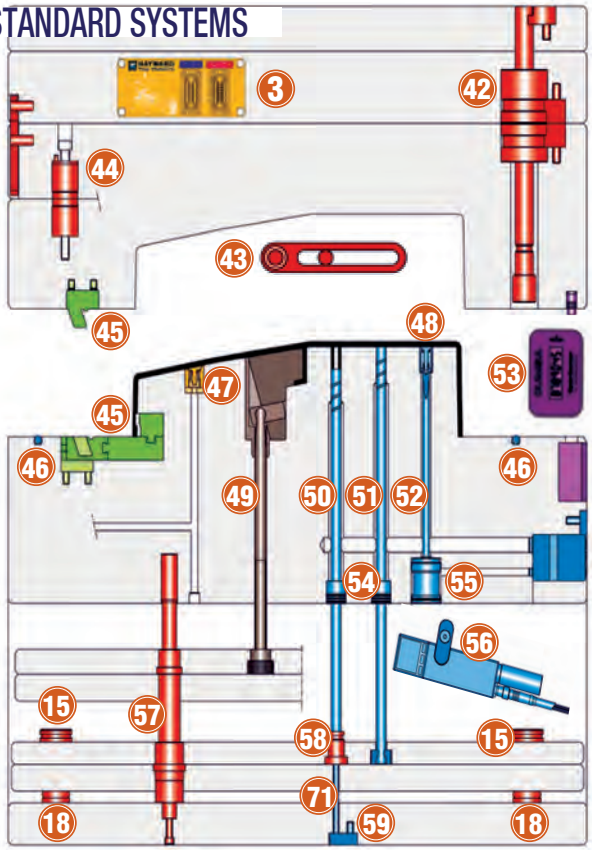

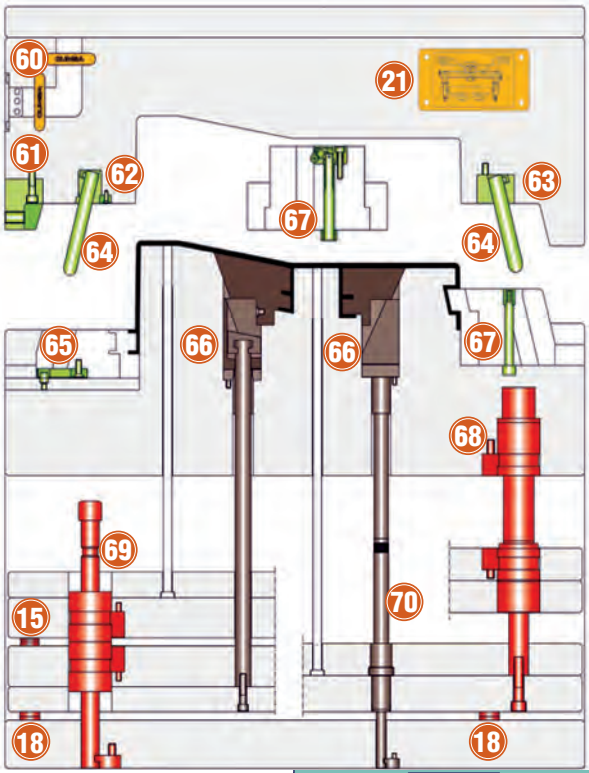

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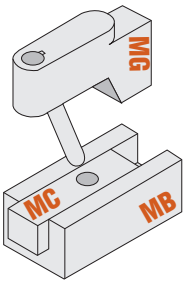


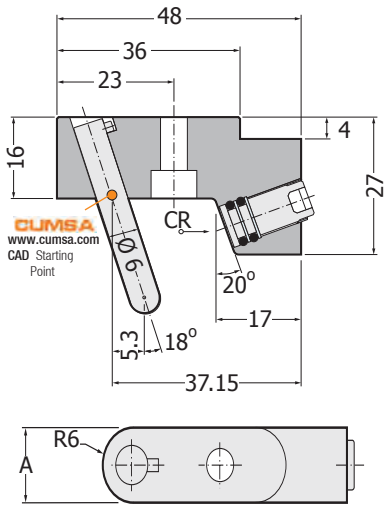
STANDARD CORE COMBINATION

MINI GUIDE MG

Mini Guide: It is consisted of Angle Pin and Locking Thrust Shoe. While Mould is Closed, it can easily adjust with Alien Key.

Material : 1.2510 Hardened 52/56 HRC
Patented System

Attention !!! Standard Stroke (Motion) is 4 mm.



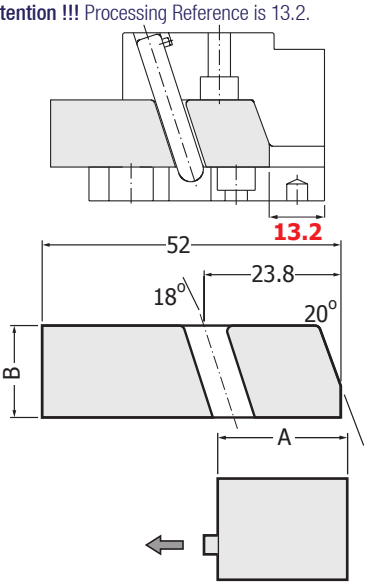
STANDARD CORE COMBINATION

MINI SLIDE MC

Mini Slide: Ready for processing, the only thing to be done is processing cavity surfaces.

Material : 1.2344 Patented System
Hardened 42/45 HRC

Attention !!! Processing Reference is 13.2.

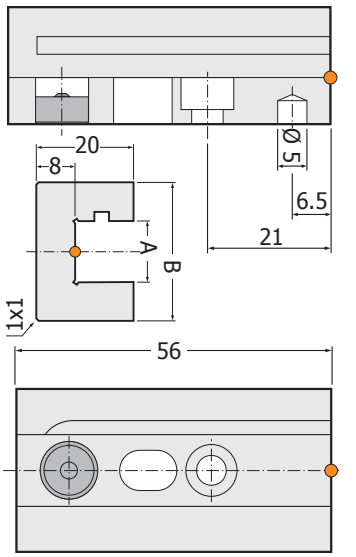


STANDARD CORE COMBINATION

MINI HOUSING MB

Mini Casing: It is a hardened and ground ready unit. There are different assembly possibilities, also replacement is easy.
It is with magnetic retainer.

Material : 1.2510 Patented System
Hardened 52/56 HRC



MINI GUIDE MG

Order Reference	A mm	CR (N)
MG.12 1648	12	50.000
MG.20 1648	20	90.000

MINI SLIDE MC

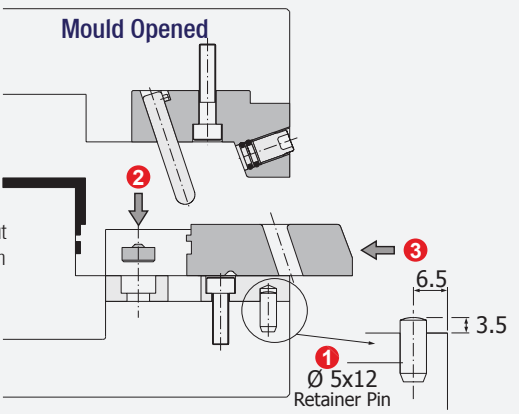
Order Reference	A mm	B mm
MC.12 1252	12.5	12
MC.12 1652	12.5	16
MC.20 1252	20.5	12
MC.20 1652	20.5	16

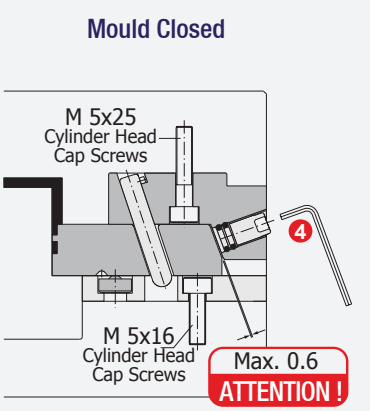
MINI CASING MB

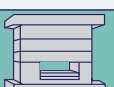
Order Reference	A mm	B mm
MB.12 2056	12.5	28
MB.20 2056	20.5	36

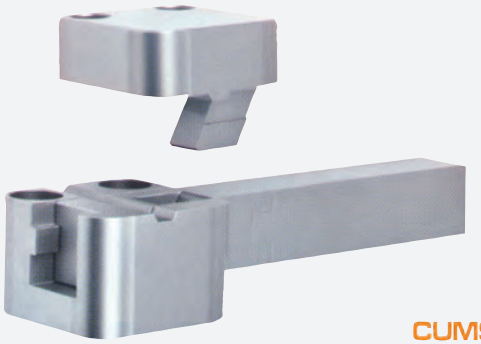
ASSEMBLY (CONNECT) and OPERATING

1- Determine the position of Mini Housing (MB) and mount it.
2- Please insert Magnetic Retainer into hole.
3- Insert Mini Slide (MC)
4- While mould is closed, please a d jut Mini Slide (MC) to maximum 0.6 mm









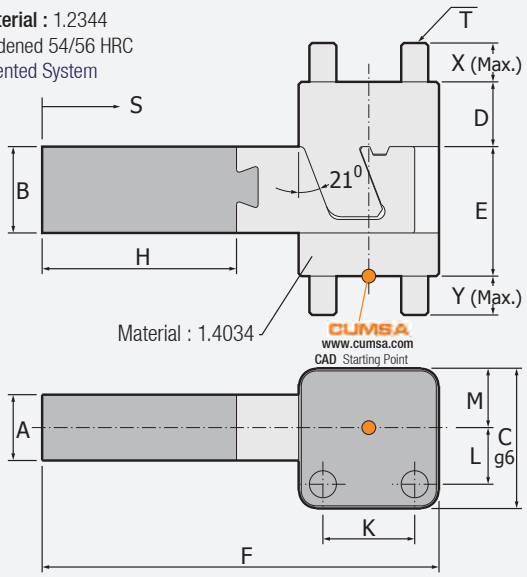
CUMSA

SLIDE CORE UNIT SU

Bottom Hole Forming, (Engraving) Processing Core Group

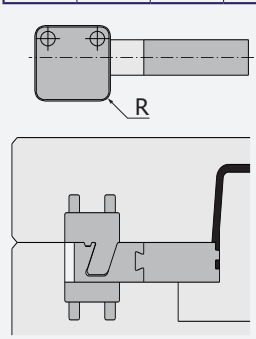
Demountable External Core Unit **Max. 5mm Stroke Distance 3 Pieces Compact System.** All surfaces are precisely grinded 90º perpendicularly. Ideal Structure for Injection Mould Internal/External Details, Mould Consisted Movable and 2 Different Slider Inserts, Flexibility Provided related with its property.

Material : 1.2344
Hardened 54/56 HRC
Patented System

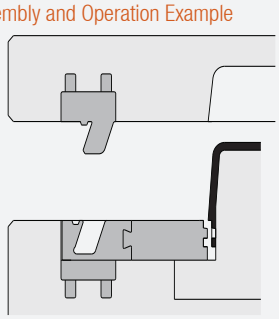


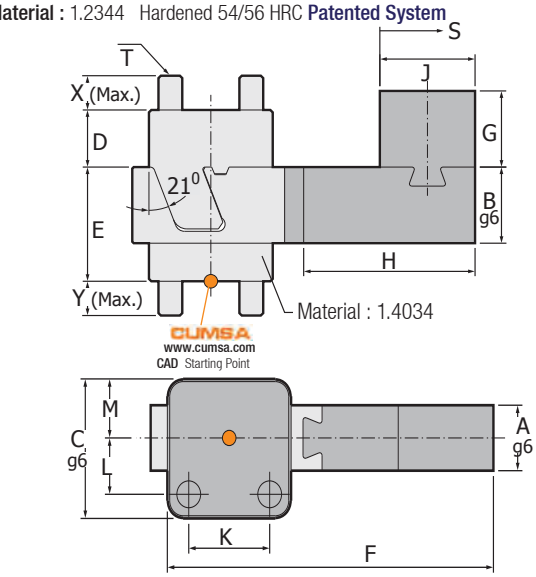
Order	A	B	C	D	E	F	H
SU.08 1220	8.2	12	20	10	18	60	32
SU.12 1626	12.2	16	26	12	24	73	36
SU.16 2032	16.2	20	32	16	30	86	40

K	L	M	R	S	T	X	Y
12.5	8.25	8	3.75	3	M4	7	8
17	10.5	11	4.5	4	M5	9	7
22	13	14	5	5	M6	10	11



Assembly and Operation Example





CUMSA

SLIDE HIDDEN CORE UNIT UU

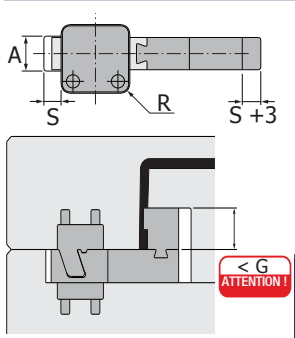
Bottom Hidden (Core) Forming (Cavity) Processing Core Group

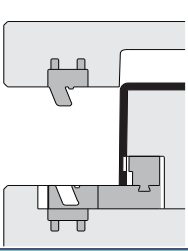
In contrast to Normal Core, provides reverse motion, **5 mm Stroke Mini Product is ideal for production of internal nails**. Forming of slide from 2 parts, provides easily process possibility the desired nail form, All processes are made 90º perpendicularly to mould parting surface.

Material : 1.2344 Hardened 54/56 HRC **Patented System**

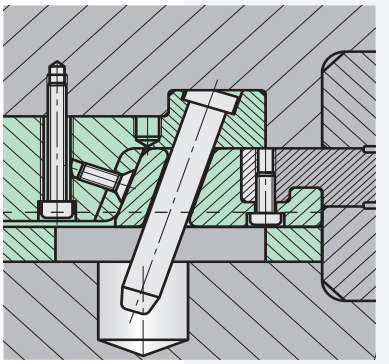
Order	A	B	C	D	E	F	G
UU.08 1220	8.2	12	20	10	18	53	12
UU.12 1626	12.2	16	26	12	24	64	16
UU.16 2032	16.2	20	32	16	30	86	20

H	J	K	L	M	S	R	T	X	Y
32	16	12.5	8.25	8	3	3.75	M4	7	8
36	20	17	10.5	11	4	4.5	M5	9	7
50	25	22	13	14	5	5	M6	10	11





CUMSA



CUMSA

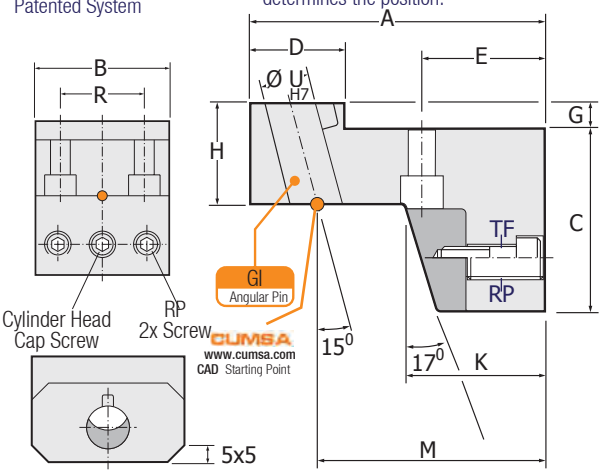
READY CORE GUIDE UNIT CG

It is unit of core system starting motion

It is delivered in position that angle and mounting holes are drilled and also presets are made. **It requires very small mounting area on mould.** All surfaces are precisely grinded and 90º perpendicular surfaces are precisely processed.

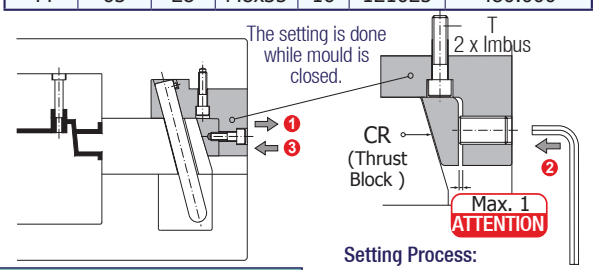
Material : 1.2312
Improved 1.080 N/ mm^2
Patented System

Two retaining pins on the outer are fixed thrust block. The intermediate screw determines the position.



Order	A	B	C	D	E	G	H
CG.60 3035	60	30	35	25	23	6	23
CG.60 4035	60	40	35	25	23	6	23
CG.75 4049	75	40	49	30	32	7	27
CG.86 4857	86	48	57	35	36	8	32

K	M	R	T	U	RP	CR (N)
29	43.7	17	M6x25	10	081015	180.000
29	43.7	22	M6x25	10	101015	320.000
39	58	22	M8x30	12	101020	320.000
44	65	28	M8x35	16	121025	480.000



Setting Process:
1- Unbolt TF (Bolt)
2- Tight RP (Screw)
3- Lock TF.

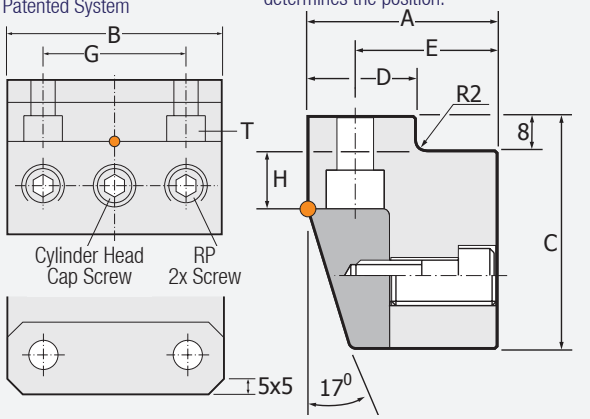
READY CORE THRUST BLOCK CR

When the mould is closed, it lets you set the core slide

It is delivered in position that connection holes are drilled and also presets are made. **It requires very small mounting area on mould.** All surfaces are precise grinded and 90º perpendicular surfaces are processed with precision.

Material : 1.2312
Improved 1.080 N/ mm^2
Patented System

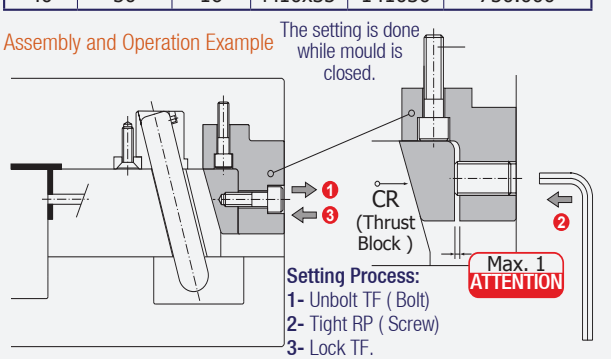
Two retaining pins on the outer are fixed thrust block. The intermediate screw determines the position.



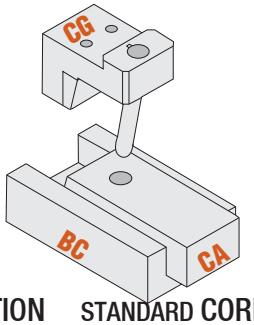
Order	A	B	C	D
CR.40 3840	40	38	40	25
CR.45 4849	45	48	49	28
CR.52 6052	52	60	52	32
CR. 52 6852	52	68	52	32
CR.52 7556	52	75	56	32

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

Assembly and Operation Example



Setting Process:
1- Unbolt TF (Bolt)
2- Tight RP (Screw)
3- Lock TF.



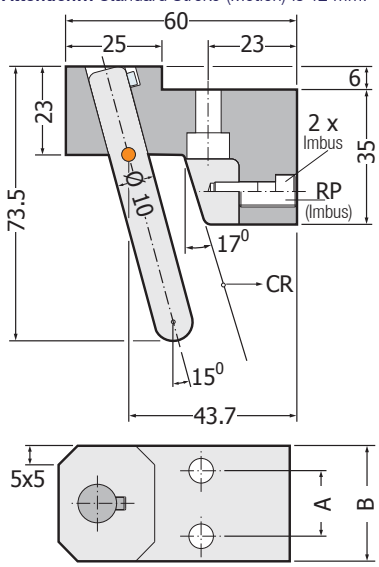
STANDARD CORE COMBINATION
PIN CORE GUIDE CG

Core Guide - Set: This unit is procured along with angle pin(GI - 010 0090).

There is Standard 12 mm Stroke. The setting can be done with a key from outside of mould.

Material : 1.2312
Improved 1.080 N/ mm^2
Patented System

Attention!!! Standard Stroke (Motion) is 12 mm.

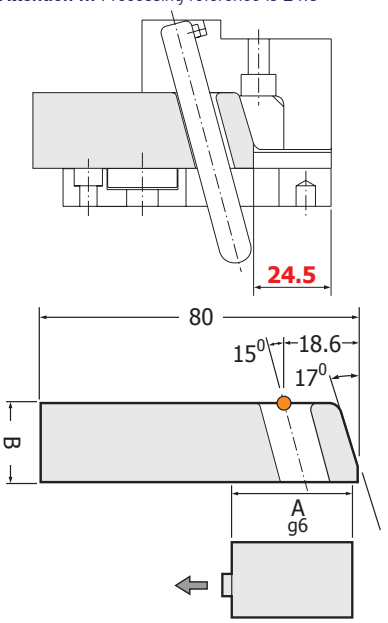


STANDARD CORE COMBINATION
CORE SLIDE CA

Core Slide: Ready for processing, the only thing to be done is processing cavity surfaces.
The core element to be used should be mounted on this casing. Angle Hole should be drilled on core slide.

Material : 1.2344 Patented System
Hardened 42/45 HRC

Attention !!! Processing reference is 24.5

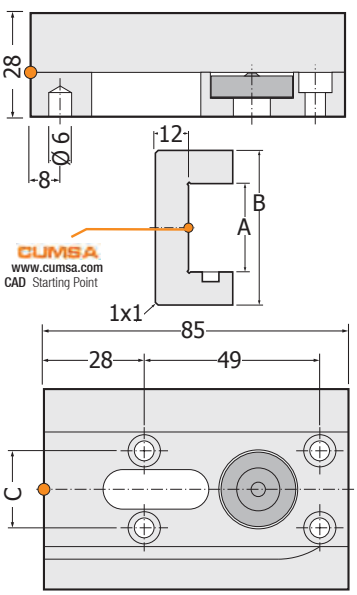


STANDARD CORE COMBINATION
CORE HOUSING BC

Core Housing: It is a hardened and grinded ready unit. There are different assembly possibilities, also the replacement is easy.

It also has a Magnetic Retainer.
Slide Grooves and Connection Holes are in ready position inside of Core Casing and is along with its Magnetic Stops. It has been manufactured in different material and in different hardness from **CA - BC** to continue its operation as smooth, frictionless and without impairment.

Material : 1.2510 Patented System
Hardened 54/56 HRC



CORE GUIDE CG

Order	A	B
CG.60 3075	17	30
CG.60 4075	22	40

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

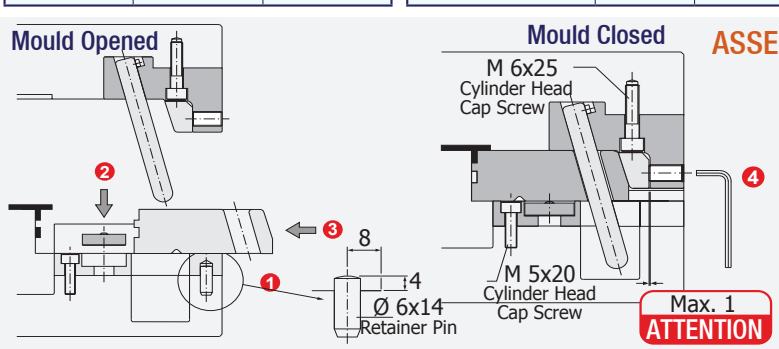
CORE SLIDE CA

Order	A	B
CA.32 2080	32	20
CA.32 2480	32	24
CA.42 2080	42	20
CA.42 2480	42	24

CORE HOUSING BC

Order	A	B	C
BC.32 2885	32	56	21.5
BC.42 2885	42	66	26.5

ASSEMBLY



1- Pls. determine the position of Core Housing (BC) and mount it.
2- Place Magnetic Retainer into hole.
3- Determine the position of Core Slide (CA).
4- While mould is closed, pls. set core slide to max. 1 mm.

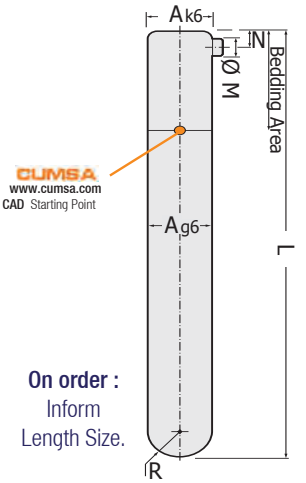
CUMSA

STANDARD CORE COMBINATION

ANGULAR PIN GI

Angular Pin: This pin, works compatibly with each core set in Cumsa Serie.

Material : 1.7242 **Hardness :** 60 HRC



On order : Inform Length Size.

ANGULAR PIN GI

Order	A	Bedding Area
GI.010.. L	10	≈ 25
GI.012.. L	12	≈ 30
GI.016.. L	16	≈ 35
GI.020.. L	20	≈ 40
GI.024.. L	24	≈ 45
GI.028.. L	28	≈ 50

M	N	L (Length)			R
4	4	075	090	105	5
4	4	095	110	130	6
4	4	115	135	160	8
6	6	140	165	190	10
6	6	170	195	220	12
6	6	200	225	250	14

Orderte : Pls. Inform " L " length size

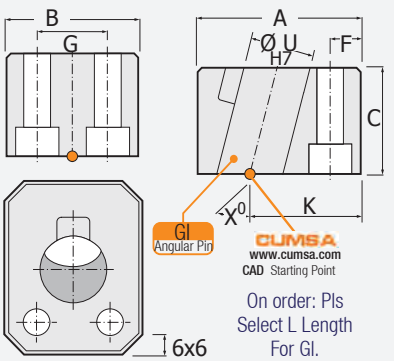
CUMSA

STANDARD CORE COMBINATION

ANGULAR PIN RETAINER BG

Angular Pin Retainer: It is same with round angularpin retainer (GR). **However, it is 15º or 20º.** Due to using this unit in more wider angle, it is greater than GR and it requests that a rectangular slot should be opened on mould.

Material : 1.2312 Improved 1.080 N/ mm²

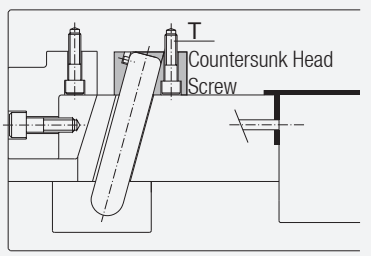


On order: Pls Select L Length For GI.

ANGULAR PIN RETAINER BG

Order	A	B	C	F
BG.423016-15	42	30	30	7.5
BG.504020-15	50	40	36	9
BG.554024-15	55	40	40	9
BG.655028-15	65	50	45	12
BG.423016-20	42	30	30	7.5
BG.504020-20	50	40	36	9
BG.554024-20	55	40	40	9
BG.655028-20	65	50	45	12

G	K	T	U	X
15	28	M6x35	Ø 16	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	

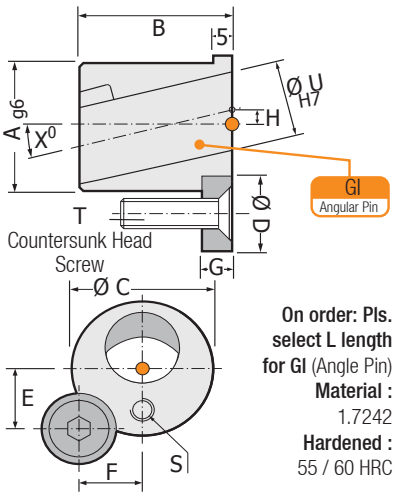


CUMSA

STANDARD CORE COMBINATION

ANGULAR PIN RETAINER GR

Angular Pin Retainer: This unit eliminates the Need for Angle Drilling on mould. Only, a hole is drilled from front face of mould to place unit and select 10⁰ or 15⁰.



On order: Pls. select L length for GI (Angle Pin)
Material : 1.7242
Hardened : 55 / 60 HRC

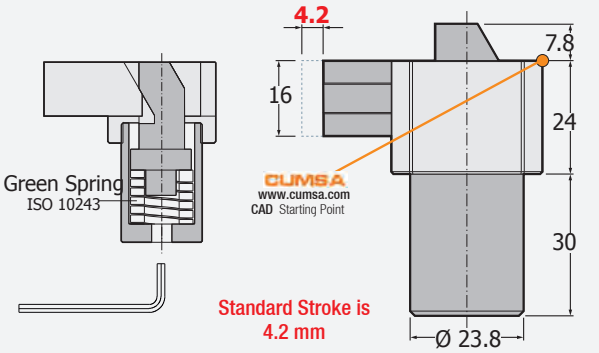
Order	A	B	C	D	E
GR.182622-10	18	26	22	12	10.8
GR.222826-10	22	28	26	16	11
GR.283432-10	28	34	32	16	13
GR.344038-10	34	40	38	20	17
GR.424546-10	42	45	46	20	19.5
GR.465050-10	46	50	50	20	21
GR.182622-15	18	26	22	12	10.8
GR.222826-15	22	28	26	16	11
GR.283432-15	28	34	32	16	13
GR.344038-15	34	40	38	20	17
GR.424546-15	42	45	46	20	19.5
GR.465050-15	46	50	50	20	21

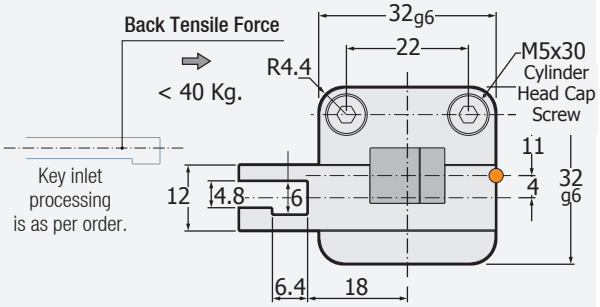
F	G	H	S	T	U	X⁰
7.5	6	3.8	M5x5	M5x16	10	10⁰
11		4	M6x6	M6x16	12	
13		5			16	
17	8	5.5	M8x6	M8x20	20	
19.5		6			24	
21		7			28	
7.5	6	3.8	M5x5	M5x16	10	15⁰
11		4	M6x6	M6x16	12	
13		5			16	
17	8	5.5	M8x6	M8x20	20	
19.5		6			24	
21		7			28	

READY CORE, SIDE HOLLOW UC

Injection Plastic Mould is to Create Side Hole.

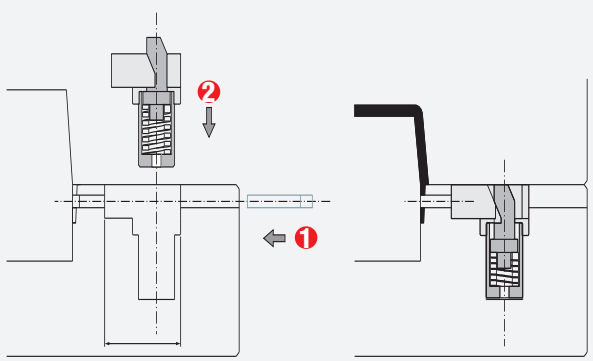
It is working mechanism used to form side holes. Core Pin is held with Automatic Locking System. The required area for mounting is very small. All surfaces are precisely grinded 900 perpendicularly. It is delivered with drilled mounting holes and also presets are made. **It requires very small mounting area on mould.**





Order:
UC.32 5445

Material : 1.2344
Hardened : 52-54 HRC

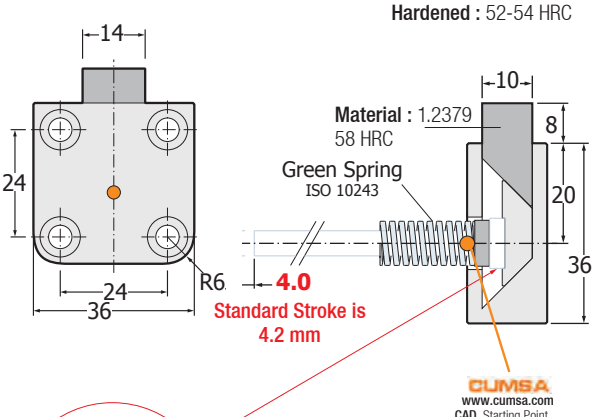


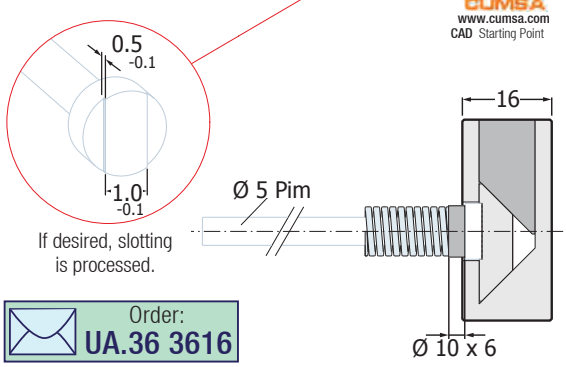
COMPACT CORE UNIT UA

Spring / Pin Loaded Compact Core / Hole Unit.

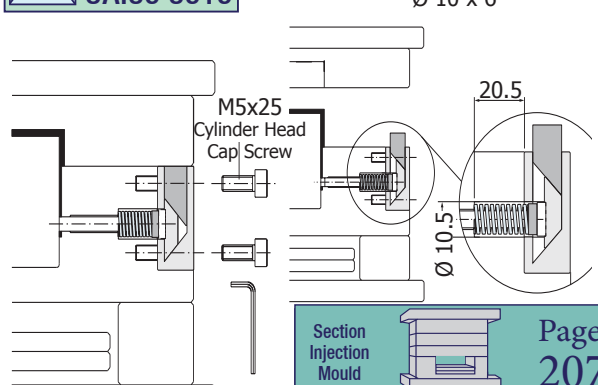
It reduces slot processing and assembly costs.
The unit used in forming side holes on plastic parts is operated with opening and closing of mould. Mounting and demounting to mould is so easy. In comparison with the classic core system, it requires a lot fewer space on mould All surfaces are grinded 900 and super finished. It is a standard solution for moulders.

Material : 1.2344
Hardened : 52-54 HRC





Order:
UA.36 3616

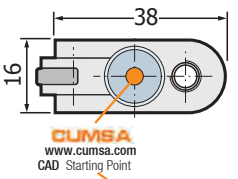


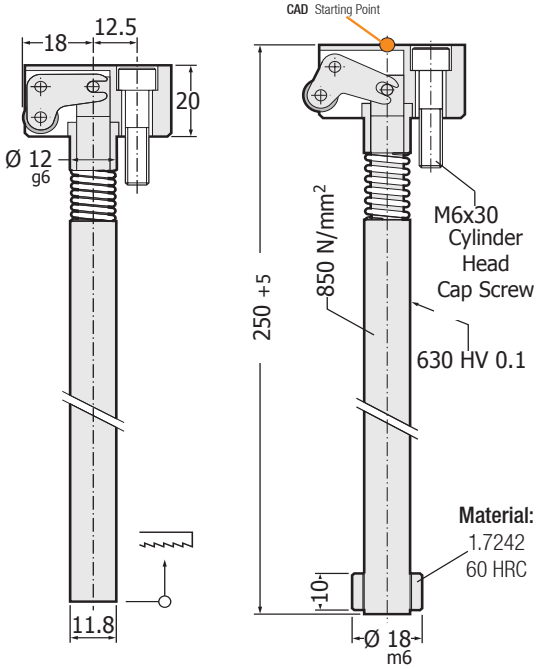
AUTOMATIC CORE RETAINER RA

It is for large Hydraulic Cores Operating With Angle Pin

It is ready standard solution for moulders. It is worked easily and smoothly without requiring large loads. This Core retainer has 2000 Kg. load capacity.

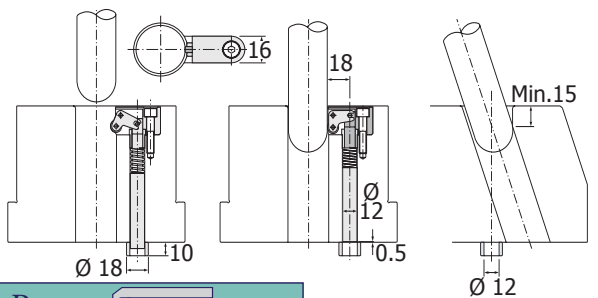
Material : 1.2510
Hardened : 56 HRC





Order:
RA.16 3812

Pin Size: It should be 0.5 shorter than core height.



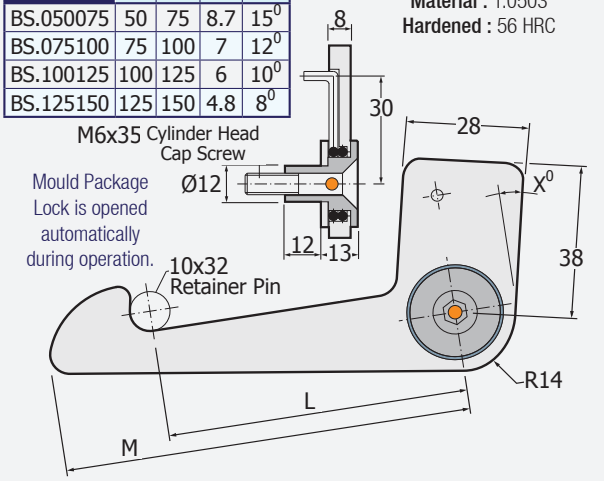
MOULD PACKAGE, SAFETY LOCK BS

While Mould is non manufactured, it is holds mould closed, opens automatically.

In the event that mould is not connected to the Injection Machine, it keeps the mould closed and protects it. When the mould is connected to injection, mould lock is opened automatically.

Order	L	M	N	X
BS.050075	50	75	8.7	15^0
BS.075100	75	100	7	12^0
BS.100125	100	125	6	10^0
BS.125150	125	150	4.8	8^0

Material : 1.0503
Hardened : 56 HRC

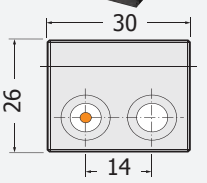


MOULD SAFETY LOCK INTERMEDIATE EXTENDER AB

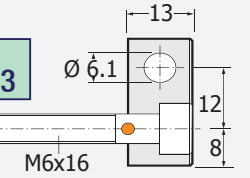
It is used for thick plate moulds.

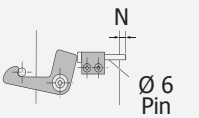
Extender Unit: It is used in spaces that mould plate is thicker than 120 mm.

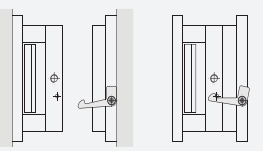
Material : 1.0503

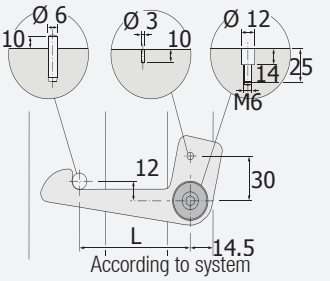


Order:
AB.302613





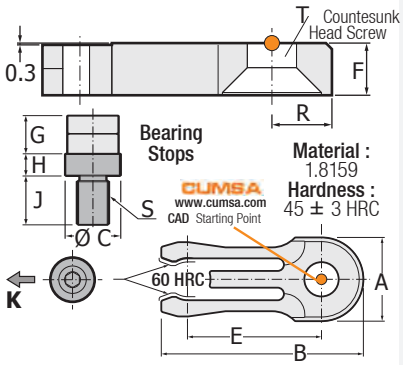




STOPPER CORE RETAINRER RCM

The bearing in mechanical stops prevents the abrasion arising from friction force, in contrast with its equivalents, it occupies less place on mould and its mounting requires less processing.

Heat Resistance is 150^0.

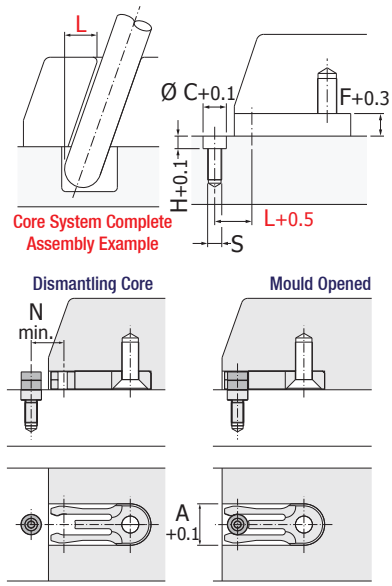


STOPPER CORE HOLDER RCM

Order	A	B	C	E	F	G
RCM.16 3808	16	38	8	25	7.7	7.6
RCM.20 4810	20	48	10	32	8.7	8.6
RCM.24 5712	24	57	12	37.5	9.7	9.6

H	J	K	N	R	S	T
4	10	10 Kg.	7	8	M5	M6
5	11	14 Kg.	8	10	M6	M8
6	12	18 Kg.	9	12	M8	M10

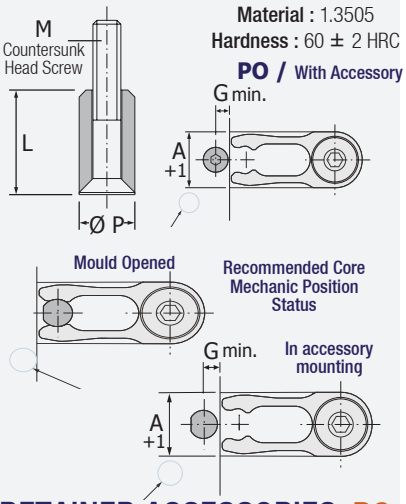
K : Forcing to release safety



RETAINER ACCESSORIES PO

Optional belonging to RC Retainer (As per order)Bush-Countersunk Bold Set

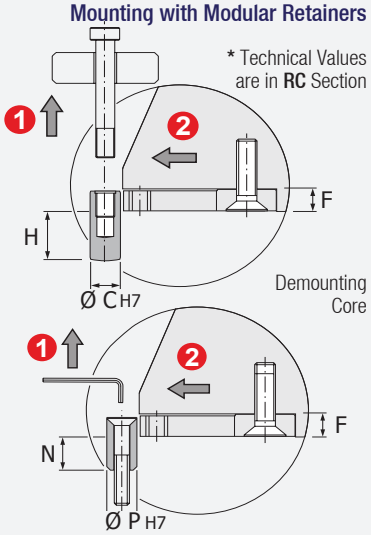
Optional Pin: To fastening core retainer, the bolt bush is fastened with set by drilling bush hole. It is optional / as per order method facilitating dismantling, this product should be ordered separately.



RETAINER ACCESSORIES PO

Order	L	M	N	P
PO.120320	12	M3x20	7.5	6
PO.150425	15	M4x25	10	8
PO.200530	20	M5x30	13	10
PO.250635	25	M6x35	16	12
PO.340850	34	M8x50	23	16

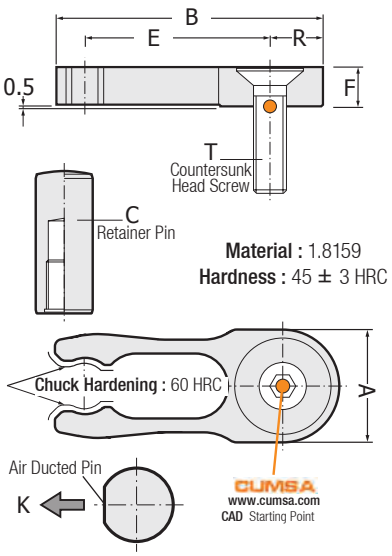
Mounting with Modular Retainers



CORE RETAINER RC

As Core Retainer or Different use of Retainer : It is a secure system preventing the falls of casings such as core etc. in vertical direction and centering mould. It is presented with Modular Retainer, Mounting Bolt and Retaining Pin requires very little mounting area in mould.

Heat Resistance is 150^0'dir.



" K " is the approximate load value required to disengage from retainers.

CORE RETAINER RC

Order	A	B	C	E	F
RC.123006	12	30	6x20	21	5
RC.164008	16	40	8x20	28	6
RC.205010	20	50	10x24	34	8
RC.246012	24	60	12x32	42	10
RC.328012	32	80	16x40	56	12
RC.328016	32	80	16x40	56	16

G	H	K	R	T
4	16	5 Kg.	6	M5x16
5	15	7 Kg.	8	M6x25
6	17	14 Kg.	10	M8x30
7	23	21 Kg.	12	M10x40
9	27	28 Kg.	16	M12x50
9	25	38 Kg.	16	M12x50

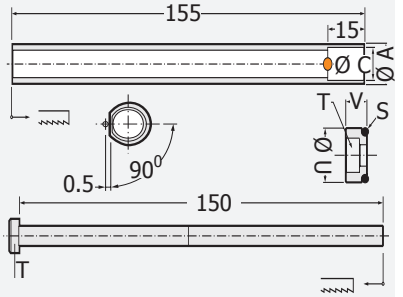
Reliable Label

CUMSA

LENGTH EXTENSION SET AP

It is used to extend length (up to 315 mm) of flexible inner cores (Such as PW).

It is a standard extension element, it is hardened and dimensionally grinded. **There is a slotting available.**

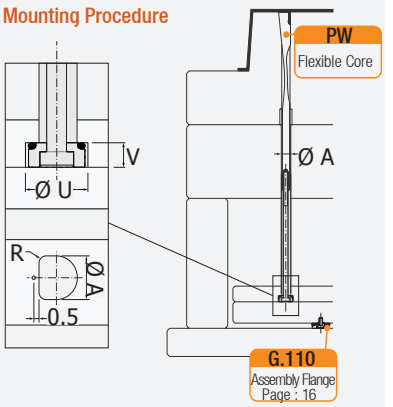


FLEXIBLE CORE L. EXTENSION SET

Order	A	C	R
AP. 08 06 15	8	6	1.25
AP. 10 08 15	10	8	2.0
AP. 12 10 15	12	10	2.5

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

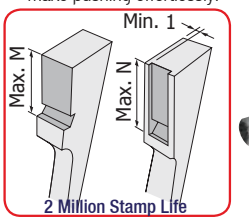
Mounting Procedure

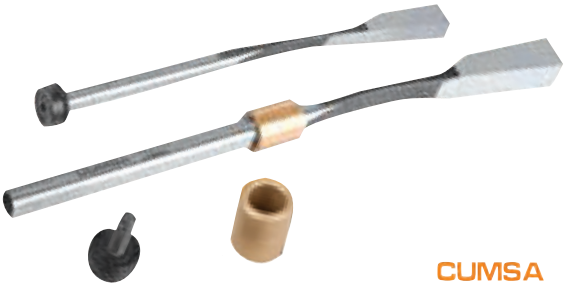


CUMSA

Injection Plastic Mould EJECTOR systems

After setting core, pls. process 0.1 mm from end section to make pushing effortlessly.



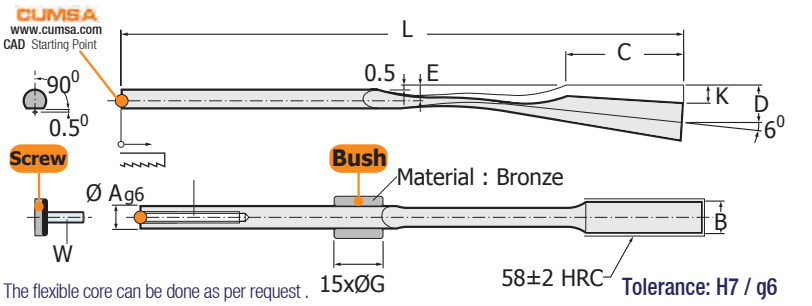


CUMSA

FLEXIBLE INNER CORE (Radial Motion, Bedding, Threaded) PW

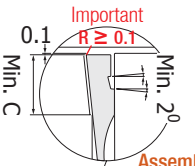
The required area for mounting is very small, it requires area as much as ejector pin. Excluding the desired form of operation, there is no need for any processing, grinding or hardening processes. Due to that parting surface is 900, mounting procedure is easy, it eliminates the needs of complex mechanic systems, opening process is radial motion. At the end of the stroke, according to the opening **K** values are 3.5 mm , 4.5 mm and 5.5 mm. **Working Temperature is 150⁰ Material :** 1.8159 - **Hardness :** 45 ± 3 HRC (We don't recommended welding / covering processes).

As other ejectors, it is worked with ejector plates. Especially, it is ideal to remove small claws

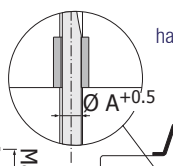


The flexible core can be done as per request . **Tolerance: H7 / g6**

Order	A	B	C	D	E	G	K	L	M	N	R	T	U	V	W
PW.060622	6	6.2	22	9	3.5	-	3.5	125	16	18	1.25	M4 x 36	12	5	M4 x 16
PW.060630			30	10		12	4.5	175	20	26					
PW.060822		8.2	22	9		-	3.5	125	16	18					
PW.060830			30	10		12	4.5	175	20	26					
PW.080825	8	8.2	25	11.5	4.5	-	4.5	140	18	21	2.0	M5 x 36	14	6	M5 x 16
PW.081025		10.2				-									
PW.081030			30	11.2		12		175	20	26					
PW.081225		12.2	25	11.5		-		140	18	21					
PW.081230			30	11.2		12		175	20	26					
PW.101430	10	14.2	30	13.6	5.5	16	5.5	175	20	26	2.5	M6 x 36	18	8	M6 x 16
PW.101630		16.2													
PW.101830		18.2													

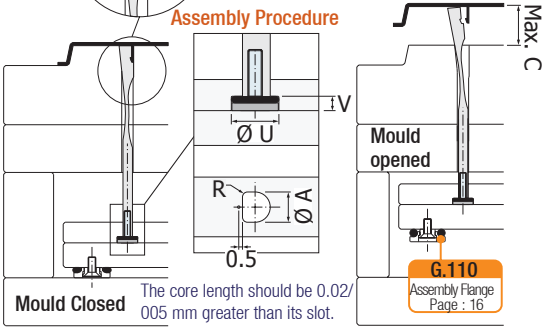


D Opening (6mm) : < Up to 3 mm
B Width : Min. 2⁰ Can be slopped.
6⁰ Surface / Bedding : Min. 5 mm
Core Could can be adjusted with its cavity. **Slot :** (6⁰)



Flexible cores have key surfaces to their sides, they should be connected.

Assembly Procedure



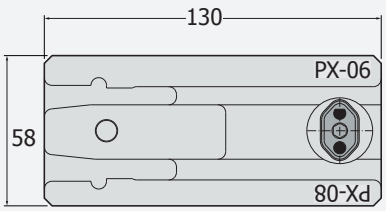
The core length should be 0.02/ 005 mm greater than its slot.

CUMSA **CX**

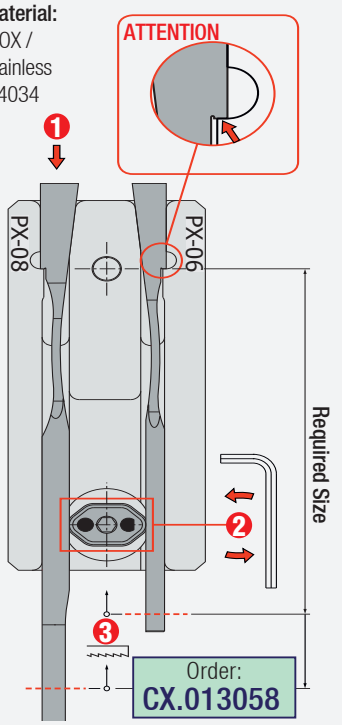
" PX " LENGTH CUTTING DEVICE

It is a device which is facilitated measuring and **PX** Shaft Cutting Processes ensuring fine tuning towards to its height in length setting of PX Flexible Inner Cores. A great quantity of PX Cores is prepared Fast / Precision Measurement and Cutting easily. How to use **CX** Cutting Device.

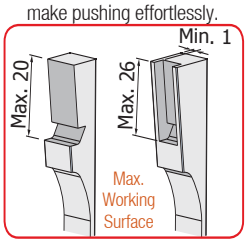
1. For 6 or 8 mm flexible core, place in slot of the device corresponding to the related product. Pls. be sure that is in correct position. Byretaing core supportively, bring to cutting position.
2. Pls. tight flat/flap or round core with Alien Key in related slot.
3. According to the desired length size, your core is ready position for cutting.



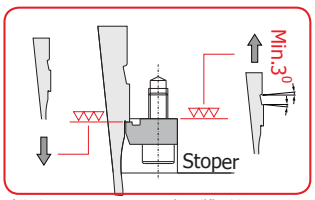
Material:
INOX /
Stainless
1.4034



After setting core, pls. process 0.1 mm from end section to make pushing effortlessly.



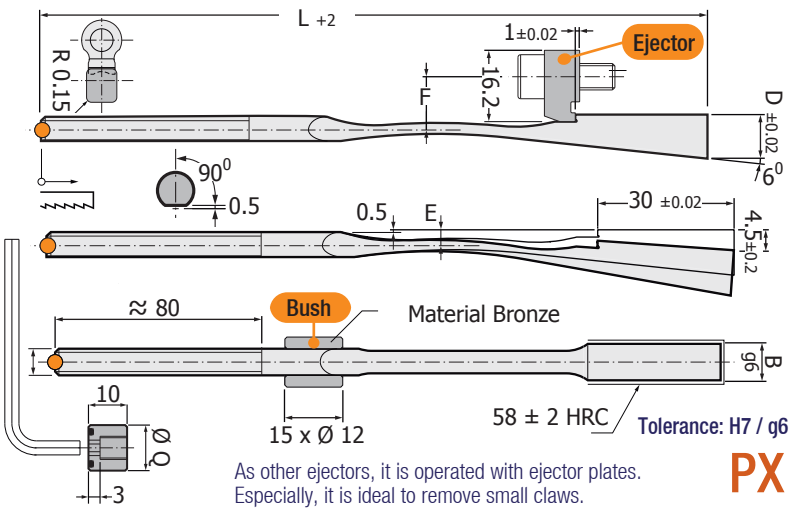
CUMSA



EXTRA - FLEXIBLE INNER CORE **PX**

By facilitating stopper setting, longevity and guaranty are provided. Technical Data (PW - Flexible Inner Core) is in similar status, it is guaranteed to work of inner core facilitating stopper setting precisely and longevity.
H7 is set to correspond to the tolerances and has been precisely processed according to the slot details.

All sharp corners, are simplified by appropriate Radius. Doing cutting processes by CX Device is recommended. Basic fixing system are available in three lengths. **Working Temperature is 150°**
Material: 1.8159 **Hardness:** 45 +3 HRC (We don't recommended welding / covering processes.



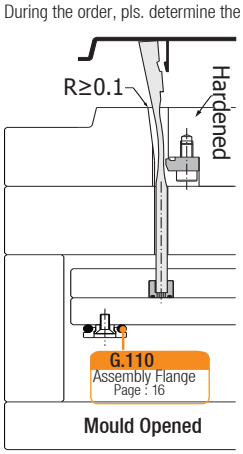
As other ejectors, it is operated with ejector plates. Especially, it is ideal to remove small claws.

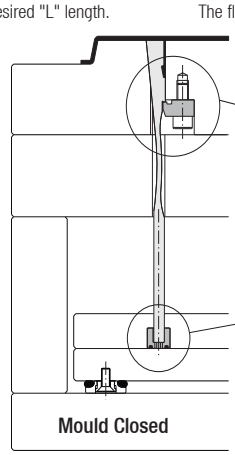
PX

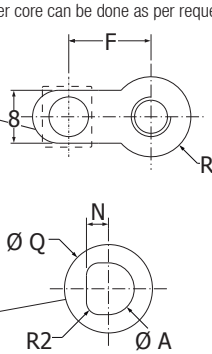
Order	A	B	D	E	F	L=175 Bush	L=250 Bush	L=325 Bush	N	Q
PX. 06 06 30-...	6	6.2	10	3.5	12.5	-	+	+	2.5	12
PX. 06 08 30-...	6	8.2	10	3.5	12.5	-	+	+	2.5	12
PX. 08 10 30-...	8	10.2	11.2	4.5	13.5	-	+	+	3.5	14
PX. 08 12 30-...	8	12.2	11.2	4.5	13.5	-	+	+	3.5	14

During the order, pls. determine the desired "L" length.

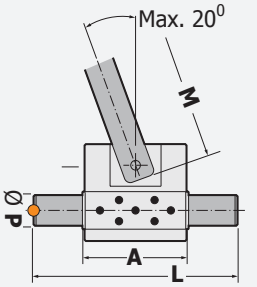
The flexible inner core can be done as per request.







CUMSA



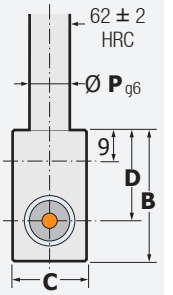
INNER CORE HOUSING SD

It is used in internal motion that requires pushing in different angles. Self lubricating bush facilitates operating.

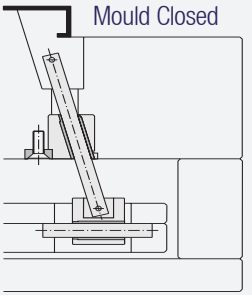
Maximum weight that inner core housing can be lifted.

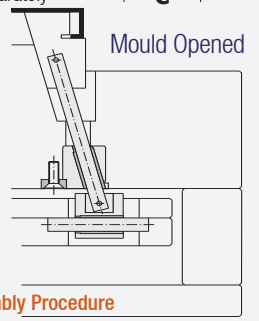
SD.322010 - 320 kg
SD382412 - 420 kg
SD.452816 - 680 kg.

Order	A	B	C	D	L	M	P
SD. 3220GR	32	37	20	27	80	180	10
SD. 3824GR	38	40	24	28	80	210	12
SD. 4528GR	45	44	28	30	100	250	16

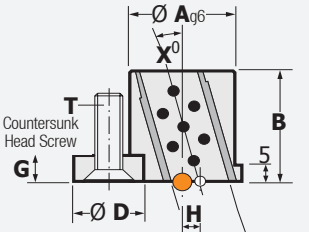


Important: Unit and rod are delivered separately



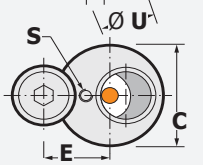


Assembly Procedure

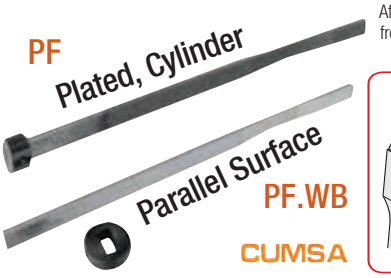


ANGLE GUIDE BUSH CI

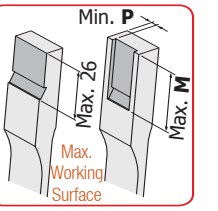
It is used as guide bush of angle core blocks. Only a plain hole for mounting is required. Due to it is Self Lubricating Bedding, there is no need lubrication. **Material:** 1.7242 **Hardness:** 60 HRC



Order	A	B	C	D	E	G	H	S	T	U	X⁰
CI.3034-5	30	34	34	16	20	6	0	M6x6	M6x16	10	5⁰
CI.3438-5	34	38	38	20	24	8	0	M8x6	M8x20	12	
CI.4040-5	40	40	44	20	27	8	0			16	
CI.3034-10	30	34	34	16	20	6	7	M6x6	M6x16	10	10⁰
CI.3438-10	34	38	38	20	24	8	8.5	M8x6	M8x20	12	
CI.4040-10	40	40	44	20	27	8	8.5			16	
CI.3034-15	30	34	34	16	20	6	7	M6x6	M6x16	10	15⁰
CI.3438-15	34	38	38	20	24	8	8.5	M8x6	M8x20	12	
CI.4040-15	40	40	44	20	27	8	8.5			16	
CI.3034-20	30	34	34	16	20	6	7	M6x6	M6x16	10	20⁰
CI.3438-20	34	38	38	20	24	8	8.5	M8x6	M8x20	12	
CI.4040-20	40	40	44	20	27	8	8.5			16	

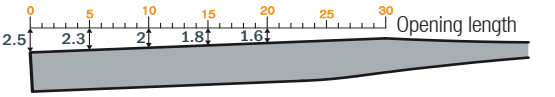


After setting core, pls. process from end section to P to make pushing effortlessly

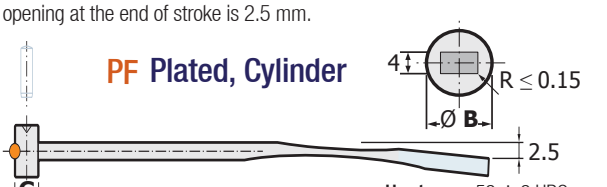


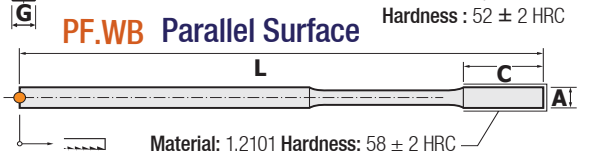
FLEXIBLE, PLATED INNER CORE PF
PARALLEL SURFACE FLEXIBLE INNER CORE PF.WB

Flexible Plated Inner Core: The core surfaces are parallel and is used on cylinder (4mm) surfaces. **Plate / Balinit** C provides a smooth operation and reduces friction **Especially,** First pushes the part, later removes from claws.
Maximum Opening Length With a radial motion Opening at the end of stroke is 2.5 mm

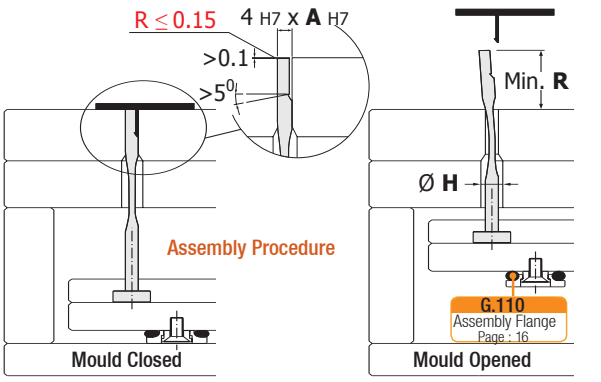


Flexible Inner Core 8x4 Parallel Surface: Due to its parallel surfaces, it provides the removal of claws in compact areas (Thickness 4 mm), it has basic system for setting. **Especially,** first gives power impulses, later removes from claws. **Maximum Opening Length** With a radial motion, opening at the end of stroke is 2.5 mm.





Order	A	B	C	G	H	L	M	N	P	R
PF. 044150	4	8	24	6	5	150	12	14	0.8	30
PF. 054150	5				6					
PF. 064200	6	12	30	8	7	200	18	20	1.0	36
PF. 084200	8	14			9					
PF. 104200	10	16			11					
PF. 124200	12	18			13					
PF. 0642 WB	6	12	30	8	7	200	18	20	1.0	36
PF. 0842 WB	8	14			9					
PF. 01042 WB	10	16			11					
PF1 01242 WB	12	18			13					



CUMSA

DUAL FLEXIBLE INNER CORE UNIT ED

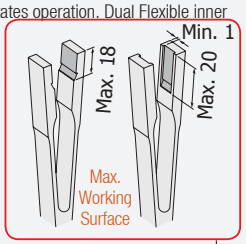
It is very useful for the removal of small claws

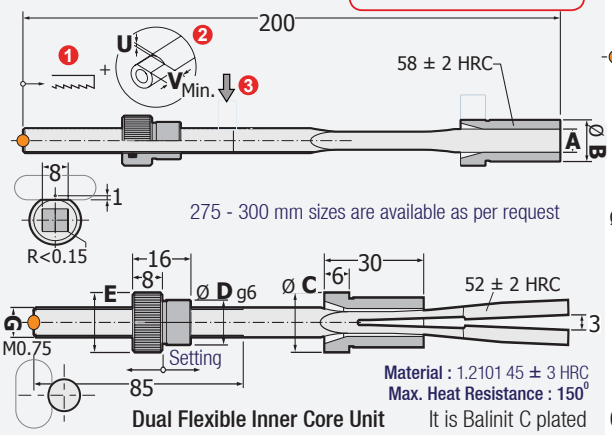
The running in of double flexible inner core has been made and length setting can be done easily. Its mounting and processing are very easy, it processes 90º to part surface .

Balinit C Plating It is best plating used in flexible inner cores, provides high hardness and low friction coefficient, protects part and facilitates operation. Dual Flexible inner core holders are **Balinit C Plated.**

Each ejector has been adjusted according to its bush. **Their tolerances are g6 / H7.** Hence, while exchanging the parts, compliance to each other should be considered during interchange of cores, the opening of flexible inner core is radial motion.

The opening at the end of stroke is **3 mm.**



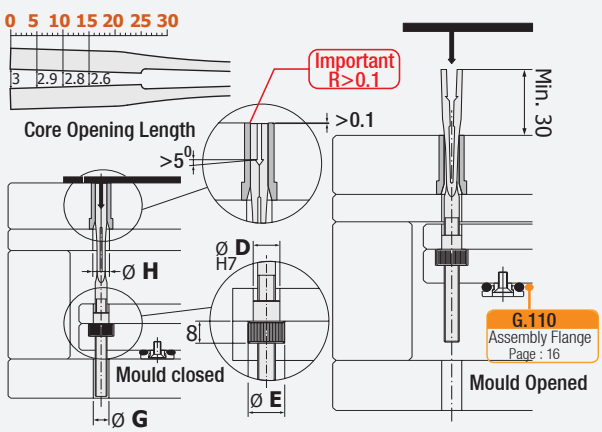


275 - 300 mm sizes are available as per request

Material : 1.2101 45 ± 3 HRC
Max. Heat Resistance : 150º

Dual Flexible Inner Core Unit It is Balinit C plated

Order	A	B	C	D	E	G	H	U	V
ED.068200	6	12	14	10	14	6	10	0.5	10
ED.088200	8	14	16	12	16	8	12		
ED.108200	10	16	18	14	18	8	14		15
ED.128200	12	16	18	16	20	8	15		



CUMSA

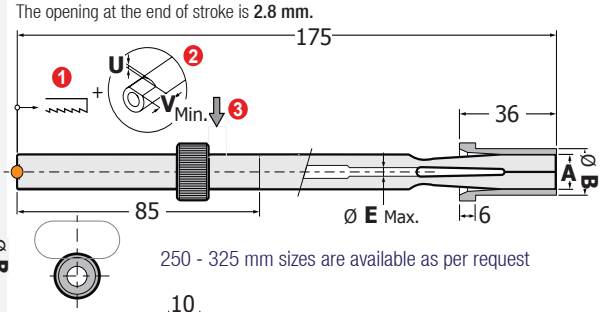
QUARTET FLEXIBLE INNER CORE UNIT EE

It is very useful for the removal of small claws

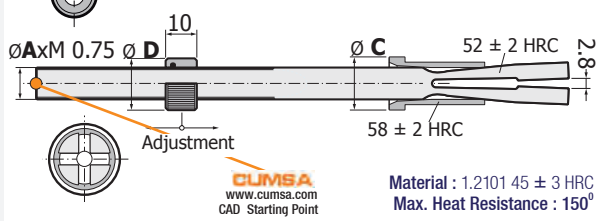
The running in of quartet flexible inner core has been made and the length setting can be done easily. Its mounting and processing are very easy, it processes 90º to part surface.

Balinit C Plating: It is best plating used in flexible inner cores, provides high hardness and low friction coefficient, protects part and facilitates operation. Dual Flexible inner core holders are **Balinit C Plated.** Each ejector has been adjusted according to its bush. Their tolerances are g6 / H7. Hence, while exchanging the parts, compliance to each other should be considered during interchange of cores, the opening of flexible inner core is radial motion.

The opening at the end of stroke is **2.8 mm.**



250 - 325 mm sizes are available as per request

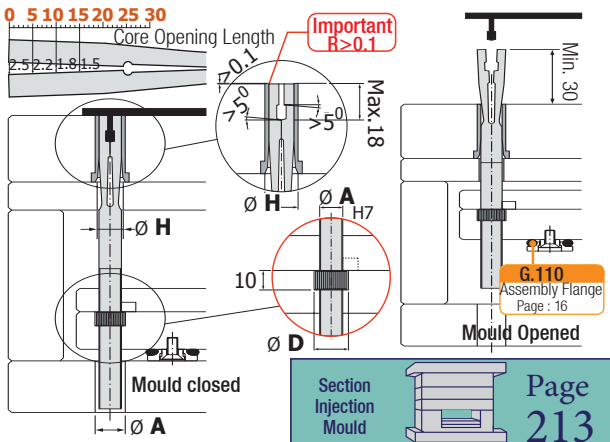


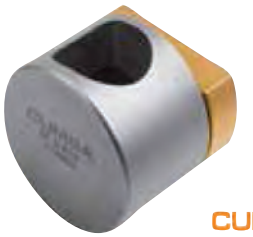
CUMSA
www.cumsa.com
CAD Starting Point

Material : 1.2101 45 ± 3 HRC
Max. Heat Resistance : 150º

Quartet Flexible Inner Core Unit It is Balinit C plated EE

Order	A	B	C	D	E	H	U	V
EE.060175	6	10	12	12	-	9	0.5	10
EE.082175	8	12	14	14	2	11		
EE.103175	10	14	16	16	3	13		15
EE.124175	12	16	18	18	4	15		
EE.168175	16	20	22	22	8	19	1.0	20





CUMSA

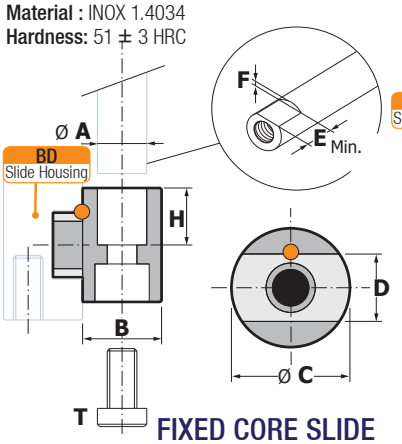
Ejector Plate Angular Pin Systems

FIXED CORE SLIDE DF

It Is Stepped Holder Of Core Pin

Occupies a very small place on ejector plate. **VI** (Core) is used as core pin. It provides angle motion of core pin.

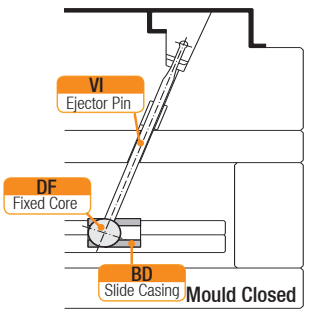
Material : INOX 1.4034
Hardness: 51 ± 3 HRC

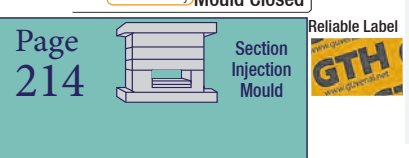


FIXED CORE SLIDE

Order	A	B	C	D
DF. 061220	6	12	20	11.5
DF. 081220	8	12	20	11.5
DF. 101624	10	16	24	13.5
DF. 121624	12	16	24	13.5
DF. 162032	16	20	32	19
DF. 202538	20	25	38	21
DF. 253148	25	31	48	28

E	F	H	T
12	05	10	M4 x 12
12	05	10	M5 x 12
14	05	12	M6 x 16
14	1.0	12	M8 x 16
18	1.5	16	M8 x 22
21	1.5	19	M10 x 25
26	2.0	24	M12 x 35





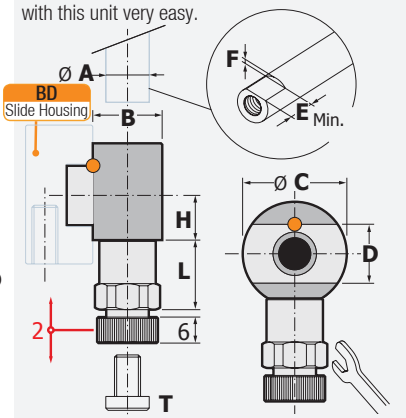
CUMSA

Ejector Plate Angular Pin Systems

ADJUSTABLE CORE SLIDE DA

It Is Wedged Holder Of Core Pin

Occupies a very small place on ejector plate, making height setting of core pin with this unit very easy.

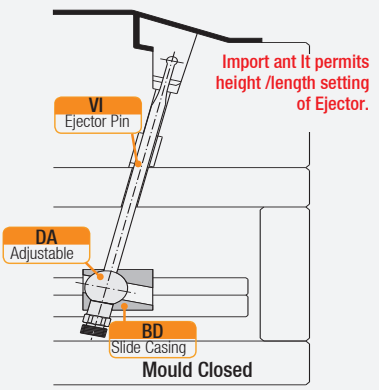


ADJUSTABLE CORE SLIDE

Order	A	B	C	D
DA. 061020	6	10	20	11.5
DA. 081220	8	12	20	11.5
DA. 101624	10	16	24	13.5
DA. 121824	12	18	24	13.5

E	F	H	L	T
15	0.5	9.0	14	M4 x40
15	0.5	8.5	14	M5 x40
17	0.5	10.2	16	M6 x40
17	1.0	9.6	16	M8 x40

Material : INOX 1.4034 **Hardness:** 51 ± 3 HRC



CUMSA

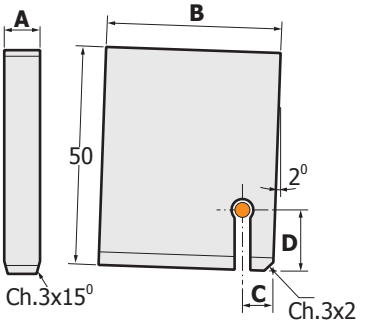
Ejector Plate Angular Pin Systems

MOVABLE CORE HEAD IF

Screw To Fasten Core Cage To Pin

The core head is hardened and grinded.
To fasten ready unit to pin, there is no extra need apparatus such as screw,retainer pin. **VI** Ejector core, acts as accessory to pin. It is presented standard solutions to the moulders.

Patented System

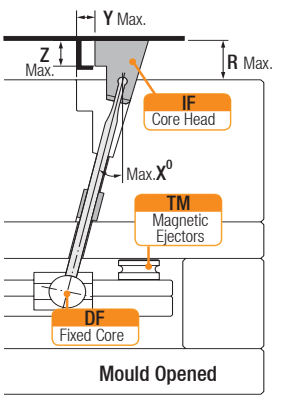


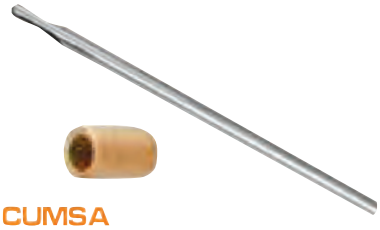
PROCESSABLE FIXED CORE HEAD

Order	A	B	C	D
IF. 064050	6.2	40	6	12
IF. 084050	8.2	40	7	14
IF. 104450	10.2	44	8	16
IF. 124450	12.2	44	9	18

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

Material : 1.2344 **Hardness :** 45 ± 2 HRC

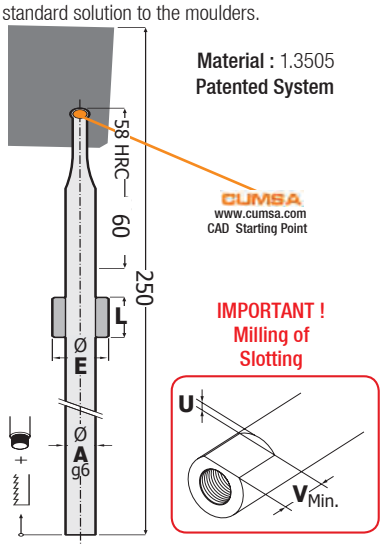




CUMSA

Ejector Plate Angular Pin Systems
EJECTOR PIN, BUSH VI

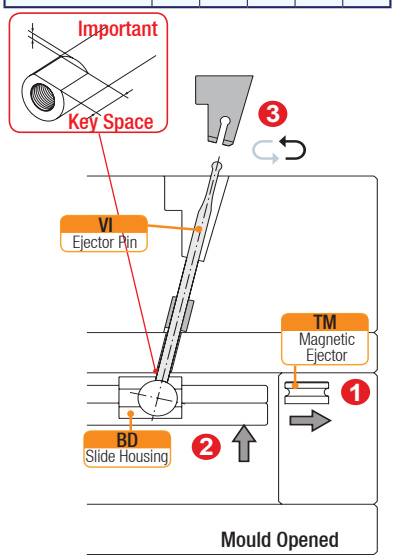
This core pin is along with bronze bush.
For connection to the core head, there is no need for screw cutting or retainer pin. It is presented to standard solution to the moulders.

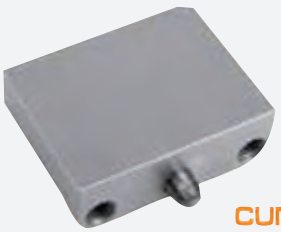


Material : 1.3505
Patented System

CORE PIN, BUSH SET

Order	A	E	L	U	V
VI. 064200	6	10	15	0.5	12
VI. 085200	8	12	20	0.5	12
VI.106200	10	14	20	0.5	14
VI. 127200	12	16	20	1.0	14

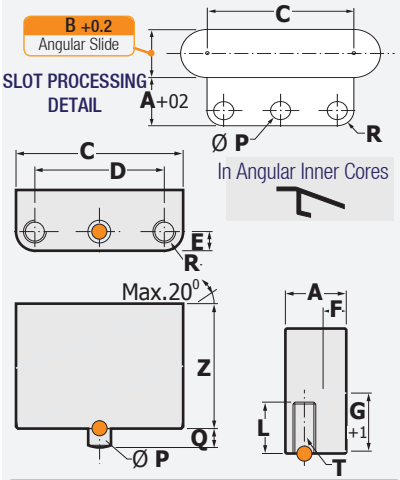




CUMSA

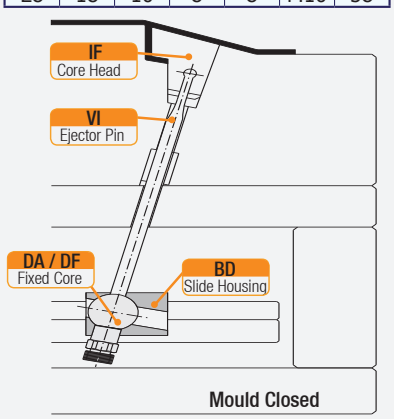
Ejector Plate Angular Pin Systems
ANGLE SLIDE HOUSING BD

It can be worked/processed with horizontal inner cores.
Can be used as angle core slide for inner cores. The casing and slide are from different materials, provides processability with smooth motion. Horizontal and adjustable slide housing.



Order	A	C	D	E	F
BD. 122836	12	36	28	4	4.8
BD. 143866	14	66	42	4	6.3
BD. 163240	16	40	30	5	6.3
BD. 204060	20	60	44	5	8.3
BD. 254672	25	72	56	7	10.3
BD. 315890	31	90	74	8	13.3

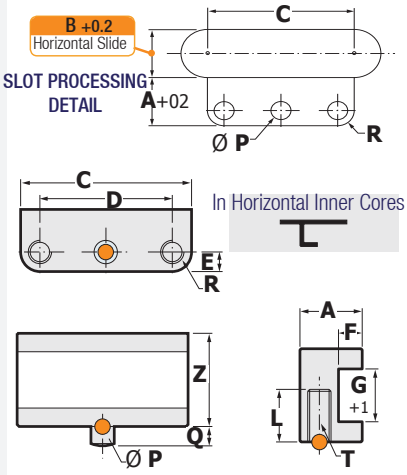
G	L	P	Q	R	T	Z
11.5	10	5	5	4	M5	28
11.5	10	5	5	4	M5	38
13.5	12	6	5	5	M6	32
19	15	6	5	5	M6	40
21	18	8	5	6	M8	46
28	18	10	8	8	M10	58



CUMSA

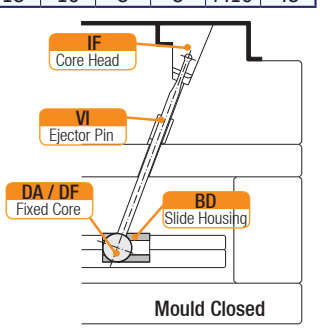
Ejector Plate Angular Pin Systems
HORIZANTAL SLIDE HOUSING BD

It can be worked/processed with horizontal inner cores.
Can be used as horizantal core slide for inner cores. The casing and slide are from different materials, provides processability with smooth motion. Horizontal and adjustable slide housing.



Order	A	C	D	E	F
BD. 122036	12	36	28	4	4.8
BD. 142266	14	66	42	4	6.3
BD. 162440	16	40	30	5	6.3
BD. 203260	20	60	44	5	8.3
BD. 253872	25	72	56	7	10.3
BD. 314890	31	90	74	8	13.3

G	L	P	Q	R	T	Z
11.5	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



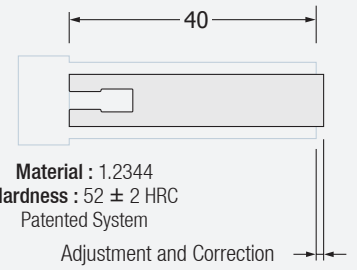
CUMSA

Perpendicular Ejector Core Systems

REPLACEMENT BLOCK RP

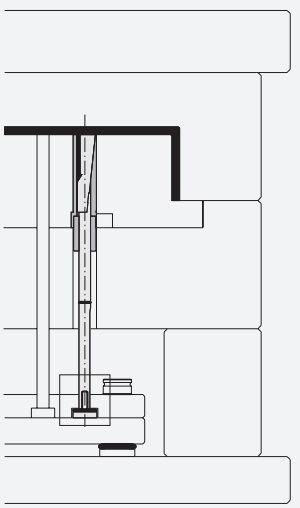
They are used with Mechanical Perpendicular Cores (PS) and they are for adjustments and corrections.

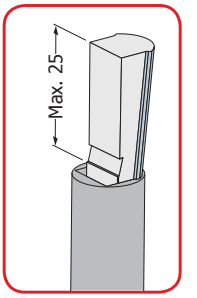
Replacement and Lifting Block is compatible to use with PS (Perpendicular Core) Unit. The length of replacement block is set as per request.



REPLACEMENT BLOCK

Order	For Per. Core PS
RP. 064000	PS. 062250
RP. 084000	PS. 082250
RP. 104000	PS. 102250
RP. 124000	PS. 122250





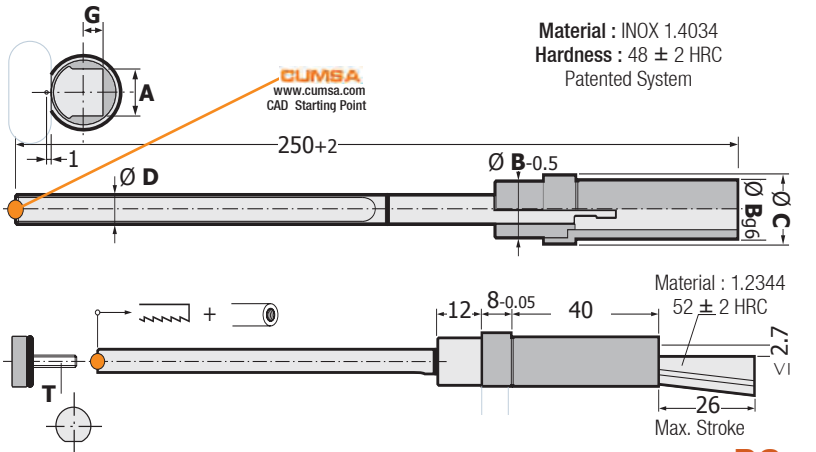
Maximum Operation Length

CUMSA

Perpendicular Ejector Core Systems

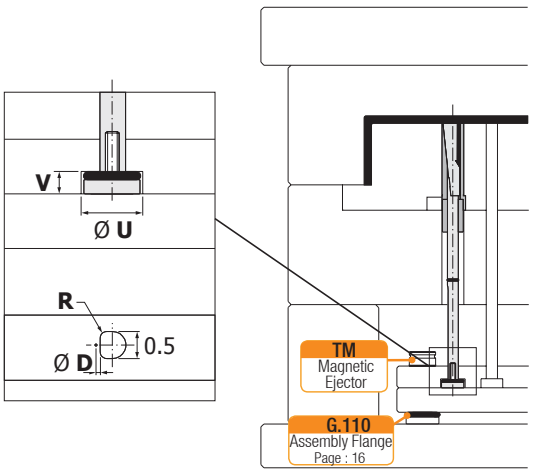
MECHANICAL PERPENDICULAR CORES / STANDARD MECHANICAL CORE PS

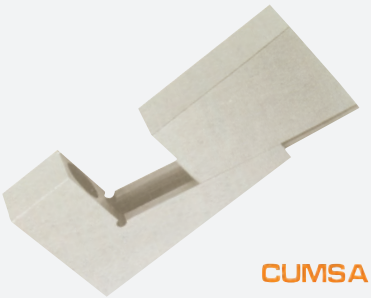
Standard Mechanical Perpendicular Core: This product is more developed in comparison with the other core systems used for small claw parts. The mounting of chuking / bush cores are rapid and easy. They work more rigid. Due to that this product which its running in has been done by moving perpendicularly to ejector plate, required area for mounting on your mould is smaller. The form of claw on the product can be processed on inner core, it makes same function as flexible inner core.



MECHANICAL PERPENDICULAR CORES / STANDARD MECHANICAL CORE PS

Order	A	B	C	D	G	R	T	U	V
PS. 06 22 50	6.2	10	12	6	3.4	1.25	M4x16	12	5
PS. 08 22 50	8.2	12	14	6	4	1.25	M4x16	12	5
PS. 10 22 50	10.2	14	16	8	4.2	2	M5x16	14	6
PS. 12 22 50	12.2	16	18	8	4.2	2	M5x16	14	6





CUMSA

Perpendicular Ejector Type Core Systems

SLIDE PERPENDICULAR CORE END PV

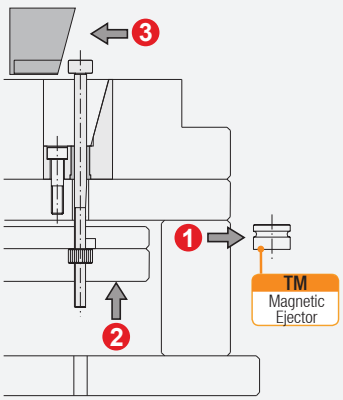
They are used along with Mechanic Perpendicular Cores (PV), in Profile Block Vertical Lifting.

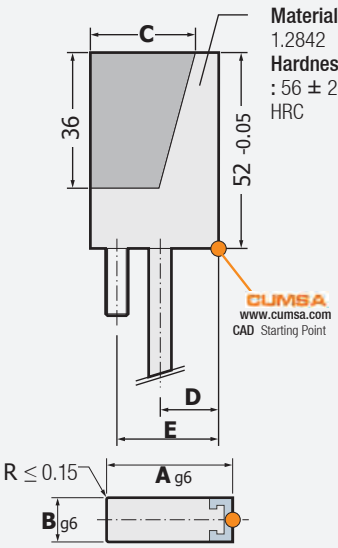
Usage: Removal Process of Profile Block (According to Technical Drawing Detail)

1- Pull TM (Magnetic Stopper) Safety Disc

2- Push Ejector Plate forward.

3- Pls. remove core casing.





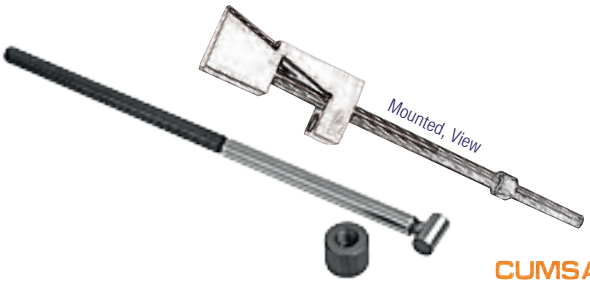
Material: 1.2842
Hardness: : 56 ± 2 HRC

PROFILE LIFTING BLOCK PV

Order	A	B	C	D	E
PV. 34 12 52	34	12	28	15.5	27
PV. 36 16 52	36	16	30	16.5	29
PV. 38 20 52	38	20	32	17.5	31
PV. 40 24 52	40	24	34	18.5	33

" PV " Profile Block should be ordered separately.

During order, pls. determine the desired "L" length...



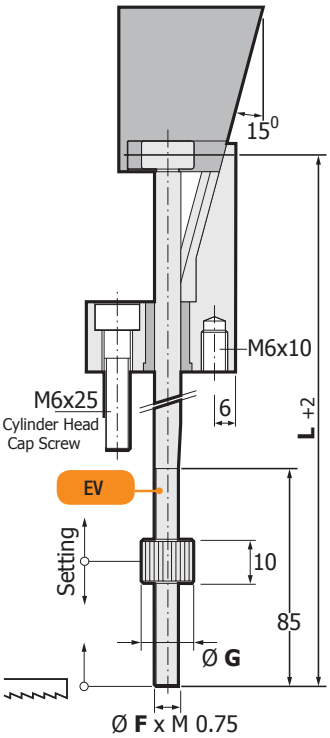
CUMSA

Perpendicular Ejector Type Core Sytems

MECHANIC PERPENDICULAR HOUSING (Core Connection Shaft) EV

Perpendicular Lifting Block: The required area for mounting is small, mounting process is easy, the need for complex mechanic systems is eliminated. This product is ideal for small claw parts.

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



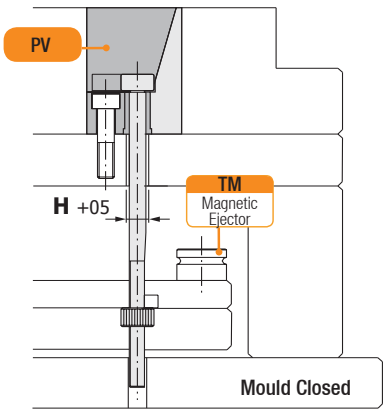
The main feature of this product is to make setting very easily and to work 90º perpendicular to ejector plate.

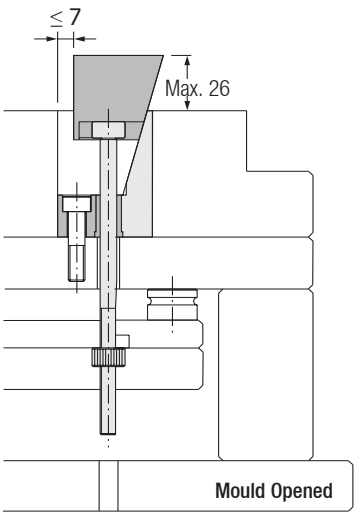
" PV " Profile Block should be ordered separately.

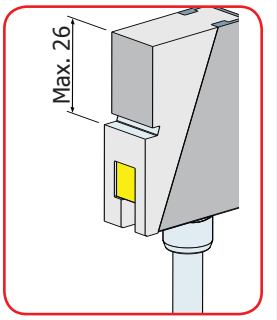
PERPENDICULAR LIFTING SPECIAL CORE EV

Order	F	G	H	L	
EV. 006. (L)	6	12	6.5	150	225
EV. 008. (L)	8	14	8.5	150	225
EV. 010. (L)	10	16	10.5	150	225
EV. 012. (L)	12	18	12.5	150	225

During order, pls. determine the desired "L" length...



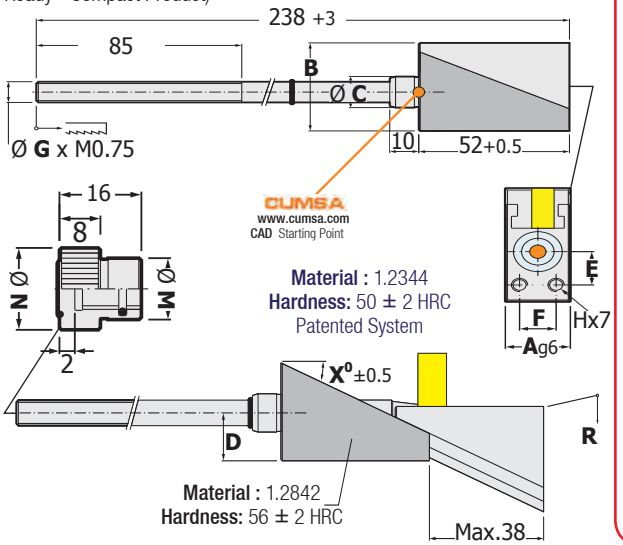




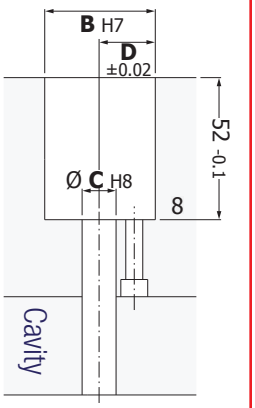
CUMSA

MECHANIC READY PERPENDICULAR CORE UNIT DHI

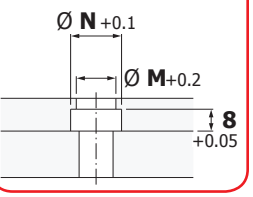
INTERNAL Core Formed Perpendicular Core Unit (Ready Compact Product)
It is a ready mechanical solution for moulders, a small area is sufficient for mounting. 90º Perpendicular slot is opened to mould parting surface, excluding special form workmanship, milling, turning and hardening are not required (Ready - Compact Product)



Pouch / Slot Detail

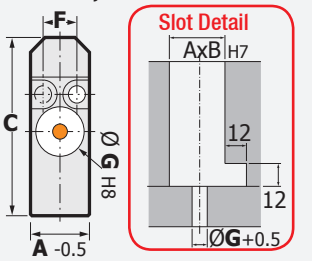


Ejector Plates

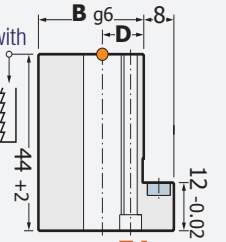


CORE BLOCK EA

Easy Mounted, Optional Core Lifting Block



EA Block: It is used with DHI / DHO Special Core Units



Optional Core Block **EA**

Order	A	B	C
EA.122844	12.2	28	36
EA.123844	12.2	38	46
EA.162844	16.2	28	36
EA.163844	16.2	38	46
EA.202844	20.2	28	36
EA.204444	20.2	44	52
EA.242844	24.2	28	36
EA.244444	24.2	44	52

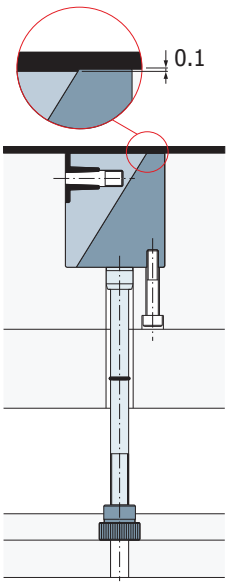
Used Together	D	F	G
DHI/DHO 122852	11	7	10
DHI/DHO 123852	18	-	10
DHI/DHO 162852	11	7	10
DHI/DHO 163852	18	-	12
DHI/DHO 202852	10.5	11	12
DHI/DHO 204452	20	11	14
DHI/DHO 242852	10.5	14	12
DHI/DHO 244452	20	14	14

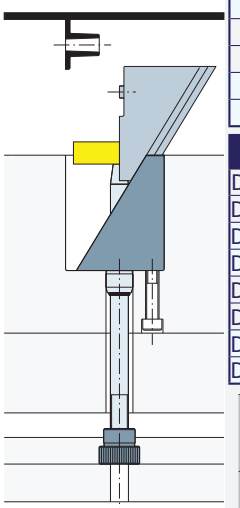
MECHANIC READY PERPENDICULAR CORE

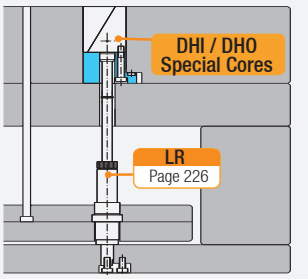
Internal Core Formed **DHI**

Order	A	B	C	D	E
DHI. 12 28 52	12.2	28	10	11	7.5
DHI. 12 38 52		38		18	12
DHI. 16 28 52	16.2	28	10	11	7.5
DHI. 16 38 52		38	12	18	12
DHI. 20 28 52	20.2	28	12	10.5	7
DHI. 20 44 52		44	14	20	14
DHI. 24 28 52	24.2	28	12	10.5	7
DHI. 24 44 52		44	14	20	14

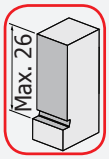
F	G	H	M	N	R	X
7	6	M3	12	16	12	17.5
-		M5			19	27
7	6	M3	12	16	12	17.5
-	8	M5	14	18	19	27
11	8	M4	14	18	12	17.5
	10	M5	16	20	22.5	31
14	8	M4	14	18	12	17.5
	10	M5	16	20	22.5	31







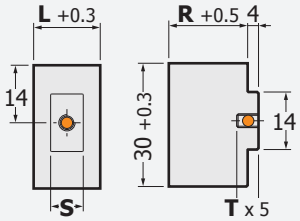
Note: It is used distinctively.
Complete Presentation with Perpendicular Lifting Special Pin Set and Perpendicular Profile Lifting Block



Working Plane

CORE BLOCK ID

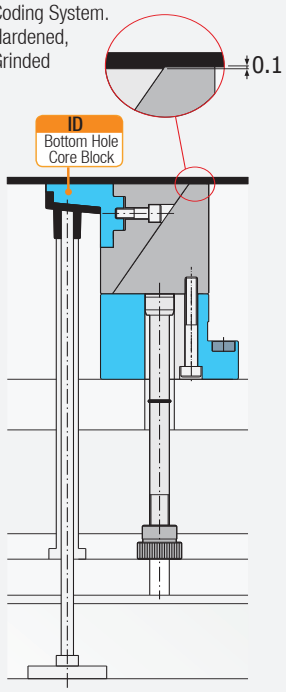
In forming of Inner Core Holes
ID Block : It is used along with "DHO" Perpendicular Core Unit for hidden bottom holes.

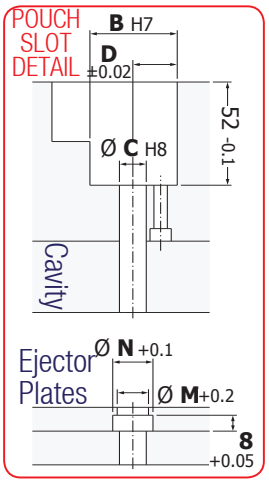


Optional (As per request) Core Block

Order	L	R	S	T
ID.121730	12.2	17	6	M4
ID.122630		26		
ID.161730	16.2	17	8	M5
ID.162630		26		
ID.201730	20.2	17	10	M6
ID.203030		30		
ID.241730	24.2	17	10	M6
ID.243030		30		

It can be ordered along with "DHO" Perpendicular Core Unit and Similar Coding System.
Hardened, Grinded





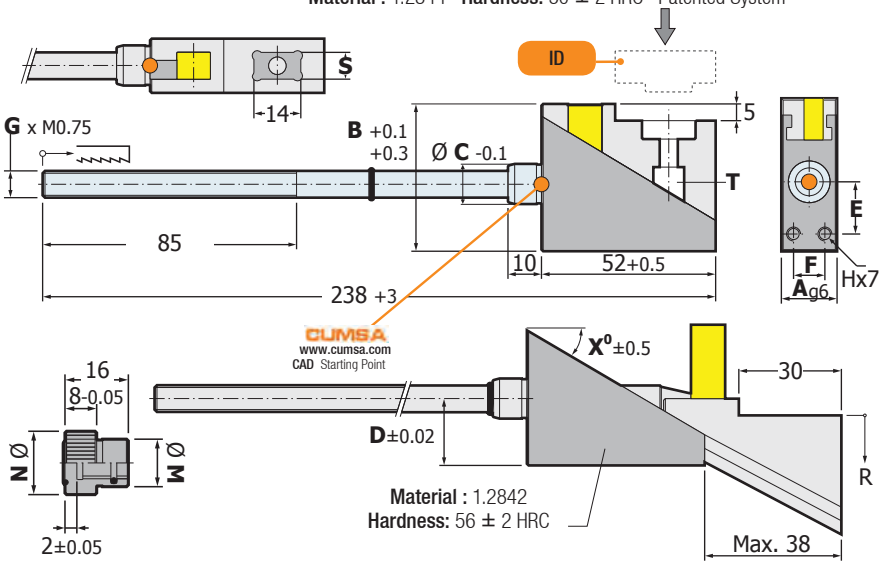
CORE BLOCK EA

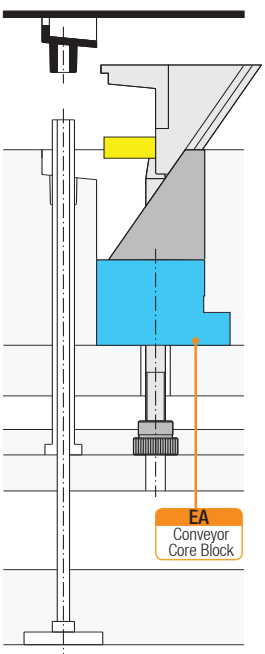
CUMSA

MECHANIC READY EXTERNAL PERPENDICULAR CORE DHO

EXTERNAL Core Formed Perpendicular Core Unit (Ready Compact Unit)
It is ready mechanic solution for moulders, a small area is sufficient for mounting. 90º Perpendicular slot is opened to mould parting surface, excluding special form workmanship, milling, turning and hardening are not required (Ready - Compact Product)

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





MECHANIC READY EXTERNAL PERPENDICULAR CORE UNIT DHO

Order	A	B	C	D	E
DHO. 12 85 52	12.2	28	10	11	7.5
DHO. 12 38 52		38		18	12
DHO. 16 28 52	16.2	28	10	11	7.5
DHO. 16 38 52		38	12	18	12
DHO. 20 28 52	20.2	28	12	10.5	7
DHO. 20 44 52		44	14	20	14
DHO. 24 28 52	24.2	28	12	10.5	7
DHO. 24 44 52		44	14	20	14

F	G	H	M	N	R	X
7	6	M3	12	16	12	17.5
-		M5			19	27
7	6	M3	12	16	12	17.5
-	8	M5	14	18	19	27
11	8	M4	14	18	12	17.5
	10	M5	16	20	22.5	31
14	8	M4	14	18	12	17.5
	10	M5	16	20	22.5	31

Note: It can be worked distinctively. Complete Presentation with Perpendicular Lifting Special Pin Set and Perpendicular Profile Lifting Block

CUMSA

SPECIAL FLEXIBLE INNER COREA (SPECIAL ORDERS)

Flexible inner core can be produced in each desired model and size

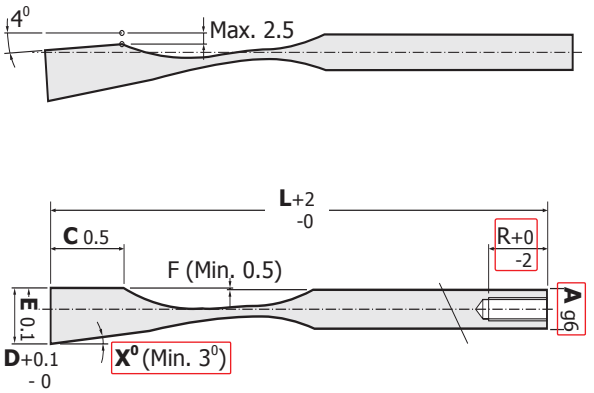
Pls. send us by filling special sizes in technical drawing details.

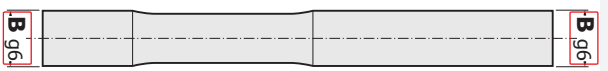
Important : **Material:** 1.8159 **Hardness:** 45 ± 3 HRC

1- The delivery is 6-8 weeks after order date.

2- The shaft of cores are rectangular.

3- After your inquiry, CUMSA will be sent an proposal including Design, Unit and Delivery Information.





A , R and **X⁰** Sizes will be determined by CUMSA depending on dimensions given by customers.

SPECIAL FLEXIBLE INNER COREA (SPECIAL ORDERS)

Order	B	C	D	E	F	L	Piece

Note: In special orders, pls. inform sizes in table by writing.

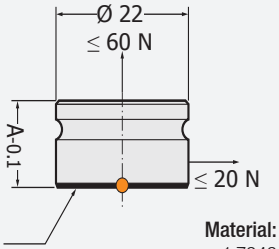
CUMSA

In-Mould Mounting Elements

SAFETY DISC TM

Magnetic Ejector

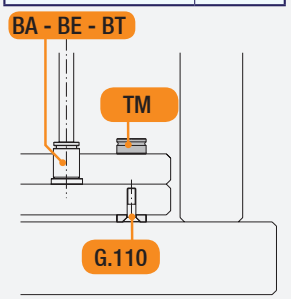
Its Ejector Plate is prevented to apply pressure to upper part of holder , when necessary to change ejector plate, it can be removed easily. The magnet is in NeFeBo power.



Material: 1.7242
Hardness: 58 ± 3 HRC

SAFETY DISC TM

Order	A
TM. 10 22 14	10
TM. 12 22 14	12.5
TM. 15 22 14	15
TM. 20 22 14	20



G.120

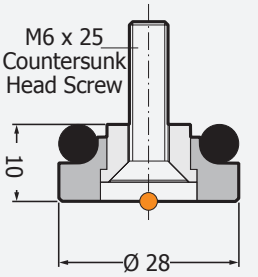
THRUST TABLET

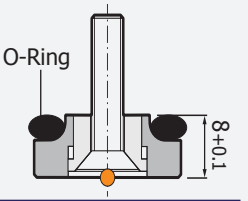
Pls. refer to page 30 for detailed information / technical drawing.

EJECTOR PLATE TA

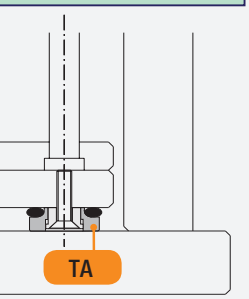
Shock Absorber (With O-Ring)

It prevents vibrations and impacts during return of ejector plates, the most important advantage is to prolong bench life of all parts.



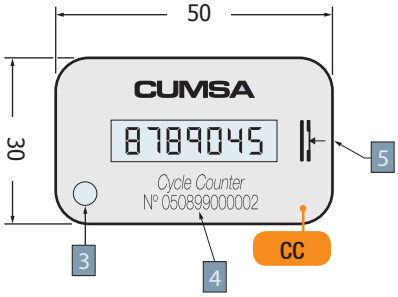


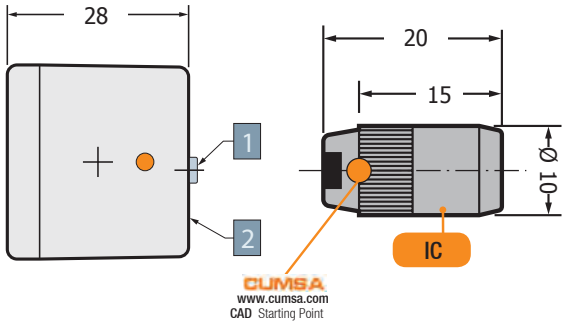
Order: **TA. 28 08 06**



G.110 ASSEMBLY FLANGE

Pls. refer to page 16 for detailed information / technical drawing.





INJECTION MOULD COUNTER CC

1 Safety Button
Security Switch

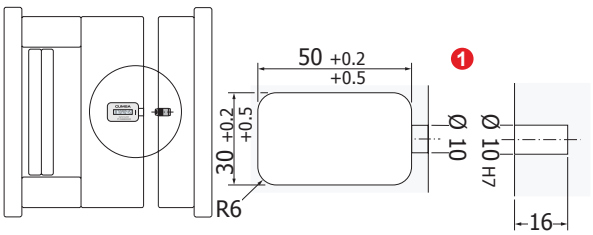
2 Magnetic Assembly
Magnetic Fixing

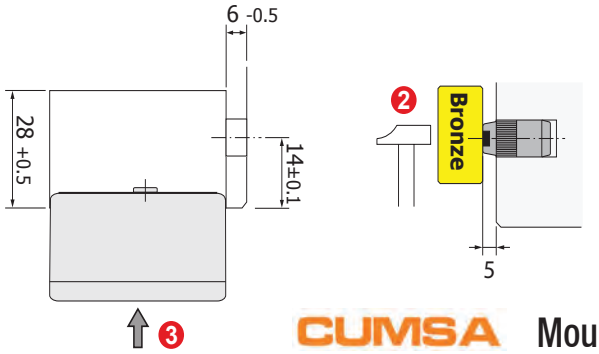
3 Resetting (Deleting / Setting up)
Reset

4 Product Number
Unique Part Number

5 IC Side - Position Indicator
IC Position Indicator

Order Reference	Deleting Setting Up	Cycle / Min. Up to
CC. 50 30 28 Orange Colour	Non	100
CC. RE 53 28 Bulue Colour	Available	100
CC. HS 53 28 Yellow Colour	Available	500





INJECTION MOULD, MOULD COUNTER CC

Production Counter, under maximum working temperature 60ºC

Production counter has 7/ 24 hours and 3 year life time (battery life), it starts to work when battery is installed. When the counter is removed from its mould, " E " (Error) Letter is appeared and cannot be deleted, this security mechanism is stepped in after sequence 25 counting, If you want to count parts printed in Mould Test / Trial, pls. remove back before 25 counting with band by inserting counter, if you remove counter from mould after 25 counting, " E " (Error) Letter appears on unit screen and this cannot be deleted. After this step, the counter is counted, however the sign showing that is falsified stays on the screen constantly. Maximum 9.999.999 counting can be made with counter. There is a 7 digit Digital screen.

The Product is presented in three different types;

1- Product No: CC 503028 (Orange Colour) : It has two versions, it counts opening of mould electronically, beside total counting, Model CC. RE 5328 also makes another counting. This counter, gives exact and constant numbers to the moulder and by looking at the number in maintenance operations, it enables to make maintenance plan, in case the device is removed from its slot, is reflected as warning to the screen.

2- Product No: CC HS5328 (Blue Colour): It has two versions, it counts opening of mould electronically, beside total counting, Model CC. RE 5328 also makes another counting. This counter, gives exact and constant numbers to the moulder and by looking at the number in maintenance operations, it enables to make maintenance plan, in case the device is removed from its slot, is reflected as warning to the screen.

3- Product No: CC RE5328 (Yellow Colour) It has two versions, it counts opening of mould electronically, beside total counting, Model CC. RE 5328 also makes another counting. This counter, gives exact and constant numbers to the moulder and by looking at the number in maintenance operations, it enables to make maintenance plan, in case the device is removed from its slot, is reflected as warning to the screen.

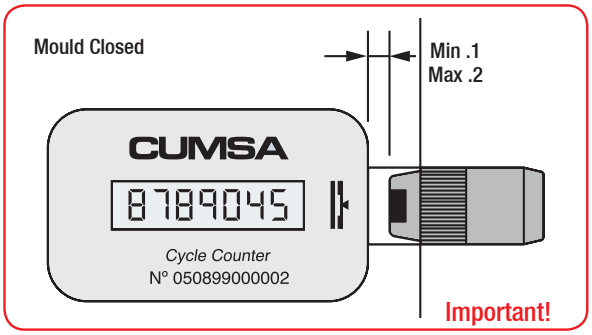
This unit is included an electronic circuit counting prints.

Assembly Procedure:

1- Process slot in a way that as determined in technical drawing.

2- Hammer counter pin **(IC)** of counter to slot with bronze hammer.

3- Insert counter/ Numerator unit **(CC)** its slot.

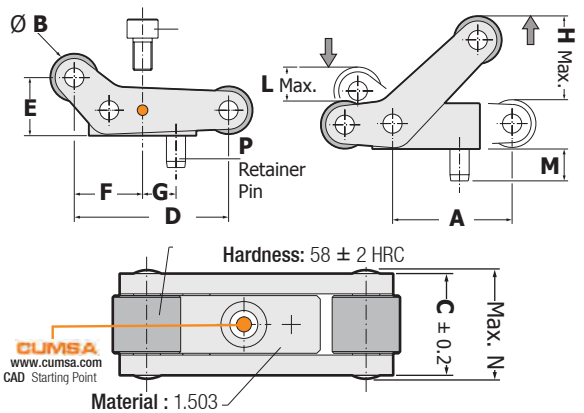


CUMSA

EJECTOR PLATE ACCERELATOR EP

In addition to ejector stroke, it gives an extra movement to the 2. Plate

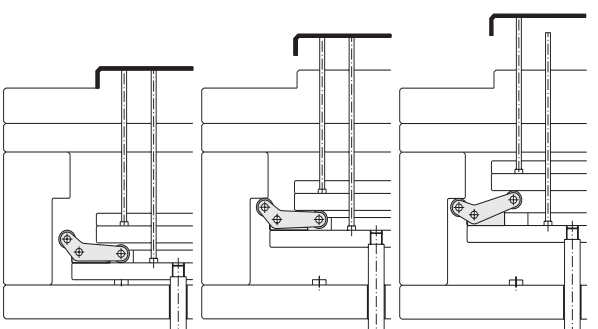
It can be used in injection moulds and moulds that are dual ejector plate group by easily mounting. This mechanical system that is simple and precise puts the dual ejector system into use. In addition to normal ejector stroke, this product, saves an extra motion to second ejector plate. In small and medium moulds with ejector, 1 piece is sufficient and in more dimensional moulds and systematic moulds according to their configurations, dual plate accelerator can be used. In terms of symmetry, generally it is consisted from 4 pieces.



EJECTOR PLATE ACCERELATOR UNIT EP

Order	A	B	C	D	E	F	G
EP.200813	20	8	13.2	25.8	9.4	11.4	6
EP.251016	25	10	16	32.3	11.8	14.3	7
EP.371522	37.5	15	22	48.5	17.7	21.5	10.5
EP.502030	50	20	30	64.6	23.6	28.6	14

H Max.	L Max.	M	N	Ø P	T	Max. Power
13.6	5.5	5	15	2.5 x10	M3 x12	125 Kg.
17	6.8	6	18.5	3 x12	M4 x16	250 Kg.
25.5	10.2	8	25	4 x16	M6 x25	350 Kg.
34	13.6	10	34	5 x20	M8 x30	800 Kg.



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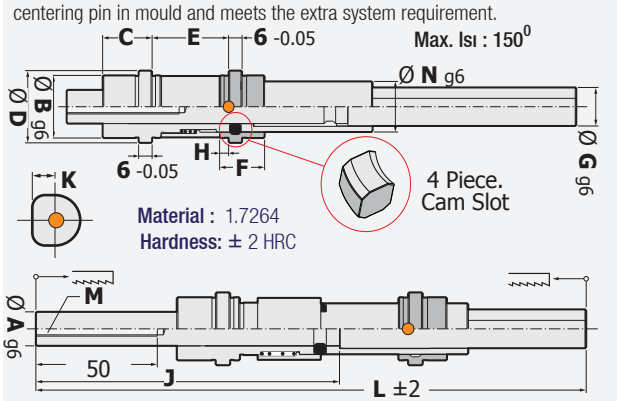
DUAL EJECTOR PLATE OPENING SYSTEM DX

It is also operated as ejector plate centering pin.

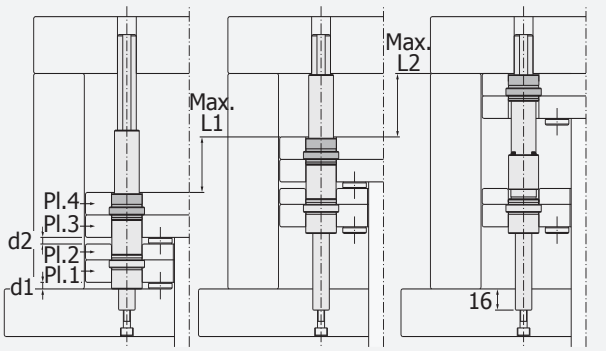
In dual ejector plate (2 + 2) mould system, rear plate group stops and the front group continues its motion to complete its full stroke. Thanks to this system, assembly area is too reduced, this system also works as ejector centering pin in mould and meets the extra system requirement.



DUAL PLATE EJECTOR SYSTEM DX

Order	A	B	C	D	E	F	G	H
DX. 142622	14	26	22	30	34	20	16	4
DX. 163027	16	30	27	34	44	23	18	6

J	K	L	M	N	L1	L2
125	7.2	243	M6	21	6 - 42	48
152	8	314	M8	24	6 - 54	80



Standard Ejector Plate Combination

Size mm	DX . 142622			
	1	2	3	4
d1	5	5	5	5
Pl.1	17	17	17	17
Pl.2	9	12	12	12
d2	13	10	5	5
Pl.3	12	12	17	17
Pl.4	9	9	19	12

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

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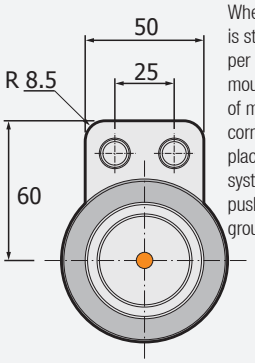
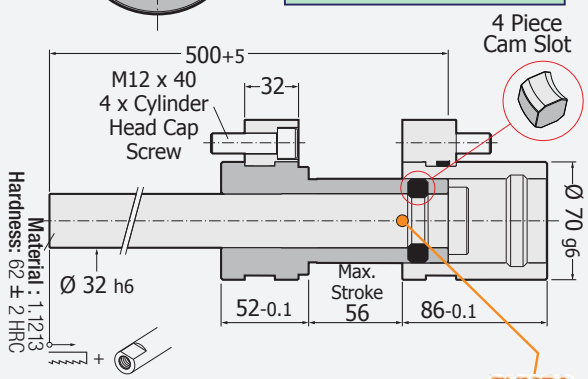
COMPACT DUAL EJECTOR PLATE TENSILE SY

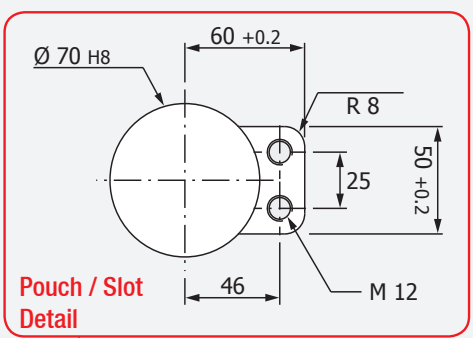
It is designed for Mould with Compact System Larger Ejector.

Stepped Ejector Plate Tensile System: When bearing is reached to plate, Ultimate Tensile is stopped 1. Group step and until reached to upper plate, rear ejector plate group continues. The mounting of compact unit is not put in the middle of mould position, in a way that is formed at the corner edge of ejector plate group, substantially place is reserved to other ejector elements. The system developed for medium size moulds, is for pushing - pulling distance of dual plate ejector group 56 mm. All units are included.

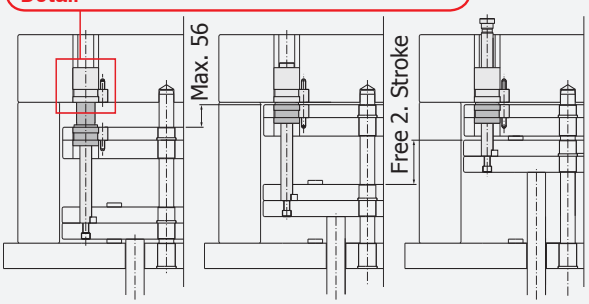


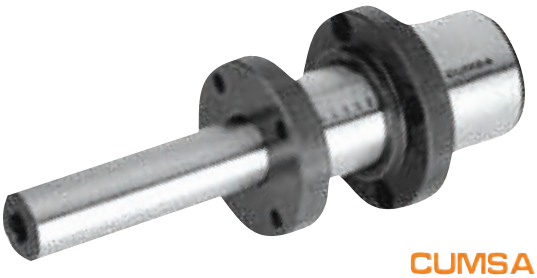
Order:
SY. 327054





Material: 1.7242
Hardness: 56 ± 2 HRC
Patented System





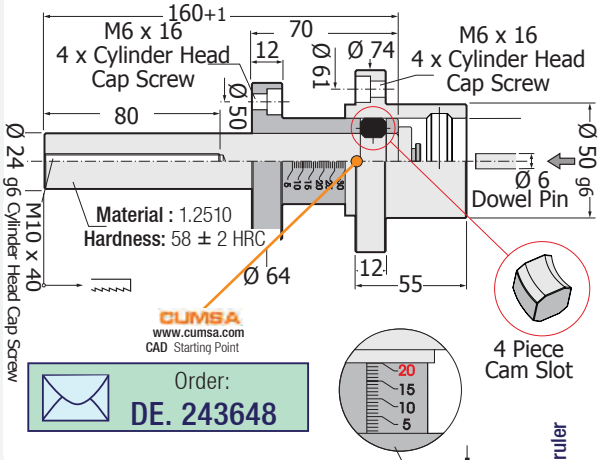
CUMSA

DUAL EJECTOR PLATE PUSH SYSTEM DE

It provides a stepped push in flexible inner core system.

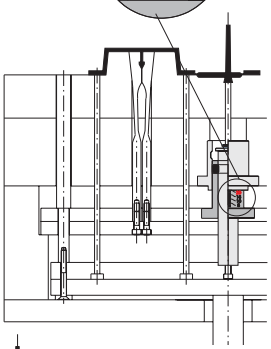
Dual Plate Ejector System: This unit is performed predetermined two stepped motion. It is very useful to obtain stepped pushing in flexible inner core moulds, **Max .dual ejector stroke is 30 mm.**

IMPORTANT!: To determine ,mounting dimensions, in selecting the first stroke, pls. use the ruler on 0-30 mm unit.



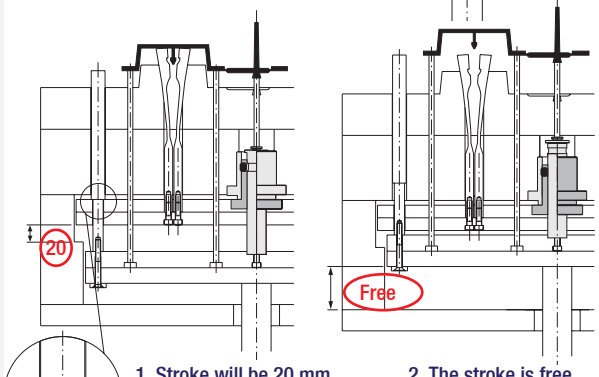
Order:
DE. 243648

Material: 1.7243
Hardness: 58 ± 2 HRC



IMPORTANT!: To determine, mounting dimensions, in selecting the first stroke, pls. use the ruler on 0-30 mm unit.

If 20 mm stroke is selected on the ruler



1. Stroke will be 20 mm

2. The stroke is free

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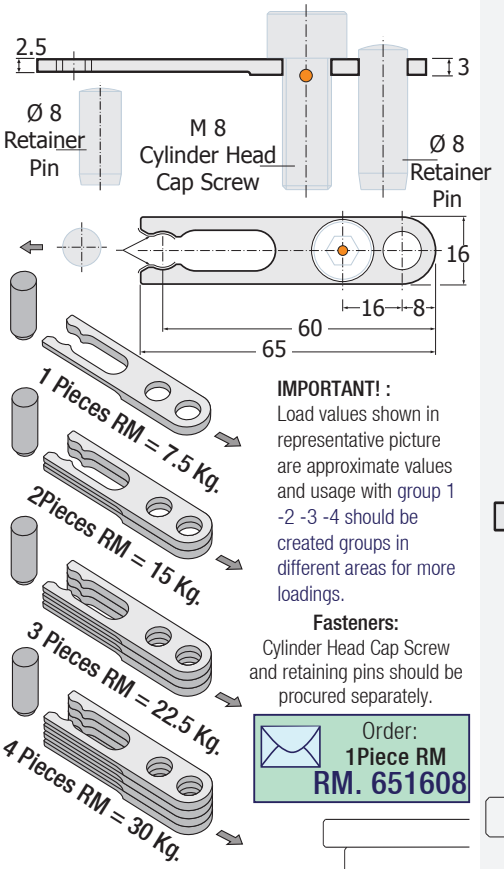
MODULAR RETAINER RM

It provides the gradual opening of the mould.

By propagating the number of Modular Retainer Unit providing gradual opening of mould, loading capacity is increased. Max. 4 pieces can be used on same surface. If the more use is needed, the system should be distributed to different areas. **Max Temperature:** Should not be exceed 150^{0}C

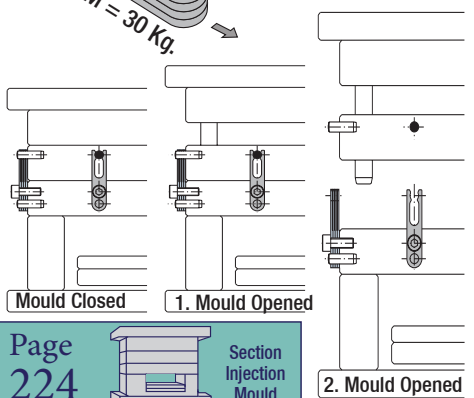
Material : 1.8159 **Hardness:** 45±3 HRC



IMPORTANT! :
Load values shown in representative picture are approximate values and usage with group 1 -2 -3 -4 should be created groups in different areas for more loadings.

Fasteners:
Cylinder Head Cap Screw and retaining pins should be procured separately.

Order:
1Piece RM
RM. 651608

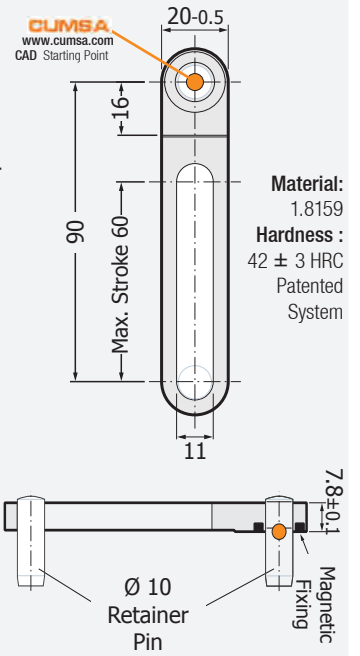


CUMSA

STROKE STOPS SL

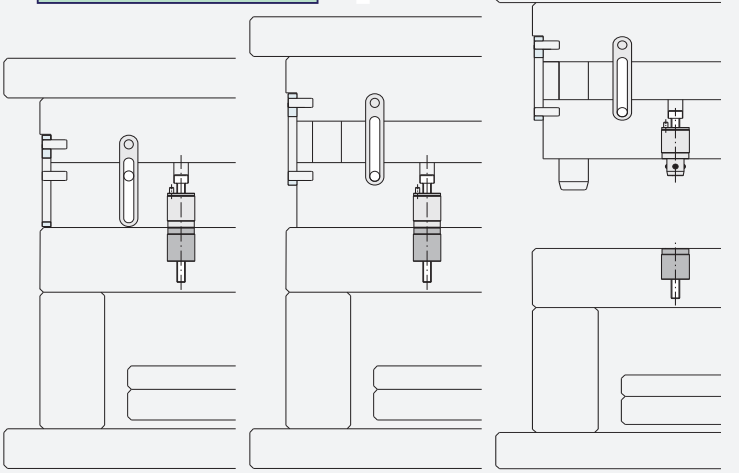
Mould Plate Opening, Stroke Stops

In moulds that PR. Coded Product is used, Dual Opening Systems with Scraper, is limited stroke of bearing plate which is opened first in 1. Group. It provides max. 60 mm opening, then 2. group's opening is engaged.



Material: 1.8159
Hardness : 42 ± 3 HRC
Patented System

Order:
SL. 602008

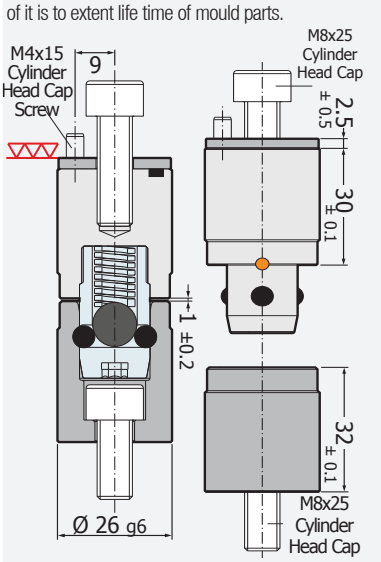


CUMSA

PLATE RETAINER PR

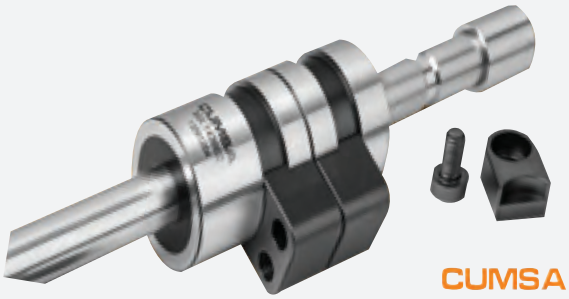
Stepped Mould Plate Retainer with Stripper

In Spring and O Ring loaded Compact System and Dual Opening Moulds with Stripper, it holds 2. Group closed until 1. Group opening is completed (Max. 50 Kg), also protects mould affecting from vibrations and impacts by reducing speed tension and absorbing pinking during opening. The most important advantage of it is to extent life time of mould parts.



Order:
PR. 263230

Material : 1.1203 **Hardness :** 58 ± 2 HRC

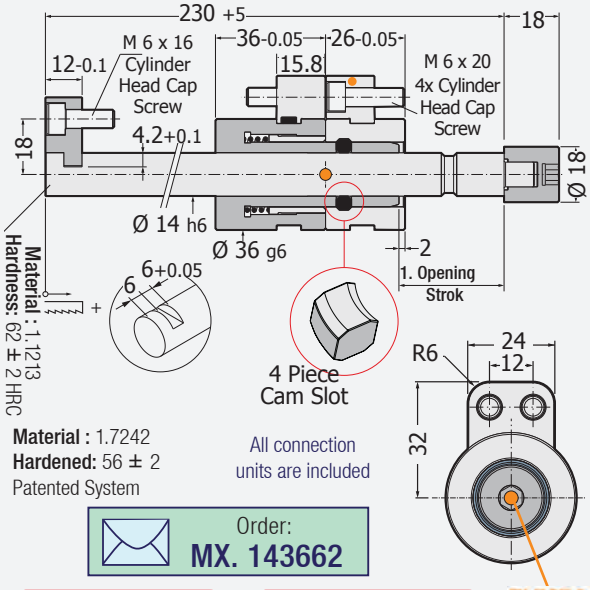


CUMSA

STEPPED / LOCKED PLATE OPENING MX

It is designed for two stepped moulds, safe and locked unit

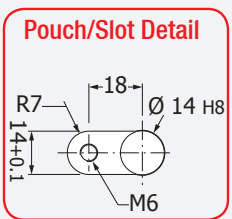
stepped opening unit: It is controlled to open safe/ accurate first plate for two stepped moulds (in moulds in stripper), the unit is required less space on the mould and is designed for small/ medium sized moulds. It is an internal latch lock plate opening unit controlling safety of opening system for 2 stepped opening.

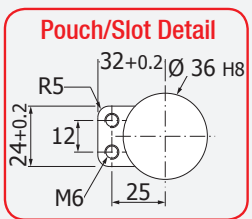


Material : 1.7242
Hardened: 56 ± 2
Patented System

All connection units are included

Order:
MX. 143662





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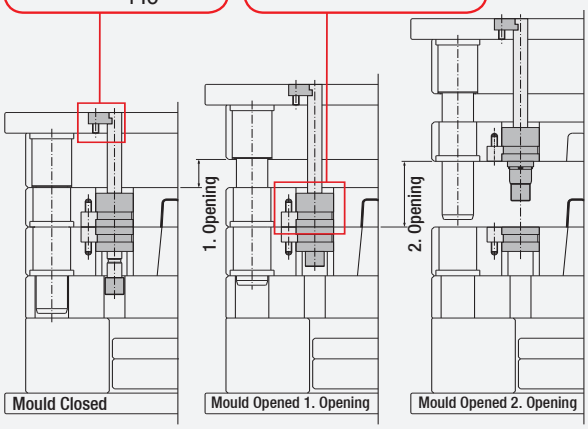
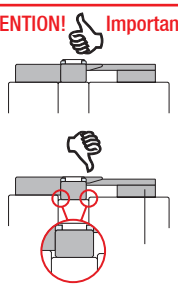
www.cumsa.com
CAD Starting Point



ATTENTION! Important



After selected desired stroke, fix the rules from unscaled part.

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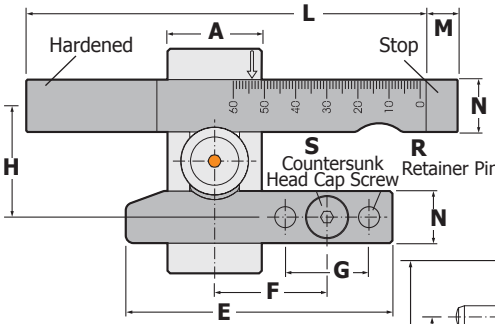
STEPPED OPENING GS

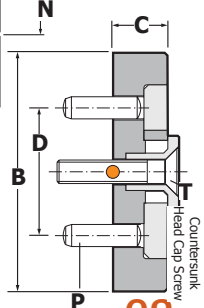
It is designed for two stepped moulds

Stepped Opening Unit: The desired measurement values on the ruler in unit are determined for two stepped moulds (In moulds with stripper) .
Opening Priority of Plates is depended the mounting direction of unit.
Stepped Opening Unit **GS. 226616** can be used in three stepped moulds up to (500 x 500mm) and **GS 368619** can be used up to (800 x 800 mm). According to mould size, it is recommended to use 4 units for balanced use.

Patented System

Material : 1.0503 **Hardened:** 55 ± 3 (Friction Area)



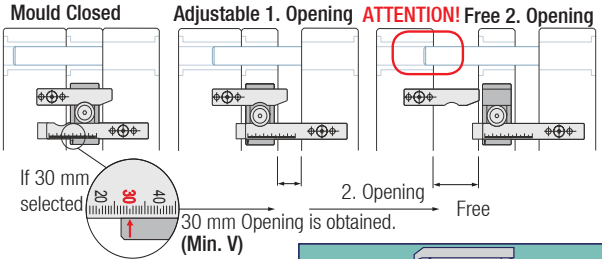


Bearing Capacity of Stepped Opening Unit:
Max. Pressure Recommended Per Part
GS.226616 : 200 Kg. / Mould Plate
GS.368619 : 400 Kg. / Mould Plate
GS.421024 : 800 Kg. / Mould Plate

STEPPED OPENING UNIT GS

Order	A	B	C	D	E	F	G	H	L
GS.226616	22	66	16	38	75	30	25	32	105
GS.368619	36	86	19	46	102	43	32	42.7	153
GS.421024	42	106	24	56	124	51	40	50.2	190

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



CUMSA
Dual Opening Systems

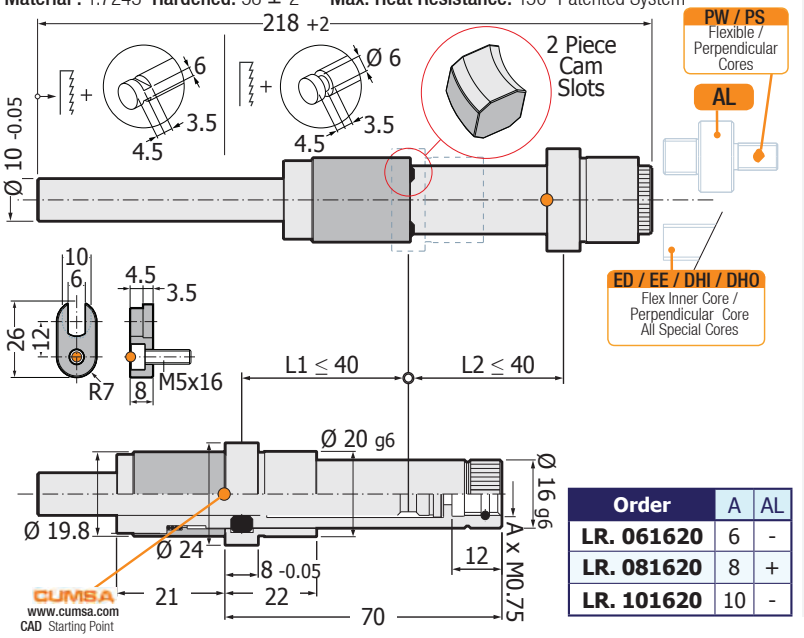
CUMSA

LIMITER UNIT FOR FLEXIBLE AND PER. CORE SYSTEMS LR

Stroke Distance Limiter Unit (For Flex / Per. and All Special Core Connections)

It is mounted and fixed to injection mould rear connection plate (H5 A). Movable bush part of the unit is embedded into the ejector plates. By limiting motion stroke in full stroke of ejector plates, it ends the motion of inner core stroke without affecting stroke motion of injection machine.

Material : 1.7243 **Hardened:** 58 ± 2 **Max. Heat Resistance:** 150^{0} Patented System



Order	A	AL
LR. 061620	6	-
LR. 081620	8	+
LR. 101620	10	-

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INTERCONNECT REDUCER AL

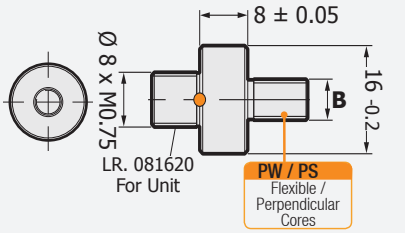
Threaded Unit, Flexible Inner Core and Perpendicular Core Limiter Unit

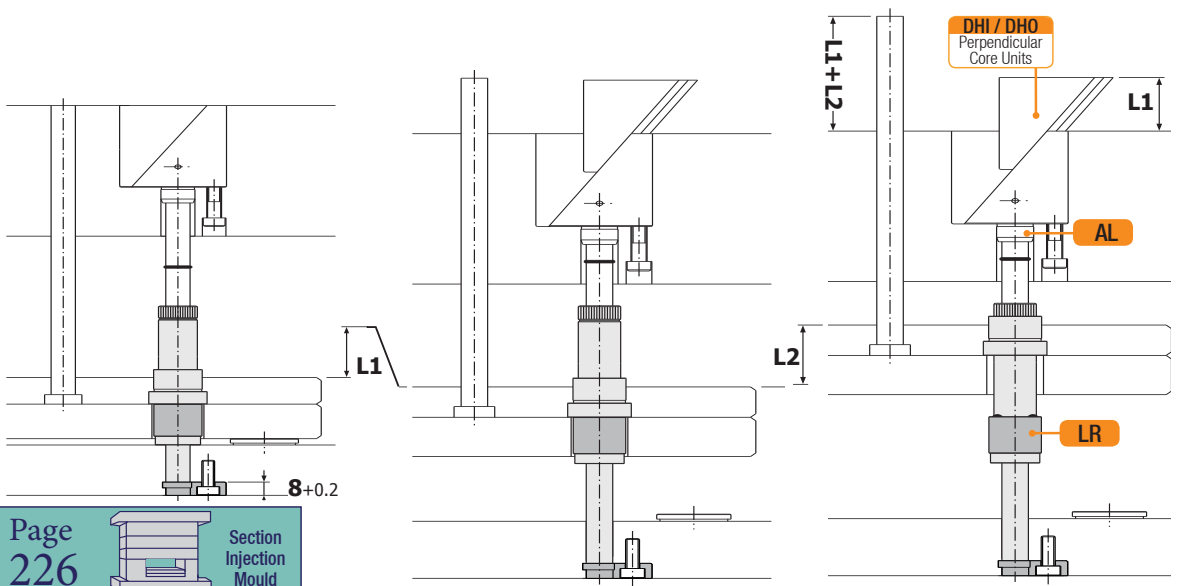
Material : 1.5060

It is a dual different threaded link adapter providing positioning of **LR.** Limiter Unit by making connection to its upper surface for other core connections. **In addition:** Fine Toothed Part **PW** also can be used as link adapter for flexible inner core and PS mechanical perpendicular cores.

INTERCONNECT REDUCER AL

Order	B
AL.0800M4	M4
AL.0800M5	M5
AL.0800M6	M6
AL.0800M8	M8





CUMSA

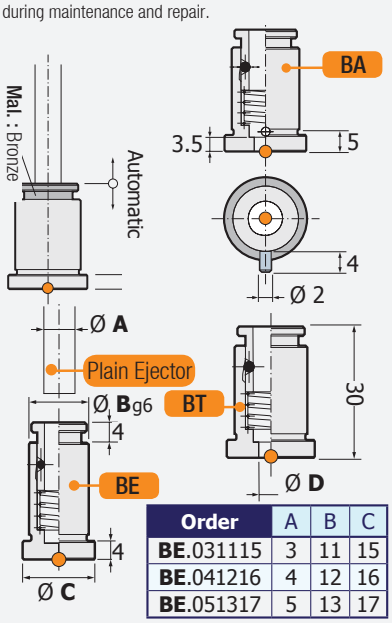
BE BT BA

BE /BT /BA

EJECTOR RETAINER

Automatic System Holding Headless Ejector Pins

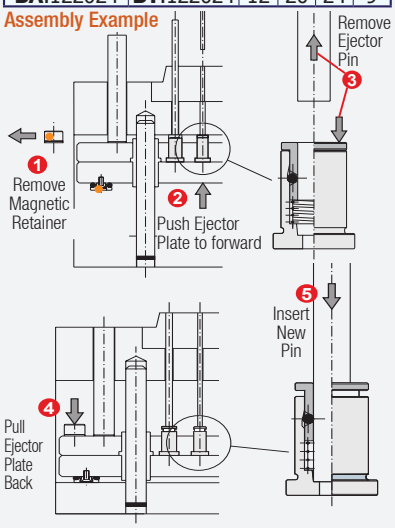
Plain pins can be removed automatically by pressing on the upper part of holder from the front of the mould. There is no need to open mould and to stop production during maintenance and repair.



Order	A	B	C
BE.031115	3	11	15
BE.041216	4	12	16
BE.051317	5	13	17

Order		A	B	C	D
BA.061418	**BT.**061418	6	14	18	3.5
BA.081620	**BT.**081620	8	16	20	5.5
BA.101822	**BT.**101822	10	18	22	7
BA.122024	**BT.**122024	12	20	24	9

Assembly Example



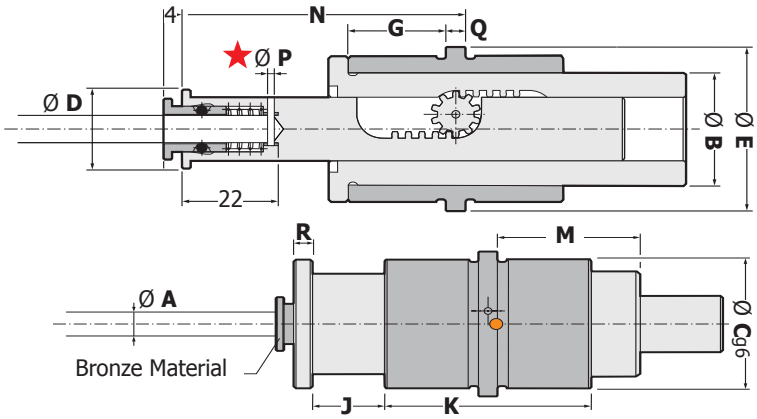
EJECTOR ACCELERATOR AE
CYLINDRICAL / THREADED UNIT

It provides the increase of motion stroke of the selected ejectors.

Ejector Accelerator: Its mounting can be made easily to injection mould ejector plates and middle of bottom support place, it is applicable on all moulds. (With Dimensional Options) It creates a second motion on standard moulds that are single ejector plate group.
Maximum Stroke 15mm x 2 = 30 mm.

Material : 1.7225 **Hardened :** 54 ± 2
Max Heat Resistance : 150^0 **Patented System**

CUMSA

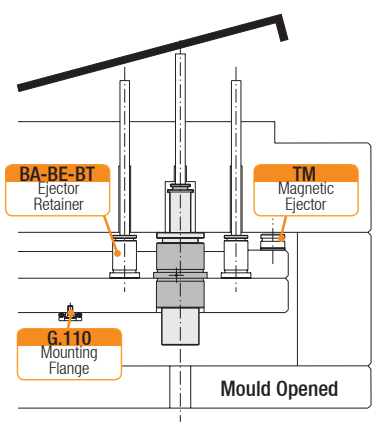


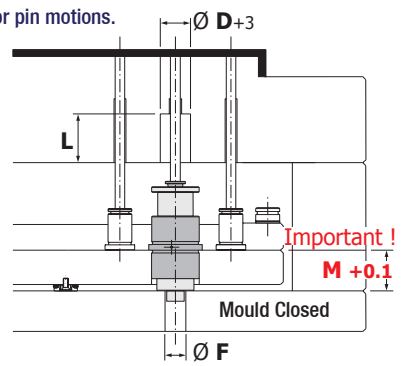
Order	A	B	C	D	E	F	G
AE. 031620	3	16	20	12.5	22	13	14
AE. 041620	4	16	20	12.5	22	13	14
AE. 052430	5	24	30	16	34	16	20
AE. 062430	6	24	30	16	34	16	20
AE. 082430	8	24	30	17	34	17	20
AE. 103036	10	30	36	21.5	40	21	28
AE. 123036	12	30	36	21.5	40	21	28

J	K	L	M	N	P	Q	R
8	32	22	17	37	-	4	3
8	32	22	17	37	-	4	3
15	44	36	27	57	2	4	3
15	44	36	27	57	2	4	3
15	44	36	27	57	2	4	3
20	62	46	34	78	2	6	4
20	62	46	34	78	2	6	4

★ On ejector accelerator unit, pliers systems providing plain ejector pin connection are available on other units except (AE.031620 / AE.041620) products.

It is enabled to 8 mm / 15 mm / 20 mm to ejector pin motions.





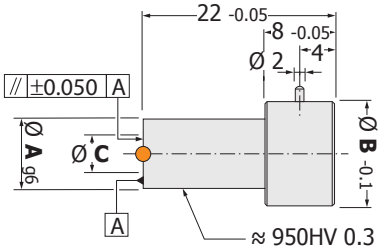
Section Injection Mould
Page 227

CUMSA

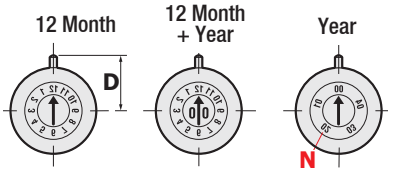
HIGH TEMPERATURE DATE STAMP FT

In Heat Resistance Moulds Containing High Tem.

It is used in injection moulds in high temperature such as Zamak, Zinc, Polyester, Bakelite and Rubber. Special Processes can be applied on unit. Due to replacing and settings can be done on front part of mould, there is no need to remove and dismantle mould from machine.



Material : 1.2344 Nitrite + INCONEL : 2.4669
Max. Heat Resistance: 450^0
Date stamp, can be changed unit hub.



H. TEMPERATURE DATE STAMP FT

Order **12 Month**	A	B	C	D	N
FT. 0847SF	8	12	4.7	11	5
FT. 1267SF	12	16	6.7	12	8

Order 12 M + YEAR	A	B	C	D	N
FT. 084712	8	12	4.7	11	5
FT. 126712	12	16	6.7	12	8

* Pls. inform year as per request in order.

Order **YEAR**	A	B	C	D	N
FT. 084705	8	12	4.7	11	5
FT. 126708	12	16	6.7	12	8

Inside of Date Stamp, M. Processing Depth Moulding

FT 08 (YEAR) : 0.15 - 0.25 mm
FT 08 (OK) : 0.40 - 0.50 mm
FT 12 (YEAR) : 0.15 - 0.25 mm
FT 12 (OK) : 0.50 - 0.60 mm

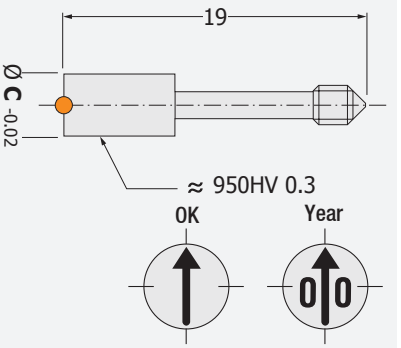
CUMSA

DATE STAMP INNER (Hub) IT

Replacement from Front of Mould and Adjustable

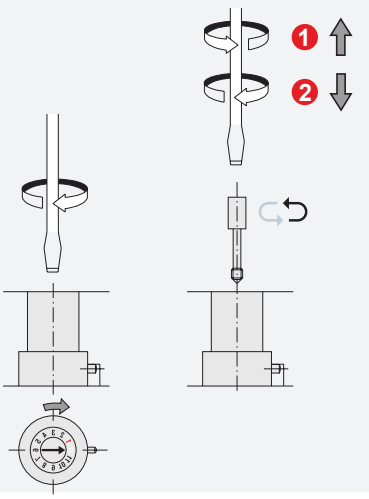
Inner Date Stamp : Due to replacing and settings can be done on front part of mould, there is no need to remove and dismantle mould from machine.

Material : 1.2344 Nitrite
Max. Heat Resistance: 450^0
Date stamp unit hub can be changed.



Order **OK**	Order **YEAR**	C
IT. 4719SF	**IT. 4719 ..**	4.7
IT. 6719SF	**IT. 6719 ..**	6.7

***Important:** To remove year, turn left, to insert new one, turn clockwise until you hear a "click" sound.



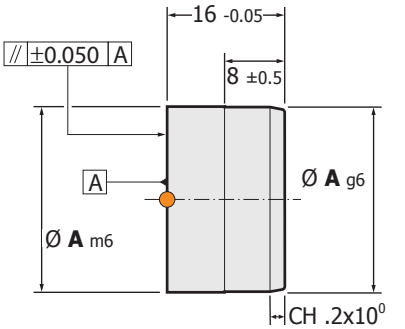
CUMSA

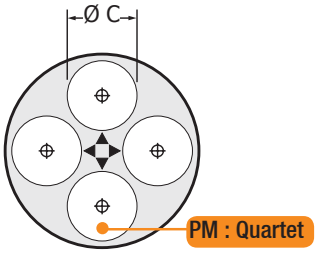
MULTIPLE STAMPING BLOCK BM

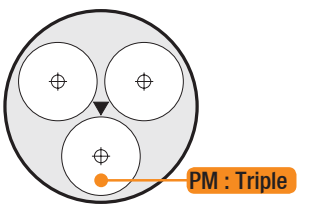
Stamping Unit, Date/ Stamping

Multiple Stamping: It is a triple or quartet stamping unit. Standard Date Stamps, Recycling or Logos can be aligned on unit.

Material : INOX. 1.4034 Hardened
Hardness : 48±2 HRC







MULTIPLE STAMPING BLOCK BM

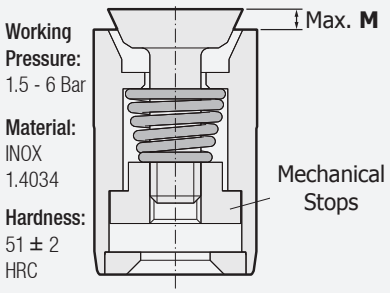
Order	A	C	E	#PM
BM. 160603	16	6.5	8	3
BM. 180604	18	6.5	8	4
BM. 220903	22	8.7	10	3
BM. 250904	25	8.7	10	4
BM. 281103	28	11.5	12	3
BM. 321104	32	11.5	12	4

CUMSA

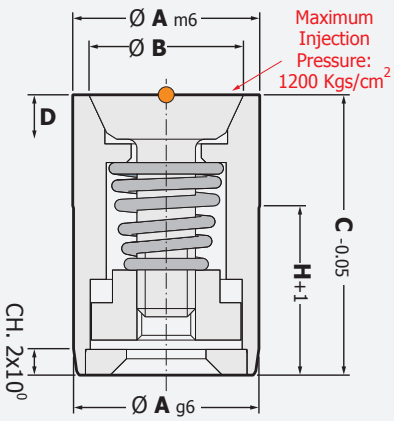
AIR VALVE / EJECTOR PLATE VA

It is an effective method in air ejecting

Air Ejector Valve: It is produced from stainless steel and provides air discharge in high range. Also, the conical ejector rises and helps the product exit from mould . The working temperature under 150ºC is recommended. In higher temperature, steel starts to expand and melt plastic raw white slips into valve and prevents operation.



1 BAR ≈ 1 Kg. / cm²

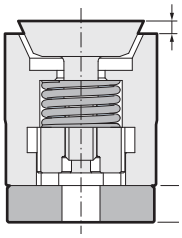


AIR VALVE / EJECTOR VA

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

* The mechanical stop is not available on product VA 040512

Max. Conical Ejector Motion



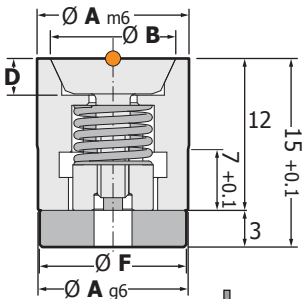
CUMSA

RAPID AIR VALVE / EJECTOR (It is for fast production) VH

It is compatible to use on high injection pressure and fast production stamps.

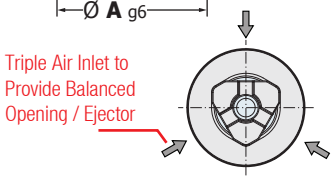
Powerful Air Ejector Valve: Internal Stopper is available, can be mounted easily. W. Pressure: 2-10 Bar.
1 BAR ≈ 1 Kg. / cm² It can be used on inclined and angle surfaces.

Material : INOX 1.4021 **Hardness:** 46 - 48 HRC

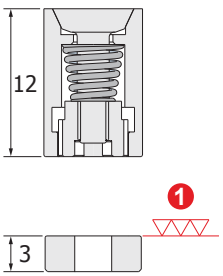


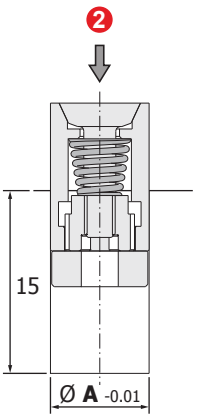
Rapid Air Valve / Ejector

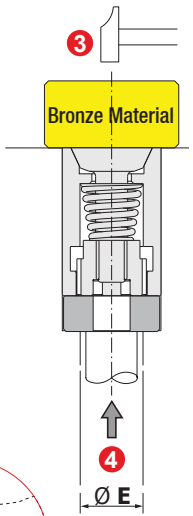
Order	A	B	C	D	E	H
VH. 065215	6	5.3	1.9	4	5.8	0.25
VH. 086515	8	6.7	2.1	5	7.8	0.75
VH. 121015	12	9.8	2.9	5	11.8	1.0



Mounting Washer is included.

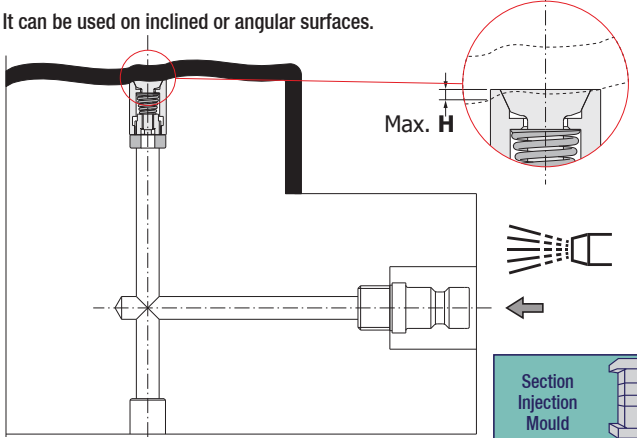






Forming Permitted Maximum Processing

It can be used on inclined or angular surfaces.



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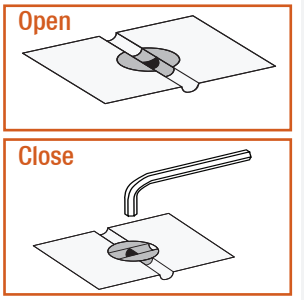
RUNNER ADJUSTOR

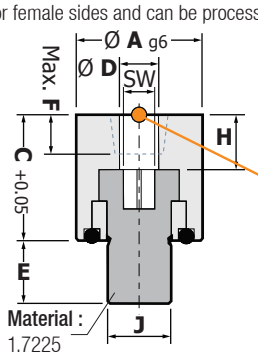


DIVERTER VALVE FOR INJECTION COLD RUNNERS

SA

It is compatible in high injection pressure or rapid production stamping.

Runner diverter unit: By closing runner duct, the connection to mould parting surface is disconnected. According to the requirement of ejector pin, there are two different models. It can be mounted to male or female sides and can be processed as Trapezoid or wholly round runners.



Material : INOX 1.4034
Hardness: 48 ± 3 HRC
Max. Temperature : 100°C

CUMSA
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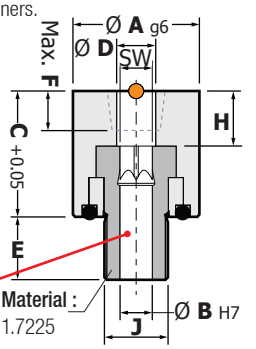
CAD Starting Point

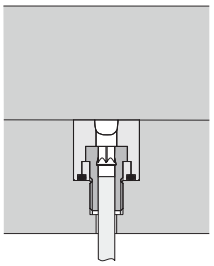
Hole Injector



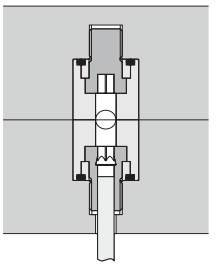
Order	A	C	D	E	F	H	J	SW
SA. 120014	12	14	4	6	3	5	M6	3
SA. 160016	16	16	5	8	5	7	M8	4
SA. 200018	20	18	6	10	6	9	M10	5

Order	A	B	C	D	E	F	H	J	SW
SA. 120314	12	3	14	4	6	3	5	M6	3
SA. 160416	16	4	16	5	8	5	7	M8	4
SA. 200518	20	5	18	6	10	6	9	M10	5

RUNNER POSITION CONFIGURATIONS

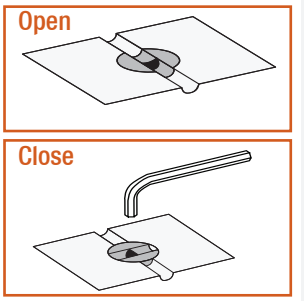


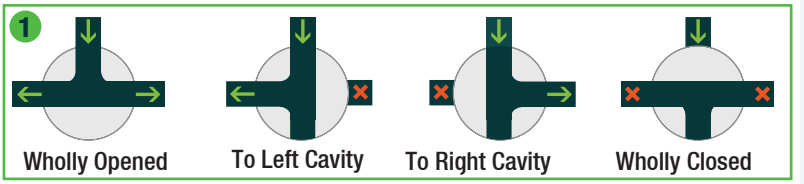
Two Edged Trapezoid Figure

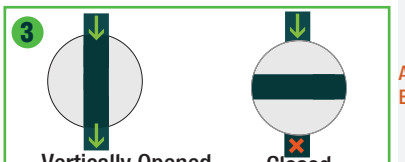


Full Round

RUNNER ADJUSTOR







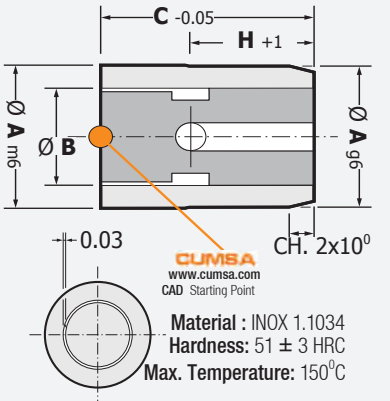
CUMSA

TWO WAY AIR VALVE

VD

It allows the pass of each two way air

Two Way / Double Valve It is an effective method for semi air pushes. It is used in case of gas temprament or vacuum formation at ends (In thin walled vessel). It allows the pass of each two way air, is uses external air for pushing process intro cavity. It deflates internal air to reverse direction to throw compressed gas containing in mould.



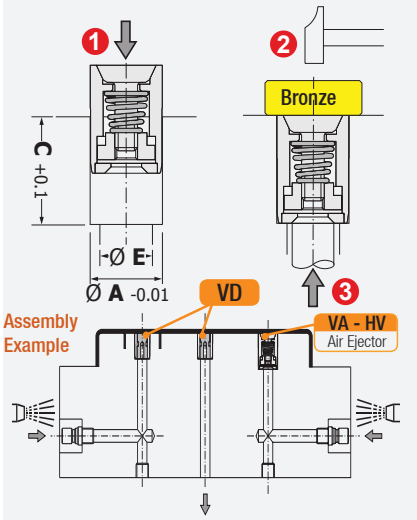
CUMSA
www.cumsa.com
CAD Starting Point

Material : INOX 1.1034
Hardness: 51 ± 3 HRC
Max. Temperature: 150°C

TWO WAY AIR VALVE

VD

Order	A	B	C	E	H
VD. 080512	8	5	12	4	7
VD. 100612	10	6	12	5	7
VD. 120812	12	8	12	7	7
VD. 161020	16	10	20	9	12

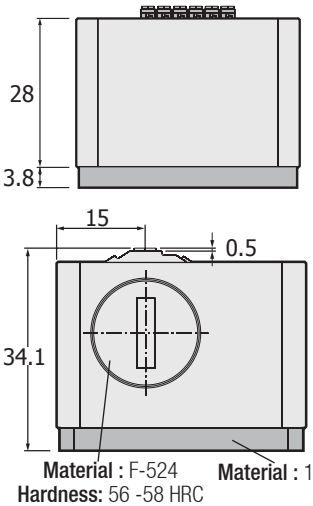


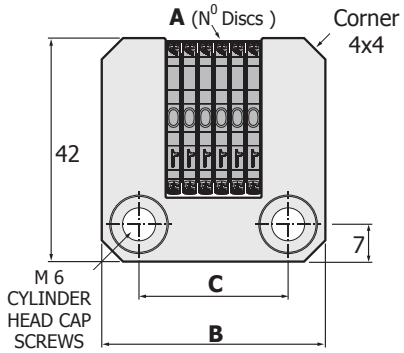
CUMSA

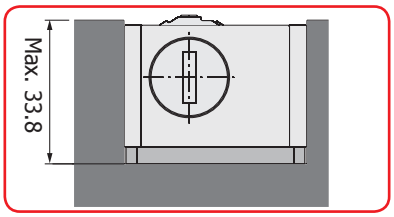
QUARTET STAMP UNIT UM

In press / sheet mould parts stamping

It is ensured the traceability of sheet mould parts. There are 4 or 6 wheel options. The positions of wheels can be changed easily. There is no need to separate stamp form mould. Its mounting and usage are easy.







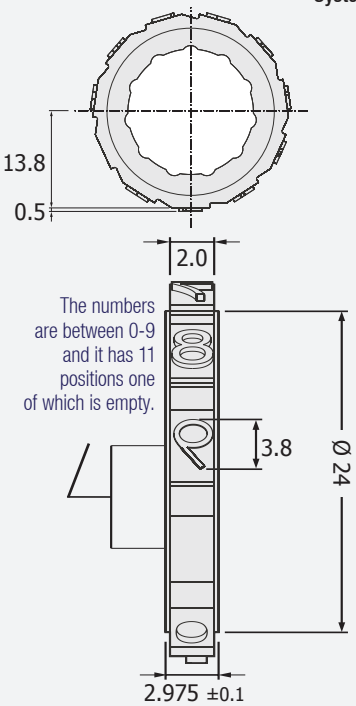
Order	A	J	SW
UM. 043642	4	36	22
UM. 064242	6	42	28

CUMSA

STAMP WHEEL 0 - 9 RR

It is a changeable stamp wheel of UM Unit.

Material: 1.2379 **Hardness:** 56 - 59 HRC **Patented System**



Order:
RR. 180311

PERCUSSIVE REVERSE LETTER/ NUMBER

Reverse Side Letter /Figure Sets: It is for marking numbering on and in mould and hammering in text creation. The characters stamped on mould are seen as reverse. The production is stamped as straight on product. (As mirror image) **Refer to Page 79** **Especially, in injection moulds**

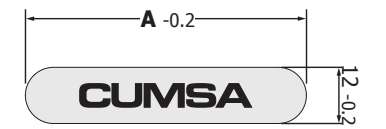
Order	Product/ Letter- Figure
15706	Reverse Figure 9 Set)
15747	Reverse Letter (27 Set)

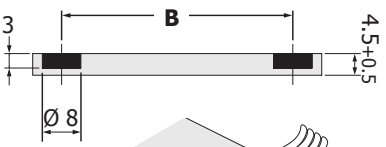
CUMSA

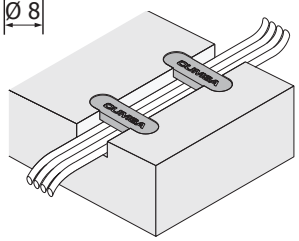
CABLE RETAINER CAP SC

Magnetic Product does not require extra hole

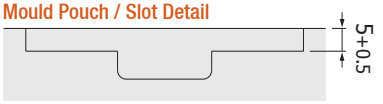
Cable Retainer 40 x 12: Specially in hot runner moulds, it keeps the diffused cables clean and smooth in duct. The product is magnetic material, it is self adhesive, there is no need to drill an extra hole. We recommend to keep max. mould temperature under 80º C. Because, plastic even magnets can be effected and broke down from high temperature.

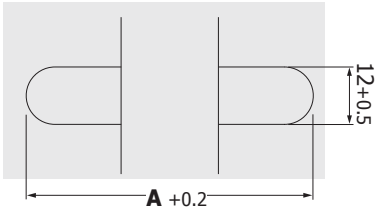




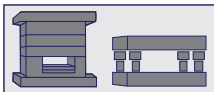


Mould Pouch / Slot Detail





Order	A	B	Material	SW
SC. 401245	40	28	ABS + NfFeB	80ºC
SC. 401245H	40	28	PA + 30% Glass Fiber	150ºC
SC. 601245	60	48	ABS + NfFeB	80ºC
SC. 601245H	60	48	PA + 30% Glass Fiber	150ºC

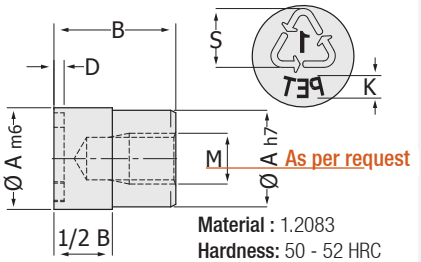


RECYLING, MOULD TABLETS GDM

Plastic Raw Material Data, Definition, Transformation Seals

Text and Definition Characters: It is for precise sign and definition of plastic raw material that is inlaid in 0,2 Depth (Conical Gradient) processing on moulds in production according to diameters. In addition: It is facilitated to recognize raw material that is about to break. See: It is compatible with DIN 6120 Single Symbol and ISO 1043-1 Normal Sign and International Codes.

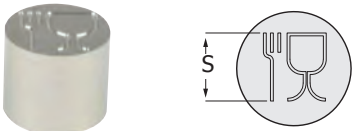
DIVERSIFICATION	
Logo /OK	GDM.01
EMPTY	GDM.02
PET	GDM.03
HDPE	GDM.04
PE-HD	GDM.05
PVC	GDM.06
LDPE	GDM.07
PE-LD	GDM.08
PE-BD	GDM.09
PP	GDM.10
PS	GDM.11
OTHERS (OTHER)	GDM.12
OTHERS (0)	GDM.13
FOOD (Food)	GDM.14



Material : 1.2083
Hardness: 50 - 52 HRC

RECYCLING TABLETS GDM

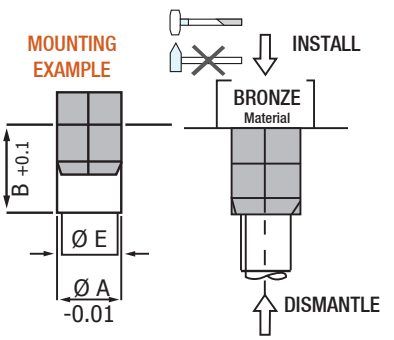
Order	A	B	D	E	K	S	M
GDM... 06	6	10	0.3	6	-	4.0	M4
GDM... 08	8	10		6	-	4.0	M4
GDM... 10	10	12		8	1.6	5.6	M5
GDM... 12	12	12		10	2.0	6.8	M6
GDM... 16	16	14		12	2.6	9.0	M6
GDM... 20	20	16		16	3.2	11.5	M6



TABLET COMPATIBLE WITH ALIMENTARY P. LAW

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

MOUNTING EXAMPLE



GTH
Production As Per Request

SCREWED DATE STAMP / MOULD CALENDAR VKT

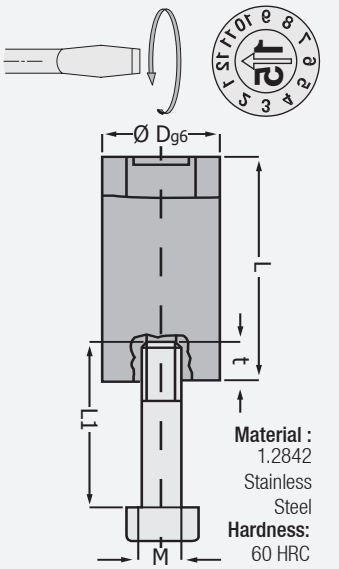
Long Type Mould Date Stamp With threaded Rear Side

We are offer wide options with our economic prices.

Mould Calendars that are preferred mostly for medium and small moulds, easy for mounting, also can be mounted on devices such as pins. Rotary Inner Hub of Mould Calendar can be adjusted limitlessly (Worm Gear).

Mounting is completed by pressing thoroughly from the inner hub and pulling from the bottom with bolt.

DIVERSIFICATION	
Standard Model Year Calendar	VKT.01
Month and Year Calendar	VKT.02
Year Calendar	VKT.03
Weekly Calendar	VKT.04
Daily Calendar	VKT.05
Work / Shift Calendar	VKT.06
Figure Calendar	VKT.07
Letter Calendar From A to M	VKT.08
Letter Calendar From N to Z	VKT.09
Marked / Arrowed Calendar	VKT.10
As per request Calendar	VKT.11

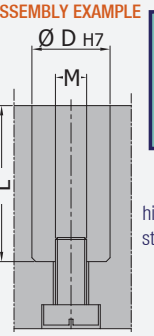


Material : 1.2842 Stainless Steel
Hardness: 60 HRC

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

Order:
VKT.TİPNO D x L

ASSEMBLY EXAMPLE



For metal injection moulds containing high temperature, date stamp involved in page 228 FT (Cumsa) Product should be selected.

DATE STAMP/ MOULD CALENDAR KT

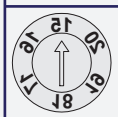
Cylindrical, Standard Model - Production as per request

Wide variety of options are available with quite economic prices. It is compatible to use in all injection mould systems. For mounting, it is enough to mould, only a hole as product diameter (H7 Reamed). Mounting: By drilling a suitable hole in the desired part of mould, place mould calendar into it (With Bronze or Rubber Hammer), making a tight hole (not to rotate date stamp) is useful.

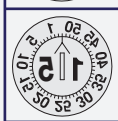
DIVERSIFICATION

STANDARD Month Calendar **KT.01**

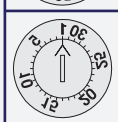
STANDARD Month and Year **KT.02**



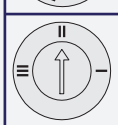
STANDARD Year Calendar **KT.03**



Weekly Calendar **KT.04**



Daily Calendar **KT.05**



Work / Shift Calendar **KT.06**

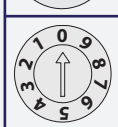
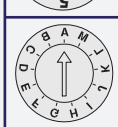
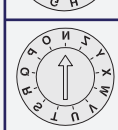


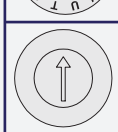
Figure Calendar **KT.07**



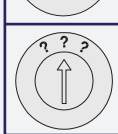
Letter Calendar From A to M **KT.08**



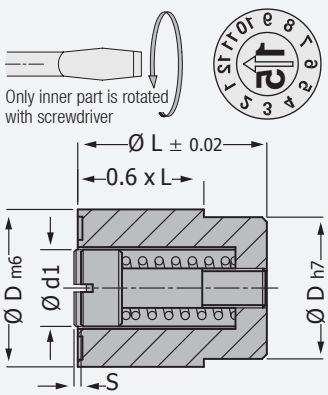
Letter Calendar From N to Z **KT.09**



Marked/ Arrowed Calendar **KT.10**



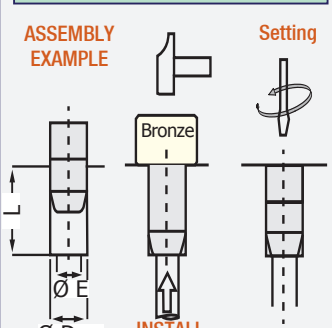
As per request Calendar **KT.11**



MOULD CALENDAR KT

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

Order:
KT.TYPE NO D x L
Pls. specify year in Month/Year Models.

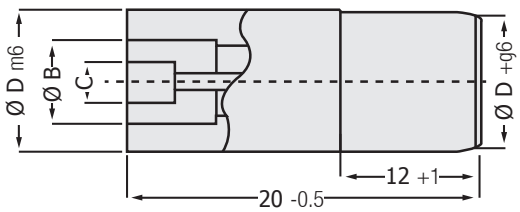


DKT

COMPLICATED (DUAL) MOULD CALENDAR

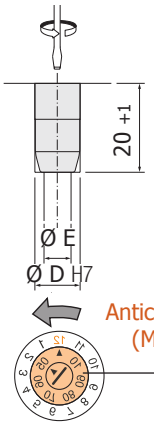
Two Different Date Stamp, Dual Date Stamp With a Unit as 12 Month + 6 Year: This product reducing needs and area required for cost and two different date stamp, shows two different criterias on unit. Its Standard Model is as 12 Month+ 6 Year, i.e. is not required any change along 6 years.

The length of all date stamps (20 mm) are same.

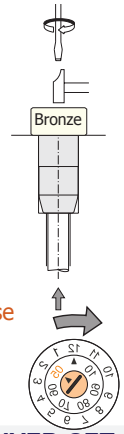


COMPLICATED (DUAL) MOULD CALENDAR DKT

Order	D	B	C	E	N
DKT.08	8	5.5	3	6	5
DKT.10	10	6	3	10	6
DKT.12	12	8	4	10	6
DKT.16	16	10.5	5.3	12	10
DKT.20	20	12	6	16	12



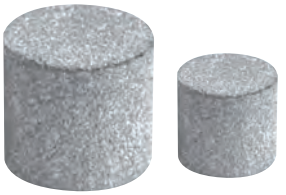
Important :
To change the month, the hub arrow on the unit is turned counter clockwise and the inner two parts are rotated. To change they year, pls. turn clockwise
Material : 1.2842 Stainless Steel
Hardness : 60 HRC



6 PIECES WATCHMAKER SCREWDRIVER SET

Watchmaker Screwdriver Set:
6 Pieces Rotary Turret Set
4 Pieces (1.5 - 2 - 2.5 - 3) Flat Ended Mini Screwdriver
2 Pieces PHO - PH1) Star Edged **Mini Screwdriver**
Chrome Vanadium Steel
Blackened Stainless Ends
Ergonomic Handles Upper Part of Handle is with turret.

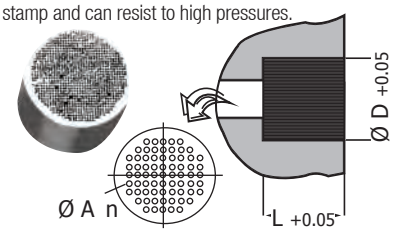
Order No : CRP-TK 9000



SINTERED GAS RELIEF FILTER

Inner Mould Gas Relief Valve SGA

With Sintered (Multi Channel) Structure, It is a featured product implementing entrapped gas relief in injection moulds and is high quality stainless product that does not leave a mark on objects in stamp and can resist to high pressures.



SINTERED GAS RELIEF FILTER SGA

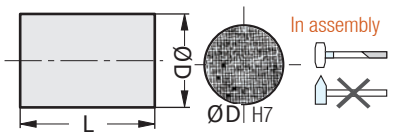
D	L	A	n
1.6	5	0.03	250 / 400
2.0			
2.5			
3.6			
4.1	9		880
5.0	10		

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

Order: **SGA D x L**

STEEL HOUSING SINTERED GAS RELIEF FILTER GVSY

External Surface is similar with grinded sinter structure mould inner gas relief valve SGA Model.



Material: Sintered Stainless Steel - HRC 40
Filter Thickness: 10 Micron **Tension**: 300 N/mm²
Durability: Weak Bases - Organic Acids Plastic Melts - Synthetic Resins

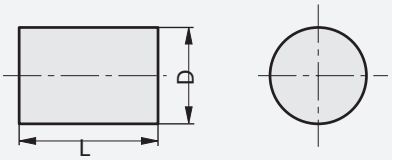
Order	D	L
GVSY 04	4	10
GVSY 06	6	
GVSY 08	8	
GVSY 10	10	12

Order	D	L
GVSY 12	12	12
GVSY 16	16	14
GVSY 20	20	15
GVSY 28	28	

YELLOW WIRED GAS RELIEF FILTER

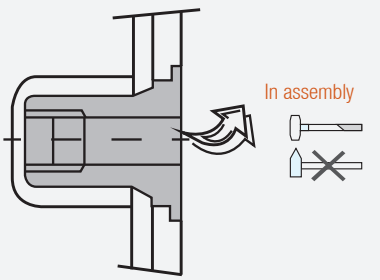
Wide Channel, Gas Relief Valve GGA

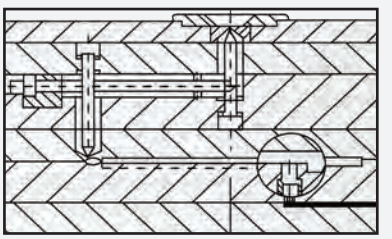
In injection moulds, it drains unwanted gas created by melted raw white fastly via wide channels, does not resist to very high pressures, can be collapsed. It can leave a mark on objects in stamp. Mostly it is suitable to use in inner parts, can be used in metal injection moulds not containing very high temperatures. I**t is an Economic Product. In mounting;** Exactly, use copper/rubber hammer. Don't make any mechanic or levelling process on filter unit (The pores are effected) **In production**; Exactly, should be manually touched to gas filters on working mould.



YELLOW WIRED GAS RELIEF FILTER GGA

Order	D	L
GGA.03	3.0	8
GGA.04	4.0	10
GGA.05	5.0	10
GGA.06	6.0	10
GGA.08	8.0	10
GGA.10	10	10
GGA.12	12	10
GGA.16	16	10

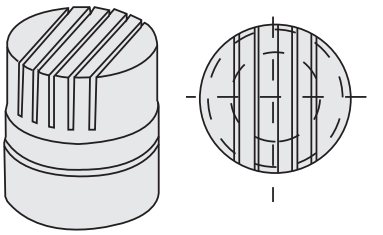


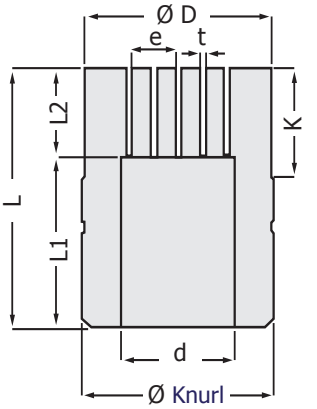


HEADING MOULD AIR RELIEF VALVE

Plastic Inj. Heading Moulds STV

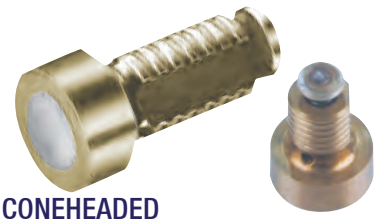
It is used in ventilation plug and plastic injection heading moulds for optimum ventilation to mould cavity. Due to the air channels of plug being parallel and wide, it drains the air in mould rapidly, also air chamber inside of the unit acts as a pool in drainage of the air. The burns on product should be cleaned instantly. These burrs can result to adhere to the pores. For cleaning, the compressed air or cleaning spray can be used (WINKEL 451280).
Mounting; Due to the knurled outer part of product, it provides tight keep and inside the safe of hole.





HEADING MOULD AIR RELIEF VALVE

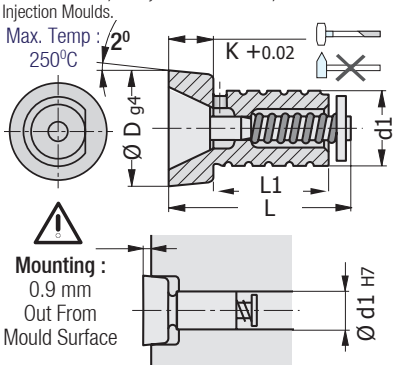
Order	STV 6x10	STV 8x10	STV 10x10	STV 12x10
D	**6**	**8**	**10**	**12**
L	**10**	**10**	**10**	**10**
d	3.5	5.0	6.0	8.0
t	1.0	1.1	1.3	1.5
e	0.3	0.3	0.3	0.3
K	4.0	4.0	5.0	5.0
L1	6.5	6.5	8.0	8.0
L2	3.5	3.5	4.0	4.0
Knurl	6.2	8.2	10.2	12.2



CONEHEADED PNEUMATIC EJECTOR VHV

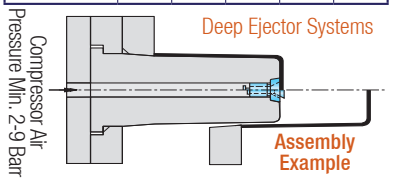
2⁰ Coneheaded / Special Reamer

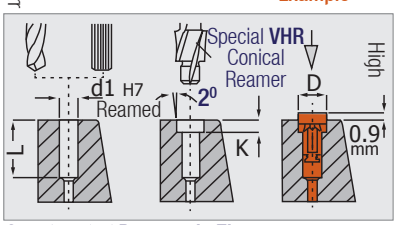
Mounted Coneheaded Pneumatic Ejector, Temperature Sensitive/ From Amcolay Material **Mounting:** It should be provided with special reamer and should be 0.9 mm out from mould parting surface. It is compatible for Metal Injection Moulds.



CONEHEADED PNEUMATIC EJECTOR VHV

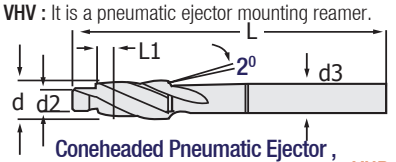
Order	D	d1	K	L	L1
VHV.08	8	6	5	16	8
VHV.12	12	8	5	21	13
VHV.16	16	10	6	22	14





Coneheaded Pneumatic Ejector , SPECIAL REAMER VHR

VHV : It is a pneumatic ejector mounting reamer.



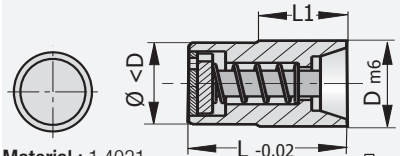
Coneheaded Pneumatic Ejector , SPECIAL REAMER VHR

Order	d	d2	d3	L1	L
VHR.08	8	6	10	5	69
VHR.12	12	8	12	5	100
VHR.16	16	10	12	6	122

SLEEVE PNEUMATIC EJECTOR V. KHV

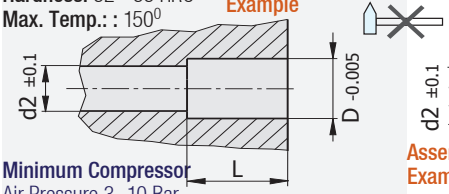
Ejector Position-Vacuum Dissolver - Short Type

It is the most suitable method for dissolving vacuum during injection. In wide and narrow walled objects, it continues to drain compressed air by vacuum in mould, all casing and processed surfaces have been produced from stainless steel. According to Pin(PHV)-Pneumatic Ejector, the **shorter length is advantageous.** Other technical details are similar.



Material : 1.4031
Hardness: 52 - 55 HRC
Max. Temp.: : 150⁰

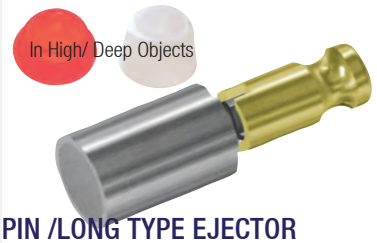
Assembly Example



Minimum Compressor Air Pressure 3- 10 Bar

Economic Product: All diameters are available in our stocks

Order	D	L	L1	d2
KHV.06	6	12	7	3.5
KHV.08	8	15	9	5
KHV.10	10	20	13	6
KHV.12	12	25	15	8
KHV.16	16	30	17.5	8
KHV.20	20	30	19	10
KHV.25	25	30	19	12
KHV.30	30	30	27.5	15



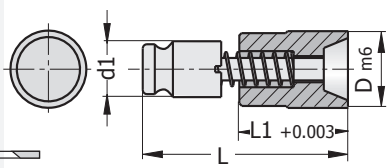
PIN /LONG TYPE EJECTOR VALVE

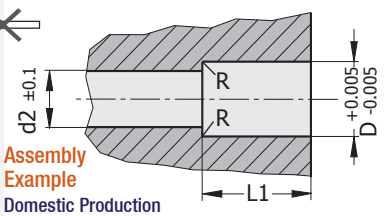
Standard Pneumatic Ejector Valve PHV

It is known as the most effective pneumatic ejector group. Especially, is ideal for deep and great mould. In mounting, definitely use the copper or rubber tipped hammer and bronze wedge.

Material : 1.4031 **Hardness:** 52 - 55 HRC

Minimum Compressor Air Pressure 2- 9 Bar **Max. Temp. :** 150⁰





Assembly Example

Domestic Production

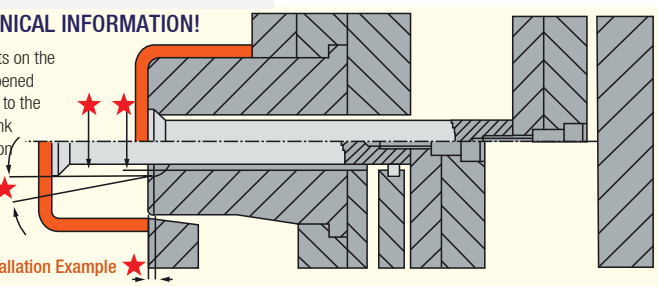
Economic Product: All diameters are available in our stocks

Order	D	L	L1	d1	d2	R
PHV.08	8	28	11	6	7	01
PHV.10	10	28	11	7	8	01
PHV.12	12	30	11	8	9	02
PHV.16	16	43	20	10	14	02
PHV.18	18	43	20	10	14	03
PHV.20	20	43	20	10	16	03
PHV.25	25	60	20/28	16	16	04

SPECIAL TECHNICAL INFORMATION!

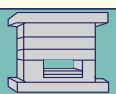
Important: The slots on the mould should be opened precisely according to the selected countersunk ejector pin dimension.

The information is advisory.



Mounting and Installation Example

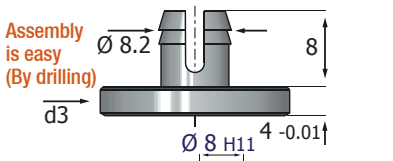
In İnjection Moulds: Especially In Great Objects/Deep Boxing Moulds, For Using In System Presented In Technical Drawing By Simple And Economical Method Facilitating Product/Object Desintegration With Compressed Air Vacuum Problem, It Is Processed (★) Marked Areas In Application On Moulds Precisely By Cutting Suitable To Special Length Mould With Selection Of Countersunk Ejector Pin (Page 247) As 6-8-10 Diameter And 315 Length Selection In Countersunk Pin Dimension Parallel. In Prepared System, It Is Provided To Drain Compressed Air / Vacuum Drainage In Mould By Connection To Ejector Plates In Such Way That Head Of Countersunk Ejectors Are Up Inversely. Also, It Can Be Provided To Be Used With It Is Pneumatic Ejector Valve Feature.

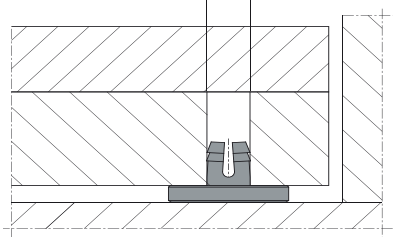
Section Injection Mould

Page 235

THRUST PLATE, GAITER G.144

Rapid Mounted Thrust Plate With A Hole

For using inside of the mould, (gaiter) can be put to bottom of the plates as support. By drilling a hole (8 mm H11), flexible claws on thrust are opened inside of the hole and is molded. During effect, can be easily dismantled. Thus, symmetry could be provided in mounting and repetition of plates.



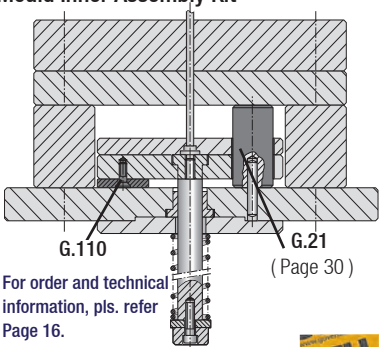


THRUST PLATE G. 144

Order	d3
G.144.20	20
G.144.30	30

THRUST PLATE G.110

Mould Inner Assembly Kit



For order and technical information, pls. refer Page 16.

GTH Reliable Label

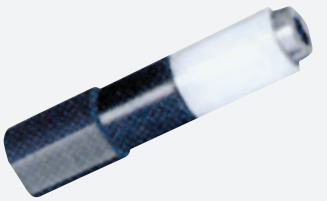


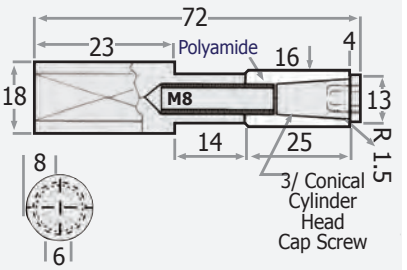
PLATE PULLER SCP M8

Frictional Plate Puller (Braking)

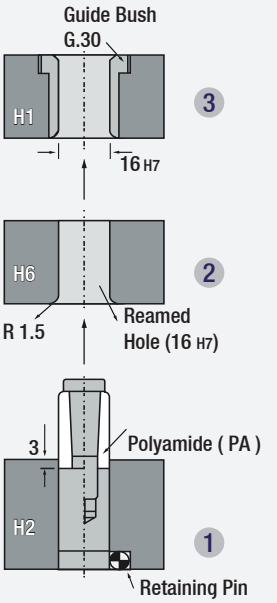
This simple plate puller, provides great benefit in 3 plate moulds that average gravitation force and plate sensitivity are sufficient, similarly, this standard plate part can be used as brake with stopping purpose between plates. For example, if it is desired to wait or postpone opposite/counter parts motions or to avoid collision of hard, detrimental plates, it provides suitability for use.

Maximum Temperature : 120^{0}C

Polyamide Extrusion Holes Ends, should be left radiuses. Don't use any oil on extrusion surfaces.



Order: **SCP M8**



Frictional Plate Puller (Figure 1) is sended its force via friction between Polyamide Bush and (Figure 2) extrusion wall (Figure 3). Friction force can be adjusted stepless. Optionally, (3 mm) can be adjusted as the suitable length of cylinder head cap screw.

FRICTIONAL PULLER GPLA

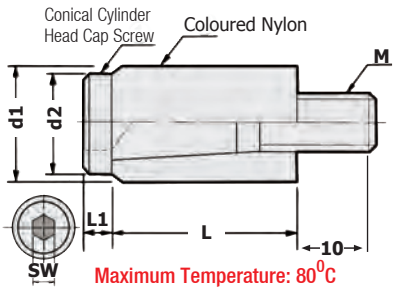
Mould, Plate Parting, Setting Bolt

Frictional Plate Puller

With this simple part, you can separate desired plate group in mould. Life time is 50.000 stamps, beside being cost effective, it is provided mounting and dismantling facility. It is also used in small and medium moulds beside two stepped moulds or side cores.

According to mould weights:

Up to 100 Kg. 4 Pieces 12 mm diameter
Up to 500 Kg. 4 Piece 16 mm diameter
Up to 1000 Kg. 4 Pieces 20 mm diameter
Over 1000 Kg. should be used minimum 6 pieces.
Polyamide extrusion holes in moulds should be H7 Reamed and also should be left as Radiuses, don't use any oil on extrusion surfaces.

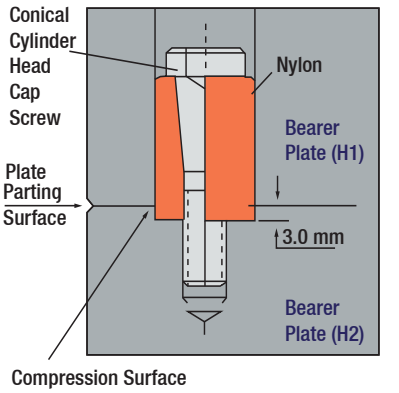


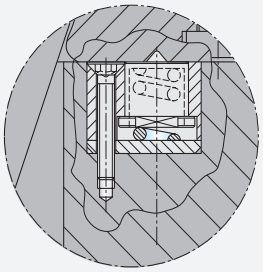
Maximum Temperature: 80^{0}C

Mould Parting, Adjusting Bolt GPLA

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

Assembly Example



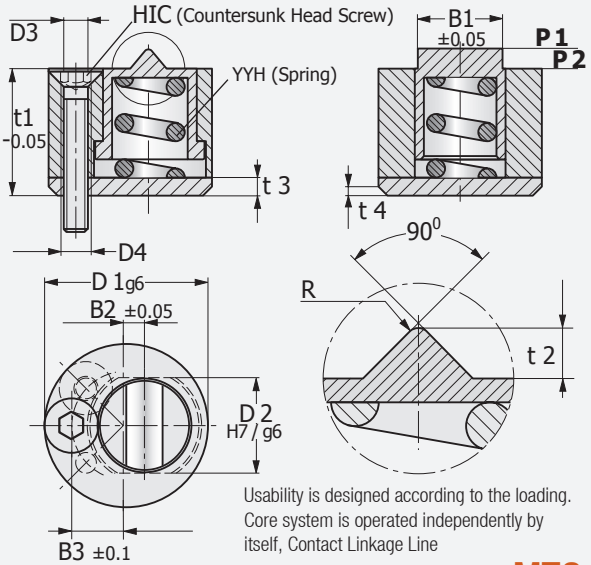


Maximum Temperature: 100^0

CORE SLIDE: SPRING RETAINER UNIT MTC

Slide Holder in Core Systems of Injection Moulds

Round core holders are operated without retaining pin and also can lift the core without core holder. Being round facilitates mounting. **Material :** 1.2767



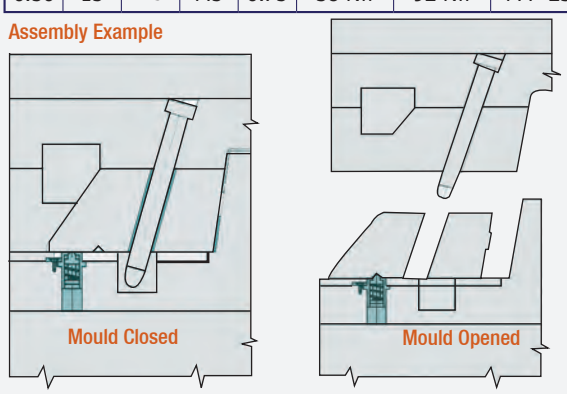
Usability is designed according to the loading. Core system is operated independently by itself, Contact Linkage Line

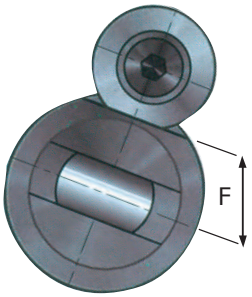
CORE SLIDE RETAINER SPRING UNIT MTC

Order	D1	B1	B2	B3	t1	t2	t3
MTC.13	13	6.6	1.4	4.3	10	1.0	1.6
MTC.18	18	9.6	2.0	6.0	14	1.8	2.0
MTC.27	27	14.4	3.0	9.0	21	2.8	3.0

t4	D2	D3	D4	R	P1	P2	HIC
0.35	7	2.2	M3	0.35	28 Nw	34 Nw	M2 -16
0.50	10	3.2	M4	0.50	38 Nw	42 Nw	M3 -50
0.50	15	4.3	M5	0.75	38 Nw	92 Nw	M4 -25

Assembly Example

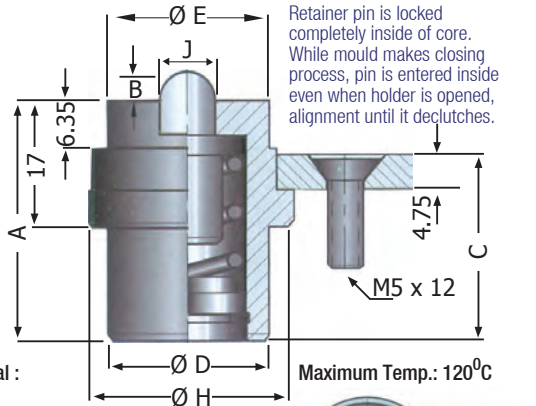




CORE SLIDE: SPRING RETAINER/PIN UNIT MTY

Small, Round, Easy To Mount, Independent, Contact Linkage

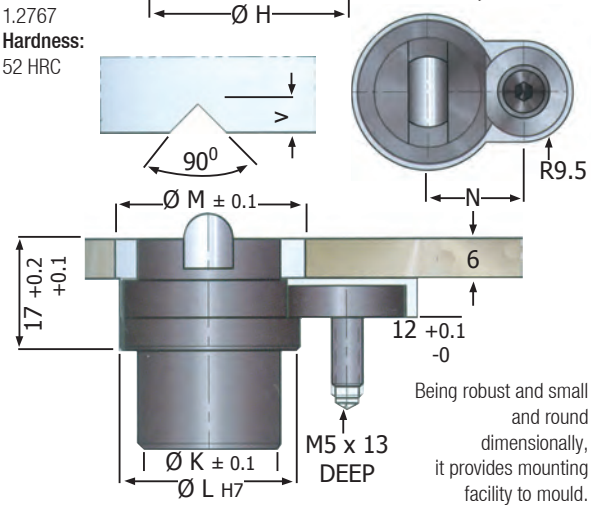
Usability is designed according to the loading. **With 3 mm holding rate**, it presents 48 / 88 / 176 Nw force requirements according to the types.



Retainer pin is locked completely inside of core. While mould makes closing process, pin is entered inside even when holder is opened, alignment until it declutches.

Material : 1.2767
Hardness: 52 HRC

Maximum Temp.: 120^0C



Being robust and small and round dimensionally, it provides mounting facility to mould.

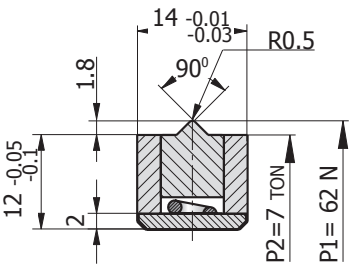
Order	A	B	C	D	E	F
MTY.100	27.43	1.83	20.2	15.75	16	9.52
MTY.200	33.53	3.07	26.29	18.8	19	10.67
MTY.400	32	3.78	24.76	22.1	22	11.86

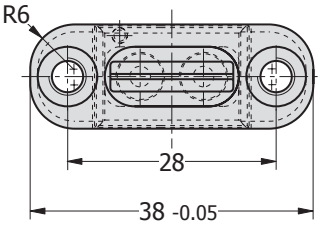
H	J	V	K	L	M	N	Kgf.
22	4.8	2.3	15.87	22	24	17	4.5
25	6.35	3.9	19.05	25	27	18.2	9
28	7.92	4.9	22.23	28	30	19.4	18

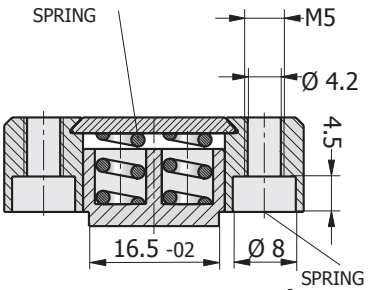
GTH Reliable Label
BOTH Producing Selling With Proper Price

CORE RETAINER TYPE: 1 MTK.1

Contact Linkage Line in Core Systems







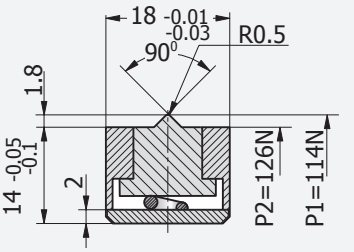
Maximum Temperature : 100°C

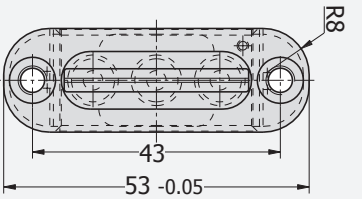
Material : 1.2343 **Hardness :** 54 ± 2 HRC

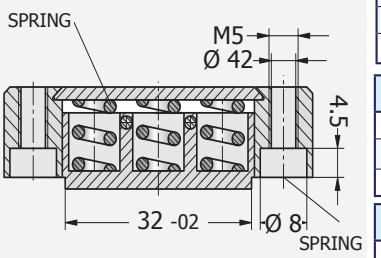
Order: **MTK.1**

CORE RETAINER TYPE: 2 MTK.2

It lifts the core without the holder in core system



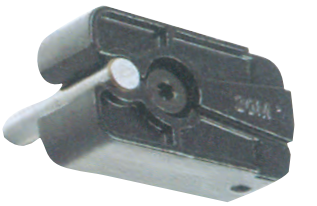




Maximum Temperature : 100°C

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

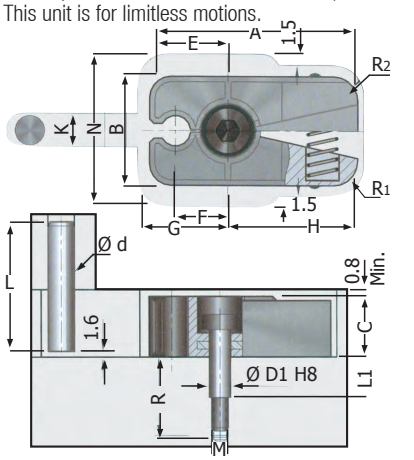
Order: **MTK.2**



CORE RETAINER, PINNED MTS

Precise - Locked and Alignment, Pinned

During the fixed mounting with body bolts, some spare holes and cavities can be required. This unit is for limitless motions.



Order	A	B	C	E	F	G
MTS 10M	38	19	16	16	**9.1**	19
MTS 20M	54	32	20	21	**12.7**	24
MTS 40M	86	45	30	53	**20.3**	36

H	N	K	D1	L1	R	R1	R2	M
26	25	**8**	6	6	15.5	8	5	M5
36	36	**10**	8	8.5	20.5	10	6	M6
56	56	**12**	10	10	25	13	10	M8

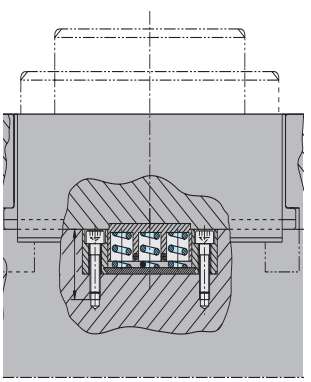
Core Block
10 (Kgf.)
20 (Kgf.)
40 (Kgf.)

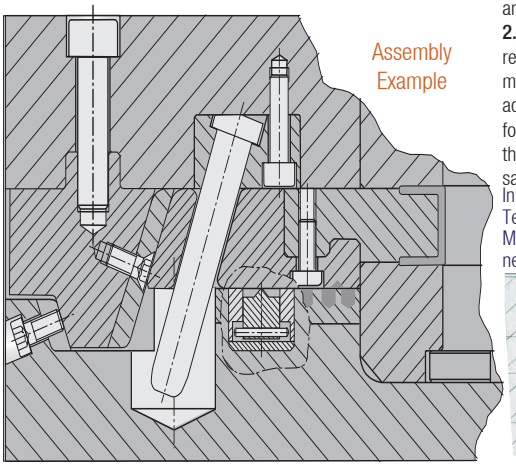
K value: It i s a load value required to emerge core block from core retainer.

While core is opened, it is entered into pin holdretainer even if there are minor errors(misalignment), process is still continued.

Assembly Procedure:

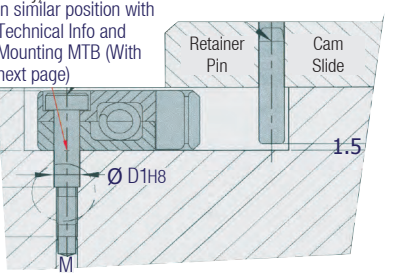
1. To remove core holder casing from slot again, an extractor pin hole should be opened on mould. **2.** The distance between pin center on the core retainer and bolt center on core holder during mounting are precise, (F) should be calculated and adjusted in a best way. **3.** Prefer a model with more force than the ultimate load requires for MTS/MTB that is suitable for your mould. (This is important for safety).

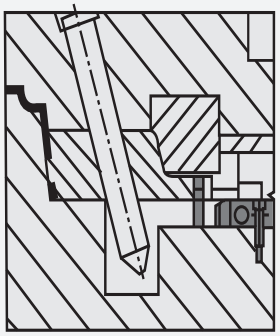




Assembly Example

In similar position with Technical Info and Mounting MTB (With next page)



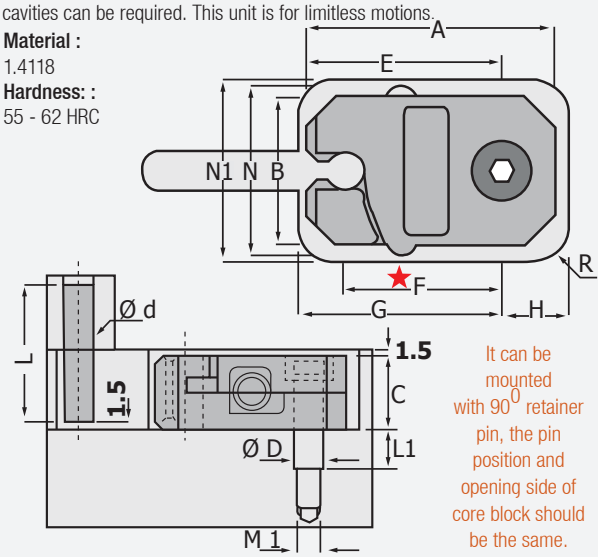


PIN, CLOSED SPRING TYPE CORE RETAINER MTB

Precise - Lock and Alignment Pinned, Spring Type Core

Retainer During fixed mounting with body core bolts, some spare hole and cavities can be required. This unit is for limitless motions.

Material :
1.4118
Hardness: :
55 - 62 HRC



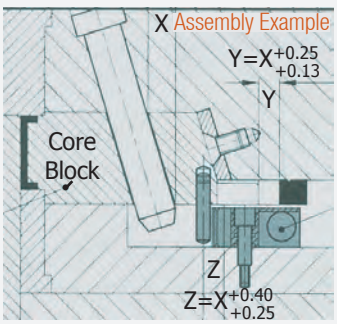
It can be mounted with 90^0 retainer pin, the pin position and opening side of core block should be the same.

If there is no different change in mould closing; this product can be used as core lock in system.

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

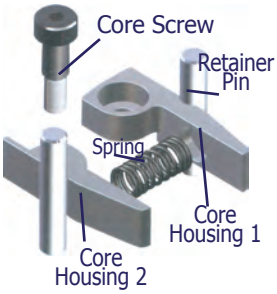
N1	R	D	L1	M1	d/L	Core
25.5	8	6	8.5	M5X11	6x30	10 Kg.
38	10	8	10.5	M6X14	8x40	20 Kg.
51	12	10	17	M8X18	10x60	40 Kg.

Application: While core retainer is opened, pin is entered into holder, even if there are minor errors (misalignment), the process is continued.



★ **Dimension is important.**

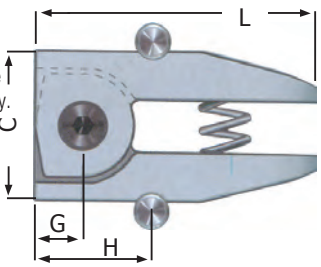
Important: The distance from the center of retainer pin should be until the center of MTB bolt. This is very important. The retainer pin should be locked inside of the holder in a way that is fully tightened to the core. In mould closing process, it has been applied as an efficient design until it is unlatched.



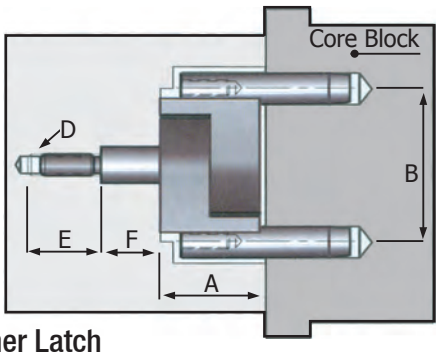
CORE RETAINER LATCH MTM

Retaining Pin Mounted, Balanced/ Precise Core Lock Unit

Core Retainer Latch:
Core Bolt (F) added to holes should not be in too deep. After it locks itself, core casing should be operated smoothly and seamlessly. Therefore, don't tight the bolt too much. When retaining pin is on core, core casing is attached on mould, also core sliding distance should be calculated exactly and then should be mounted.



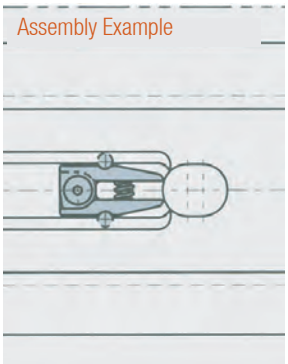
Material :
1.2767
Hardness :
55 - 62 HRC
Maximum Temp. : 100^0
Especially, it can be preferred in alloy material moulds.

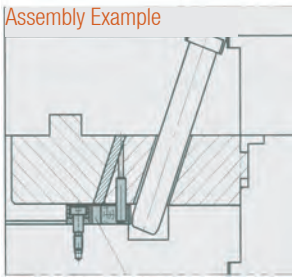


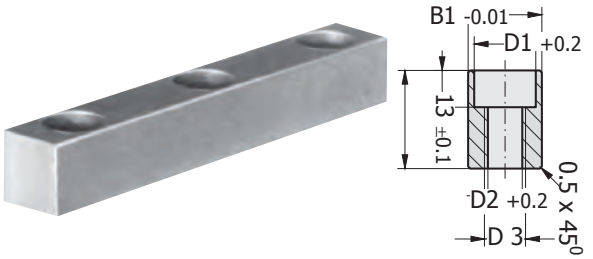
Core Retainer Latch

Order	A	B	C	E	F
MTM 1040	10	21.5	18	9.5	5.1
MTM 1243	12	25.5	22	11	6.1
MTM 1650	16	31.5	28	11	8.1

Order	G	H	L	D	Max.Retaining	Ret. Pin
MTM 1040	7	17.5	40	M5	Ø 6 - 30	10
MTM 1243	7.5	18	43	M6		15
MTM 1650	9.5	20.5	50	M6		25





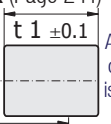


CORE SLIDE, BOTTOM SUPPORT & INCLINED UNIT G.147

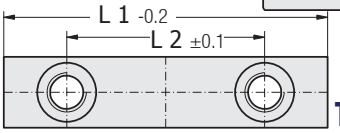
It can be used also as Core Guide Block Bottom Support Plate or Inclined Angular Pin Unit Guide Block (Page 241)

Material : 1.2842

Hardness : 58 + 2 HRC
Milled, Precision Grinded, Perpendicularity Controlled, Block With Prepared Connection Holes

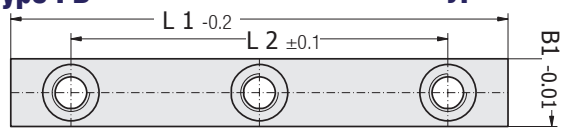


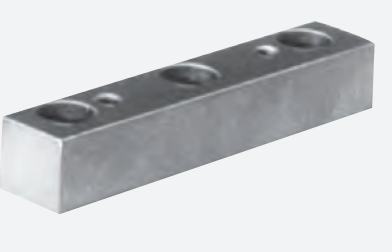
As per request, our production is also available in special material and special sizes.



Type : B

Type : A



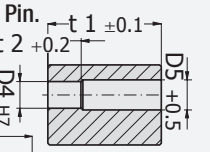


CORE SLIDE; LATERAL GUIDE PLATES G.148

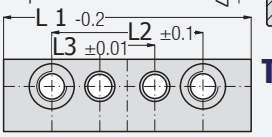
Core Block Lateral Support Ready Guide Plates. Bolt Slots and Ready Perforated Retainer Pin.

Material : 1.2842

Hardness: : 58 + 2 HRC
Milled, Precision Grinded, Perpendicularity Controlled Block With Prepared Connection Holes

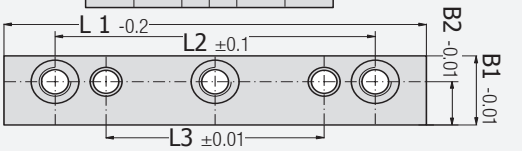


As per request, our special productions are available.



Type : A

Type : B



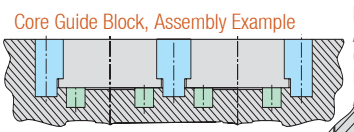
CORE SLIDE, BOTTOM SUPPORT& INCLINED UNIT G.147

Order	B1	t1	L1	Type	t3	L2	D1	D2	D3
G.147.1250			**50**	A		30			
G.147.1260			**60**	A		40			
G.147.1270		11	**70**	B		50			
G.147.1275			**75**	B		60			
G.147.1280			**80**	B		60			
G.147.1290	**12**		**90**	B	5.7	70	10	5.3	M6
G.147.12100			**100**	B		80			
G.147.12120			**120**	B		100			
G.147.12140		16	**140**	B		120			
G.147.12160			**160**	B		140			
G.147.12180			**180**	B		160			
G.147.18100			**100**	A		76			
G.147.18120			**120**	A		96			
G.147.18140	**18**	16	**140**	B	6.8	116	11	6.4	M8
G.147.18160			**160**	B		136			
G.147.18180			**180**	B		156			
G.147.24140			**140**	B		116			
G.147.24160			**160**	B		136			
G.147.24180	**24**	21	**180**	B	6.8	156	11	6.4	M8
G.147.24200			**200**	B		176			
G.147.24220			**220**	B		196			

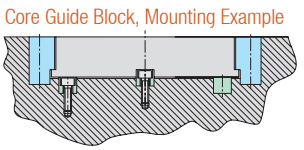
CORE SLIDE; LATERAL GUIDE PLATES G.148

Order	B1	t1	L1	Type	B2	t2	t3	L2	L3	D1	D3	D4	D5
G.148.1550			**50**	A		-		30	10				
G.1481560			**60**	A		-		40	20				
G.1481570	**15**	11	**70**	B	9	-	5.7	50	30	10	M6	4	-
G.1481575			**75**	B		-		60	40				
G.1481580			**80**	B		-		60	40				
G.1481590			**90**	B		-		70	50				
G.1481880			**80**	A				56	32				
G.14818100			**100**	B				76	52				
G.14818120	**18**	22	**120**	B	11	12	6.8	96	72	11	M8	6	7
G.14818140			**140**	B				106	92				
G.14818160			**160**	B				136	112				
G.14824100			**100**	A				68	36				
G.14824120			**120**	A				88	56				
G.14824140	**24**	36	**140**	B	15	12	9.0	108	76	15	M10	8	9
G.14824160			**160**	B				128	96				
G.14824180			**180**	B				148	116				
G.14830120			**120**	A				80	40				
G.14830140			**140**	A				100	60				
G.14830160	**30**	50	**160**	B	18	15	11	120	80	18	M12	10	11
G.14830180			**180**	B				140	100				
G.14830200			**200**	B				160	120				

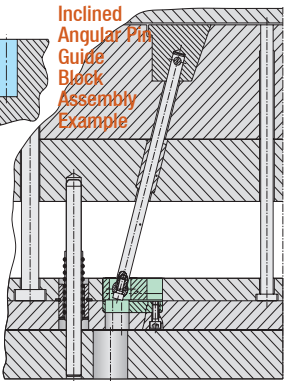
Core Guide Block, Assembly Example



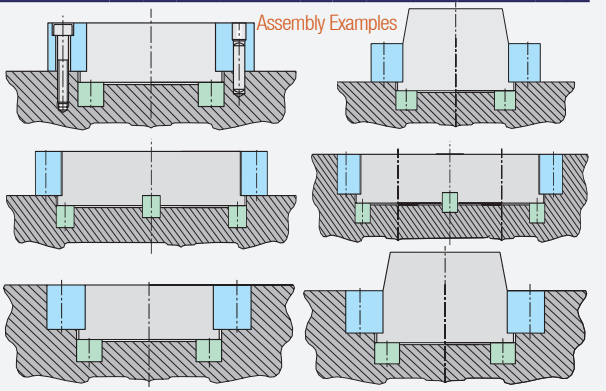
Core Guide Block, Mounting Example

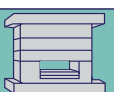


Inclined Angular Pin Guide Block Assembly Example

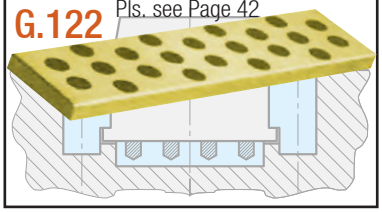


Assembly Examples

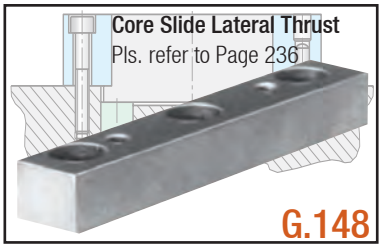




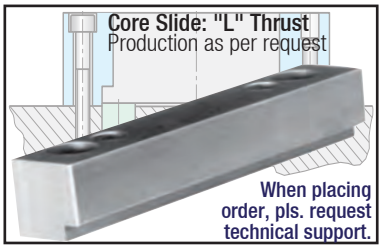
Wear Plates, Self Lubricating
G.122
Pls. see Page 42



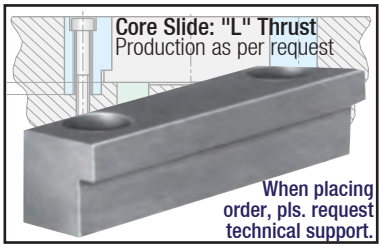
Core Slide Lateral Thrust
Pls. refer to Page 236
G.148



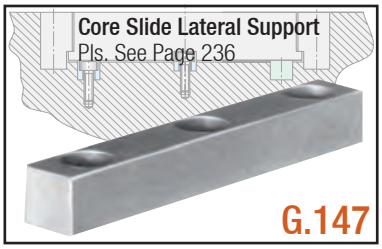
Core Slide: "L" Thrust
Production as per request
When placing order, pls. request technical support.



Core Slide: "L" Thrust
Production as per request
When placing order, pls. request technical support.

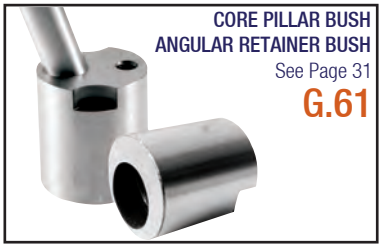


Core Slide Lateral Support
Pls. See Page 236
G.147



CORE PILLAR
See Page 31
G.14

CORE PILLAR BUSH
ANGULAR RETAINER BUSH
See Page 31
G.61



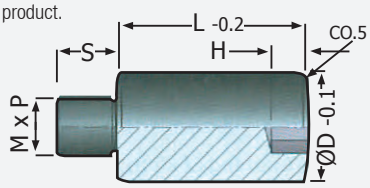
For clamping bolt, alien key is used

G.150

CORE SLIDE: STOPPING

Core Slide, Ejector Pin

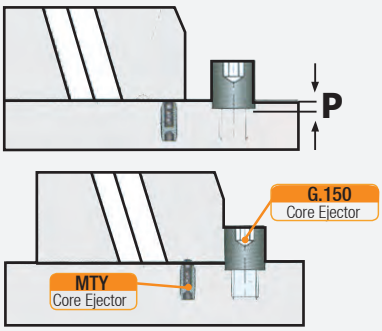
It can be used as joint in inner mould designs. Ejector Pin is a pratical and easy to mount product.



CORE SLIDE: STOPPING G.150

Order	M x P	SW
G150. M6	M6 x 1.0	5 Alien
G150. M10	M10 x 1.5	8 Alien
G150. M12	M12 x 1.75	10 Alien
G150. M16	M16 x 2.0	14 Alien

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



CORE STOPPERS

BSM
Ball Locking Screw
For order and Technical Info, refer to Page 132

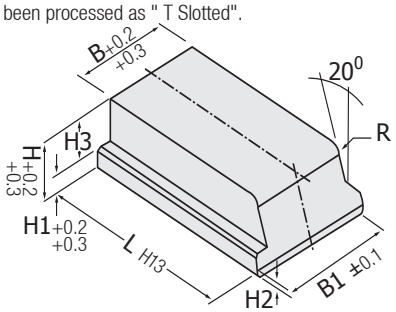
YBS
Toothed Screwed Spring Locking
For order and Technical Info, refer to Page 132

KBS
Belt and Spigot Spring Stops
For order and Technical Info, refer to Page 132

READY, CORE SLIDE G.149

It is ready for processing, the only thing to be done is processing cavity surfaces.

Core Slide: It is a ready core slide that has been milled, precision grinded and 20º C inclined angular has been given to cavity surface. All edge corner bevels of core slide are broken, Slide has been processed as " T Slotted".

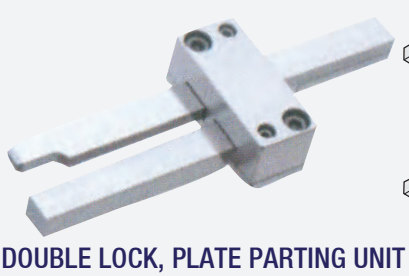


Material: 1.2344 **Hardness:** 42 - 45 HRC

READY, CORE SLIDE G.149

Order	H	L	B	B1	H1	H2	H3	R
G149.1220	12	40	20	26	4	1.5	8	1.5
G149.1225			25	31				
G149.1240			40	46				
G149.1263			63	69				
G149.1620	16	50	20	26	4	1.5	12	1.5
G149.1625			25	31				
G149.1640			40	46				
G149.1663			63	69				
G149.2040	20	63	40	46	5	2	15	2
G149.2063			63	69				
G149.2080			80	86				
G149.2540	25	71	40	46	5	2	20	2
G149.2563			63	69				
G149.2580			80	86				
G149.3263	32	100	63	71	6	3	26	3
G149.3280			80	88				
G149.32100			100	108				
G149.4063	40	100	63	71	6	3	34	3
G149.4080			80	88				
G149.40100			100	108				
G149.5080	50	112	80	90	8	4	42	4
G149.50100			100	110				
G149.50135			125	135				
G149.6380	63	112	80	90	8	4	56	4
G149.63100			100	110				
G149.63125			125	135				

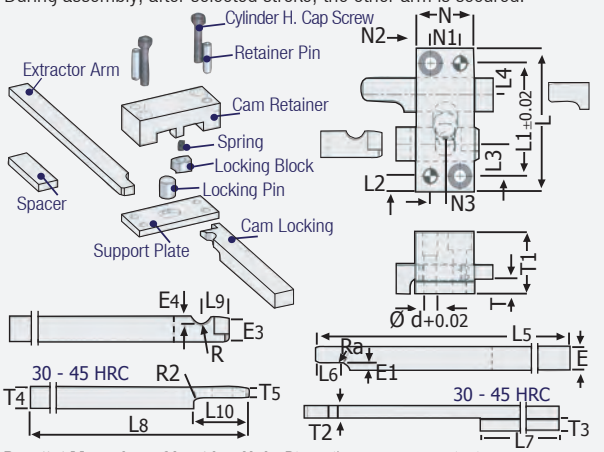
GTH Reliable Label



DOUBLE LOCK, PLATE PARTING UNIT KAU

By Double Sided Lock System, Safe and Reliable, Often Heat Toothed, Easy Mounting with Control Arms on Lock

In injection moulds, it is for two stage (Stripper Plate) moulds. Opening priority of plates is related in assembly direction of the unit. During assembly, after selected stroke, the other arm is secured.



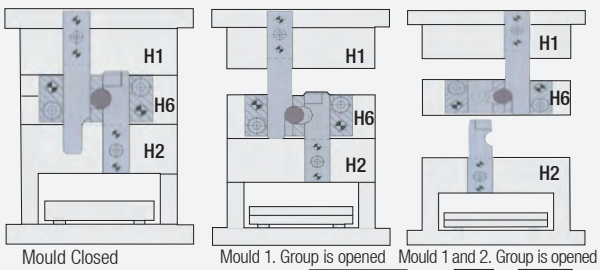
Parallel Mounting of Locking Unit: Pls. adjust or cut cam lock arm in required distance, open hole positions of bolts, tight cam locks on their positions, complete adjusting position with compatible parts. By forming dowel, secure cam locks. Pls. cut extractor arm in required distance and insert into mould perpendicularly. For being equal of drop points on each sliding, pls. be sure that " L " length pops out. (For emerging of outlets smooth/ compatible and fast, also it is to avoid inclining of scraper plate).

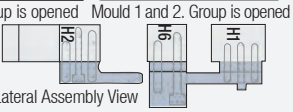
* Pls. insert cam lock arm, extractor arms on minimum two plate on mould.

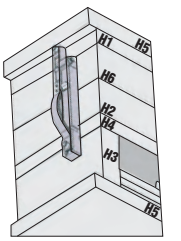
Important: After mounting unit, the operation test should be applied to your mould exactly, before production, the controls of opening and closing test controls of movable system should be separately. Movable parts can be greased.

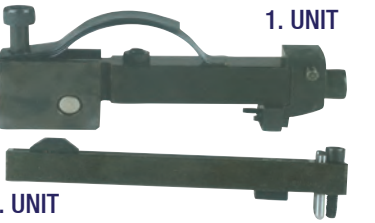
Order	L	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	N
KAU.55	55	43	6	12	12	150	12	40	100	14	28	24
KAU.67	67	53	7	15	14	200	16	50	150	18	36	32

N1	N2	N3	d	E	E1	E3	E4	R	Ra	T	T1	T2	T3	T4	T5
12	6	6	5	13	4	13	4	5	5	5	24	6	5.5	11.5	6
16	8	8	6	16	5	18	5	6	6	6	32.5	10	6.5	16.5	10



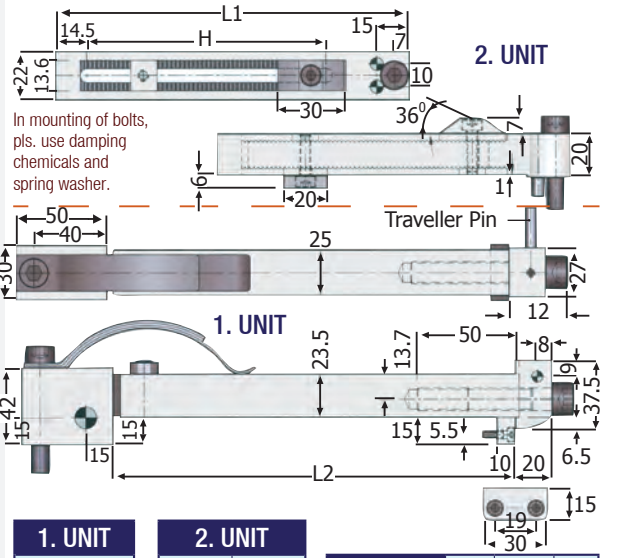






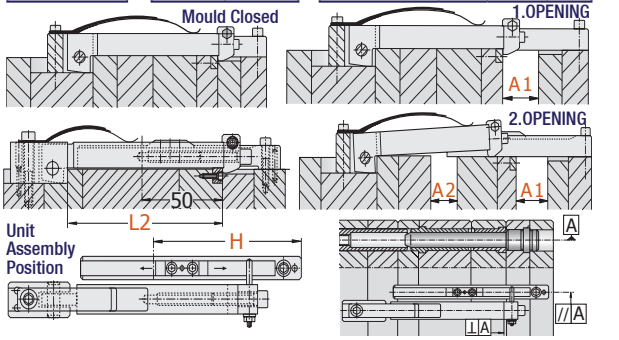
DOUBLE UNIT - MOULD PLATE PARTING COMBINATION BOX

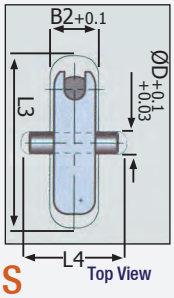
In this double unit system, 2. Unit is consisted from fixed and 1. Unit is consisted from movable group. While mould is opened, movable spring (1. Unit) is moved on fixed part (2.Unit) on sliding, while pin of spring group is passed over elevation on fixed group, hook is remained free and 2. group of mould scrapper starts to open. Free arm starts to open freely on mould casing. Free arm should be moved freely on mould casing. **Settings:** Both units (spring/holder - freearm) should be left well-timedly, incorrect or improper mounting is caused to tapper off and to bend of movable plate (HG) or to break unit arm. Units: Before mould is closed, it should be adjusted, open mould and control movable plate (H6) and movements of arms... **(Fine tuning is required)** Pls. apply until free/movable arms are fully working with each other with springs and lock system, then Free/Extractor Arm will become centered/ linked with locked /spring unit. While processes are continued, pls. grease movable parts of units with thin grease oil. In mounting, impacts and stroke of plate should be considered. During and after assembly, bolts and other fasteners should be controlled, in part replacement, first, it should be started by dismantling spring /lock unit. Pls. determine your products in suitable dimensions.



1. UNIT	2. UNIT	
L2	L1	H
90	140	83.5
170	204	152
220	254	194.5

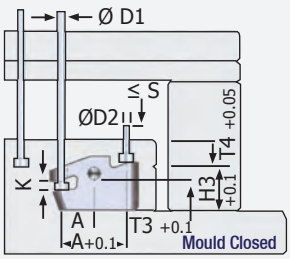
Order	L1	H	L2
BOX460.140	140	83.5	90
BOX460.204	204	152	170
BOX460.254	254	194.5	220



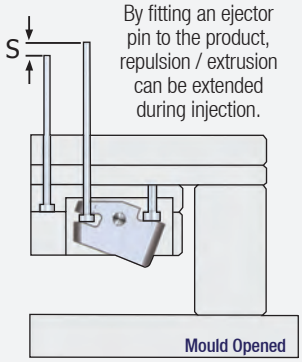


EJECTOR ACCERELATOR SWING IHS

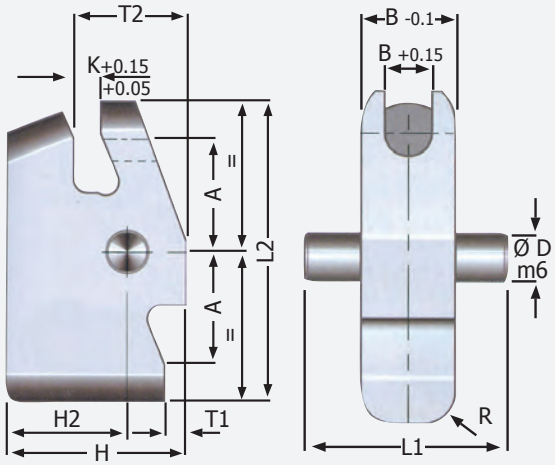
It is used in case that ejector plate requires motion/stroke more than normal motion distance.



By fitting an ejector pin to the product, repulsion / extrusion can be extended during injection.



Mechanical swing system increasing stroke distance of system connected

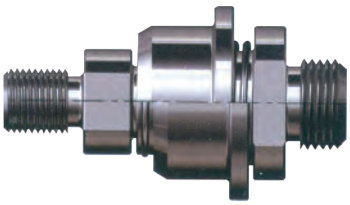


EJECTOR ACCERELATOR SWING IHS

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

T3	T4	D1	L1	L2	L3	L4	H	H2	H3	K	R	S
4	4	3	16	26	31	23	19	14	16	3	4	2.5
8	8	6	36	56	63	45	34	23	27	5	8	7.6
8	8	8	36	56	63	45	34	23	27	5	8	7.6

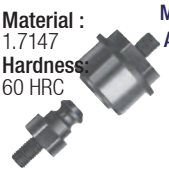
Accerelated Core Protector



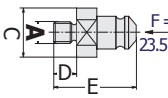
AUTOMATIC PERCUSSION EJECTOR PLATE SYSTEM

Reliable Back Stroke in Ejectors - Reliable Injection Automatic Ejector System in Moulding: it can be used in each positions with rapid and simple mounting (even within existing mould), only it is released during injection. In any injection mould, it makes contact with returns especially hydraulic ejector systems or it protects ejector pins to possible core contact in mechanical ejectors/core systems. The installation period is so simple and short. Initial settings can be done to unit on mould. In mounting, it should be controlled that back stroke is completely in back position and in contact manually. For serial and economic processes, it can be increased up to 25-30 per minute.

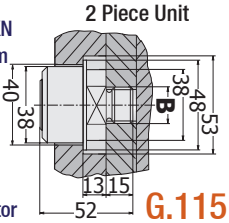
Material : 1.7147
Hardness: 60 HRC



Medium Force F = 23.5 KN
Automatic Ejector System

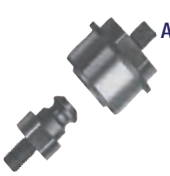


2 Piece Unit

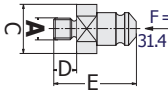


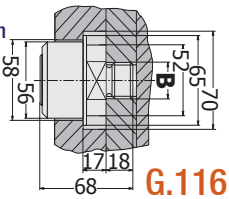
Medium Force F = 2.400 Kg. Automatic Ejector — **G.115**

Order	A	C	D	E	B
G.115 A/B	M10 x 1.5	26	20	55	M16 x 1.5
	M12 x 1.75				
	M14 x 2.0				
	M16 x 2.0				



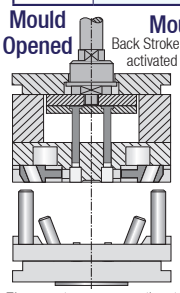
High Force F = 31.4 KN
Automatic Ejector System

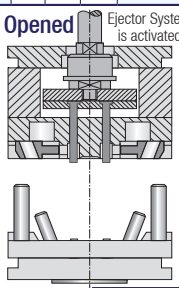


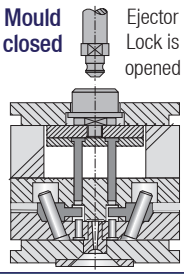


High Force F = 3.200 Kg. Automatic Ejector — **G.116**

Order	A	C	D	E	B
G.116 A/B	M16 x 2.0	35	25	68	M16 x 1.5
	M18 x 2.5				M18 x 1.5
	M20 x 2.5				M20 x 1.5
	M24 x 3.0				M24 x 1.5
	M27 x 3.0				M27 x 1.5
	M30 x 3.5				M30 x 1.5







Ejector plates are reclined back with retractors, during resting, automatic stroke system is invalidated unit (spring rollers) and end part is released.

Section Injection Mould
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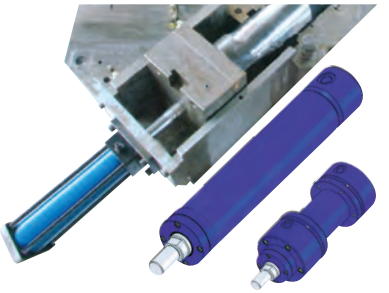


CONNECTED HYDRAULIC CYLINDER

THSE - THSF - THSM

Head Flange Various Cylinder Connection Types

Except Standard Piston, as per request, there is also special type hydraulic cylinder piston production available. For excessive heat environments, as per request, special / single effect (spring return) shaft dimensions can be changed. In types, also hydraulic cylinders are available. The following table, is diversification of some connection types belonging to these cylinders.

INJECTION MOULDS, HYDRAULIC CYLINDERS

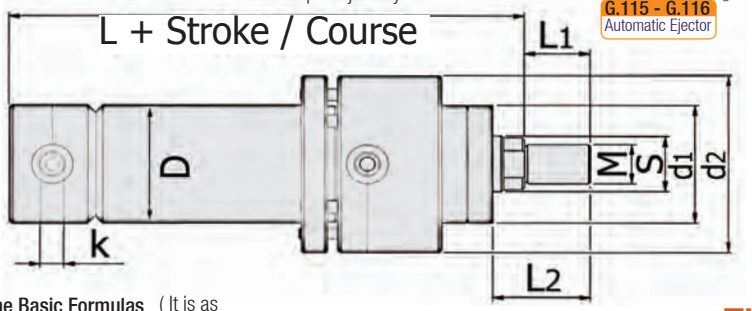
THS Standard Type

Hydraulic Cylinders for moulds such as Waste Water Pipes, PVC Pipes.

Hydraulic Ccylinders: They are in Standard "THS" Types or as per request, are in special shapes and dimensions. In Plastic Injection Waste Water / Contaminated Water PVC pipes moulds, they are used in formation of core systems. The energy requirement of system is obtained from system by connecting plastic injection machine to hydraulic system. As per request, the motions over fixed limit can be obtained by connecting piston rod to system. **Working System:** It is hydraulic oil, Maximum Working Pressure: 160 Bar. **Motion Type:** Double action **Sealing:** It is provided with Polyurethane + NBR. **Working Temperature:** It is between - 20 / + 80º. **Stroke Error:** ± 0.3 mm. **Cylinder:** It is honed with cold drawn / rolled ST - 52. **Piston:** Diameter Tolerance is grinded with H8 RA ≥ 2 Micron and coated with hard chrome. As per request, auxiliary Equipment (Connections, hoses and so on) can be supplied.

In such moulds, automatic ejector plate joint system is recommended.

G.115 - G.116 Automatic Ejector



Some Basic Formulas In Application (It is as advisory)

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

Cylinder Force:
F (N) = p (bar)x A (cm²)x 10
A = Effective Piston Area

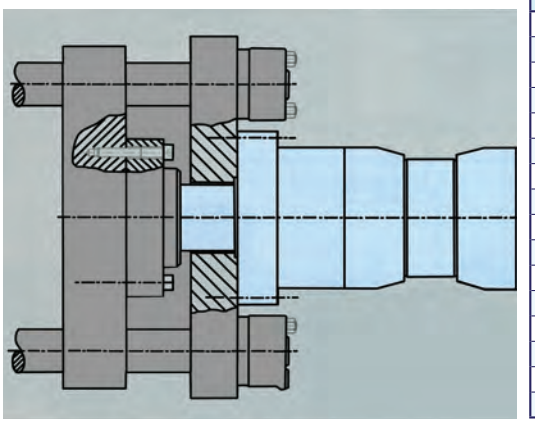
Required Mass Flow Rate:
$Q\ (lt / dk) = A\ (cm^2) \times v(\frac{m}{s}) \times 6$

Repulsion and Return Speed:
$v(\frac{m}{s}) = \frac{Q\ (lt / dk)}{A\ (cm^2)} \times \frac{1}{6}$
Q = Mass Flow Rate

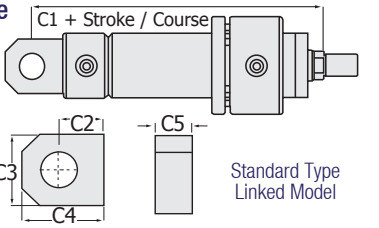
Required Pump Capacity:
$P\ (kW) = \frac{Q\ (lt/dk) \times p\ (bar)}{\eta} \times \frac{1}{600}$
η = Pump Efficiency

INJECTION MOULD HYDRAULIC CYLINDERS THS

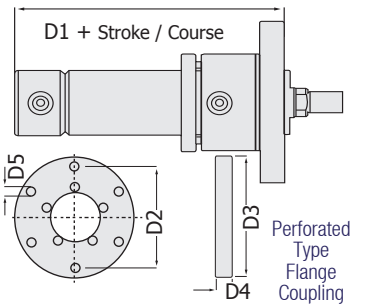
Order	D	k	M	S	d1	d2	L	L1	L2
THS. 40	50	1/4	M16 x 1.5	22	50	80	122	22	35
THS. 50	60	1/4	M20 x 1.5	28	60	95	148	31	46
THS. 63	75	3/8	M27 x 2.0	36	70	125	161	39	55
THS. 80	95	3/8	M33 x 2.0	45	85	130	180	47	65
THS. 100	115	1/2	M42 x 2.0	56	109	160	187	60	80
THS. 125	145	1/2	M48 x 2.0	70	130	195	212	67	90



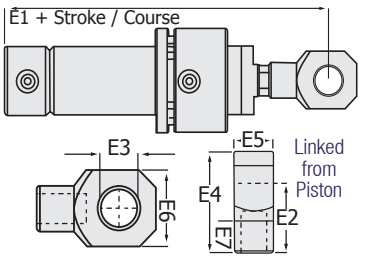
THSE HYDRAULIC CYLINDER



THSF HYDRAULIC CYLINDER



THSM HYDRAULIC CYCLINDER



Other dimensions are in the order table

In Order: Product code and diameter be specified should

Linked Hydraulic Cylinders

Ø	40	50	63	80	100	125
C1	192	224	248	280	307	349
C2	30	30	40	45	63	70
C3	50	55	70	80	113	130
C4	40	50	60	70	100	120
C5	20	25	30	35	45	60
D1	145	175	188	2213	224	251
D2	107	126	145	165	200	235
D3	130	150	175	200	240	280
D4	16	20	20	26	30	32
D5	11	11	14	18	22	22
E1	212	249	278	317	259	399
E2	50	55	70	82	115	120
E4	20	25	32	40	50	60
E5	70	80	104	119	165	180
E6	40	50	60	80	100	120
E7	20	25	29	29	50	50

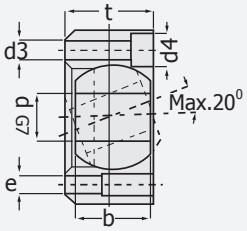
Section Injection Mould

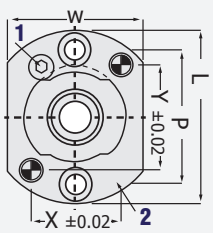
G.136

ANGULAR SPHERICAL BUSH

Guide Bush Transmitting Angle Motion

It offers easy installation for desired inclined pin design in great moulds. Angle adjustment can be done between 0º and 20º. Working temperature is 170º. The illustration in technical drawing has been prepared according to the way of work. The right one is drawing symmetry of way of work. Locking units shown with 1 and 2 is valid for d > 16'.





Working mechanism should be ordered as
G.136 Right - **G.136L** Left.

ANGULAR SPHERICAL BUSH G.136

Order	d	L	w	t	b
G136.08	**8**	44	28	17	14
G136.10	**10**	46	30	20	16
G136.12	**12**	50	32	22	18
G136.16	**16**	58	45	29	25
G136.20	**20**	65	50	33	28
G136.25	**25**	78	57	38	33
G136.30	**30**	86	65	43	37
G136.35	**35**	98	72	49	40
G136.40	**40**	106	77	53	44
G136.45	**45**	118	85	57	48

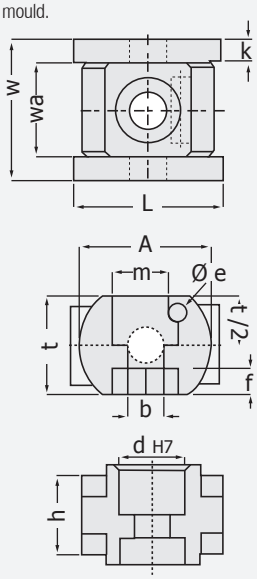
p	e	x	y	d3	d4	M
32	5	20	28	6	10	-
34	5	22	28	6	10	-
36	6	22	30	7	11	-
45	6	30	35	7	11	M8
52	6	35	40	7	11	M8
62	8	40	50	9	15	M8
70	8	48	55	9	15	M8
78	8	52	60	11	18	M10
84	8	55	65	11	18	M10
96	8	59	72	11	18	M10

G.135

INCLINED INNER UNIT

Mountable to the Mould (Ejector Plate)

Slide part (Self Lubricating) is mounted by processing to ejector plate of mould.



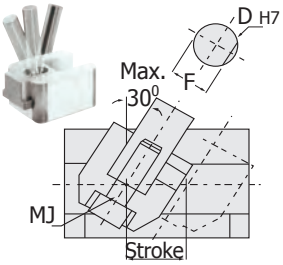
Self Lubrication System in inclined ejector pin unit, is greased up to 30º in unit

Material: 1.0503 (C.45)
Bronze and On Providing Graphite Pores:

INCLINED INNER UNIT G.135

Order	d	w	L	wa	k
G135.08	**8**	24	25	12	6
G135.10	**10**	28	32	14	7
G135.12	**12**	31	40	17	7
G135.16	**16**	36	45	21	7.5
G135.20	**20**	43	45	28	7.5
G135.25	**25**	48	50	33	7.5
G135.30	**30**	55	60	38	8.5
G135.35	**35**	64	70	44	10
G135.40	**40**	72	80	50	11

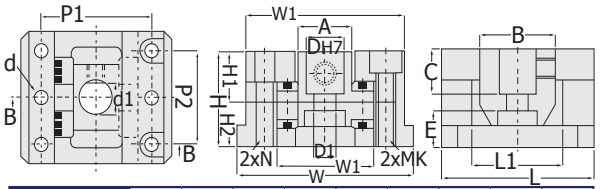
h	A	t	f	m	b	e
13	20	16	5	7.5	5	3
17	20	16	4	8.5	6	3
20	25	20	5	10	7	4
24	30	24	6	13	9	6
24	40	30	8	17	11	6
26	45	35	9.5	22	14	6
30	50	38	9	27	14	6
34	55	40	10	31	14	8
38	60	43	11.5	36	18	8



FIXED, INCLINED EJECTOR PIN UNIT G.133

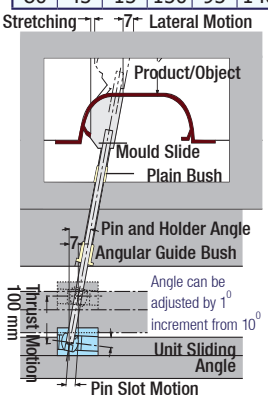
It moves the inclined/angle pin systems in the desired angle

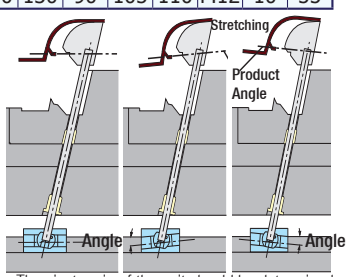
With this unit, processing in mould and mounting costs are very low, processing and mounting costs and system installation are economic and easy and also it provides important contribution to production period, the product separating from moulds with this unit is more economical compared with similar systems. The heat resistance of unit in mould is up to 300º (With Graphite bearing system), the unit can be lubricated itself, the working angle of ejector pin can be inclined up to 10º-20º-30º, can be connected to ejector plates via retaining pins and bolts in its mounting, according to specified pin length, the position of intermediate block can be positioned, make this adjustment when intermediate centre block and pin are inserted and removed easily. For the precise bottom support/bedding of unit, the block product coded G. 147 in Page 240 can be used.



Order	D	d1	D1	A	B	C	E	F	MJ
G.133.08	**8**	7	4.5	11	20	8	10	7	M4
G.133.10	**10**	7	5.5	15	25	10	12.5	9	M5
G.133.12	**12**	10	7	17	25	12	15	11	M6
G.133.16	**16**	12	9	22	30	16	15	14.5	M8
G.133.20	**20**	14	11	26	40	20	16	18	M10
G.133.25	**25**	16	14	32	45	25	17	22.5	M12
G.133.30	**30**	18	14	38	50	30	17	27	M12
G.133.35	**35**	20	14	45	60	35	18	32	M12
G.133.40	**40**	25	18	55	70	40	19	36	M16
G.133.45	**45**	30	18	60	80	45	24	40	M16

H	H1	H2	L	L1	W	W1	W2	P1	P2	MK	N	Strok
22	12.5	5	32	20	33	30	19	24	20	M3	3	10
27	15.5	5	45	25	45	40	25	32	30	M4	4	18
32	18	7	50	30	57	51	31	39	35	M6	6	20
36	20	8	65	40	65	58	38	46	40	M6	6	25
42	23	11	80	50	80	72	44	56	55	M8	8	30
50	28	15	90	55	93	85	52	66	65	M10	10	35
55	30	15	100	60	101	93	60	74	70	M10	10	40
62	35	15	120	75	120	110	70	85	80	M12	10	45
70	40	15	135	85	130	120	80	95	90	M12	10	50
80	45	15	150	95	140	130	90	105	110	M12	10	55





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

Section Injection Mould
Page 245

Gaining of Cutting Machine to Mould Industry is provided by GÜVENAL GROUP.

PIN CUTTING AND GRINDING MACHINES PKM.1 Order

Ø 1 - 24 mm Cylindrical Part, work piece for length adjusting

Positioning the Work Piece and Safety **Precise Length Cutting and Grinding**

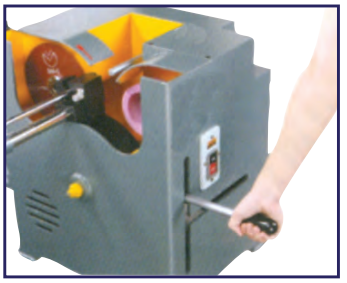
Stone Diameter Capacity	From Ø 1 mm to 24 mm
Length Capacity	Roughly, 320 - 800 mm ± 0.10
Standard Length Adjustment, Precise Cutting	60 - 320 mm ± 0.01
Short Cutting (With optional bus bar)	40 - 320 mm ± 0.01
Grinding Cutting, Wheel Cycle / Speed	2800 m / Min.
Engine cycle / Speed	3600 RPM
Motor	220 / 280 F. 50 Hz. 0.75 Kv.
Cutting Wheel (Order PKM 2 **)**	125 x 1 or 1.5 mm
Grinding Wheel (Order PKM 3 **)**	EKR / D100
Stone Correction Diamond (Order PKM 4 **)**	0.50 Carat
Machine Dimensions	430 x 360 x 500 mm
Weight	109 Kg.

It provides rapid precise cutting with length adjustment repeatedly. Besides the cutting process, it runs the face grinding process simultaneously.

In mould production plants, it is used for cutting all your parts (Many cylindrical parts such as Ejector Pin / Pipe Ejector / Runner / Punch Posts / Bolts or Small Square - Sheet Bar Parts).

CUTTING AND GRINDING PROCESS

By pushing the side control arm forward, the material to be cut is placed into the slot and Length Adjustment: The desired dimension is selected on the scale, the precision control is made by micrometer. Machine is activated, Transparent Plexiglass Cover on Machine has a safety switch, Machine does not work without closing the cover...



When movable control arm on the side of the cutting machine is in upward position, the work piece is cut in cutting stone slowly and in a controlled manner, when it is in lower position, the face grinding of cut work piece is done and by pushing control arm forward again, work piece is taken from the slot. Precision Scaled Adjustment Mechanism belonging to all working parts on machine are available.

Ejector Pins / Punchesthat belong to our Company are cut and face grinded precisely.

Easy Rapid Practical

Work Piece Support Thrust

Grinding, Stone Correction Diamond Adjustment Scale

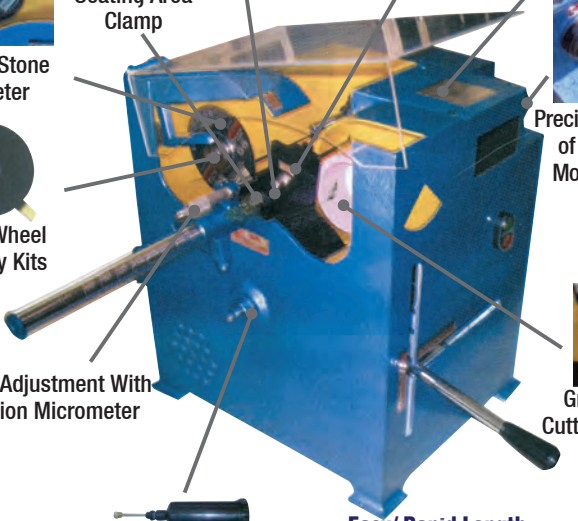
Cover Safety Switch

Work Piece Placement Seating Area Clamp

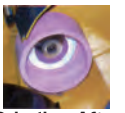
Cutting Stone Diameter

Precision Whetting of Dish Stone Movable Scale

Cutting Wheel Assembly Kits



Length Adjustment With Precision Micrometer



Grinding After Cutting Dish Stone

System Lubricant Grease Nipple

Easy/ Rapid Length Adjustment & Cutting in Precision Cutting

It Provides Recycling of Refused Material

COUNTERSUNK EJECTOR PIN DIN 1530 - D

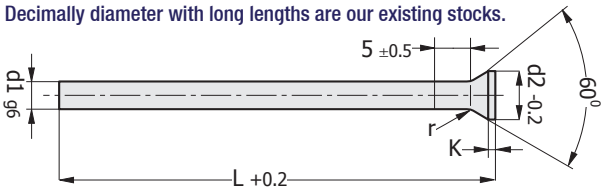
HBI

Plastic Injection Mould Ejector Pins

Material: 1.2516 WS **Head Hardness :** 45 ± 2 HRC **Casing Hardness :** 60 ± 2 HRC

Max Heat Resistance : 220^0 **Tension Resistance:** 1300 N / mm^2

Decimally diameter with long lengths are our existing stocks.



d1	L	d2	k
9.0	100, 125, 160, 200, 250	11	1.0
9.5	100, 125, 160, 200	12	1.0
10	100, 125, 160, 200, 250, 315	12	1.0
10.5	100, 125, 160, 200	13	1.0
11	100, 125, 160, 200, 250	13	1.0
12	100, 125, 160, 200, 250, 315	14	1.0
13	100, 125, 160, 200, 250	15	1.0
14	100, 125, 160, 200, 250, 315	16	1.5
16	100, 125, 160, 200, 250, 315	18	1.5

d1	L	d2	k
5.4	100, 125, 160	6.5	0.5
5.5	100, 125, 160, 200, 250, 315	7.0	0.5
5.6	100, 125, 160	7.0	0.5
5.7	100, 125, 160	7.0	0.5
5.8	100, 125, 160	7.0	0.5
5.9	100, 125, 160	7.0	0.5
6.0	100, 125, 160, 200, 250, 315	8.0	0.5
6.5	100, 125, 160, 200, 250	9.0	1.0
7.0	100, 125, 160, 200, 250, 315	9.0	1.0
7.5	100, 125, 160, 200	10	1.0
8.0	100, 125, 160, 200, 250, 315	10	1.0
8.5	100, 125, 160, 200, 250	11	1.0

d1	L	d2	k
3.9	100, 125, 160	5.0	0.5
4.0	100, 125, 160, 200, 250, 315	5.5	0.5
4.1	100, 125, 160	5.5	0.5
4.2	100, 125, 160	5.5	0.5
4.3	100, 125, 160	5.5	0.5
4.4	100, 125, 160	5.5	0.5
4.5	100, 125, 160, 200, 250, 315	6.0	0.5
4.6	100, 125, 160	6.0	0.5
4.7	100, 125, 160	6.0	0.5
4.8	100, 125, 160	6.0	0.5
4.9	100, 125, 160	6.0	0.5
5.0	100, 125, 160, 200, 250, 315	6.5	0.5
5.1	100, 125, 160	6.5	0.5
5.2	100, 125, 160	6.5	0.5
5.3	100, 125, 160	6.5	0.5

d1	L	d2	k
2.9	100, 125, 160	4.0	0.5
3.0	100, 125, 160, 200, 250, 315	4.5	0.5
3.1	100, 125, 160	4.5	0.5
3.2	100, 125, 160	4.5	0.5
3.3	100, 125, 160	4.5	0.5
3.4	100, 125, 160	4.5	0.5
3.5	100, 125, 160, 200, 250, 315	5.0	0.5
3.6	100, 125, 160	5.0	0.5
3.7	100, 125, 160	5.0	0.5
3.8	100, 125, 160	5.0	0.5

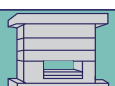
d1	L	d2	k
2.0	100, 125, 160, 200, 250, 315	3.0	0.5
2.1	100, 125, 160	3.2	0.5
2.2	100, 125, 160	3.2	0.5
2.3	100, 125, 160	3.5	0.5
2.4	100, 125, 160	3.5	0.5
2.5	100, 125, 160, 200, 250, 315	3.5	0.5
2.6	100, 125, 160	4.0	0.5
2.7	100, 125, 160	4.0	0.5
2.8	100, 125, 160	4.0	0.5

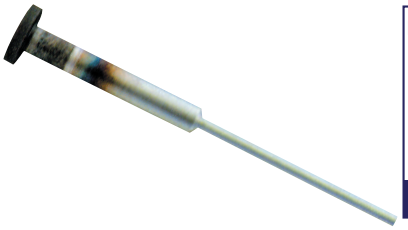
d1	L	d2	k
1.0	100, 125, 160, 200	1.8	0.5
1.1	100, 125, 160	1.8	0.5
1.2	100, 125, 160	2.0	0.5
1.3	100, 125, 160	2.0	0.5
1.4	100, 125, 160	2.2	0.5
1.5	100, 125, 160, 200	2.2	0.5
1.6	100, 125, 160	2.5	0.5
1.7	100, 125, 160	2.5	0.5
1.8	100, 125, 160	2.8	0.5
1.9	100, 125, 160	2.8	0.5

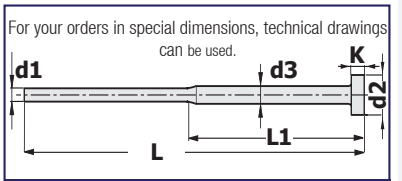
Order : **HBI** d1 x L

Reliable Label

Section Injection Mould







As per request/ Special Order Definition

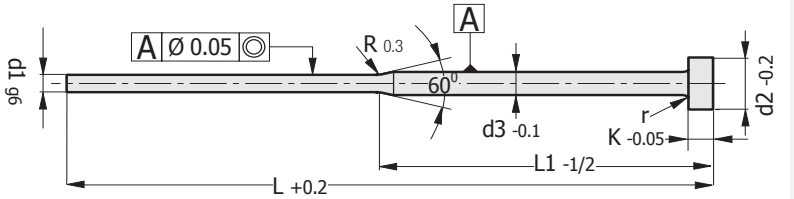
CYLINDRICAL HEAD, EJECTOR PIN, STEPPED

DIN ISO 8694 **SBK**

Type : AH

Material: 1.2516 WS **Head Hardness:** 45 ± 2 HRC **Casing Hardness:** 60 ± 2 HRC

Max. Heat Resistance : 220^0 **Tension Resistance :** 1300 N / mm^2



d1	L	L1	d3	d2	k
0.8	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			
1.0	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			
	200				
1.1	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			
1.2	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			
1.3	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			

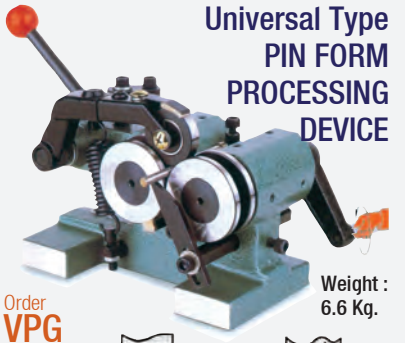
d1	L	L1	d3	d2	k
1.4	63	25	2	4	2
	80	35			
	100	50			
	125				
	150				
	160	75			
1.5	63	25	3	6	3
	80	35			
	100	50			
	125				
	150				
	160	75			
	200				
1.6	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				
1.7	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				
1.8	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				

d1	L	L1	d3	d2	k
2.0	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				
2.2	80	35	3	6	3
	100	50			
	125				
	150				
	160	75			
	200				
2.5	100	50	3	6	3
	125				
	150				
	160	75			
	200				
2.6	100	50	3	6	3
	125				
	150				
	160	75			
	200				
2.7	100	50	3	6	3
	125				
	150				
	160	75			
	200				
2.8	100	50	3	6	3
	125				
	150				
	160	75			
	200				

For your special order, pls. fill in the technical drawing details.

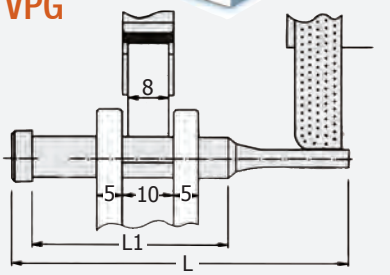
Order : **SBK.AH** d1xd3xL1xL

Universal Type PIN FORM PROCESSING DEVICE



Weight : 6.6 Kg.

Order **VPG**



Working System:
Grinding, Bench Manual System Device

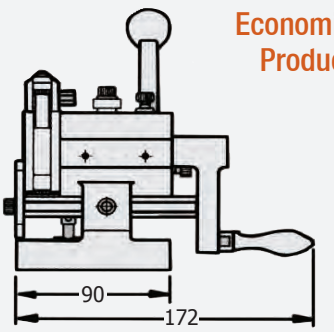
* It is used in cylindrical or stepped form grinding operations of ejector pin - perforator or EDM Work Piece on surface honing workbench.

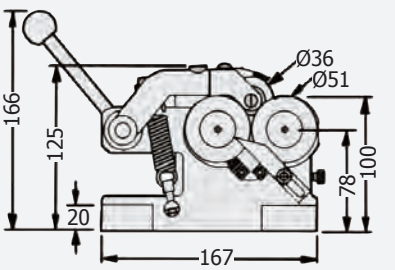
Pin Capacity : ..... 1.5 mm x 25 mm

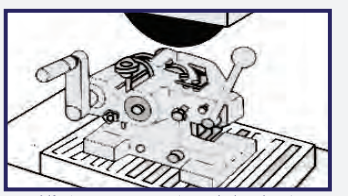
* Pin: When it is secured between precision wheels, the center of work is determined automatically.
* Thanks to Rigid Fastening System, the grinding distance from **5 mm to 35 mm** can be obtained.

d1 = 35 mm, after it can be stretched.

Economic Product







Lift depressor arm, place pin into its slot.
Tight depressor arm screw, grind manually.

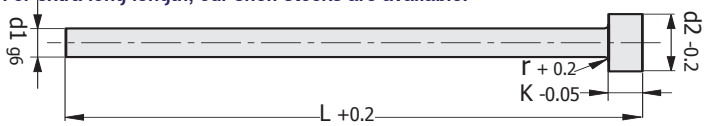
CYLINDRICAL HEAD EJECTOR PIN DIN ISO 6751 TYPE: AH SBİ

Plastic Injection Mould Economic - Heat Ejector Pins

Material: 1.2516 Head Hardness: 45 ± 2 HRC Casing Hardness: 60 ± 2 HRC

Max. Heat Resistance : 220^0 Tension Resistance : 1300 N / mm^2

For extra long length, our shelf stocks are available.



d1	L	d2	k
12	100 125 160 200 250 315 400 500 630 800 1000	18	7.0
13	160 200 250 315	20	7.0
14	100 125 160 200 250 315 400 500 630 800 1000	22	7.0
16	100 125 160 200 250 315 400 500 630 800 1000	22	7.0
18	100 125 160 200 250 315 400 500 630 800 1000	24	7.0
20	100 125 160 200 250 315 400 500 630 800 1000	26	8.0
25	100 125 160 200 250 315 400 500 630 800 1000	32	10

d1	L	d2	k
7.5	100 125 160 200 250 315 400 500	12	5.0
8.0	100 125 160 200 250 315 400 500 630 800 1000	14	5.0
8.5	100 125 160 200 250 315 400 500 630	14	5.0
9.0	100 125 160 200 250 315 400 500 630 800	14	5.0
10	100 125 160 200 250 315 400 500 630 800 1000	16	5.0
10.5	100 125 160 200	16	5.0
11	100 125 160 200 250 315 400 500 630	16	5.0

d1	L	d2	k
5.5	100 125 160 200 250 315 400 500	10	3.0
6.0	100 125 160 200 250 315 400 500 630 800 1000	12	5.0
6.5	100 125 160 200 250 315 400 500 630	12	5.0
7.0	100 125 160 200 250 315 400 500 630 1000	12	5.0

d1	L	d2	k
3.5	250 315 400 500 630	7.0	3.0
4.0	100 125 160 200 250 315 400 500 630 800 1000	8.0	3.0
4.5	100 125 160 200 250 315 400 500	8.0	3.0
5.0	100 125 160 200 250 315 400 500 630 800 1000	10	3.0

d1	L	d2	k
1.0	100 125 160	2.5	1.2
1.5	100 125 160 200	3.0	1.5
2.0	100 125 160 200 250 315 400 500	4.0	2.0
2.5	100 125 160 200 250 315 400 500	5.0	2.0
3.0	100 125 160 200 250 315 400 500 630	6.0	3.0
3.5	100 125 160 200	7.0	3.0

Order : SBI-AH d1 x L

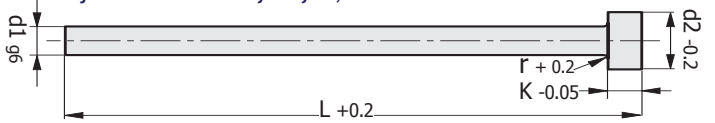
CYLINDRICAL HEAD EJECTOR PIN DIN ISO 6751 TYPE : A SBI

Plastic / Metal Injection Economic - Heat Resistant Ejector Pins

Material: 1.2344 (Hot Work Steel) Head Hardness: 45 ± 5 HRC **Casing Hardness:** 44 HRC

Max. Heat Resistance : 500 - 550^0 Tension Resistance **:** 1450 N / mm^2

Decimally diameter with long lengths, Our available stocks.



d1	L	d2	k
1.0	100	2.5	1.2
	125		
	160		
1.5	100	3.0	1.5
	125		
	160		
	200		
1.8	100	3.0	1.5
	160		
2.0	100	4.0	2.0
	125		
	160		
	200		
	250		
	315		
2.2	100	4.0	2.0
	160		
2.5	100	5.0	2.0
	125		
	160		
	200		
	250		
	315		
3.0	100	6.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
3.2	100	6.0	3.0
	160		
3.5	100	7.0	3.0
	125		

d1	L	d2	k
3.5	160	7.0	3.0
	200		
	250		
	315		
	400		
4.0	100	8.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
4.2	100	8.0	3.0
	160		
4.5	100	8.0	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
5.0	100	10	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		

d1	L	d2	k
5.5	100	10	3.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
6.0	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
6.5	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
7.0	100	12	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		

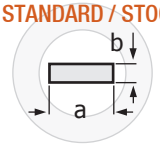
d1	L	d2	k
7.5	100	12	5.0
	125		
	160		
	200		
	250		
	315		
8.0	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
8.5	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
9.0	100	14	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
10	100	16	5.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
10.5	100	16	5.0
	125		
	160		
	200		
11	100	16	5.0
	125		
	160		
	200		
	250		
	315		
	400		

d1	L	d2	k
12	100	18	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
	1000		
14	100	22	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
16	100	22	7.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
	800		
18	100	24	7.0
	125		
	160		
	200		
	250		
20	100	26	8.0
	125		
	160		
	200		
	250		
	315		
	400		
	500		
	630		
25	100	32	10
	125		
	160		
	200		
	250		
	315		
	400		
	500		

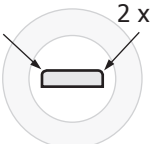
Ejector Pins in Special Diameters-Dimensions of Different Materials can be Produced as per Request.

Order : **SBI.A** d1 x L

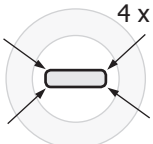
STANDARD / STOCK



Sharp Edged **Type. A**



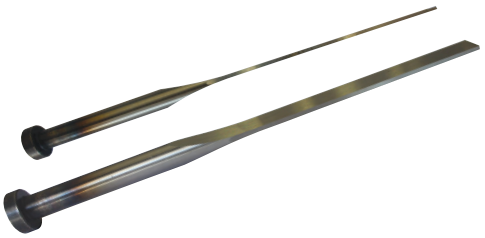
2 Corner Radius **Type. B**



4 Corner Radius **Type. C**

AS PER REQUEST

Corner Radius Diversification of Sheet Bar Belonging to Sheet Bar Ejector

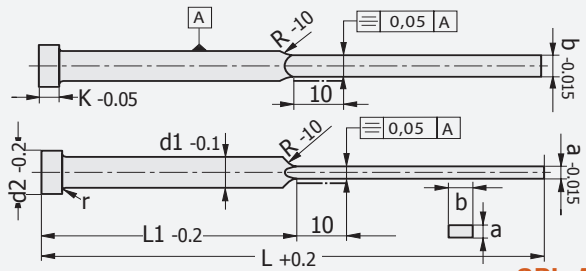


As per request; CYLINDRICAL HEAD SHEET BAR EJECTOR PIN

ISO 8693 (DIN 1530 F) **TYPE : A-B-C** **SPL**

Plastic / Metal Inj. Mould HEAT RESISTANT S. BAR EJECTOR SPL.A

Material: 1.2344 (Hot Work Steel) Max. Heat Resistance: 500 - 550°



Plastic / Metal Inj. Mould HIGH TEMPERATURE S. BAR EJECTOR SPL.A

Our standard shelf stocks are created from **Type A** (Sharp Edged).
Type B (2 Corner Radius /**Type C** (4 Corner Radius) are as per request.
As per request, your orders can be dimensioned by Technical Drawing Details.

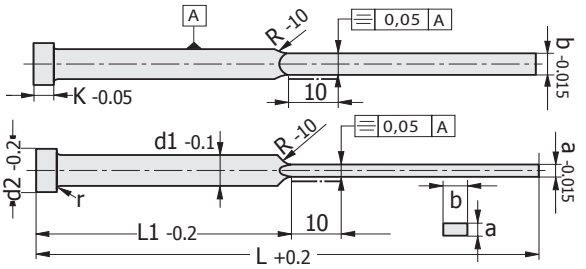
a	b	d1	L	L1
1.5	4.5	5.0	100	50
			125	60
			160	80
			200	100
1.5	5.5	6.0	100	50
			125	60
			160	80
			200	100
1.5	7.5	8.0	125	60
			160	80
			200	100
			250	125
1.5	9.5	10	160	80
			200	100
			250	125
2.0	5.5	6.0	100	50
			125	60
			160	80
			200	100
2.0	7.5	8.0	160	80
			200	100
			250	125
2.0	9.5	10	200	100
			250	125
			315	160
2.0	11.5	12	200	100
			250	125
			315	160
2.5	11.5	12	200	100
			250	125
			315	160

a	b	d1	L	L1
0.8	3.5	4.0	80	40
			100	50
			125	60
1.0	4.5	5.0	80	40
			100	50
			125	60
			160	80
1.0	5.5	6.0	80	40
			100	50
			125	60
			160	80
1.2	3.5	4.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	4.5	5.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	5.5	6.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	7.5	8.0	80	40
			100	50
			125	60
			160	80
			200	100

Order : **SPL.A** Standard Type A **a x b x d1 x L**
(Special Type B / Type C)

Plastic Inj. Mould HARDENED SHEET BAR EJECTOR SPL.AH

Material: 1.2516 (Hardened) Max. Heat Resistance: 220°



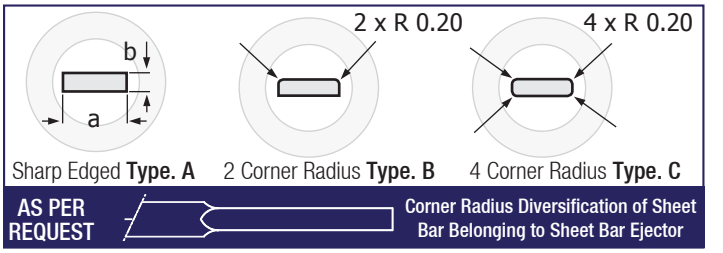
Plastic Inj. Mould HARDENED S. BAR EJECTOR SPL.AH

Our standard shelf stocks are created from **Type A** (Sharp Edged).
Type B (2 Corner Radius /**Type C** (4 Corner Radius) are as per request.
As per request, your orders can be dimensioned by Technical Drawing Details.

a	b	d1	L	L1
1.5	4.5	5.0	100	50
			125	60
			160	80
			200	100
1.5	5.5	6.0	100	50
			125	60
			160	80
			200	100
1.5	7.5	8.0	125	60
			160	80
			200	100
			250	125
1.5	9.5	10	160	80
			200	100
			250	125
2.0	5.5	6.0	100	50
			125	60
			160	80
			200	100
2.0	7.5	8.0	160	80
			200	100
			250	125
2.0	9.5	10	200	100
			250	125
			315	160
2.0	11.5	12	200	100
			250	125
			315	160
2.5	11.5	12	200	100
			250	125
			315	160

a	b	d1	L	L1
0.8	3.5	4.0	80	40
			100	50
			125	60
1.0	4.5	5.0	80	40
			100	50
			125	60
			160	80
1.0	5.5	6.0	80	40
			100	50
			125	60
			160	80
1.2	3.5	4.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	4.5	5.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	5.5	6.0	80	40
			100	50
			125	60
			160	80
			200	100
1.2	7.5	8.0	80	40
			100	50
			125	60
			160	80
			200	100

Order : **SPL.AH** Standard Type A **a x b x d1 x L**

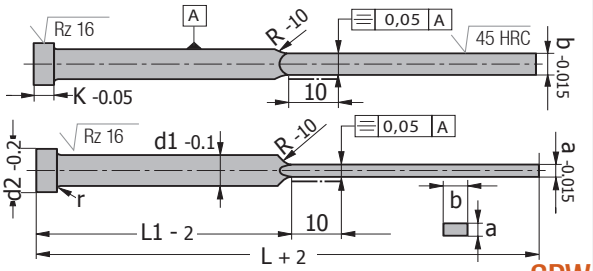


Per request; CYLINDRICAL HEAD (Oxidation) SHEET BAR EJECTOR PIN

DIN ISO 8693 TYPE : A-B-C SPW

Plastic / Metal Inj. Mould HIGH TEMPERATURE S. BAR EJECTOR SPW

Material: 1.2343 (Nitrite- Oxidation) Heat Resistance: 650 / 1400°



Metal Inj. Mould HIGH TEMPERATURE (Oxidation) S. BAR EJECTOR SPW

Our standard shelf stocks are created from **Type A** (Sharp Edged).
Type B (2 Corner Radius /**Type C** (4 Corner Radius) are as per request.

As per request, your orders can be dimensioned by Technical Drawing Details.

a	b	d1	L	L1
0.8	3.5	4.0	80	40
			100	50
			125	60
1.0	4.5	5.0	80	40
			100	50
			125	60
			160	80
1.0	5.5	6.0	80	40
			100	50
			125	60
			160	80
1.2	3.5	4.0	80	40
			100	50
			125	60
			160	80
1.2	4.5	5.0	80	40
			100	50
			125	60
			160	80
1.2	5.5	6.0	80	40
			100	50
			125	60
			160	80
1.2	7.5	8.0	80	40
			100	50
			125	60
			160	80
1.5	4.5	5.0	100	50
			125	60
			160	80
			200	100

a	b	d1	L	L1
1.5	5.5	6.0	100	50
			125	60
			160	80
			200	100
1.5	7.5	8.0	125	60
			160	80
			200	100
			250	125
1.5	9.5	10	160	80
			200	100
			250	125
2.0	5.5	6.0	100	50
			125	60
			160	80
			200	100
2.0	7.5	8.0	160	80
			200	100
			250	125
			315	160
2.0	9.5	10	200	100
			250	125
			315	160
			400	200
2.0	11.5	12	200	100
			250	125
			315	160
			400	200
2.5	11.5	12	200	100
			250	125
			315	160
			400	200

Ejector Pin lubricating grease is provided operation at high temperature as 1400°C.

AWF 1400

METAL INJECTION MOULD INNER USE

High Temperature Lubricating Grease Such as Ejector Pins / Core Systems

It consists of AVF 1400 well refined mineral oils and EP additives providing lubricity as film strip between other mould parts and mould parts that are not affected from high temperature of ejector systems, core systems in working mould in high temperature such as metal injection. Thanks to solid lubricants and additives, it has comfortable operation. (No load operation, high heat insulation and it provides resistance up to 1400°, it is in film strip position of surfaces among their parts, even at very high temperature, it prevents sticking together. It is produced from vegetable oils and is not harmful to the health.

Advantage of Using AWF 1400 Lubricating Grease:

* It is resistant against oxidation and friction.
* It is resistant to corrosion and abrasion.
* It is silicium and white. (Don't make any contamination on mould)
* It is resistant against water and humidity. (There is no corrosion on water proof mould).
* It is easy to use, (in small packages with end sponge) and clean. The mould parts are not contaminated with reasons such as lubricating, abrasion, also it is presented to market as 520 gr. spray grease.
* Due to dust atmosphere as casting moulds, the user's hands are not painted black. It is a very good protector.
* It does not cause any reaction on surfaces.

Order	
AWF 10	10 Kg. (In can) packing
AWF 05	5 Kg. (In can) packing
AWF 01	1 Kg. (In metal can) packing

Order
AWF 04
520 gr. / ml. In Spray Grease Packing

Order
AWF 03
40gr. / ml. Mini Tube With End Sponge

Order : **SPW. AV**
Standard Type A **a x b x d1 x L**

d1	L	d2	k	r
12	500 630 800 1000	18	7.0	0.8
12.5	100 125 315 500 630	18	7.0	0.8
13	100 125 160 200 250 315 400	18	7.0	0.8
14	100 125 160 200 250 315 400 500 630 800 1000	22	7.0	0.8
16	100 125 160 200 250 315 400 500 630 800 1000	22	7.0	0.8
18	100 125 160 200 250 315 400 500	24	7.0	0.8
20	125 160 200 250 315 400 500 630 800 1000	26	8.0	1.0
25	160 250 315 400 630 800	32	10	1.0

d1	L	d2	k	r
8	250 315 400 500 630 800 1000	14	5.0	0.5
8.5	100 125 160 200 250 315 400 500 630	14	5.0	0.5
9	100 125 160 200 250 315 400	14	5.0	0.5
9.5	100 125 160 200 250 315	14	5.0	0.5
10	100 125 160 200 250 315 400 500 630 800 1000	16	5.0	0.5
10.5	100 125 160 200 250 315 400	16	5.0	0.5
11	100 125 160 200 250 315 400	16	5.0	0.5
12	100 125 160 200 250 315 400	18	7.0	0.8

Its Ejector pin, Lubricating Grease are provided working at high temperature up to1400^{0}C

Plasma Nitrite Covered oxidation

CYLINDRICAL HEAD EJECTOR PIN(Oxidation) TYPE : AV03 SBM

Especially: In Metal Injection Moulds, High Heat Resistance, Black

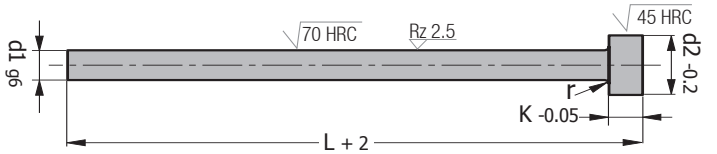
Material: 1.2343 (Hot work steel) Head Hardness : 45 ± 5 HRC **Casing Hardness :** 44 HRC

Casing is Grinded and Covered with Plasma Nitrite and Oxidation Hardness : 70 HRC.

AV03 The Ejector Pins; When they are used with AWF 1400 Lubricating Grease, is reached to 1400^0 Heat Resistance. Max. Heat Resistance : 650^0 (Without lubricating grease, dry) 1400^0

Tension Resistance : 1450 N / mm^2

Especially : It is Plasma /Nitrite - Oxidation Coated (it is highly qualified compared with similar products.)

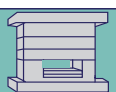


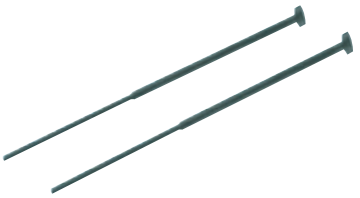
d1	L	d2	k	r
6	100 125 160 200 250 315 400 500 630 800	12	5.0	0.5
6.5	100 125 160 200 250 315 400	12	5.0	0.5
7.0	100 125 160 200 250 315 400 500 630	12	5.0	0.5
7.5	100 125 160 200 250 315 400 500	12	5.0	0.5
8.0	100 125 160 200	14	5.0	0.5

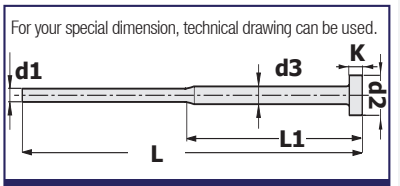
d1	L	d2	k	r
4	100 125 160 200 250 315 400 500 630	8	3.0	0.3
4.5	100 125 160 200 250 315 400 500 630	8	3.0	0.3
5.0	100 125 160 200 250 315 400 500 630 800	10	3.0	0.3
5.5	100 125 160 200 250 315 400 500	10	3.0	0.3

d1	L	d2	k	r
1.5	100 125 160 200	3	2.0	0.2
2.0	100 125 160 200 250 315 400	4	2.0	0.2
2.5	100 125 160 200 250 315 400	5	2.0	0.3
3.0	100 125 160 200 250 315 400 500 630	6	3.0	0.3
3.5	100 125 160 200 250 315 400 630	7	3.0	0.3

Order :
SBM.AV03
d1 x L







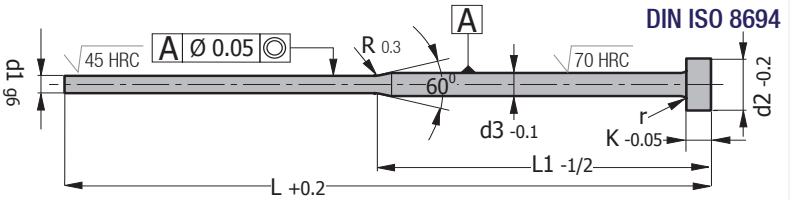
As per request/ Special Order Definition

CYLINDRICAL HEAD - STEPPED (Oxidation) EJECTOR PIN Type : AW SBW

Material : 1.2343 (Hot Work Steel) **Head Hardness :** 45 ± 5 HRC **Casing Hardness :** 44 HRC

AV03 Ejector Pins ; When they are used with AWF 1400 Lubricating Grease, it is reached to 1400^0 Heat Resistance.

DIN ISO 8694

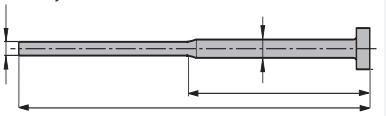


d1	L	L1	d3	d2	k	r
0.8	100	50	2	4	2	0.2
	125	50				
	160	75				
0.9	100	50	2	4	2	0.2
	125	50				
	160	75				
1.0	100	50	2	4	2	0.2
	125	50				
	160	75				
	200	75				
1.1	100	50	2	4	2	0.2
	125	50				
	160	75				
1.2	100	50	2	4	2	0.2
	125	50				
	160	75				
1.3	100	50	2	4	2	0.2
	125	50				
	160	75				

d1	L	L1	d3	d2	k	r
1.4	100	50	2	4	2	0.2
	125	50				
	160	75				
1.5	100	50	3	6	3	0.3
	125	50				
	160	75				
	200	75				
2.0	100	50	3	6	3	0.3
	125	50				
	160	75				
	200	75				
2.5	100	50	3	6	3	0.3
	125	50				
	160	75				
	200	75				

The production will be done as per request. (They are not available at our stocks)

For your special orders, pls. fill technical drawing details...



Cylindrical Head THREADED PIN SBD

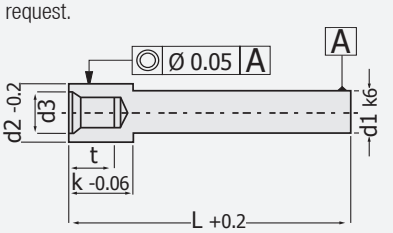
Mould Inner (Ejector Plate - Cores) Usage

DIN 1530 - A / ISO 6751

It has pin mounting feature without dismantling parts. **Material :** 1.2344 it is Grinded and Hardened.

Tension Resistance : 1400 N mm^2

Our special production is available as per request.



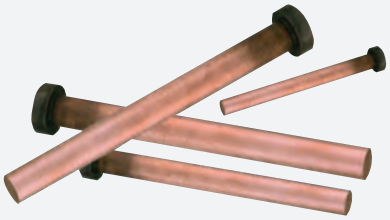
Cylindrical Head Threaded PIN SBD

d1	L	d3	t	k	d2
3	63	M4	5	10	6
	125				
4	63	M5	7	12	8
	125				
5	80	M6	9	14	9
	160				
6	80	M6	9	14	10
	160				
8	80	M6	10	16	13
	160				
10	100	M10	12	18	15
	200				
12	100	M12	14	22	18
	200				
14	100	M12	14	22	20
	200				

Order : SBW.AV d1 x d3 x L1 x L
Limited Stocks

Reliable Label

Order : SBD d1 x L x d3
Limited Stocks



Cylindrical Head COPPER ALLOY EJECTOR PIN SPP

High Heat Conductivity, Ejector Pin **DIN ISO 6751** **Type : AV 07**

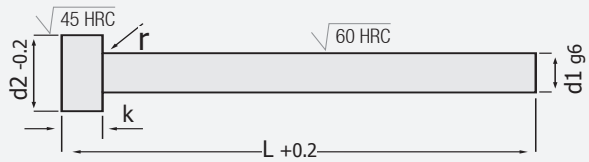
Copper Alloy Ejector Pin: It is for moulds that are produced with added copper/Cbn (Nickel Bornite) into material during production and have high temperature. The cooling for the desired area of mould is provided very quickly without deviating the targeted area, due to thermal optimisation, very high quality product is obtained from moulds under optimum temperature. Also, due to thermal optimisation again, production time per part is shortened as 30%. By changing according to the material, the heat conductivity is 6 times higher than standard pin. There is no need to use pin oil for copper ejector pins, even after cooling, it does not lose its conductivity, does not become deformated, it is weldable, solderable, burnishable. However, the upper surfaces of plated products can not be processed in turning or milling machine.

Material: CBN Chemical - Nickel- Bornite Alloy **Limited Stocks**

Hardness : 45- 50 HRC (71 Micron Plated)

Heat Resistance : 400^0 (1 Hour) - 300^0 (5 Hour)

Surface Roughness Ra <0.8 Micron

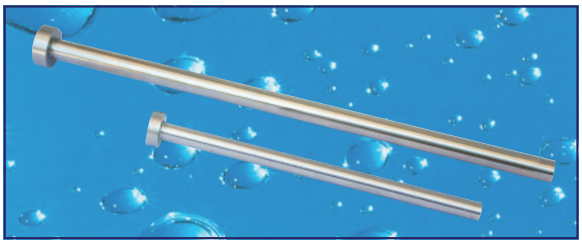


Cylindrical Head COPPER ALLOY EJECTOR PIN SPP

d1	L	d2	k	r
2.0	100 160	4	2	0.2
2.5	100 160	5	2	0.3
3.0	100 160 250	6	3	0.3
3.5	100 160	7	3	0.3
4.0	100 160 250	8	3	0.3
4.5	100 160	8	3	0.3
5.0	100 160 250	10	3	0.3
6.0	100 160 250 315	12	5	0.5

d1	L	d2	k	r
7.0	100 160 250	12	5	0.5
8.0	100 160 250 315	14	5	0.5
10	100 160 250 315 400	16	5	0.5
12	100 160 250 315 400	18	7	0.8
14	160 250 400	22	7	0.8
16	160 250 400 500	22	7	0.8

Order : **SPP.AV07** d1 x L



Cylindrical Head STAINLESS EJECTOR PIN SPI

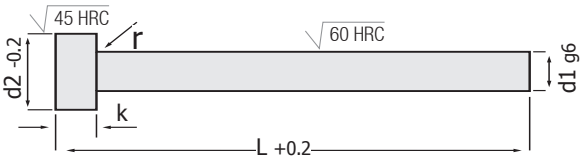
It is compatible with Medicine and Food Industry Standards **DIN ISO 6751**

Stainless Steel : The ejector pins has been produced to avoid corrosion problems. They are anti magnetic products resistant to corrosion and acids for production at severe climate conditions in Chemistry / Medicine and Food Industry, also in hygienic places.

Material : 1.4125 NIROSTA (Stainless Steel)

Casing Hardness : 60 ± 2 HRC **Head Hardness :** 35 ± 2 HRC

Heat Resistance : 180^0 **Limited Stocks**

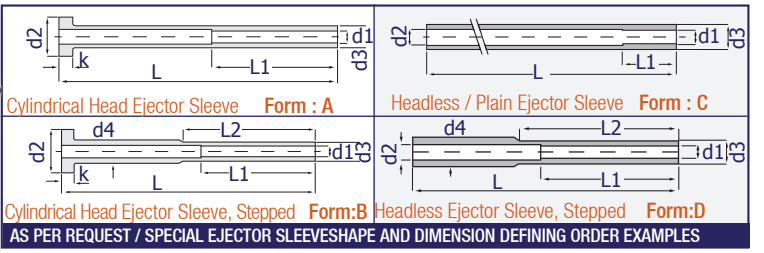


Cylindrical Head STAINLESS EJECTOR PIN SPI

d1	L	d2	k	r
4.5	100 160 200 250	8	2	0.3
5.0	100 160 200 250	10	2	0.3
5.5	100 160 200 250	10	2	0.3
6.0	100 160 200 250	12	5	0.5
8.0	100 160 200 250	14	5	0.5

d1	L	d2	k	r
2.0	100 160 200 250	4	2	0.2
2.5	100 160 200 250	5	2	0.3
3.0	100 160 200 250	6	2	0.3
3.5	100 160 200 250	7	2	0.3
4.0	100 160 200 250	8	2	0.3

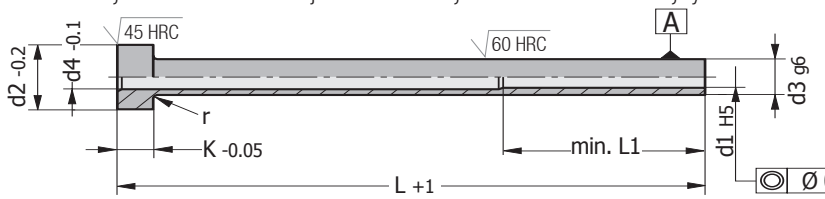
Order : **SPI.INOX** d1 x L



AS PER REQUEST / SPECIAL EJECTOR SLEEVESHAPE AND DIMENSION DEFINING ORDER EXAMPLES

CYLINDRICAL HEAD HEAT RESISTANT EJECTOR SLEEVE DIN ISO 8405 TYPE : A SMB

Heat Resistance for Injection Moulds (1.2344 Hot Work Steel) Ejector Sleeve, especially for Metal Injection Moulds; Rear Part of Inner Hole is grinded in 30 - 45 mm Ejector Pin Working Tolerance and drilled roughly with drill to rearward (until the cap)



Material : 1.2344 Hot Work
Head Hardness : 45 ± 2 HRC
Casing Hardness : 60 ± 2 HRC
Max. Heat Resistance : 500 - 550^0
Tension Resistance: 1450 N / mm^2

STANDARD TYPE

CYLINDRICAL HEAD HEAT RESISTANT EJECTOR SLEEVE (They are available in decimal dimensions.) SMB

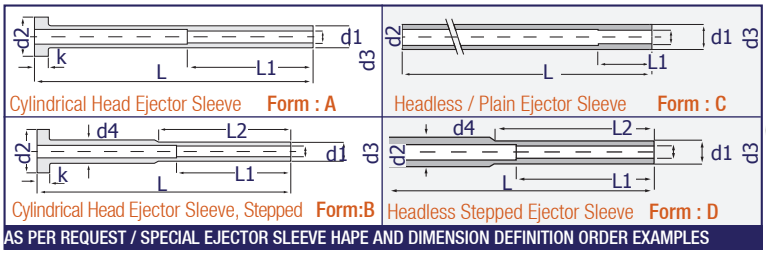
d3	L	d1	L1	d4	d2	k	r
4	75	2.0	35	2.3	8	3	0.3
	100						
	125						
	150						
5	75	2.5	35	3.0	10	3	0.3
	100						
	125						
	150						
5	75	3.0	45	3.3	10	3	0.3
	100						
	125						
	150						
	160						
	175						
	200						
	250						
6	75	3.5	45	4.0	12	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						

d3	L	d1	L1	d4	d2	k	r
6	75	4.0	45	4.3	12	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
8	75	4.2	45	5.3	14	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
8	75	5.0	45	5.3	14	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						

d3	L	d1	L1	d4	d2	k	r
10	75	6	45	6.3	16	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
12	75	8	45	8.3	20	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
14	75	10	50	10.3	22	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
16	75	12	50	12.3	22	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						

Order : **SMB.A** d1 x d3 x L

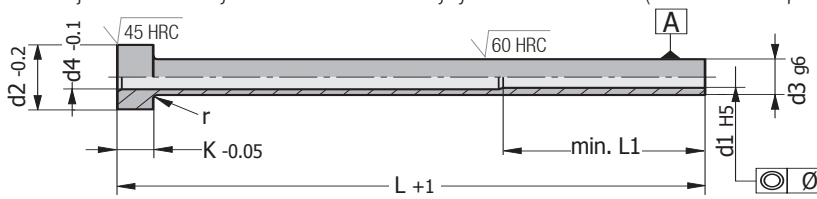
Reliable Label
GTH



AS PER REQUEST / SPECIAL EJECTOR SLEEVE HAPE AND DIMENSION DEFINITION ORDER EXAMPLES

CYLINDRICAL HEAD HARDENED EJECTOR SLEEVE DIN ISO 8405 TYPE : AH SPB

Hardened for Plastic Injection Moulds (1.2516 WS), Ejector Sleeve, Especially for Plastic Moulds; Rear Part of Inner Hole is grinded in 30 - 45 mm Ejector Pin Working Tolerance and drilled roughly with drill to rearward (until the bonnet part).



Material : 1.2516 WS
Head Hardness : 45 ± 2 HRC
Casing Hardness : 60 ± 2 HRC
Max. Heat Resistance : 220^0
Tension Resistance: 1300 N / mm^2

STANDARD TYPE

CYLINDRICAL HEAD HARDENED EJECTOR SLEEVE (Extra long length are available at our.)

d3	L	d1	L1	d4	d2	k	r
12	75	8	45	8.3	20	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

d3	L	d1	L1	d4	d2	k	r
6	75	4.0	45	4.3	12	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

d3	L	d1	L1	d4	d2	k	r
4	75	2.0	35	2.3	8	3	0.3
	100						
	125						
	150						
	160						
	175						
	200						
	250						

d3	L	d1	L1	d4	d2	k	r
5	75	2.5	35	3.0	10	3	0.3
	100						
	125						
	150						
	160						
	175						
	200						
	250						

d3	L	d1	L1	d4	d2	k	r
14	75	10	50	10.3	22	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

d3	L	d1	L1	d4	d2	k	r
8	75	5.0	45	5.3	14	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

d3	L	d1	L1	d4	d2	k	r
5	75	3.0	45	3.3	10	3	0.3
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						

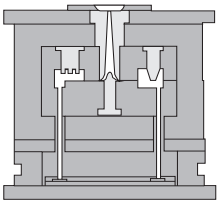
d3	L	d1	L1	d4	d2	k	r
16	75	12	50	12.3	22	7	0.8
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

SPB.AH
Order : d1 x d3 x L

d3	L	d1	L1	d4	d2	k	r
10	75	6	45	6.3	16	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						
	350						
	400						
	450						
	500						

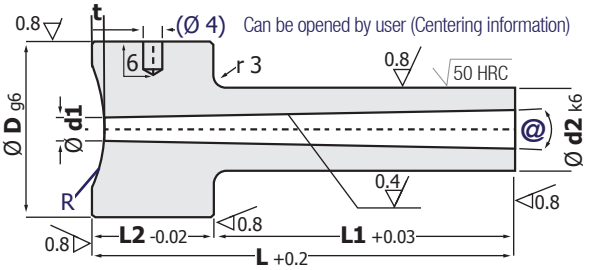
d3	L	d1	L1	d4	d2	k	r
6	75	3.5	45	4.0	12	5	0.5
	100						
	125						
	150						
	160						
	175						
	200						
	250						
	300						

Reliable Label



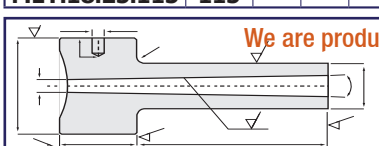
METAL INJECTION MOULDS, RUNNERS MEY

High Heat Resistant, Standard Hot Work Steel Runners / Standard Type



Material: 1.2344 **Hardness:** 60 HRC **Heat Resistance:** 500^0 **Angle:** 5.8 mm @ 3^0

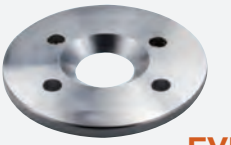
Order	L	d2	d1	D	R	t	L2	L1
MEY.12.20.55	55							35
MEY.12.20.65	65	12	5.8	20	15.5	3	20	45
MEY.12.20.75	75		3^0					55
MEY.12.25.55	55							30
MEY.12.25.65	65							40
MEY.12.25.75	75							50
MEY.12.25.85	85	12	5.8	28	15.5	3	25	60
MEY.12.25.95	95							70
MEY.12.25.105	105		3^0					80
MEY.12.25.115	115							90
MEY.14.25.55	55							30
MEY.14.25.65	65							40
MEY.14.25.75	75							50
MEY.14.25.85	85	14	5.8	28	15.5	3	25	60
MEY.14.25.95	95							70
MEY.14.25.105	105		3^0					80
MEY.14.25.115	115							90
MEY.16.25.55	55							30
MEY.16.25.65	65							40
MEY.16.25.75	75							50
MEY.16.25.85	85	16	5.8	28	15.5	3	25	60
MEY.16.25.95	95							70
MEY.16.25.105	105		3^0					80
MEY.16.25.115	115							90
MEY.18.25.55	55							30
MEY.18.25.65	65							40
MEY.18.25.75	75							50
MEY.18.25.85	85	18	5.8	28	15.5	3	25	60
MEY.18.25.95	95							70
MEY.18.25.105	105		3^0					80
MEY.18.25.115	115							90



We are producing special runner.

As per request / Standard Type Special Order Definition

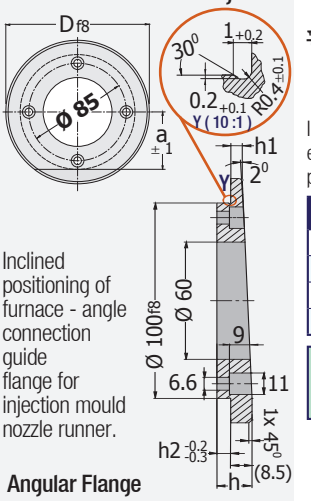
Section Injection Mould



EYF

INCLINED SURFACE HOLE POSITIONING FLANGE

Inclined Plate Guide Flange

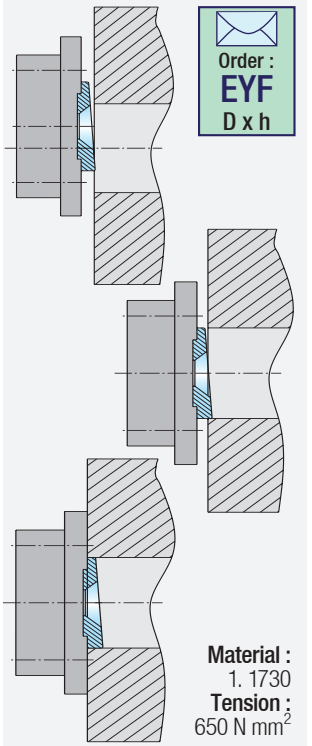


Inclined positioning of furnace - angle connection guide flange for injection mould nozzle runner.

Angular Flange

D	h	h1	h2	a
125	14	4.6	5.5	50
	20		11.5	
	22		13	

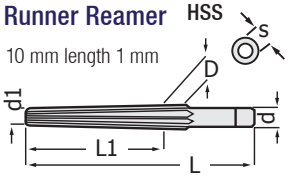
Order : EYF D x h



Material : 1. 1730
Tension : 650 N mm^2

KYR

1:10 Conical, Special Runner Reamer HSS



In reaming of conical growing cutting edge hand reamer, conical or stepped pre processed continuous holes.

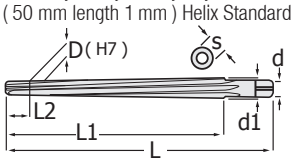
d1	D	d	L	L1	S
4	10	10	100	70	8
9	16	12.5	120	80	10
14	24	20	160	110	16
20	32	25	200	140	20

Order : KYR (1:10 Conical) d1 x D x L

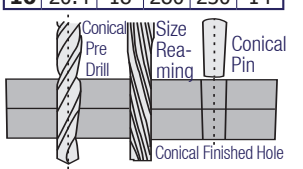
KPR

1:50 Conical Pin Hole Reamer DIN 9 HSS

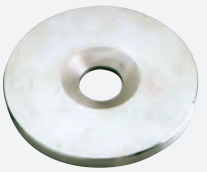
Hand Reamer (With Conical Drill Bit) For Conical Pins compatible with conical growing cutting edge (50 mm length 1 mm) Helix Standard

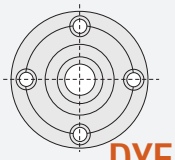


D	d1	d	L	L1	S
3	4.06	4	80	58	3.15
4	5.26	5	93	68	4
5	6.36	6.3	100	73	5
6	8.0	8	135	105	6.3
8	10.8	10	180	145	8
10	13.4	12.5	215	175	10
12	16	14	255	210	11.2
14	18	14	255	210	11.2
16	20.4	18	280	230	14



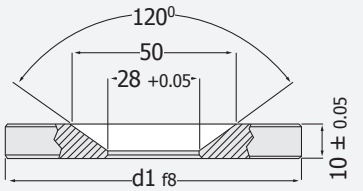
Order : KPR D x L





RUNNER POSITION, FLANGE DYF

Material: CK 45 Work Tool Steel (Grinded)



Order	d1
DYF.60	60
DYF.70	70
DYF.80	80
DYF.90	90
DYF.100	100

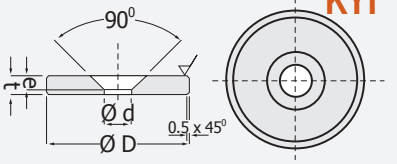
Order	d1
DYF.125	125
DYF.150	150
DYF.175	175
DYF.200	200

Note: Flange Connecting Holes are opened as per request (Subject to Price).

Connection Holes
Special, As per Request

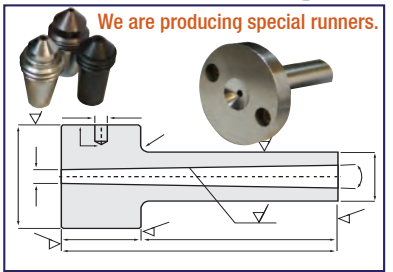
RUNNER POSITIONING FLANGE

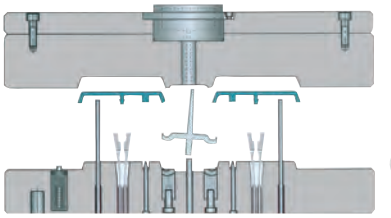
Material : CK 45 Work Tool Steel KYF



Order	Ø D	Ø d	t	e
KYF.60	60	28	15	7
KYF.80	80	28	15	7
KYF.125	125	28	20	10
KYF.150	150	28	20	10

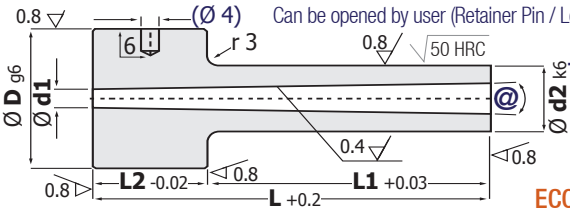
Note: Flange Connecting Holes are opened as per request (Subject to Price).





PLASTIC MOULDS, INJECTION RUNNERS DIN 16752 EYM

Injection Runner Nozzle: The length selection is presented in very wide range in our stocks.



Can be opened by user (Retainer Pin / Locating information)

Material : 1.2826

Two Different Options

d1 3.3 : @ 1.5⁰
(Standard Angle)

d1 4.3 : @ 2⁰
(Wide Angle)

ECONOMICAL PRICES

L	d2	d1	D	L2	L1
50	12	4.3	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125		2⁰			105
135					115
150					130

L	d2	d1	D	L2	L1
50	12	3.3	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125		1.5⁰			105
135					115
150					130

L	d2	d1	D	L2	L1
50	14	4.3	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125					105
135		2⁰			115
150					130
200					180

L	d2	d1	D	L2	L1
50	14	3.3	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125					105
135		1.5⁰			115
150					130
200					180

L	d2	d1	D	L2	L1
50	16	4.3	28	20	30
65					45
75					55
85					65
95		2⁰			75
105					85
115					95
125					105
135					115
150					130
200					180

For injection cold runner diverter valve, pls. refer to page 230.

L	d2	d1	D	L2	L1
50	16	3.3	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125					105
135		1.5⁰			115
150					130
200					180

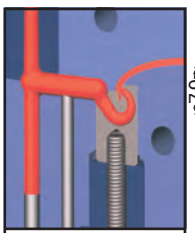
L	d2	d1	D	L2	L1
50	18	4.3	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125		2⁰			105
135					115
150					130
200					180

Order : EYM d2 x L x d1

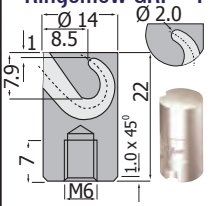
L	d2	d1	D	L2	L1
50	18	33	28	20	30
65					45
75					55
85					65
95					75
105					85
115					95
125		1.5⁰			105
135					115
150					130
200					180

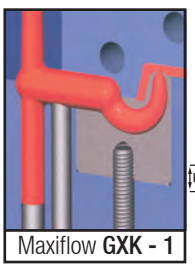
TUNNEL / CURVED DIVERTER RUNNER SYSTEMS

* Being Long Life, Clean Runner Tracks
* Filling of each eyes balancedly.
* Very low abrasion at runner area
* 60 HRC - RA : 08 - 1.3 Surface Quality
* Safe Fluency, One Piece Design

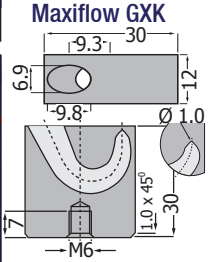

Ringelflow **GRF - 1**

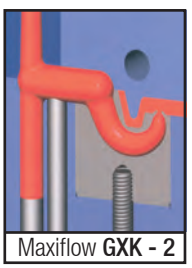
Ringelflow GRF - 1



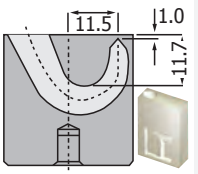

Maxiflow **GXK - 1**

Maxiflow GXK

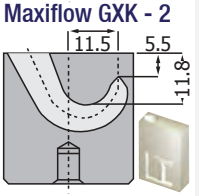


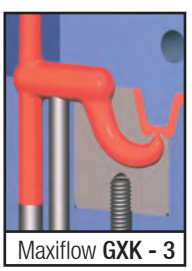

Maxiflow **GXK - 2**

Maxiflow GXK - 1

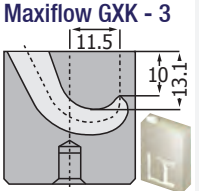


Maxiflow GXK - 2




Maxiflow **GXK - 3**

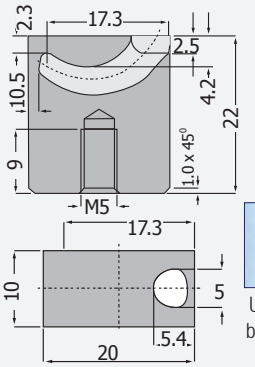
Maxiflow GXK - 3

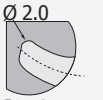


KONTURFLOW RUNNER GTK

Processable Upper Surface, Curved S. Runners.

GTK Runners Mostly for geometric structure as curved surface parts, can be used in injection mould cold runner systems. Including 50% glass fiber, all thermoplastic filling material, blasting diameter can be created up to 1.7 mm in tunnel runner systems.





Blasting diameter can be created up to 1.7 mm.

Upper surface can be processed up to 3 mm.

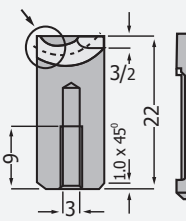
Order Form : GTK 10 x 22

MINIFLOW RUNNER GTM

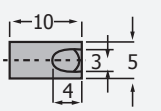
They are compatible with small thin walled parts.

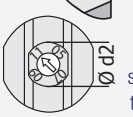
GTM Runners: By creating hidden runner in injection runner systems, runner diameter is optional from 0.8 mm to 2.14 mm, it does not have a head part and it is in 10 x 5 dimension.

Blasting Diameter: d2 Between 0.5 mm and 1.1 mm



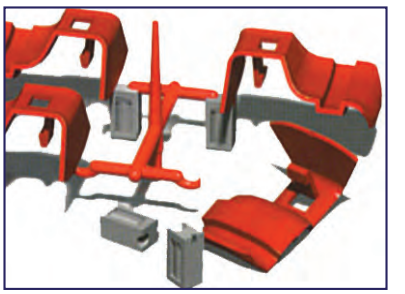
Order	d2
GTM1005	0.5
GTM1007	0.7
GTM1009	0.9
GTM1011	1.1





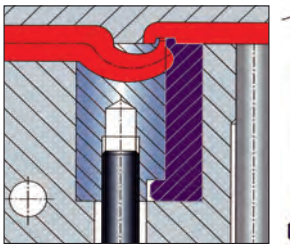
Stamp Size

Due to that there is no protrusion at blasting point, it is suitable for thin walled moulds.



VISCOSITY CONTINUATION BLOCK

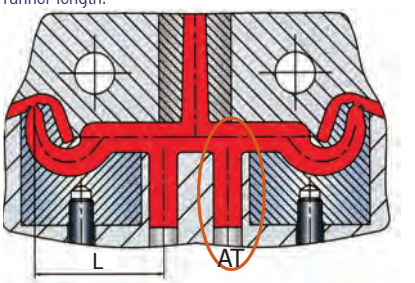
Flat Plain Progress



To reduce loss of raw white flow that is injected or to minimise sliding, an auxiliary block is added in front of tunnel runner. For various Processing methods of cove on block at EDM (Erosion Machines), pls. refer the 'CAD' files at **www.exaflow.com**

The block dimensions are depended on selected tunnel runner length.

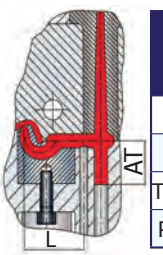
Material: 1.2379 60 HRC



"AT" RUNNER DISTANCES

Distance Between Runner and Blasting Point

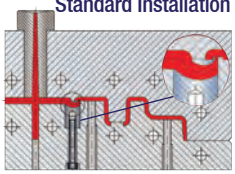
AT : According to the plastic raw white and tunnel runner type to be used, the distance dimension that should be given between cold runner center and blasting point is given at the following table.



Plastic Raw White Groups	Mini Runner **GTM**
PE -PP -PA vs.	17-20
ABS -ASA vs.	22-27
TPU -TPE -TPA vs.	15-20
PA +GF, POM vs.	25-30

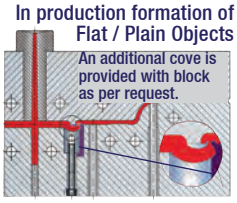
GTR / GTE Ø 10 mm	GTR / GTE Ø 12 mm	GTR / GTE Ø 14 mm	Konturflow **GTK**
20 - 25	22 - 27	24 - 30	30 - 35
25 - 30	27 - 32	30 - 35	33 - 38
15 - 25	17 - 27	20 - 30	25 - 35
30 - 35	32 - 37	35 - 40	40 - 45

Tunnel Runner Systems Standard Installation



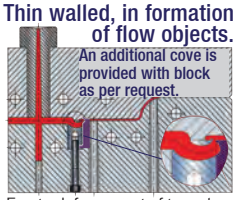
System providing viscosity control to front mould cavity next to cold runner.

In production formation of Flat / Plain Objects



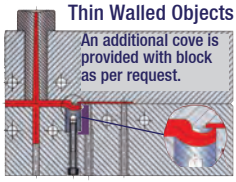
To reduce pressure loss, viscosity is provided by minimise sliding.

Thin walled, in formation of flow objects.



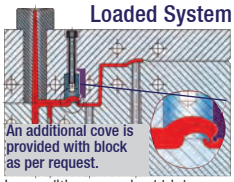
Front reinforcement of tunnel runner end has been closed with cove / block at separating line.

Mini Tunnel Runner Thin Walled Objects



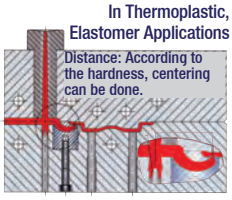
It will be formed on a line with cold runner, application in 0.5 - 1.2 mm thin walled parts.

Cold Nozzle Side Loaded System



In conditions required high viscosity, tunnel Runner is screwed to mould inlet.

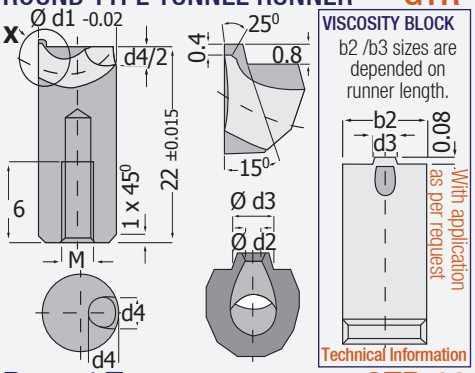
In Thermoplastic, Elastomer Applications



Cold runner Span Length should be reduced inwards, Elastomer Plastics.

In mounting: Tunnel Runners are secured with retaining pin against loosening. However, mostly they are secured with bolts.

ROUND TYPE TUNNEL RUNNER GTR



Round Type (Standard Flow) GTR 10

d1	d2	d3	d4	M	Viscosity - Gram		
					Easy	Smooth	Hard
10	0.8	2.1	4	4	8	7	5
	1.0	2.3			14	12	9
	1.2	2.5			20	16	10
	1.4	2.7			30	23	15
	1.6	2.9			40	30	20

Thermoplastic Raw White (Including %50 Glass Fiber)

Order Form : GTR 10. d2

Round Type (Standard Flow) GTR 12

d1	d2	d3	d4	M	Viscosity - Gram		
					Easy	Smooth	Hard
12	0.8	2.1	5	5	8	7	5
	1.0	2.3			14	12	9
	1.2	2.5			20	16	10
	1.4	2.7			30	23	15
	1.6	2.9			40	30	20
	1.8	3.1			54	40	27
	2.0	3.3			68	52	34

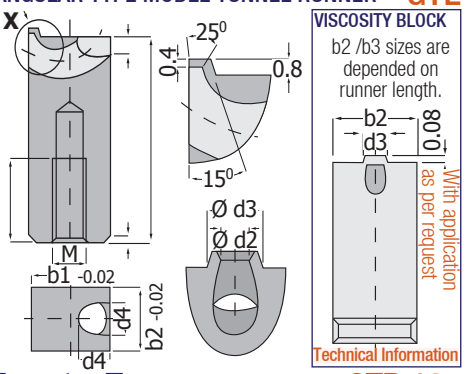
Order Form : GTR 12. d2

Round Type (Standard Flow) GTR 14

d1	d2	d3	d4	M	Viscosity - Gram		
					Easy	Smooth	Hard
14	1.2	2.5	6	6	20	16	10
	1.4	2.7			30	23	15
	1.6	2.9			40	30	20
	1.8	3.1			54	40	27
	2.0	3.3			68	52	34
	2.2	3.5			85	65	43
	2.4	3.7			100	80	50

Order Form : GTR 14. d2

ANGULAR TYPE MODEL TUNNEL RUNNER GTE



Angular Type (Standard Flow) GTR 10

b1	b2	d2	d3	d4	M	Viscosity - Gram		
						Easy	Smooth	Hard
10	8	0.8	2.1	4	4	8	7	5
		1.0	2.3			14	12	9
		1.2	2.5			20	16	10
		1.4	2.7			30	23	15
		1.6	2.9			40	30	20

Thermoplastic Raw White (Including %50 Glass Fiber)

Order Form : GTE 10. d2

Angular Type (Standard Flow) GTR 12

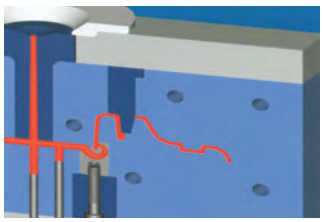
b1	b2	d2	d3	d4	M	Viscosity - Gram		
						Easy	Smooth	Hard
12	10	0.8	2.1	5	5	8	7	5
		1.0	2.3			14	12	9
		1.2	2.5			20	16	10
		1.4	2.7			30	23	15
		1.6	2.9			40	30	20
		1.8	3.1			54	40	27
		2.0	3.3			68	52	34

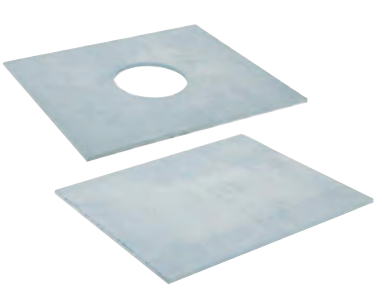
Order Form : GTR 12. d2

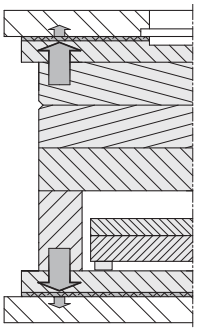
Angular Type (Standard Flow) GTR 14

b1	b2	d2	d3	d4	M	Viscosity - Gram		
						Easy	Smooth	Hard
14	12	1.2	2.5	6	6	20	16	10
		1.4	2.7			30	23	15
		1.6	2.9			40	30	20
		1.8	3.1			54	40	27
		2.0	3.3			68	52	34
		2.2	3.5			85	65	43
		2.4	3.7			100	80	50

Order Form : GTR 14. d2







HEAT INSULATION PLATES IYP

Impact and Heat Insulation Processes of Press and Injection Moulds

To avoid heat dissipation in injection moulds, they are preferred in order to avoid Heat Dissipation / Loss among mould plates or between machine connection block plate and mould upper plates, especially in moulds produced with thermoplastic and thermoset raw material.

Heat Insulation Plates : 260^{0}C Heat Resistant P.T.F.E (Teflon Sheet). **Plates; It does not contain asbestos, it is not affected from impacts water, friction and electricity and is resistant 1800 TONE Pressure per centimeter.** Insulation plates also raise the display standards of moulds used.

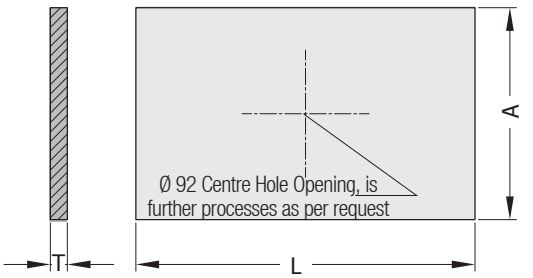
Compression Stresss : At... 100^{0}C.....188 N / mm^2
At... 200^{0}C.....126 N / mm^2
At... 260^{0}C.....118 N / mm^2

Thermal Conductivity : 218^{0}C..... 3.0 x 10^{-3} W /mK

Humidity Rate : .....0.06 %

Combustion Resistance according to UL 94 : .....94 V -0

It is for hot runner moulds.

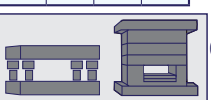


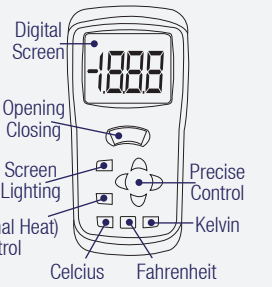
HEAT /INSULATION and PULSE PLATES IYP

Order	A	L	T
IYP.1515.6	152	152	6
IYP.1520.6	152	192	6
IYP.1525.6	152	242	6
IYP.2020.6	192	192	6
IYP.2025.6	192	242	6
IYP.2030.6	192	292	6
IYP.2035.6	192	342	6
IYP.2525.6	242	242	6
IYP.2530.6	242	292	6
IYP.2535.6	242	342	6
IYP.2540.6	242	392	6
IYP.2550.6	242	492	6
IYP.3030.6	292	292	6
IYP.3035.6	292	342	6
IYP.3040.6	292	392	6
IYP.3045.6	292	442	6
IYP.3050.6	292	492	6
IYP.3055.6	292	542	6

Order	A	L	T
IYP.3535.6	342	342	6
IYP.3540.6	342	392	6
IYP.3545.6	342	442	6
IYP.3550.6	342	492	6
IYP.3560.6	342	592	6
IYP.4040.10	342	392	10
IYP.4045.10	342	442	10
IYP.4050.10	392	492	10
IYP.4060.10	392	592	10
IYP.4545.10	442	442	10
IYP.4550.10	442	492	10
IYP.4560.10	442	592	10
IYP.4570.10	442	692	10
IYP.4580.10	442	792	10
IYP.5050.10	492	492	10
IYP.5055.10	492	542	10
IYP.5060.10	492	592	10
IYP.5070.10	492	692	10
IYP.5080.10	492	792	10

Our products in the desired dimensions and in 4 and 8 mm thicknesses are available.





HEAT CONTROL /MEASURING K TYPE THERMOMETER TP

As a set with 2 pieces Probe in Protection Bag

This device is designed to use with Portable (Battery Operated) 3 1/2 Digital Screen External K Type Thermocouple or Contact Probe. It has two heat sensors. (Thin Type Thermocouple or Contact Probe)

Measurement Range: -50º C and 1300º C / 2000º F / 223 K - 2000 K

Resolution: 1º C or 1º F,01º C or 01º F,1K

Accuracy: It has been determined as one year, Operating Temperature over 18º C - 28º C (64º F - 82º F) and does not contained thermocouple and probe errors.

Heat Rate: For 01 Run Accuracy Specification ºC, From ºC' to 18ºC and 28º C - 50º C (32º F - 64º F and 82º F - 122º F)

Ingress Protection: At "60 V" or "24 V" rms Ac, Max. Input Voltage

Reading Rate: 2.5 Run Per Second

Input Connectors: 1 Piece Thermocouple (Thin Type)
1 Piece Contact Probe With Extension Cable

Ambient Operating Range: 0º C - 50º C

Storage Temperature: -20º C / 60º C Relative Humidity %0 - 80 (0º-35º)

Digital Screen Protector: 3 1/2 Crystal Display LCD Max.1999 Reading

Energy Unit: Standard 9 V (Cell) Battery **Dimensions:** Length:162 mm **Width:** 76 mm **Thickness:** 38.5 mm **Weight:** 210 gr.

OPERATION INSTRUCTION

To Select Temperature Scale, the option is specified with ^{0}C / ^{0}F / K keys on unit. When thermometer is opened, it is shown the last heat values when the thermometer closed last. Pls. use keys to change it.

Thermometer: It allows two types of resolutions. High Resolution 0.1 ^{0}C or 0.1 ^{0}F - Low Resolution 1 ^{0}C or 0.1 ^{0}F

Battery Replacement : When the screen shows the İ sign, 9 V Battery should be changed.

1 - Remove device cover and Air Temperature Contact Probe.

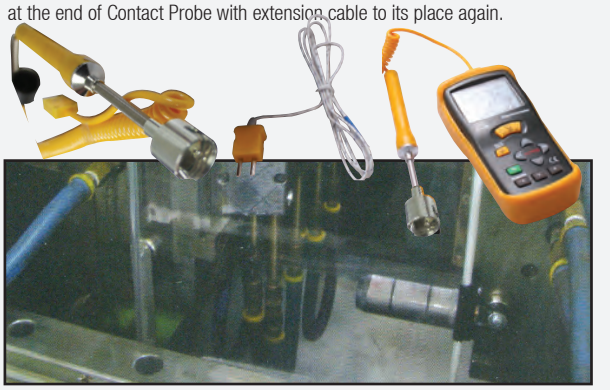
2 - Remove screws of battery box behind the device, insert battery, then close the cover and mount it again.

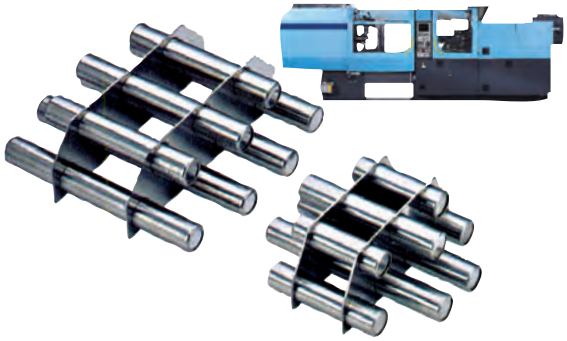
Safety Information :

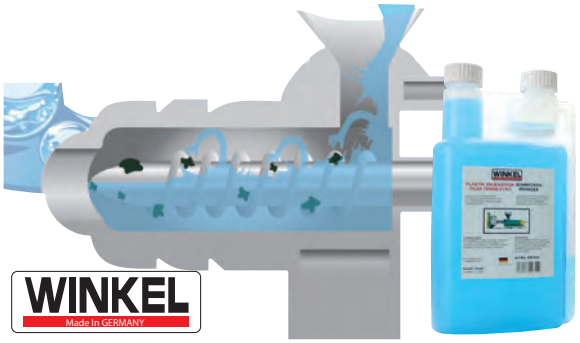
WARNING ! To avoid the electric shock, if the voltage exceeds 24 V AC OR 60 V DC on measurement surfaces, don't use the device.

* To avoid damage and burning, making heat measurement in Micro Wave and so on ovens, due to repeated sharp tension, can be broke Thermocouples ends.

* To prolong end' s life, avoid the sharpness at the ends, especially at the ends of corrector. When the measurement is finished, pls. insert rubber guard that is at the end of Contact Probe with extension cable to its place again.



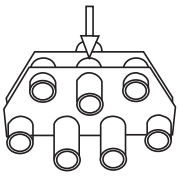




SCREENER MAGNETIC SEPARATOR EGM

Keeps Unwanted Metal Particles in raw material.

Especially in your plastic mould machines, the unwanted metal particles mixing to raw material, damages the extruder of injection machine. This is for screening process at the bottom of fluid raw material. Stainless Magnetic Rods and Cylindrical Magnetic Rods are excellently powerful in keeping metal particles, can be used also in liquids due to that they are compatible with fluidity compliance of raw material.
Example: Electro Diving Erosion (EDM)
also keep the metal particles in liquid chamber.



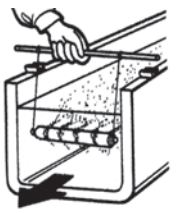
Magnetic Separator is the cheapest insurance of Plastic Injection Machines.

SCREENER MAGNETIC SEPARATOR EGM

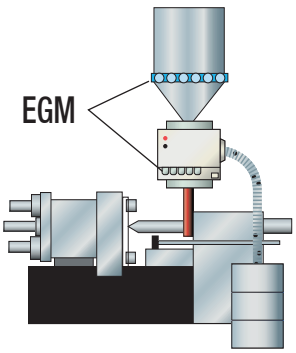
Order	Product Dimension	Weight
EGM 20C	**Width:** 170 **Length:** 180 **Height :**75	2.70 Kg.
EGM 25C	**Width:** 220 **Length:** 230 **Height :**75	4.00 Kg.

Heat Resistance : 60°C

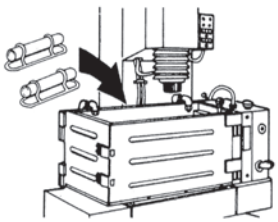
It is for feeding tunnel of plastic injection machines.
Magnetic Separator ; Especially, it is a processing industry application area of granule or crushing materials.
Magnetic Separator ; It is inserted to raw white feeding tunnel of injection machine. It is equipped with very powerful Neodymium (Nd Fe B) magnets and materials are from stainless steel, also can capture very thin metal particles. When magnetic separator is used, the extruder life of injection machine is prolonged considerably. The main advantage of magnetic magnet is its demagnetization opportunity. The cleaning of metal particles on stainless rods can be done rapidly and comfortably. According to dimension of feeding tunnel, the product selection can be done.



* In plastic injection machine applications



* Application in EDM Erosion Machine



PLASTIC INJECTION OVEN CLEANSER

Plastic Injection Oven Cleaner for Colour change, Economic

Extruder Drainage Cleaning; It is a liquid corrosion preventative and cleanser for plastic processing machines. By sticking to raw material due to additives inside it, the liquid cleans auger metal of extruder thoroughly and protects against corrosion due to inhibitors exhausting during combustion. Thanks to its fluidity, it leaks to then whole area in oven and it protects everywhere that corrosion may occur, the material is similar to foam, it expands and the pressure increases in plastic granule and extruder occurs by expanding limited volume in T Extruder auger metal, thanks to this feature of cleanser, all previous melt plastic granule raw material at the end of oven or inside of duct are sprayed outside with a few times of pressure.

Usage: A unique product for cleaning the previous black colour related and hard polymers from inside of oven. Under all circumstances, the processing is not abrasive and does not include any solvent. Especially, it is effective in raw material such as ABS, PA, PET, PS, PMMA, PC, SAM, PVC, EVA, PU, TR, PBT, PPO, PP, PE etc. and is used at the temperatures between 120ºC and 320ºC with extrusion. For sufficient cleaning of appliances, it is mixed with approximate %1 WINKEL Plastic Injection Oven Cleaner according to its inhibition and cylinder volume unit and 1 /10 Granule. By foaming at the extruder, it is sprayed outside. (It is Scaled Packing.)

Ultra Powerful & Economic & Compatible Hot Runner

Material Consumption in Raw Material and Colour Change	
WINKEL Liquid Mixed	**Experience - 1:** Normal Runner a b **Main Cleaning A :** 3 Kg. Raw White + 1 /2 Scale (Cover) WINKEL **Final Cleaning B :** 2 Kg. Raw White Spraying
Traditional Oven Cleaning	40 Kg. Sprayed Material Consumption
WINKEL Liquid Mixed	**Experience - 1:** Normal Runner a b **Main Cleaning A :** 4 Kg. Raw White + 2 /3 Scale (Cover) WINKEL **Final Cleaning B :** 3 Kg. Raw White Spraying
Traditional Oven Cleaning	With, 75 Kg. Sprayed Raw material, the experience is completed.
This experiences are data made in injection machine with 50 mm auger diameter.	

Order :
1- Liter **800655**

INNER MOULD APPLICATION MECHANICAL PLIERS

Machine & Mould, Heavy and Hard Work Hot Objects Holding Kits

LONG FLAT ENDED NEEDLE PLIER RUK 1300

In Deep Zones of Long and Thin Chuck Mould or Product Holding Operation in Hot Stamped Moulds, Also during Repair /Maintenance, In Places that can be difficult to reach.

Order	Length	Housing	Handle
RUK1300	300 mm	Vanadium Steel	PVC - Insulated

LONG CURVE ENDED NEEDLE PLIER RUK 1345

In Deep Zones of Long and Thin Chuck Mould or Product Holding Operation in Hot Stamped Moulds, Also during Repair /Maintenance, In Places that can be difficult to reach

Order	Length	Housing	Handle
RUK1345	300 mm	Vanadium Steel	PVC - Insulated

LONG ROUND ENDED NEEDLE PLIER RUK 0360

In Deep Zones of Long and Thin Chuck Mould or Product Holding Operation in Hot Stamped Moulds, Also during Repair /Maintenance, In Places that can be difficult to reach

Order	Length	Housing	Handle
RUK0360	300 mm	Vanadium Steel	PVC - Insulated

LONG COMBINATION PLIER RUK 2345

In Deep Zones of Long and Thin Jaw Mould or Product Holding Operation in Hot Stamped Moulds, Also during Repair /Maintenance, In Places that can be difficult to reach

Order	Length	Housing	Handle
RUK0360	300 mm	Vanadium Steel	PVC - Insulated

* For other hand tools, pls. request our Güvenal 2014 (Page 296/9) Volume 2. Catalogue.

UNIVERSAL TYPE UTILITY KNIVES

This Knives that are economic and high quality products with single blade and breakable blade types, have wide variety of usage area and different presentation options, should be used very carefully.

W 2169 | MB 5203 | T 21600 | T 21609

Order	Product Definition
W 2169	Wert: Plastic Handle, Breakable Blade -100x 18
MB 5203	Wert: Small Type, Breakable Blade, Economic
T 21600	Wert: Metal Casing, Nonskid Handle, Robust
T 21609.B	Spare (Breakable Blade) Ends10 Pieces 100x18
T 21610.K	Spare (Breakable Blade) Ends, 10 Pieces 80 x 9

PCAM 1555 | W 2163 | MB 52207 | W 2161-8

Order	Product Definition
PCAM 1555	Deburring Scalpel (Plastic Handle) 155 mm
PCAM 36	Deburring Spare Blade End Length: 36mm
W2163	Deburring Scalpel (Metal Type) 160 mm
MB 52207	Utility Knife Angular cutting - With Spare Blade
W 2161	Utility Knife Metal Structure 100 x 18 / 88 gr.
W 2168	Utility Knife Metal Structure 80 x 90/ 60 gr.

FAST OPENING | COTTER TYPE | STILSON TYPE | HEAVY TYPE

Order	Product Definition
0510210	Hook: Fast Opening Pipe Wrench 10" - 14"
2201 10	İzeltaş: Cotter Pipe Wrench 325-430-585
2100 10	İzeltaş: Stilson Pipe Wrench 300-450-600
2110 10	İzeltaş: Heavy Type Pipe Wrench 300-450-600

PLASTIC RUNNER CUTTING 90⁰ ANGULAR CHISEL 1231

The product is for cutting stainless material and Plastic / Lead. The ergonomic handle of product does not have any insulation against electricity.

Order	Length	Housing	Handle	Orifice Form
1231	150 mm	External	Foam PVC	90⁰

PLASTIC RUNNER CUTTING 35⁰ ANGULAR CHISEL 1233

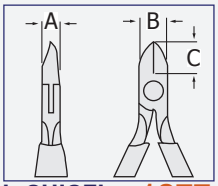
The product is for cutting stainless material and Plastic / Lead. The ergonomic handle of product has not any insulation against electricity.

Order	Length	Housing	Handle	Orifice Form
1233	150 mm	External	Foam PVC	35⁰

ELECTRICIAN CHISEL 2323

A long and thin product has stainless material and nonskid PVC Plastic Handle with Ergonomic hold of product has not any insulation against electricity.

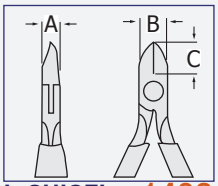
Order	Length	Housing	Handle	Cutting
2323	120 mm	Internal	Nonskid PVC	0.65 mm



ELECTRICIAN SPRING DIAGONAL CHISEL 1377

A long and thin product has stainless material and nonskid PVC Plastic Handle with Ergonomic hold and is used for cutting 0.65 mm wires such as Plastic /Cable/copper.

Order	Length	A mm	B mm	C mm	Head	Cutting
1377	130 mm	5	9	12	Oval Type	0.65 mm



ELECTRICIAN SPRING DIAGONAL CHISEL 1406

A long and thin product has stainless material and nonskid PVC Plastic Handle with Ergonomic hold and is used for cutting 0.65 mm wires such as Plastic /Cable/copper.

Order	Length	A mm	B mm	C mm	Head	Cutting
1406	130 mm	7.5	13	16	Oval Type	0.65 mm

Plain Surface, 25ºC Blade Angle Cutting - 18mm Blade Length 4 mm Cutting Capacity - 190mm Heat Controlled Runner Cutting Shear

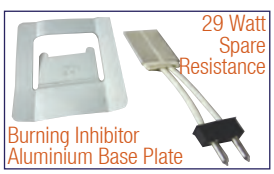
HEAT CONROLLED RUNNER CUTTING SHEARS HT180

It can be performed applications for cutting injection runners and other plastic materials, hard and thick plastic materials that are hard to cut with special cutting shears by without cracking - breaking - and by heating (Heat Controlled) clean cutting surface.

Especially: In cutting operations of Plastic Materials of Engineering (Headlamp etc.) for precise / rapid and quality surfaces. The cutting shear is used with Heat Setting Device / Rheostat Desired Adjustable Heats in a controlled manner, cutting shear is also with spare resistance and aluminium plate burning inhibitor base plate.

Order	Length	Housing	Cutting	Capacity
HT180	190 mm	With Heat Unit	25⁰ / Straight Length : 23 mm	4.0 mm

Cambered Surface, 16ºC Blade Angle Cutting - 23 mm Blade Length 7mm Cutting Capacity - 190mm Heat Controlled Runner Cutting Shear



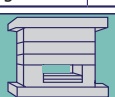
HEAT CONTROLLED RUNNER CUTTING SHEARS HT200

It can perform applications for cutting injection runners and other plastic materials, hard and thick plastic materials that are hard to cut with special cutting shears by without cracking - breaking - and by heating (Heat Controlled) clean cutting surface.

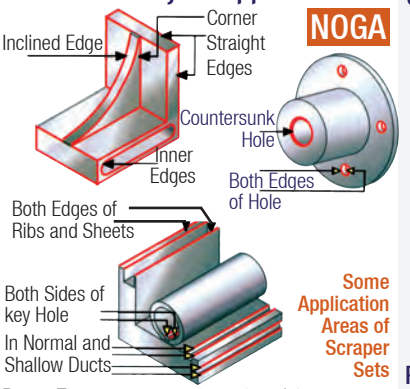
Especially: In cutting operations of Plastic Materials of Engineering (Headlamp etc.) for precise / rapid and quality surfaces. The cutting shear is used with Heat Setting Device / Rheostat Desired Adjustable Heats in a controlled manner, cutting shear is also with spare resistance and aluminium plate burning inhibitor base plate.

Order	Length	Housing	Cutting	Capacity
HT200	190 mm	With Heating Unit	16⁰ / Camber Length:23 mm	7.0 mm

GTH Mould Equipments
Present Special Solution...



SCRAPER Usage & Application



NOGA

Some Application Areas of Scraper Sets

Burrs: They are unwanted metal particles remained at the edge of work piece after machining process. For safety and quality production, these particles should be cleaned. Material Removal on bench is both long term and is hard to make balanced process. Hence, it will take more time, also surface roughness is important. All of this can not be economical.

NOGA DEBURRING SETS: With two component plastic handle and cutting blades (extended telescopic) and have withdrawal spring for opening and closing handle locks. 3 Pieces Spare Cutting Blades are stored in rear covered chamber.

NOGA GRIP HOLDER (3 Different Model)

- **NG-1** Ø **3.2 mm** For All "S" Scraper Ends
- **NG-2** Ø **2.6 mm** For All "N" Scraper Ends
- **NG-3** Ø **7.0 mm** or All "T" Scraper Ends

Rasp Holders: Plier Holder in rotary position, Replaceable Ends (With Drill Chuck) Holding Handle. It is adapted to part contour automatically. With options for the processing of very different materials, it is used for deburring of contours rationally. With the ergonomic difference from other holders, it is suitable for your hand. - For max. comfort of your hand- Hard and Soft - Light Robust Structure - Rapid Replacement of Scraper Ends and Holders. Spare stripper ends are in rear cover assembly.

Stripper Rasps (New Product)

T50 Triangle Stripper End: HSS Blades with "NG3" Holder.

T70 Triangle Stripper End: HSS Blades with "NG3" Holder.

EXTERNAL Blade End: External Rotating Countersunk Driver **Length :** 150 mm

EXTERNAL Blade End: Internal Rotating Countersunk Driver **Length :** 150 mm

SCRAPING SETS

NOGA

Economical Set

PROMOTIONAL SETS

Deburring : Steel, Aluminium, Plastic

S Promo Set - NG 8150
Content: Noga Grip 1 Holder
10 Piece **S10** Scraping Blade

Order : NG 8150

N Promo Set - NG 8100
Content: Noga Grip 2 Holder
10 Piece **N1** Scraping Blade

Order : NG 8000

Left and Right Brass Casting

TELE SETS

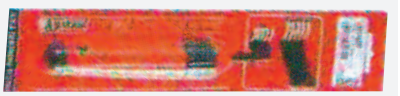
Deburring : Steel, Aluminium, Plastic, Brass and Casting

S Tele Set - NG 8350
Content: Noga Grip 3 Holder
S Holder, 5 Piece **S10**
5 Piece **S20** Scraping Blade

Order : NG 8350

N Tele Set - NG 8300
Content: Noga Grip 3 Holder
N Holder, 5 Piece **N1**
5 Piece **N2** Scraping Blade

Order : NG 8300



LIZA BURR SET Multi Purpose Set

Liza Burr Set - LB 1900
Content: UNI Holder, 5 Piece **S10** 5 Piece **N1** Scraper Ends

Order : LB 1900

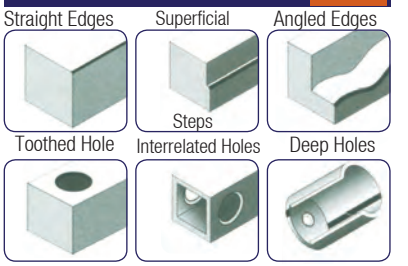
PLASTIC EDGE OFFSET

Economical Set - E02100
Content : E0 Holder+ S10 Green Stripper End (Aluminium) E0 Hold + S100 Blue Stripper End (Steel) E0 Holder + S150 Yellow Stripper End (Plastic)

Order : E02100

STRIPPER SETS

NOGA



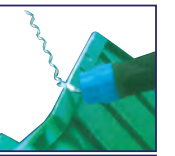
Deburring Scrapers: The stripper retainers have replaceable ends at rotary position and are adapted to work piece contour with handy, cutting edge automatically and they are excellent /quality brand hand tools in deburring different types of materials rationally.

MULTI PURPOSE SCRAPING SETS

" Special Sets "
LIZA BURR LB 1000
N and S : Double Ended Stripper Ends for using with Stripper blades. Extension from 20 mm to 110 mm with **N** Scraper Blade. 20-94 mm with **S** Scraper.
Content: Plastic Handle, Telescopic Head with Pliers **N1** and **N2** Stripper.

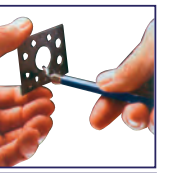
Order : LB 1000

" Special Sets "
SOFT GRIP SG 1000
Ergonomic Holder, Two Holes are suitable for **S** and **N** Scraper.
Content: S 100 and **N10** Cobalt Alloy Scraper Blade with SG Holder.



Order : SG 1000

" Pen Type Pocket Rasp "
TEDDY BURR TB 1000
N1 Stripper End, 8 mm Hexagon Aluminium Retainer. It can hold all **N** Type (Diameter 2.6 mm) Stripper Ends. Stripper Ends can be changed easily, Pocket Attachable / Clip On.



Order : TB 1000

Light Duty Stripper End — Short Type

Order	End Type	Application
BN 1010 40^0	N1	For steel, plastic aluminium
BN 2010 80^0 **L/R**	N2	Brass, Casting With Right-Left Hand
BN 2012 80^0 **L/R**	L/R N2 TİN	Stainless Steel With Right-Left Hand
BN 1310 45^0	N10 Cobaltous	Deburring of internal and external burrs
BN 3010 50^0	N3	In many materials Straight Edges
BN 6010 40^0	N6	In all plastic and hard materials

STRIPPER SETS

NOGA

NOGA BURR NG 1003 " Multi Purpose "

Content: NG 1 Holder With S10 - S20 - S35 Stripper Ends

NOGA BURR NG 1005

Content: NG 1 Holder With S 10 - S 20 - S 35 - S 101 and S 202 Stripper Ends

NOGA BURR NG 1000

Holds all S Type Stripper Ends (3.2 mm) Spare strippers are in rear cover.

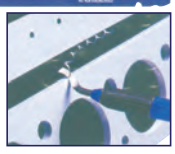
Order : NG 1000 NG 1003 NG 1005

PLASTIC EDGE OFF E0 2000

Economical Set

Holds all **S** Scrapers.(3.2 mm) Replaceable Stripper Model,

Content: Plastic retainer and S 10 Stripper End



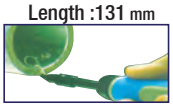
Order : E0 2000

Long Telescopic Stripper Set

SUPER BURR NG 3003 Length :131 mm

Long With Retainer

Holds all **S** Strippers. Replaceable Stripper Model. Content: Plastic Retainer and S 100 Stripper End



Order : NG 3003

Adjustable, Stripping/Correcting Stripper

ADJUSTABLE STIPPER SC 8000

With 12 mm Ratchet Ring, handle holding D50 D66 / D75/ D77 and T80 Scraper, is for scraping almost all materials. T80 Double Side end

Order : SC 8000

Heavy Duty Rasp Ends Long Type

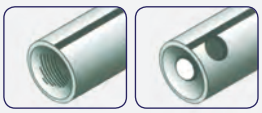
Order	End Type	Application
BS 1010 40^0 S10		For Steel, Plastic Aluminium
BS 2010 60^0 S20	L / R	Brass , Casting With Left, Right Hand
BS 2012 60^0 S20	L / R TIN	Stainless Steel With Left, Right Hand
BS 3010 40^0 S30		Deburring of internal and external burrs
BS 3510 55^0 S35	L / R	In many materials Straight Edges
BS 1018 45^0 S100	Cobalt	In all plastic and hard materials
BK 1010 40^0 S101		All Precise Edges (Finish)
BK 3010 45^0 S150		Small Holes up to 1.5 mm
BS 7001 - S70		Straight Edges
BS 6001 40^0 S60		Interrelated holes that are hard to reach

DEBURRING & STRIPPING

NOGA

At Straight Edges | Half lines | Superficial Scraper

Pipe Stripper Erasing



Deburring of Interrelated Pipe Hole

MINI SCRAPER SET

MINI STRIPPER NG 3700

It is an ideal set for mould and set producers. **D** Holder and **D50 / D66** Scrapers. The stripper is connected with 3mm fasteners.

Order : NG 3700

TRIANGLE STRIPPER SET

TRIANGLE STRIPPERS NG 3600

Holds T50 / T70 Strippers with **NG3** Plastic handle and **"T"** Retainer.

Length:131 mm

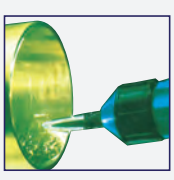
5 mm Inner Screwed

Order : NG 3600

HEAVY DUTY STRIPPERS

HEAVY - DUTY STRIPPER SC 1000

More durable heavy duty scraping processes, lockable to stripper retainer, can be used with T 80 / T120 triangle strippers.



Order : SC 1000

STRIPPER ENDS

Order	End Type	Dimension
BD 5010 60^0 D50		Dimension: 3.2 x 50 mm
BD 5501 60^0 D55	Carbide	Dimension : 3.2 x 50 mm
BD 6610 50^0 D66		Dimension : 3.2 x 48 mm
BD 7510 60^0 D75		Dimension : 3.2 x 75 mm
BD 7710 50^0 D77		Dimension : 3.2 x 73 mm
BT 5000 60^0 T50		Dimension : 3.2 x 51 mm
BT 7000 60^0 T70		Dimension : 4.2 x 57 mm
BT 8001 60^0 T80		Dimension : 2.5 x 80 mm
BT 3001 60^0	T120	Double edged

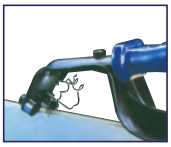
DOUBLE EDGE STRIPPING

NOGA

Double Angular Cutting

DOUBLE BURR DB 1000

It is for stripper plate sheets up to 12 mm. At the meantime, it cleans burrs of plates and it allows Hand Protector Shield and DB Retainer to rotate Stripper Ends easily. With 2 x N80 Diamonds Ends.



Order : DB 1000

Double Angular Cutting

NOGA V CUT NG 3200

It is for stripping sheets between 1 - 8 mm. **NG-3** Retainer, L Retainer Setting 4mm, Screwed Length 131 mm, it is used with **L3** Stripper Blade.

Order : NG 3200

Deburring of Slotting

KEYWAY BURR NG 3300

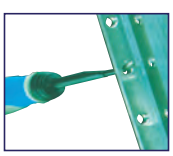
Deburring process from internal and external slottings, **Distance 2.4 mm** NG-3 Retainer - K Retainer and N80 K Stripper Blade

Order : NG 3300

For Stripping Interrelated Holes

INNER HOLE STRIPPER NG 3710

It is ideal to strip interrelated holes. It is ideal for NG 3 Retainer, D Pliers Retainer and D75/ D66/ D77 Stripper Blades.



Order : NG 3710

STRIPPER ENDS

Order	End Type	Range
BN 8010 55^0 N80	Diamond End Plaque	Between 0 - 12 mm Scraping
BN 7001 55^0 N70K	Diamond End Plaque	Between 1.2 - 8 mm Countersinking
BN 8110 55^0 N80K	Diamond End Plaque	Between 2.4- 11 mm Countersinking
BN 9009 55^0 N90K	Diamond End Plaque	Between 3 - 15 mm Countersinking
BL 3001 50^0 L3		Between 1 - 8 mm Countersinking
BL 4004 50^0 L4		Between 0 - 2.5 mm Countersinking
BC 3201 90^0 RD3.2		Between 0-3 mm Countersinking
BC 1001 90^0 TC		Max. 3 mm Countersinking

COUNTERSINKING SETS

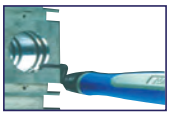
NOGA

Countersunk Holes | Pipe Holes | Outer Shafts

O -Ring Duct Cleaning, Stripping

O-RING BURR NG 1100

O-Ring Gasket, it is for inner duct cleaning and stripping and with NG1 Retainer and O-Ring Stripper Blade.



Order : NG 1100

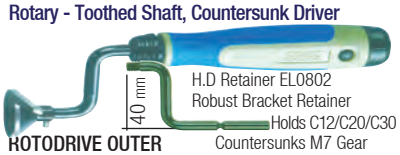
Rotary Inner Countersunk Driver, Single Edged

ROTODRİVE TOOLS NG 1200

The fastest way for bevel-ling by hand. Single Ended Countersunk provides smooth cutting. Content: NG1 Holder RD10.4 Countersunk Stripper

Order : NG 1200

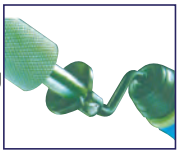
Rotary - Toothed Shaft, Countersunk Driver



H.D Retainer EL0802
Robust Bracket Retainer
Holds C12/C20/C30
Countersunks M7 Gear

ROTODRIVE OUTER COUNTERSUNK NG 1700

It takes bevels on rods and outer diameters of tubes. The fastest tool for bevelling outer dimaters of almost all materials. Content: NG1 Retainer, Bracket Retainer - EX 18 / 28 Stripper Blade



Order : NG 1700

Inner & Outer Edge Stripping (Single Product)

INNER - OUTER REAMER SP 8000

It strips inner and outer, corners of pipes / tubes. 3 Cutter Edge, Casting Housing Aluminium, Brass, Copper Range 4 -42 mm

Order : SP 8000

Order	End Type	Range
B0 1001 40^0	O - Ring	Between 1 - 3 mm Countersinking
BC 8301 90^0 RD8.3		Between 1 - 8.3 mm Countersinking
BC 1041 90^0 RD10.4		Between 1-10.4 mm Countersinking
BC 1651 90^0 RD16.5		Between 1-16.5 mm Countersinking
EX 2001 90^0 EX18		Between 4 - 18 mm Countersinking
EX 3011 90^0 EX28	H.D Rotor Drive M.7 with Holder	Between 8 - 28 mm Countersinking

Standard Set for Countersinking

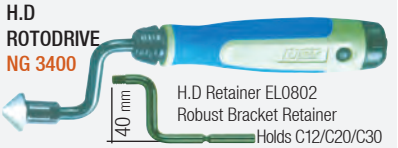
COUNTERSINK

Usage for countersinking of deep holes and all countersunk processes. Content: NG - 3 Retainer C H Retainer and C20 Countersunk (20 mm)

Order : NG 3100

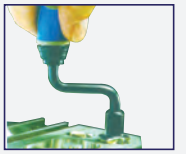
Bracket Retainer, Rotary-Rapid Countersinking

H.D ROTODRIVE NG 3400



H.D Retainer EL0802
Robust Bracket Retainer
Holds C12/C20/C30
Countersunks M7 Gear

It provides 40 mm extension for heavy duty stripper sets. Continuous axial rotation of countersink allows fast bevelling. Content: NG -3 Retainer / Bracket Retainer and C20 Countersunk, can be used in C12 / C30.

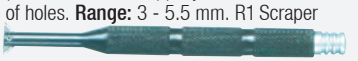


Order : NG 3400

Reversible Hole Front & Rear Precision Stripping

Mini REVERSIBLE Order No : RC 1000

It is a precision set for stripping front and rear sides of holes. **Range:** 3 - 5.5 mm. R1 Scraper



Medium REVERSIBLE Order No : RC 2000

Range: 5 - 10 mm Steel holder and R2 Stripper End

Large REVERSIBLE Order No : RC 3000

Range: 10 - 22 mm Steel holder and R3 Stripper End

Stripping of Narrow Ducts Corners

NOGA -SLOT CLEANER NG 3210

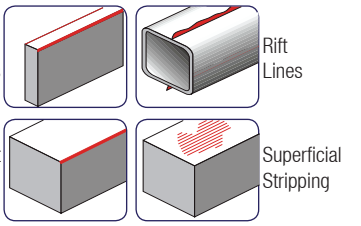
It is used for scraping of narrow ducts corners from 3.5 mm. **Content:** NG3 Retainer, L Retainer and L5 Stripper, L7 Stripper is available to cut in 2 ways.

Order : NG 3210

Order	End Type	Range
BC 1211 90^0 C12		Between 1 - 12 mm Countersinking
BC 2011 90^0 C20		Between 3 - 20 mm Countersinking
BC 3011 90^0 C30		Between 3 - 30 mm Countersinking
BR 1001 90^0 R1		Between 3 - 5.5 mm Countersinking
BR 2001 90^0 R2		Between 5 - 10 mm Countersinking
BR 3001 90^0 R3		Between 10 - 22 mm Countersinking

CERAMIC STRIPPER

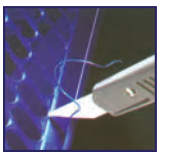
NOGA



A- Metal (Plastic Etc.) Ceramic Stripper

CONVEX CERA - CUT CR 2000

It is ideal for stripping and polishing surfaces of all plastic materials or soft metals. Replaceable Stripper End. Content: Cera - Cut Retainer and 25 ml. Convex Angular Stripper.



Order : CR 2000

Replacement of Stripper End; Remove Rear Retainer, insert cover to round hole and turn 90º, then pull the stripper end.

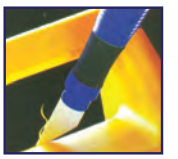
CONCAVE CERA - CUT CR 2300

It is ideal for stripping and deburring surfaces of all plastic materials or soft metals. Replaceable Stripper End. Content: Cera- Cut Retainer and 15 ml. Convex Radius Stripper.

Order : CR 2300

CERA - CUT CR 1100

It is ideal for stripping and deburring surfaces of all plastic materials or soft metals. It is long lasting and is thrown after use. Ergonomic handle is mounted to holder.



Order : CR 1100

Ceramic Double Burr DB 5000

It is ideal for deburring two edges of work piece simultaneously, the stripper is replaceable. **Range**: 1-11 **Content:** V Shaped Ceramic Stripper, is designed with hand protector ergonomically.

Order : DB 5000

Spare Stripper Blades (Material: Ceramic)

Convex End	Concave End	'V' Shaped
Order : **CR 2200**	Order: **CR 2500**	Order: **CR 5100**

NOGA SILVER KİT NG 9300

Quite Useful Kit :

Order No : **NG 9300**

Content:

* Noga Grip 3 Piece Retainer / 'S' Holder /Plastic Intermediate Countersunk Edge OFF Holder. 3.2 mm Roto Drive Countersunk / 10.4 mm Rotodrive Countersunk / 16.5 Rotodrive Countersunk / 18 mm Outer Rotor Drive

Stripper Ends: S10 / S20 and S30 **Packing Size :** 215 x 120 x 40 mm

NOGA BRONZE KIT NG 9200

Most Economical Set For All Users

Content :

Order No : **NG 9200**

* Noga Grip 3 Piece Retainer / 'N' Retainer / 'S' Retainer / 'C' Retainer +C20 / 'D' Retainer / +D50

Stripper Ends: N1 / N2 / S10 / S20 / S30 and S150 HSS Ends

Packing Size: 215 x 120 x 40 mm

NOGA GOLD SET NG 9400

Full Set for Professionals

Content:

Order No : **NG 9400**

* Noga Grip 3 Piece Retainer / Adjustable Stripper Plastic Edge OFF Retainer/ 'S' Retainer/ 'N' Retainer/ 'C' Retainer +C20/ 'D' Retainer +D50 'K' Retainer +N80K / Alien Key (1.5mm) / 10.4 Countersunk Bracket arm

Stripper Ends: N1 / N2 / S10 / S20 / S30 / S150 / D66

Packing Size: 270 x 230 x 50 mm

ECONOMICAL SETS

PROMO - 1 SET

Specifications:

* 1 Piece T-SD Plastic Housing
* 1 Piece DT-C Telescopic Retainer
* 10 Pieces C20 Stripper Ends

Order : RCP - 84059
Code : 13829

PROMO - 2 SET

Specifications:

* 1 Piece D-SD Plastic Housing
* 10 Pieces C20 Stripper Ends

Order : RCP - 84069
Code : 13830

UNIVERSAL KIT

Order :
RCP - 48034
Code :
13839

Specifications:

* 5 Pieces D-SD, T-SD, R-SD Plastic Retainer Housing
* 21 Pieces 3.2 mm Stripper Ends
* 2 Pieces C-30, C-121, C-100, C-15 / 1 Piece C60
* 5 Pieces Stripper Blade with "6 mm" Handle/2 Pieces R10 (S)/3 Pieces R15 (S10)
* 2 Pieces Stripper Blade SCR - 3 (75 mm) and SCR - 612
* 1 Piece V-2 and V-4 Blade with VT Telescopic Retainer
* 1 Piece KW Telescopic Retainer / KW - 16 Stripper Blade
* 1 Piece DTO Telescopic Retainer for 'C Type' Blades
* 1 Piece CS-20 Countersunk Stripper Set
* 1 Piece C-1 Ceramic Stripper Set

Multi Signum Spray

Specifications This spray carries out 5 functions collectively, protects metal against corrosion, removes rust, lubricates, cleans product and prevents recontamination. - It has heat resistance to 30°C / 100°C. Vanilla fragrant. WD-40 Equivalent, Economic

Usage It is used protecting and lubricating metals in mould industry for a short period. Also, it cleans corrosion on surfaces. It is water repellent. Used for cleaning metal parts.

Order No : Art. Nr. 416380

Ice Maker Spray (In tensions)

Specifications: The refrigerant spray, provides easy mounting possibility by shrinking metals and chains. It is used in finding and correcting failures in electrical areas. It penetrates the surface thoroughly.

Usage: It enables the dismantle by cooling parts in moulds expanded due to temperature. Also, it is a very good surface cleaner. Volatile and non-poisonous.

Order No : Art. Nr. 414080

WW 3000 Spray (Liquid Grease)

Specifications: It is a lubricant, resistant to high pressure, water, and 180°C temperature and corrosion. It has a high adhesion feature and it is dripless and non dropping. It has transparent colour and makes permanent lubrication.

Usage: It is a long term protection lubricant for moulds, ejector pins, cores and columns. Also it is used for assembly such as chain, apparatus etc. Can be also applied at press .

Order No : Art. Nr. 420080

Powerful Rust Remover Spray

Specifications: It is a dust remover with superior features and advanced technology. It has a very well penetration feature and it loosens tight bolts and nuts. Also, by penetrating even the thinnest places, it removes rust. Environment-friendly.

Usage: It is used for cleaning all moulds during their maintenance and mounting and removing rust from rusted bolts and surfaces. Also, it is corrosion inhibitor.

Order No : Art. Nr. 414480

Anti - Seize Ceramic Grease Spray

Specifications: It is mounting paste not containing metal and graphite and is a lubricant providing very good efficiency on ceramic structure and high heat resistant parts with its advanced technology. - It is resistant to 40°C/ 1400°C temperature, also 220 N/mm² pressure.

Usage: It is used as precision lubricant in all mould parts working in high temperature, metal injection and press moulds such as ejector pins - Column Bushes - Cores etc.

Order No : Art. Nr. 413980

Anti-Seize Copper Grease Spray

Specifications: It has very good adhesion on surfaces. It is resistant to -30ºC / 1200º temperature and 230 N /mm² pressures and also against rust and corrosion, it is copped based mounting paste. It prevents sticking of parts due to high temperature and is used in Quick Working Systems.

Usage: It is used as mounting spray on moulds, bolts, nozzles and oven joints of injection machines exposed to high temperature and pressure.

Order No : Art. Nr. 415080

Mould Protector Spray

Specifications: It creates long term robust protection layer on surfaces, it dries quickly. It protects against corrosion, rust and creates long term non aqueous dry protection layer. It protects in the form of white powder.

Usage: It is a long term concealer product used as protector for metal, ceramic, glass, plastic moulds, machines and pipe ducts B.

Order No : Art. Nr. 428880

Food Approved Lubricant Spray

Specifications: It is used for machines and equipments producing and contacting with food. Tasteless and odourless. It is approved by Food Grade LMBG. It is a white liquid grease and is used in mould related with food.

Usage: It is used for lubricating various components of food and bottling machine, milk, mineral water, beer factories, meat, vegetable, fruit, fish machines.

Order No : Art. Nr. 416480

Matt Black Spray Paint

Specifications: It is quick dry and good adhesive paint. It provides intensive protection against weather conditions and corrosion.

Usage: Used on machines, cars and motors in order to provide sportive appearance, also it is used on window texts and exhibition stands for decorative purposes. Also, it is used as mould exterior paint.

Order No : Art. Nr. 414880

Protective Wax Spray

Specification: It protects all metals, machines and equipments against corrosion. Provides rust formation. By creating a thin wax layer on surface, it prevents air contact of product. It is resistant against water and salty water vapour. Ideal protector in pneumatic formwork.

Usage: It provides protection in long distance moving of moulds, especially transporting of vessels against corrosion. Also, it is suitable for long-term Machine and Tool Storage.

Order No : Art. Nr. 418289

Rubber & Plastic Care Spray

Specifications: It is used to clean rubber, plastic and PVC surfaces from oil, coal dust, nicotine and other dirts. It provides cleaning and maintenance at all rubber and plastic gaskets, also bumper and car cockpits.

Usage: It is used on all kinds rubber and plastics. It does not cause any reaction with product, protects shapes, does not discolor, cleans thoroughly.

Order No : Art. Nr. 413280

Part Cleaning Spray

Specifications: It cleanses oil, dirt and resins at all metals rapidly and without leaving a trace. Especially, for mould polishing / cleaning works, application on mould surfaces, it cleanses all dirts, oils, chemicals from surface to down / outward thoroughly with its volatility.

Usage: It is used at mould polishing works intensively. It removes traces when the mould stamp is finished, it is used on mould and metal al parts of machines cleaning.

Order No : Art. Nr. 415280

WD -40 5 Function Spray

Specifications: The worldwide proven multi function oil is odourless. It is effective in areas like Rust Remover - Cleanser - Lubricant - Corrosion Protector - Contact Spray. 3 Different Types. **400 - 200 ml. - 440 ml.** Spray Lubrication. 5 Function General Workshop Usage

Order No : WD40-402 200 ml.
WD40-404 400 ml.

Varnish Spray (Protector)

Specifications: By creating a transparent layer on all plastic, dyed metal and dyed surfaces, it provides long term protection against dust, dirt and corrosion on surfaces. It is resistant to salty water.

Usage: It is used for mechanical maintenance and Repair Works and also is used on wood surfaces as varnish.

Order No : Art. Nr. 411780

Hand Cleansing Creme

Specifications: It does not contain alkali or solvents and consists of components which are non prejudicial dermatologically . The processed fine grainy materials in the product, provide cleaning and protection on hand pores thoroughly. It is extremely effective on all rusty, painted and adhesive dirts.

Order No :
310804 - 500 ml. Can
318806 - 3 lt. Packing
310809 - 30 lt. Barrel

WINPLAST MOULD PROTECTOR

Rust and Corrosion Inhibitor, Protecting Flexible Plastic Elastic Surface Coating Spray Paint provides flexible, non-porous and easy coating. It is quick dryed and thanks to its blue colour, it is detected immediately on mould and metal parts. In mould and metal industry, it is for surface corrosion protection.**Order :** 400 ml. **Art No : 418880**

Economic Mould Release

WINKEL Silicone Spray

MACHINE & MOULD MOUNTING SPRAY

In plastic injection machines, it helps to release products from mould. 2 Different Presentations:
Silicone Spray: It creates oil covered slippery surfaces
Siliconless Oilless Spray: It creates spotless slippery surfaces. Use on surfaces to be painted.

Order	Product Definition
411580	WINKEL Silicone Spray
417480	WINKEL Oil-free Silicone
K.2000	Economic Silicone Spray
K.1000	Economic Oil-free Silicone

WINKEL REPAIR PASTE

Winkel Mix: It is used for repairing unsuccessful drills, eyelet spaces, all cracks on metals and wood and plastic, mechanical work can be done in a short time. The parts can be grinded, milled, drilled, painted. It is a product resistant up to 300ºC temperature.
Winkel Mix - Waser: It has similar specifications to the other sealant and is a model used against water. Especially, it can be applied on pipe and metal cracks.

Order	Product Definition
200016	WINKEL Mix 56 gr.
200017	WINKEL Mix - Waser

It is for Hot Runner Moulds.

UNIVERSAL FLUID GASKET

HYLOMAR Fluid Gasket that is a permanent sealing product, is a leader in the product area providing 100% sealing to all industry Leaders companies for a long time.

Especially, in hot runner moulds: The parts to be repaired with suitable operation should be cleaned and oil-free. Sanding improves holding quality.
Usage: Cut the edge and squeeze Winmet. The mixture is adjusted automatically. Mix material until receiving an even colour, apply to the parts with scraper kit. After 30 minutes, mechanical work can be performed. Full curing is realized after 24 hours. Should not be worked under 5ºC.
After completion of the work: Close the cartridge with its cover again.

Technical Detail Information!

Colour ..... Blue
Density (25ºC) ..... 1,12 g / cm3
Chemical Element.....63 - 67 Polyurethane
Resolvent.....33 - 37 %
Mixture Acetone / Ethylacetate
Minimum Heat Resistance..... - 500C
Maximum Heat Resistance..... 250 / 3000C
Maximum Crack Filling..... 0.10 / 0.15 mm
Delivery Status.....In 80 ml. tube as paste
Usage: After ventilating solvent (approximately 10 minutes), the mounting can begin. It is resistant to oils, grease fuels, water and other chemicals. Its usage is easy, non drying, thus when desired to open the sealed system, it does not cause any difficulty.

Order : **HYLOMAR M**

HOT RUNNER CLEANING SYT

It provides cleaning on hot runner moulds, runner/nozzle systems by heating frozen raw material.

While beginning application, the selected compatible (runner nozzle) copper end is connected to the heat gun end with mounting ring in appropriate manner. Thanks to flexible hose of heat gun, it has ergonomic usage.

Nozzle Ends Related to Unit (With compatible selection)

Technical Detail Information!

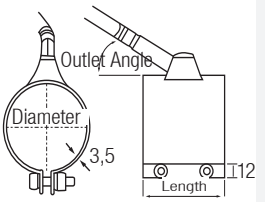
Voltage ..... 220 / 230 V
Power..... 100 W min. - 200 W max.
Weight..... 250 gr.
Cable Distance ..... 2.5 Meter
Max. Nozzle Heat 350ºC
12 Second heating time / Waiting 48 Second
It is suitable for all plastic raw materials.

Application:

During the process, 12 seconds after pressing the trigger of the Heat Gun, the coppered end reaches to the required Temperature (350ºC) to open the plugged area, while gun is working, don' t pull the trigger continuously. After pulling the trigger for 12 Seconds (ON), wait for 48 Seconds (OFF) by removing your hand from the trigger. This process cycle can be repeated in accordance with specified time values. It can be extended according to the hard plastic materials. Coppered Ends can be worn out in time, they should be changed at suitable intervals. **Important:** When the process is completed, the energy source should definitely be cut and also the product should not be left in a place with fire risk.
The cleaning of the product is very easy, don't remove melt plastic from copper end, the cleaning process should be done after the plastic is cooled, otherwise there is a breaking risk for the nozzle.

Order : **SYT**

Standard 230 Volt



HOT RUNNER, CLAMP END RESISTANCE KR

With its economical prices, excellent insulation, outlets reinforced for long use, inner sleeve rolling it is excellent. The fittings are stainless bolts.

As per request, it can be produced as Thermocouple

Standard 300 mm cable is used, it can be extended as per request also, as per request special production can be made.

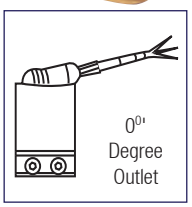
Power : 5 W/cm² - 230 V

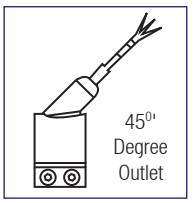
Sleeve material: Copper, Tin Alloy - Cr-Ni in yellow.

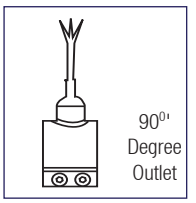
Energy Cable: Pure Nickel 300mm length, glass fiber glass fireproof cable outside, external Armour 304 Stainless Steel Mesh Tie.

Connecting Bolt: Stainless Cylinder Head Cap Screw M5x30

As per request, outlet angle diversification types



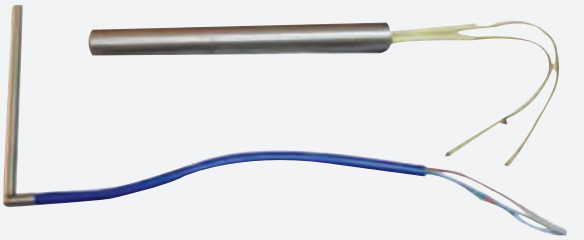




HOT RUNNER, CLAMP END RESISTANCE KR

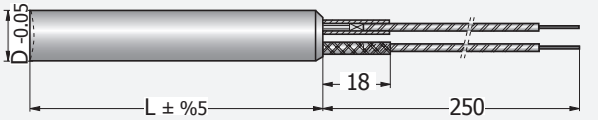
Dia.	Length	Watt
25	30	120
30	25	120
	30	140
	35	165
	40	185
35	25	135
	30	165
	35	190
	40	220
	45	235
40	25	155
	30	190
	35	220
	40	250
	45	280
42	25	165
	30	200
	35	230
	40	265
45	25	175
	30	210
	35	250
45	40	280
	45	320
	50	350
50	25	195
	30	235
	35	275
	40	315
	50	390
55	25	215
	30	260
	35	300
	40	345
	50	430
60	25	235
	30	280
	35	330
	40	375
	50	470
	60	565
65	25	255
	35	355
	50	510
70	25	270
	30	330
	35	385
	40	440
	50	550
	60	660
75	30	355
	40	470
	50	590
	60	705
80	25	310
	30	375
	35	440
	40	500
	50	630
	60	750
100	25	390
	30	470
	35	550
	40	630
	50	785
	60	940

Order : KR Diameter x Length

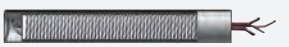


CARTRIDGE RESISTANCE (Plain/Thermocouple) FR

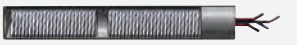
The cartridge resistors produced with advanced technology, provide a good performance in difficult use conditions in short distances and small areas due to its high watt. By insulating resistance wire wrapping on ceramic stone in equal and common pitch ranges with high resistant magnesium oxide powder, is created at a very close point to the stainless steel. The thickness of insulation between resistance wire and stainless steel pipe provides excellent heat transmission.



Thermocouple Resistance Diversification (Selection as per request)



Type 1: Thermocouple junction point is not grounded to resistance body and is located at the bottom washer of resistance tube.

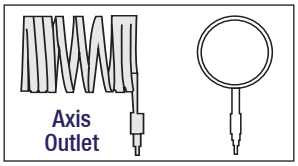


Type 2: Thermocouple junction point is not grounded to resistance body and is located at the center of resistance tube.

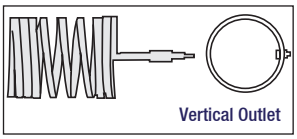
L	40	50	60	80	100	130	160	200	250	300	400
D	WATT (230 V)										
6.5 -0.02 -0.04	80 100 125 160 200	125 160 200 250 315	125 160 200 250 315	160 200 250 315	200 250 315 400	250 315 400 500	250 315 400 500	-	-	-	-
8.0 -0.03 -0.05	125 160 200	125 160 200 250	160 200 250 315	200 250 315 400	200 250 315 400	250 315 400 500	250 315 400 500	-	-	-	-
10 -0.03 -0.06	125 160 200 250 315	160 200 250 315 400 500	160 200 250 315 400 500	200 250 315 400 500 630	250 315 400 500 630 800	315 400 500 630 800 1000	400 500 630 800 1000	-	-	-	-
12.5 -0.04 -0.07	160 200 250 315	160 200 250 315 400	200 250 315 400 500	200 250 315 400 500 630	315 400 500 630 800 1000	315 400 500 630 800 1000	400 500 630 800 1000 1250	500 630 800 1000 1250 1600	630 800 1000 1250 1600 2000	630 800 1000 1250 1600 2000	-
16 -0.05 -0.08	-	200 250 315 400	200 250 315 400 500	250 315 400 500 630 800	315 400 500 630 800 1000	400 500 630 800 1000 1250	500 630 800 1000 1250 1600	630 800 1000 1250 1600 2000	630 800 1000 1250 1600 2000	800 1000 1250 1600 2000 2500	800 1000 1250 1600 2000 2500
20 -0.06 -0.10	-	-	-	400 500 630	400 500 630	500 630 800 1000	630 800 1000 1250	800 1000 1250 1600	1000 1250 1600 2000	1000 1250 1600 2000	1250 1600 2000 2500

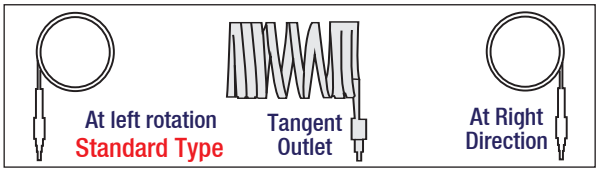
* As per request, the desired type thermocouple can be produced in dimensions in red.
* The slot that cartridge resistance will be inserted should be even and smooth.
* The suitable temperature control should be done to prolong resistance life.
* The resistance should be sit on slot kindly.
* 90º Rotational Types is produced with an order.

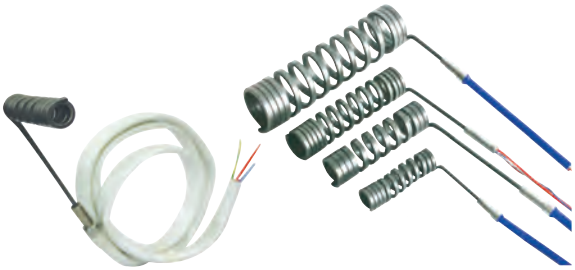
Order : FR D x L x Watt



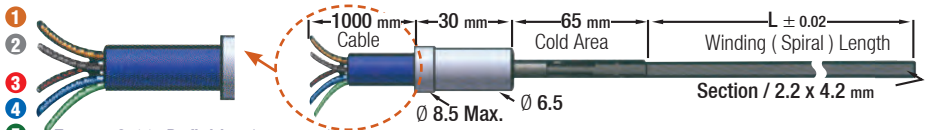
Selection as per request, OUTLET TYPES

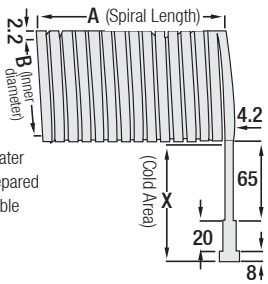






HOT RUNNER, SPIRAL RESISTANCE SR





Energy Cable Definition (1000 mm)

1 - Orange Colour (Thick) Phase
2 - Grey Colour (Thick) Neutral
3 - Red Colour (Thin) + Thermocouple
4 - Blue Colour (Thin) - Thermocouple
5 - Green Colour (Thick) Grounding

Spiral Resistances of Nozzle Used In Hot Runner System:
In Spiral Resistances, Spiral Section is from 321 Quality Stainless Steel Material and Heater Wires inside the pipe is from 8020 Chrome Nickel (Cr-Ni 8020), energy cables are prepared and delivered by winding as per request with pure nickel conductive, export fireproof cable resistant to 400ºC, Teflon Coated Insulation.
Our production as per request is available in standard series too.

STANDARD "WATT" VALUES CORRESPONDING TO OPEN / WINDING LENGTH (L)

Watt (W)	200	225	250	290	350	400	470	620	690	850	950	1100	1200
Winding (L) Length (mm)	250	280	335	385	460	520	600	760	900	1100	1200	1400	1550

STANDARD SPIRAL RESISTANCES

Heated (Spiral) Area /A Length and Watt Values (Watt / W)

Spiral (A)	20	40	60	80	100	120	140	160	180	200	220	240	260
İç çap (B)	Heated Area (Spiral) Heat Watt / W Values												
10 mm	-	200	250	350	350	350	400	470	470	620	-	-	-
12 mm	-	225	290	400	400	400	470	620	620	620	-	-	-
12.5 mm (1/2")	-	225	290	400	400	400	470	620	620	690	-	-	-
14 mm	-	250	350	400	400	470	620	620	690	690	-	-	-
15 mm	-	250	400	470	470	620	620	620	690	-	-	-	-
16 mm (5/8")	-	250	400	470	470	620	620	690	690	-	-	-	-
18 mm	-	290	400	620	620	620	690	690	-	-	-	-	-
19 mm (3/4")	-	290	470	620	620	620	690	850	950	950	1100	1200	1200
20 mm	-	290	470	620	620	690	690	850	950	1100	1100	1200	1200
22 mm (7/8")	200	350	620	690	690	690	850	950	1100	1100	1200	1200	-
24 mm	200	400	620	690	690	850	950	950	1100	1200	1200	1200	-
25 mm (1")	225	400	620	690	690	850	950	1100	1100	1200	1200	-	-
28 mm	225	470	690	850	850	950	1100	1200	1200	1200	-	-	-
30 mm	250	470	690	950	950	1100	1200	1200	1200	-	-	-	-
32 mm (1 1/4")	250	470	690	950	950	1100	1200	-	-	-	-	-	-
35 mm	290	620	690	950	950	1100	1200	-	-	-	-	-	-
38 mm (1 1/2")	290	620	850	1100	1100	1200	-	-	-	-	-	-	-
40 mm	290	620	850	1100	1100	1200	-	-	-	-	-	-	-
42 mm	350	620	950	1200	1200	1200	-	-	-	-	-	-	-
45 mm	350	690	950	1200	1200	1200	-	-	-	-	-	-	-
48 mm	400	690	1100	1200	-	-	-	-	-	-	-	-	-
50 mm (2")	400	690	1100	1200	-	-	-	-	-	-	-	-	-

Standard Series; It is produced up to 2200 Watt and has 1000 mm cable. Standard "J" Type Thermocouple is used in our products.
As per request, (N Type and K Type) Thermocouple Spiral Resistance can be produced for precision works.
Special Tight Resistance; For your order, as winding formula;
Inner Diameter x "P" (3.14) x Thread No =....

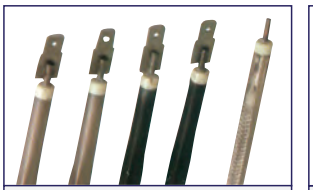
RESISTANCE LENGTH DETECTION

Cold Area Including 65 mm

Min. Wrapping Diameter	Ø 8 mm
230 Volt	2.2 x 4.2 mm Ø 3.3 x 3 x 3 mm
200 Watt	315 mm
225 Watt	345 mm
250 Watt	400 mm
290 Watt	450 mm
330 Watt	-
350 Watt	525 mm
400 Watt	585 mm
470 Watt	665 mm
550 Watt	-
620 Watt	825 mm
690 Watt	965 mm
700 Watt	-
800 Watt	-
850 Watt	1165 mm
950 Watt	1265 mm
1000 Watt	-
1100 Watt	1465 mm
1200 Watt	1615 mm
1400 Watt	-
1600 Watt	-
1800 Watt	-
2000 Watt	-
2200 Watt	-

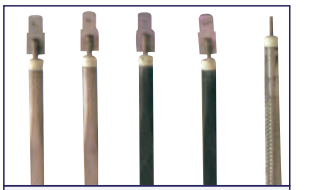
Order **SR** B (Inner Dia) X A (Length) X Outlet- (Left) Raw Material (Granule) ?

For Correct Resistance Selection; Pls. complete system with used plastic granule raw material information and by requesting information from our technical staff (**0212 671 09 10**)..!



Circular Section Flexible Resistance

Ø **5 - 6.5 - 8.5** - 10 - 12 - 16 - 21



Square Section Flexible Resistance

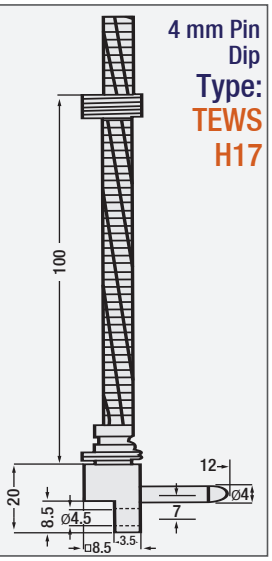
⊠ **4.5 x 4.5 - 6 x 6 - 8 x 8** mm

MANIFOLD SYSTEM, THERMOCOUPLES RT

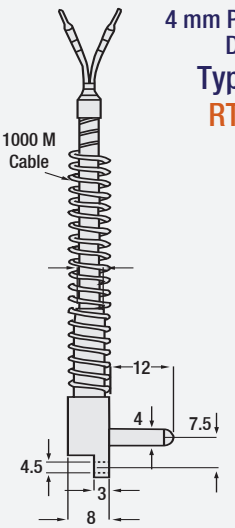
The Thermocouples ("**J**" Type) FE-constent combination makes measurement as minivolt from contact surface, sends values to the screen. Thus, it maintains heat measurement. The Cables are insulated with glass fiber coating. Thermocouples are the first element of the temperature measurement sensors from - 200ºC to +800ºC . Thermocouples are produced in various types as "K Type" - "J Type" and "PT100". "J Type" Standard Type that we produce are shown below. Except these, we produce thermocoupl according to the different special type sample.

MANIFOLD SYSTEM, THERMOCOUPLE TYPES

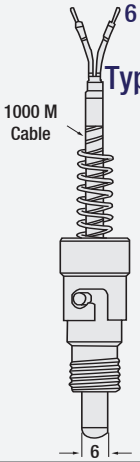
4 mm Pin Dip
Type: TEWS H17



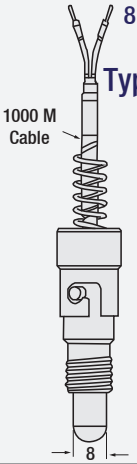
4 mm Pin Dip
Type: RT.1



6 mm With Coupling
Type: RT.2



8 mm With Coupling
Type: RT.3



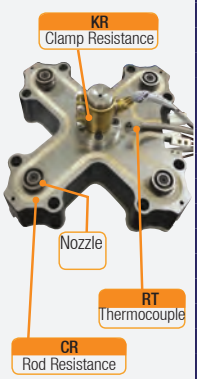
FLEXIBLE ELASTIC ROD RESISTANCES CR

It can be produced up to 4.400 mm length and in the form desired by customer. In heating of liquid and air stream, especially is used as resistance to manifold channels (by closing with resin), it can be mounted to hexagon flange. It is presented in two different types; **1** - In round structure **2**- In Square type To provide insulation inside of 304 Quality Stainless Pipe (Cr-Ni 8020), inside of stainless heater wire resistance and between pipe (Cr-Ni) and wire, magnesium powder is used, energy cables are from pure nickel and covered by fire proof glass fiber cable. For selection as per request, refer to the table. **RESISTANCE DIAMETERS:** Ø 5 - 6.25 - 6.4 - 7 - 8 - 8.5 - 10 - 10.2 - 11 - 12

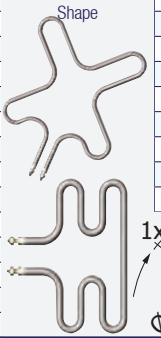
FLEXIBLE ELASTIC ROD STANDARD RESISTANCE CR

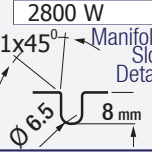
Section	⊠ 4.5 x 4.5 mm Ø 5.0 mm±0.10	⊠ 6 x 6 mm±0.05 Ø 5.0 mm±0.10	⊠ 8 x 8 mm±0.05 Ø 8.5 mm±0.15
Type	BASE filex	BASE filex	BASE filex
Mini. Radius that can be curved.	Radius Up to **12** mm	Radius Up to **15** mm	Radius Up to **20** mm
Cold Area	25 mm±5	30 mm±5	40 mm±5
Order / Length	WATT (230 Volt 'ta)		Standard Types
250 mm	200 W	-	
300 mm	250 W	-	
350 mm	300 W	550 W	
400 mm	350 W	650 W	
450 mm	400 W	750 W	
500 mm	450 W	800 W	
550 mm	500 W	900 W	
600 mm	550 W	1000 W	
650 mm	600 W	1100 W	
700 mm	650 W	1200 W	
750 mm	700 W	1300 W	
800 mm	750 W	1350 W	
850 mm	800 W	1450 W	
900 mm	850 W	1550 W	
950 mm	900 W	1650 W	
1000 mm	950 W	1750 W	
1050 mm	1000 W	1850 W	
1100 mm		1950 W	2.500 W
1150 mm		2000 W	-
1200 mm		2100 W	2.700 W
1250 mm		2200 W	-
1300 mm		2300 W	2.900 W
1350 mm		2400 W	-
1400 mm		2500 W	3100 W
1450 mm		2600 W	-
1500 mm		2700 W	3300 W
1550 mm		2800 W	-
1600 mm			3500 W
1700 mm			3700 W
1800 mm			3900 W
1900 mm			4100 W
2000 mm			4300 W

Manifold Assembly Example



Bendable Type According to Manifold Shape





Section Injection Mould

Order : RT. Type

INDUSTRIAL TYPES PLUGS AND SOCKETS

16 CONTACT 16 Amper Plugs and Sockets

Core Socket : 16 Contact
Order No : EBM16CP

Core Plug : 16 Contact
Order No : EBM16CF

Extension Plug: 16 Contact
Order No : EBM16PU

Extension Plug 16 Contact
Order No : EBM16FU

Wall Plug: 16 Contact
Order No : Single Entry **EBM16FD14**
Double Entry **EBM16FD24**

Usage Area: Generally, it is used as wall plug in 6 or 8 Manifolds, hot runner systems or wall plug or heat control devices.

10 CONTACT 16 Ampere Plugs and Sockets

Core Socket : 10 Contact
Order No : EBM10CP

Core Plug : 10 Contact
Order No : EBM10CF

Extension Plug: 10 Contact
Order No : EBM10PU

Extension Plug : 10 Contact
Order No : EBM10FU

Wall Plug : 10 Contact
Order No : Single Entry **EBM10FD14**
Double Entry **EBM10FD24**

Usage Area: Generally, it is used as wall plug in 4 Manifolds, hot runner systems or wall plug or heat control devices.
Order Description : EBM10FD24
EB: Industrial Plug or Socket **M:** Metal Casing **10**: Contact **FD**: Wall Plug **2**: Double Entry **4** :Latch

5 CONTACT 10 Ampere Plugs and Sockets

Core Socket: 5 Contact
Order No : EBM05CP

Core Plug : 5 Contact
Order No : EBM05CF

Extension Plug: 5 Contact
Order No : EBM05PU

Extension Plug: 5 Contact
Order No : EBM05FU

Ratchet Socket: 5 Contact
Order No : EBM05PM

Usage Area: It is used as machine plug or extension plug or socket in one-eyed main runner nozzles or one-eyed hot runner control devices.
Order Description : EBM05PM
EB: Industrial Plug or Socket **M:** Metal Casing **05:** Contact **P:** Socket **M:** Latch

48 CONTACT 16 Ampere Plugs and Sockets

Core Socket : 48 Contact (1-24) & (25-48)
Order No : EBM48CP

Core Plug : 48 Contact (1-24) & (25-48)
Order No : EBM48CF

Extension Plug 48 Contact
Order No : EBM48PU

Extension Plug: 48 Contact
Order No : EBM48FU

Wall Plug : 48 Contact
Order No : EBM32FD44

32 CONTACT 16 Ampere Plugs and Sockets

Core Socket : 32 Contact (1-16) & (17-32)
Order No : EBM32CP

Core Plug : 32 Contact (1-16) & (17-32)
Order No : EBM32CF

Extension Plug: 32 Contact
Order No : EBM32PU

Extension Plug: 32 Contact
Order No : EBM32FU

Wall Plug : 32 Contact
Order No : EBM32FD44

24 CONTACT 16 Ampere Plugs and Sockets

Core Socket : 24 Contact
Order No : EBM24CP

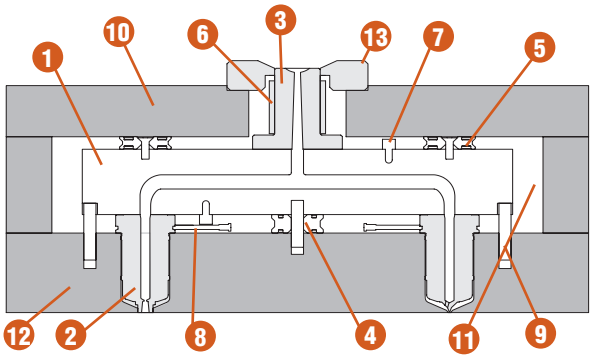
Core Plug : 24 Contact
Order No : EBM24CF

Extension Plug: 24 Contact
Order No : EBM24PU

Extension Plug: 24 Contact
Order No : EBM24FU

Wall Plug : 24 Contact
Order No : Single Entry **EBM24FD14**
Double Entry **EBM24FD24**

HOT RUNNER MANIFOLD EQUIPMENTS



1- Hot Runner Manifold
2- Hot Runner Nozzle
3- Angus
4- Thrust Disc
5- Locking Disc
6- Angus Clamp
7- Thermocouple
8- Hot Runner Nozzle Resistance
9- Locating Pin
10-Top Cover Plate
11- Manifold Pool
12- Nozzle Plate
13 -Locating Flange

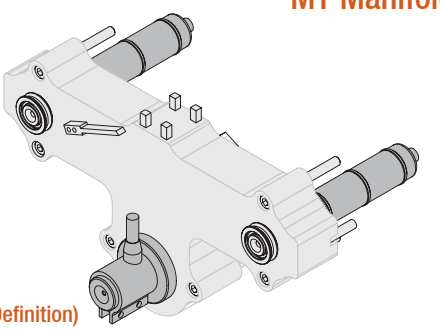
HOT RUNNER SYSTEM: It is the continuation and extension of machine injection group and independently a system in mould, its design and Engineering requires special Knowledge and Experience. The system equipments are relevant to each other from bonnet to heels.

Hot Runner Systems are manifold, hot runner nozzle resistance and thermocouple in base. The element contacting with products directly and effecting the result is hot runner nozzle. To give desired performance by hot runner nozzle, the production of all equipment should be correct. It works as a casing in manifold system. Also, it is an important element that collects and distributes material. The system is heated via resistances placed on it. The elements that keep the resistance temperature in specified range and measure the temperature are thermocouples. The thermocouples that detect the temperature decrease, allow resistances to work by triggering electric energy.

ANGUS; is the first element that provides the start of distribution of melt raw white into manifold. To reach melt raw material into manifold with the same pressure and temperature, **Clamp Resistance** is inserted around Angus.

Manifold SYSTEM FOR MULTI-EYED MOULDS

MT Manifold



Order Form (Definition)

MT XX KA CX CY

- Axis Range in X
- Axis Range in Y
- Number of Used Nozzle
- Dia. of Used Nozzle
- Manifold Model

Other Equipments with Important Roles in System:

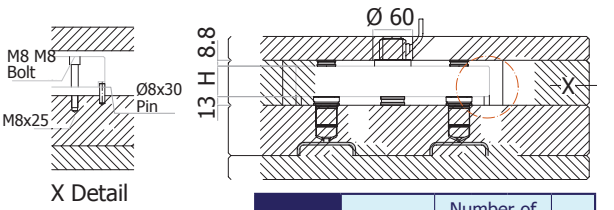
Thrust Disc - Locking Disc - Bolts and Locating Pins.

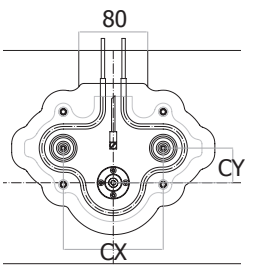
They are used to mount system to mould in the most correct way. Another Section that is effective in working of hot runner systems continuously and seamlessly are mould plates and manifold pools. As well as system and labour, also precision processing of the mould should be in the desired values.

Hot Runner Products: BELONGS TO TURKISH PRODUCTION SECTOR.

In our large mould production industry, our national capital continues to service status and we present Spare Parts - Service - Demo - Maintenance Guarantee. In selection and installation of all these systems, we will help together with our technical team. In addition, we will continue its follow up. We believe that all products which we present in continuation of faith to known GÜVENAL GROUP A.Ş. services will gain continuity in your mould with appropriate manner.

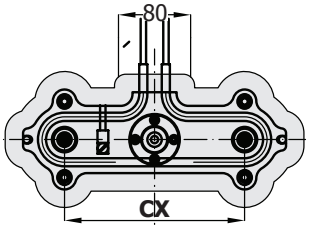
With economical presentations...

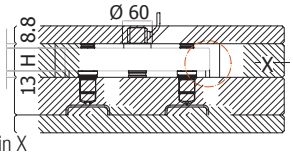




Manifold Model	Requested Nozzle Diameter	Number of Manifold Eye Number of Nozzle To be used			Inter Axis
MT	Ø 18	2	4	8	CX* XY
	Ø 22				
	Ø 25				
	Ø 32				
	Ø 40				

" H Height": It is calculated according to the material type, weight and number of nozzle used in manifold.

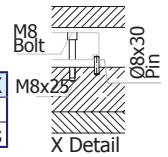




Order Form (Definition)

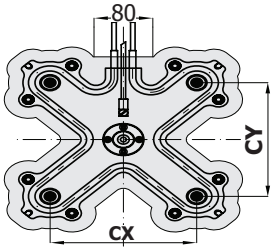
MI XX KA C/C X

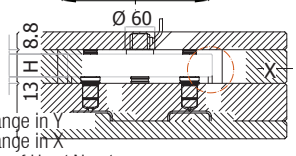
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model



Order	MI - XX.. - KA.. - C/CX
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	02 - 04 - 08 - 16 Pieces

" H Height": It is calculated according to material type, weight and number of nozzles used in manifold.

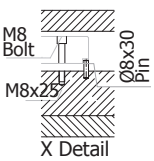




Order Form (Definition)

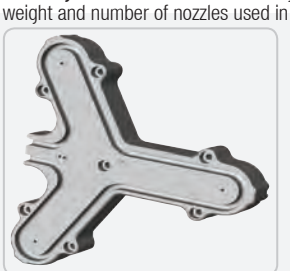
MX XX KA CX CY

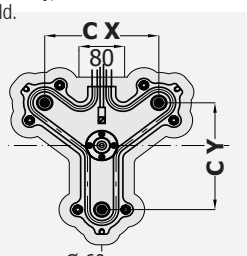
- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model

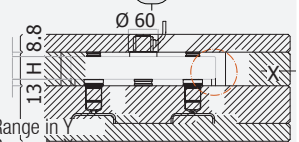


Order	MX- XX- KA- CX- CY
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	04 - 08 - 16 Pieces

" H Height": It is calculated according to material type, weight and number of nozzles used in manifold.



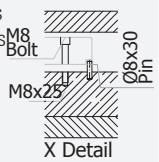




Order Form (Definition)

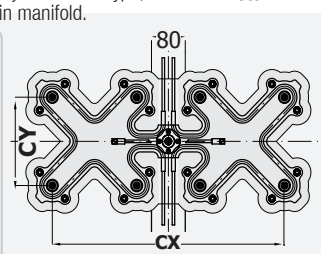
MY XX KA CX CY

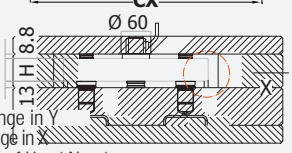
- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model



Order	MY- XX- KA- CX- CY
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	03 - 06 - 12 Pieces

" H Height": It is calculated according to material type, weight and number of nozzles used in manifold.

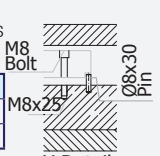




Order Form (Definition)

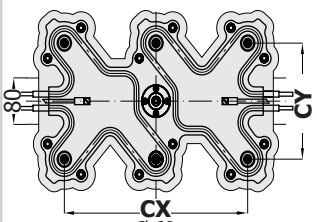
MXX XX KA CX CY

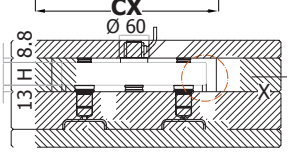
- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model



Order	MXX- XX- KA- CX- CY
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	08 - 16 - 32 Pieces

" H Height": It is calculated according to material type, weight and number of nozzles used in manifold.

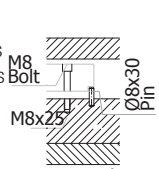




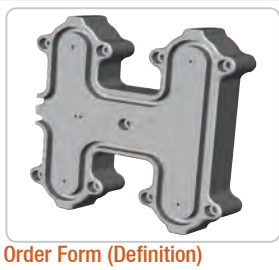
Order Form (Definition)

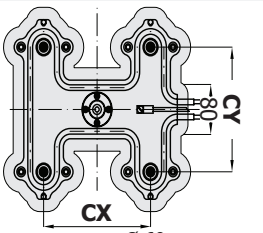
MYY XX KA CX CY

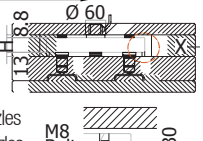
- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model



Order	MYY- XX- KA- CX- CY
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	08 - 16 - 32 Pieces



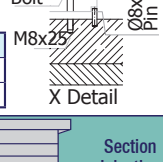




Order Form (Definition)

MH XX KA CX CY

- Axis Range in Y
- Axis Range in X
- Number of Used Nozzles
- Diameter of Used Nozzles
- Manifold Model



Order	MH- XX- KA- CX- CY
Nozzle Diameter	18 - 22 - 25 - 32 - 40
N. of Eye/Nozzle	08 - 16 - 32 Pieces

" H Height": It is calculated according to material type, weight and number of nozzles used in manifold.

HOT RUNNER UNITS: HEAT CONTROL DEVICES

HCC Model Hot Runner Control Modules, have been produced from Microprocessor-Based Devices specially designed for hot runners.

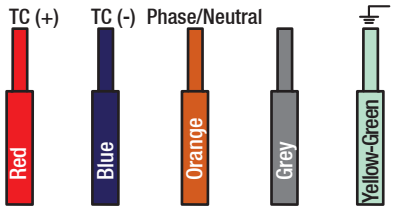
Specifications of Heat Control Devices:

* 1.0 Degree * PID Control System
* Working System Increases Resistance Mode up to 8 times with Soft Start Mode
* Standby Mode: (Stanby) Provides savings from electricity.
* Working without Thermocouple
* Compatible with "J " Type Thermocouple
* 0-600 Degree Operation Scale
* Structure Not Requiring Calibration (Ability to Restore Factory Calibration Settings to avoid sliding)
* Automatic Parameter Settings in all circumstances with Autotune feature
* Warning Alarm Output for Upper and Lower Values
* 25A Solid State RELAY (SSR) per Channel
* Siemens 10A Rapid Fuse per Channel
* With Standard 3 Meter Patch Cord
* 4 Meter Power Cable - With 5 unit feeder plug
* Stranded and specially alloyed Thermocouple Cable in Cable Line (FeConst)
* Easy Service / Change Opportunity with Pluggable Feature (Optional).

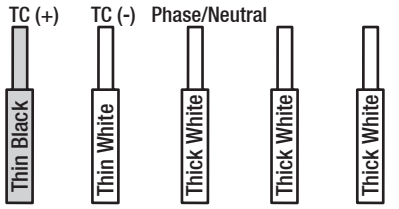
CABLE SELECTION AND IT S IMPORTANCE

In hot runner system, without considering cable status between hot runner and device and without checking it, it controls temperature in hot runner moulds. The device and cables used here are very important in terms of mould, the colours that are used are also important . Should be inserted to the device by considering these colours.

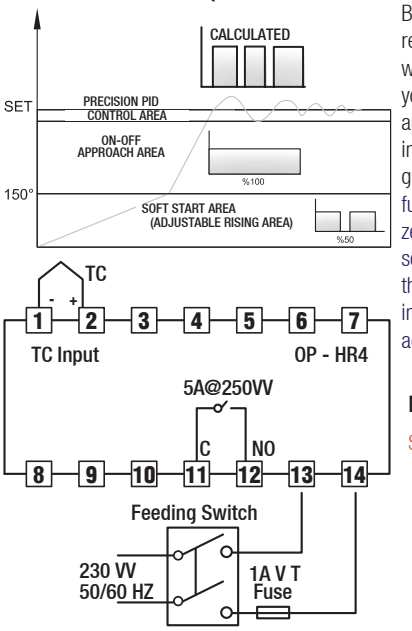
Cable Resistance Connection of Nozzles



Manifold Cable Resistance Connection



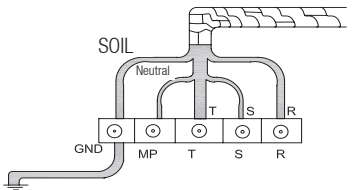
Heat Control Technique



Warnings:

Things to do before operation ;

Before Connecting the Hot Runner Mold Control Module, make sure that your mains is grounded and your mould is connected to grounded line of mains. Electrical leakage that may occur in resistance of mould due to ungrounded line can pose a risk to human life. Also, these leakage will damage the resistance and thermocouple. The occuring leakages can be misread of temperature value or damage the device by transferring via thermocouple cable.



Attention!!

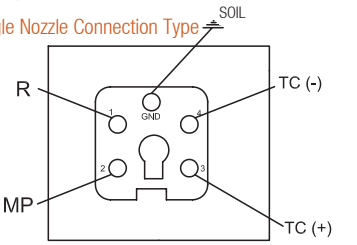
Neutral (N) and Ground (GND) is different than each other. Due to current switching from neutral line, pls. don' use this line for grounding. In order not to pose risk for human health and to operate your device normally, the ground end at power cable absolutely should be connected to **actual ground line** in your mains.

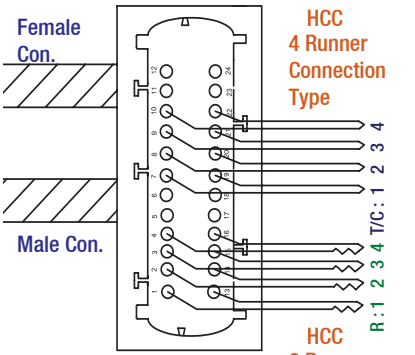
Heat Control Devices Operation Procedure

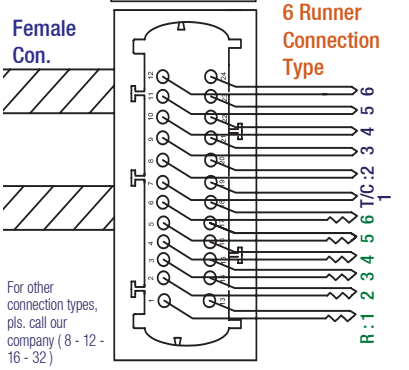
Before operating, make connection of resistance and thermocouple in accordance with gang socket connection diagram given to you. After ensuring that socket connection is applied in accordance with the diagram, insert interconnection cables, gang sockets. Before giving energy to control module, switch rear fuses to off position, switch Pacco Switch to zero position, plug power plug into appropriate socket, open the fuses in order, make sure that the temperature in eyes opened its fuses is increased. By entering Program menu, you can adjust the desired temperature values.

Example: CABLE PLUG CONNECTION SERIE

Single Nozzle Connection Type







For other connection types, pls. call our company (8 - 12 - 16 - 32)

Injection Machine and Runner Problems and Solutions

Injection Problems		Solution Follow Up			
P.01	Very Fragile Parts	M1/E6	E6	E8	M2
		M1 E3	M3	E4 E6	-
P.02	Faulty Stamp	E9 E6	E11 K1	E1 K4/K5	E3 K7
P.03	Gap Air Bubble	E4 E2 E6 K1	E11 K5 E10	E5 E3 K5 K7	E3 E6 K5
P.04	Burning	E6 / E7 M3 / K5	E2 E8	E4/M3 K5/K6	K7 K8
P.05	Distortion	K3 K4/ K5 K2	M5 E11 K6/E6	E11 E3 E4 K8/K5	E3 E4 E5
P.06	Joint Trace	M1 / K7 E1 K1 / E6	E1/E3 E6/M1 K7	E3/E11 K6/K4 K7	K8
P.07	Deposition	E9 K5	E5/E3 K6	E11 M6	K2/E6 K8
P.08	Parts is sticking jamming to mould.	K3 E5 K9	K9 E4 E5 M6/K8	E11 K8	E4 M6
P.09	Surface appearance Damaged	M1 K1 K7	E11 K4 K5	E6 K6	E3 E4
P.10	Colour/ Material are not nonhom-geneous	E6	E8	E10	E12
P.11	Burrs	E2 E6	E13 M4M6	E4 E5	K8
P.12	Jetting	E2 K5	E7 K6	K1 K8	E6
P.13	Interrelated on surface	E1 K4 K5	E6	K1	M5

(K) Possible MOULD Problems:

K1- Increase the mould temperature.
K2- Reduce mould temperature.
K3- Control mould waterways and cooling balance
K5- Control inlet diameter of your runner.
K6- Control/ Change inlet place of your runner.
K7- Control gas exhaust channel.
K8- Review/Change your mould design.
K9- Review your extractor design.

(E) Injection Machine Problems

E1- Increase injection speed/pressure.
E2- Decrease injection speed/pressure.
E3- Increase ironing speed/pressure.
E4- Decrease ironing speed/pressure.
E5- Adjust ironing time correctly.
E6- Adjust area/melt temperature correctly.
E7- Control that nozzle heater is connected its temperature.
E8- Control compatibility of your part to the injection machine grammage.
E9- Control padding/good receiving rate.
E10- Control rear pressure/compression receiving rate.
E11- Control transition distance and point from injection to ironing.

Some General Information Related Plastic Raw Material

Table A Raw Material Type (Fixed Coefficients)	Symbol	Coefficient for Closing Power ton / cm²	Viscosity Fluidity Rate	Specific Gravity in melting temperature	Specific Gravity in room temperature
General Purpose Polystyrene	GPPS	0.155-0.31	1	0.886 - 0.901	1.04 - 1.09
General Purpose Polystyrene (Thinner walled than 1mm)	GPPS	0.465-0.62	1	0.886 - 0.901	1.04 - 1.09
Strength polystyrene (Antishock)	HIPS	0.155-0.31	1	0.895 - 0.917	1.14 - 1.20
Strength polystyrene (Antishock) (Thinner than 1mm)	HIPS	0.388-0.543	1	0.895 - 0.917	1.14 - 1.20
Acrylonitrile butadiene styrene	ABS	0.388-0.62	1.3 - 1.5	0.895 - 0.908	1.01 - 1.08
Acrylonitrile styrene	AS (SAN)	0.388-0.465	1.3 - 1.5	0.907 - 0.917	1.06 - 1.10
Acrylonitrile styrene (Long Flow Path)	AS (SAN)	0.465-0.62	1.3 - 1.5	0.907 - 0.917	1.06 - 1.10
Low Density Polyethylene	LDPE	0.155-0.31	1.0 - 1.3	0.730 - 0.740	0.89 - 0.93
High Density Polyethylene	HDPE	0.233-0.388	1.0 - 1.3	0.752 - 0.772	0.94 - 0.98
High Density Polyethylene (Long Flow Path)	HDPE	0.388-0.543	1.0 - 1.3	0.752 - 0.772	0.94 - 0.98
Polypropylene (Homo/Copolymer)	PP	0.233-0.388	1.0 - 1.2	0.712 - 0.737	0.85 - 0.92
Polypropylene (Homo/Copolymer) (Long Flow Path)	PP	0.388-0.543	1.0 - 1.2	0.712 - 0.737	0.85 - 0.92
Soft Polyvinyl Chloride	PPVC	0.233-0.388	2	1.050 - 1.389	1.19 - 1.35
Hard Polyvinyl Chloride	UPVC	0.31-0.465	2	1.134 - 1.219	1.38 - 1.41
Nylon (Polyamide) 6 ve 66	PA6,PA66	0.62-0.775	1.2 - 1.4	0.958 - 0.995	1.12 - 1.16
Polymethyl Methacrylate (Acrilic)	PMMA	0.31-0.62	1.5 - 1.7	0.996 - 1.012	1.16 - 1.20
Polycarbonate	PC	0.465-0.775	1.7 - 2.0	1.018 - 1.037	1.20 - 1.22
Polyoxymethylene (polyacetal) (Homo / Copolymer)	POM	0.465-0.775	1.2 - 1.4	1.187 - 1.214	1.41 - 1.43
Polyethylene Terefaltalet (Amorphous)	PET	0.31-0.388	17 - 2.0	1.129 - 1.172	1.29 - 1.41
Polyethylene Terefaltalet (Crystalline)	PET	0.62-0.93	1.7 - 2.0	1.129 - 1.172	1.29 - 1.41
Polybutadiene Terefaltalet	PBT	0.465-0.62	1.7 - 2.0	1.102 - 1.113	1.30 - 1.38
Cellulose Acetate	CA	0.155-0.31	1.3 - 1.5	1.074 - 1.104	1.25 - 1.35

Choosing machine in right mould closing power

Mould Closing Power: In order to avoid opening of mould during injection of melt plastic raw material into mould and to create burrs at final product, it is a maximum power that clamp past can apply. Minimum closing power calculation required for machine to produce product in plastic injection machine changes according to the various parameters, as well as it can be calculated with a Few Different methods .

Most Practic Method: Required Machine Closing Power Practic Calculation x Cavity Projection Area fixed coefficient of used raw material (Table A)

Cavity Projection Area: It is the largest vertical projection area seen when looked cavity from injection side.
Coefficient: You can find multiplier coefficients of raw material in Table A that are used commonly.
Example: A glass having 40 mm radius will be produced. The thinnest wall thickness of glass is 0.6 mm. Pls. find closing power required for this glass production.
Field of circle being base of Glass:
(Pi=3.1416) x **r ²** (Square of radius) = **50cm²**
Therefore, when projection area (50cm²) is multiplied with GPPS Coefficient (0.62) from Table.2, is seen that the minimum closing power of plastic injection machine for this glass production is 31 Tons.

(M) Production, Raw Material/Material Problems

M1-Make sure that you dried the material correctly.
M2- Check that the crushing rate is correct.
M3- Check that the MB Carrier and its rate are correct.
M4- Decrease material fluidity.
M5- Increase material fluidity.
M6- Check material type/selection.
E12- Check goods receiving period.
E13- Increase opening power.

Thermoplastic Raw Materials Melting & Drawing Rates

	ISO Symbol	Melting Temperature Range °C	Drawing Drawing Rate %
Amorphous Thermoplastics	ABS	170 - 200	0.4 - 0.7
	PS	130 - 160	0.3 - 0.6
	SB	130 - 160	0.3 - 0.6
	SAN	140 - 170	0.4 - 0.6
	CA	130 - 170	0.3 - 0.7
	CAB	130 - 170	0.3 - 0.7
	CP	130 - 170	0.3 - 0.7
	PC	220 - 260	0.5 - 0.8
	PMMA	150 - 180	0.4 - 0.8
	PPO	240 - 270	0.5 - 0.8
	PVC	130 - 160	0.4 - 0.8
Crystalline Thermoplastics	PE	~ 110	1 - 3
	PE	~ 130	1.5 - 4
	PP	~ 165	1 - 2.5
	PA66	~ 255	1.2 - 2.5
	PA6	~ 220	0.8 - 2
	PA610	~ 220	0.8 - 2
	POM	~ 175	1.5 - 3.5
	POM	~ 165	1.5 - 3.5
	PBTP	~ 225	1.2 - 2.8
	PETP	~ 255	1.2 - 2
	FEP	~ 270	3.5 - 5
	ETFE	~ 270	3.5 - 5

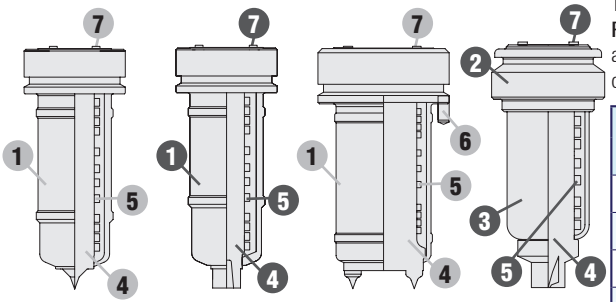
In order to avoid surface quality problems on stamped parts, drying the raw material before injection is priority according to test form. Drought stamp is required.

Hot Runner Nozzle Equipment:

Hot runner nozzles are consisted from the following equipments, all of them have a separate task in system, sleeves are provided bedding of nozzle and avoiding of its motion. Resistances are made heating task to provide stamping of fluid material without problem. Sealing gasket, is to avoid flowing of plastic raw material out, that is passed between manifold and nozzle with high pressure. Nozzle types should be selected by determining according to the raw material and grammage and considering mould conditions.

HOT RUNNER NOZZLE EQUIPMENTS

1- SLEEVE **2-** NOZZLE HEAD **3-** NOZZLE OUTER SHEATH **4-** NOZZLE
5- NOZZLE SPIRAL RESISTANCE **6-** NOZZLE LOCATING PIN
7- SEALING GASKET



SELECTION OF HOT RUNNER NOZZLE

The success of hot runner application depends on many factors. Using suitable raw material / polymer, making good part and mould design and selecting the right injection machine are critic factors, besides these, the location of runner inlet on part and selection of inlet type are essential in the same manner. During part design, while deciding runner inlet location, filling the part in balance and pressure resistance created by runner inlet should be considered. When deciding the runner inlet location, right selection among various hot runner types should be done. While deciding runner inlet type, then runner inlet length, first the compatibility of plastic material to this inlet type should be considered.

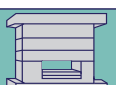
Nozzle Ends are the elements having direct contact with the product and effecting the result in the hot runner systems.

Thus, the selection of nozzle end;

*** Technical Drawing of the part or its data/weight**
*** Raw Material to be used / Colour Change**
*** Distances between cavities** (In X and Y Axises)
*** Is injection point on cavity?**
Or on runner? (Related information)
*** N. of Mould Eye * Location of Cooling System**
*** Melting Temperature of Material/ Raw Material**

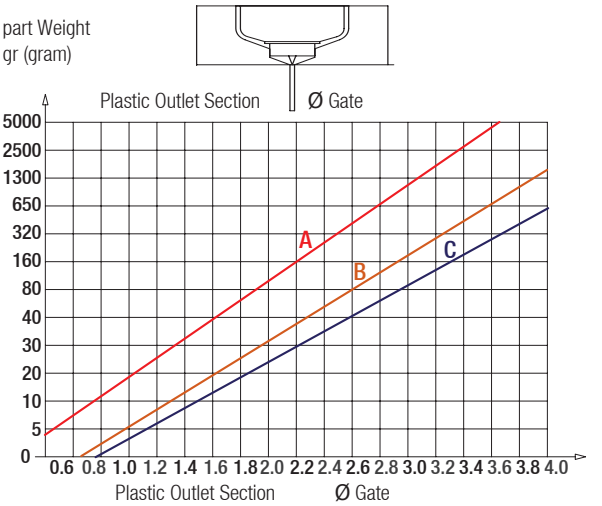
Order Placing Informationy

should be selected according to the afore mentioned criteria, in the event that these data are provided, performance expected from nozzle ends will be achieved.



PLASTIC OUTLET SECTION DETERMINATION SCHEME

GATE DIAMETER/ Melt Plastic Raw Material Outlet Section Determination



A	Low Density Plastics	PE	PP	PS	TPU	i20	HDPE
B	Medium Density Plastics	SAN	ABS	POM	PA	TPE	
C	Medium Density Plastics	PES	PC	PMMA	PPS	PPRC	

Selection of Hot Runner Nozzle Dia. According to the Part Weight:

The following table is prepared for our customers for information purposes. **Real Working Conditions:** can be differed depending on part volume, average wall thickness, process injection speed, machine capacity and gate diameter.

Nozzle Diameter	Raw Material Flow Character			Product Wall Thickness	
	A	B	C	≤2 mm	≥2 mm
Ø 18	~25 gr.	~15 gr.	~12 gr.	~12 gr.	~25gr.
Ø 22	~60 gr.	~40 gr.	~25 gr.	~25 gr.	~60 gr.
Ø 25	~200 gr.	~100 gr.	~60 gr.	~60 gr.	~200gr.
Ø 32	~800 gr.	~500 gr.	~300 gr.	~ 300 gr.	~800gr.
Ø 40	~2000gr.	~1200gr.	~800 gr.	~ 800 gr.	~2000gr.

A Group Raw Materials: PP - PE - PS - SB
B Group Raw Materials: ABS - SAN - POM - PMMA - PA - PBT - PET
C Group Raw Materials: PC - PPS - PES - TPE - PUR - PC - ABS

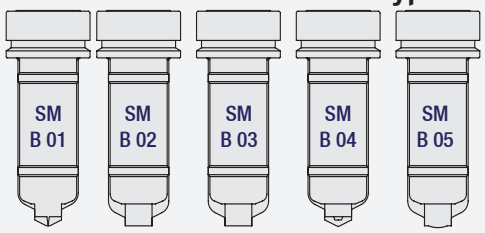
Feature in Usage of Hot Runner Mould:

Even cost of cold tunnel mould is more higher than cold runner mould, in the long term hot tunnel moulds provide economy in part costs as well as it idealizes part quality.

Advantages of Hot Runner Systems:

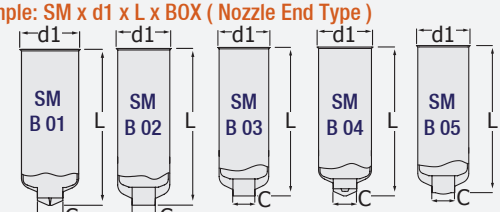
* Also, provides saving from created labour. Any of process (Such as runner cleaning, storage/ crushing etc.) are not done.
* Short Injection Cycle Period (Runner Tree that is not created)
* Mould is worked full automatically - Mould efficiency is high. (Short Cycle Period without Runner)
* Provides savings from material/ raw material (In hot runner system, there are no missing material in runner.)
* Provides saving at machine capacity. (Hot Runner Moulds can be used in all injection moulds/ There is no machine limitation.
* Excellence in part quality (Due to making moulding with low pressures, internal stresses of moulded parts is very lower than hot runner mould, however heater element should be hot runner system control.

Standard Nozzle B SERIE Types

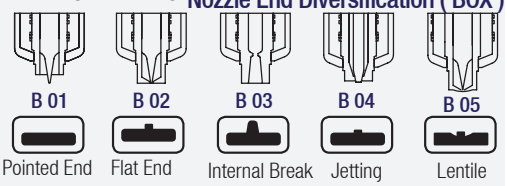


Order Example: SM x d1 x L x BOX (Nozzle End Type)

SM → Code
d1 → Nozzle Diameter
L → Nozzle Length
BOX → Nozzle End Type



Nozzle End Diversification (BOX)



In the order; slot detail will be presented with technical drawing.

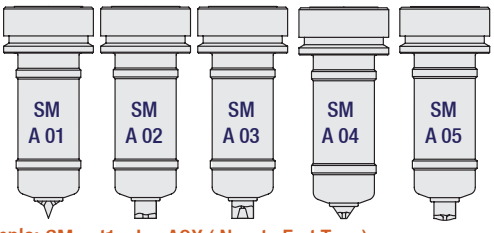
Code	d1	L	C	BOX	Resistance Watt
SM...	22	46	8	Plug In End Type Nozzle End Types:	200 - 225 Watt
SM...		56			225 - 250 Watt
SM...		66			200 - 225 Watt
SM...		76			225 - 250 Watt
SM...	25	46	10		250 - 290 - 350 W.
SM...		56		B01	290 - 350 - 400 W.
SM...		66		B02	225 - 250 Watt
SM...		76		B03	250 - 290 - 350 W.
SM...		86		B04	290 - 350 - 400 W.
SM...		96		B05	350 - 400 - 470 W.
SM...	32	46	12		400 - 470 Watt
SM...		56		According to the Selection In Order	400 - 470 - 620 W.
SM...		66			250 - 290 Watt
SM...		76			290 - 350 Watt
SM...		86			350 - 400 Watt
SM...		96			400 - 470 Watt
SM...	40	46	14		400 - 470 - 620 W.
SM...		56			400- 470- 620- 690
SM...		66		B installation	290 - 350 Watt
SM...		76			350 - 400 - 470 W.
SM...		86			400 - 470 Watt
SM...		96			470 - 620 Watt

Attention !!! Technical information is absolutely essential in order.

Resistance Watts: It is changed according to material density.

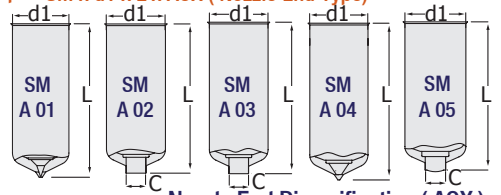
Gate Diameters: It will be determined in accordance with the order.

Standard Nozzle A SERIE Types

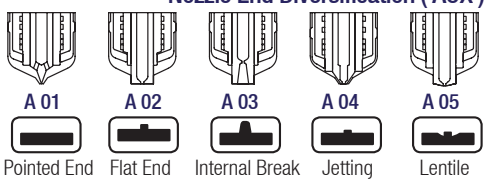


Order Example: SM x d1 x L x AOX (Nozzle End Type)

SM → Code
d1 → Nozzle Diameter
L → Nozzle Length
AOX → Nozzle End Type



Nozzle End Diversification (AOX)



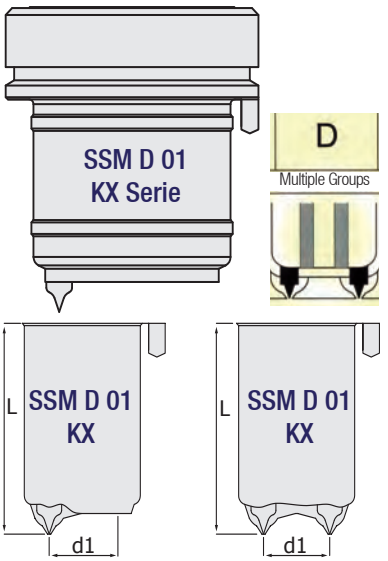
In the order; slot detail will be presented with technical drawing.

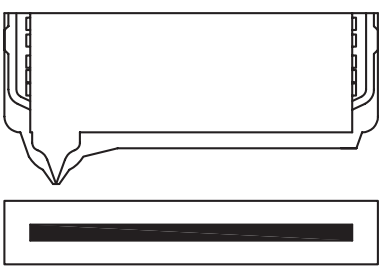
Code	d1	L	C	AOX	Resistance Watt
SM...	18	46	6	Plug In End Type Nozzle End Types:	200 - 225 Watt
SM...		56			225 - 250 Watt
SM...	22	46	7		200 - 225 Watt
SM...		56			225 - 250 Watt
SM...		66			250 - 290 - 350 W.
SM...		76		A01	290 - 350 - 400 W.
SM...	25	46	8	A02	225 - 250 Watt
SM...		56		A03	250 - 290 - 350 W.
SM...		66		A04	290 - 350 - 400 W.
SM...		76		A05	350 - 400 - 470 W.
SM...		86			400 - 470 Watt
SM...		96			400 - 470 - 620 W.
SM...	32	46	10	According to the Selection In Order	250 - 290 Watt
SM...		56			290 - 350 Watt
SM...		66			350 - 400 Watt
SM...		76			400 - 470 Watt
SM...		86			400 - 470 - 620 W.
SM...		96			400- 470- 620- 690
SM...	40	46	14		290 - 350 Watt
SM...		56		A stable	350 - 400 - 470 W.
SM...		66			400 - 470 Watt
SM...		76			470 - 620 Watt
SM...		86			620 - 690 Watt
SM...		96			620 - 690 - 850 W.

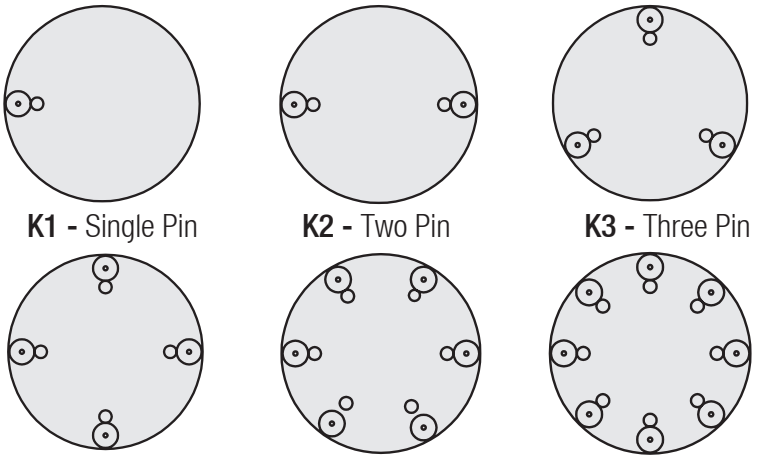
Attention !!!

Resistance Watts: It is changed according to the material density.

Standard MULTI NOZZLE D01 SERIE







Standard MULTI NOZZLE D01 SERIE

Code	d1	L	D01 - KX	Resistance Watt
SMM..	16	46	K1 - K2 - K3 - K4	225 - 250 - 290 Watt
SMM..		56	K1 - K2 - K3 - K4	225 - 250 - 290 Watt
SMM..		66	K1 - K2 - K3 - K4	350 - 400 - 470 Watt
SMM..		76	K1 - K2 - K3 - K4	400 - 470 - 620 Watt
SMM..		86	K1 - K2 - K3 - K4	470 - 620 - 690 Watt
SMM..		96	K1 - K2 - K3 - K4	470 - 620 - 690 Watt
SMM..	22	46	K1 - K2 - K3 - K4	250 -290 -350 -400 Watt
SMM..		56	K1 - K2 - K3 - K4	290 - 350 - 470 Watt
SMM..		66	K1 - K2 - K3 - K4	400 - 470 - 620 Watt
SMM..		76	K1 - K2 - K3 - K4	470 - 620 - 690 Watt
SMM..		86	K1 - K2 - K3 - K4	470 -620 -690 -850 Watt
SMM..		96	K1 - K2 - K3 - K4	620 -690 -850 -950 Watt
SMM..	28	46	K1 - K2 - K3 - K4 - K6	250 -290 -350 -400 Watt
SMM..		56	K1 - K2 - K3 - K4 - K6	350 - 400 - 470 Watt
SMM..		66	K1 - K2 - K3 - K4 - K6	400 - 470 - 620 Watt
SMM..		76	K1 - K2 - K3 - K4 - K6	470 - 620 - 690 Watt
SMM..		86	K1 - K2 - K3 - K4 - K6	620 -690 -850 -950 Watt
SMM..		96	K1 - K2 - K3 - K4 - K6	690 - 850 - 950 Watt
SMM..	34	46	K1 -K2 -K3 -K4 -K6 -K8	290 - 350 - 400 Watt
SMM..		56	K1 -K2 -K3 -K4 -K6 -K8	400 - 470 - 620 Watt
SMM..		66	K1 -K2 -K3 -K4 -K6 -K8	470 - 620 - 690 Watt
SMM..		76	K1 -K2 -K3 -K4 -K6 -K8	470 -620 -690 -850 Watt
SMM..		86	K1 -K2 -K3 -K4 -K6 -K8	620 -690 -850 -950 Watt
SMM..		96	K1 -K2 -K3 -K4 -K6 -K8	690-850 -950-1100 Watt

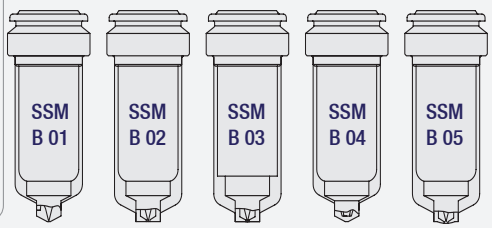
SMM d1 L KX Order Example

- KX — Nr of Nozzle End Cavity
- L — Nozzle Length
- d1 — Nozzle End Axis Dia.
- SMM — Standard Multi Nozzle

Multi Nozzle Series :

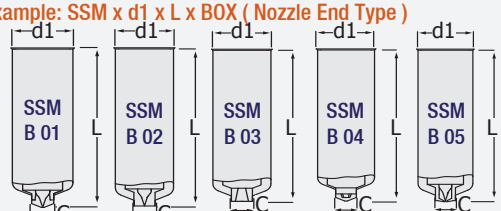
* It is not suitable for each material and weight
* While making selection, pls. request technical support...
* Resistance watts are changed according to material density.

Standard Spinning Nozzle B SERIE

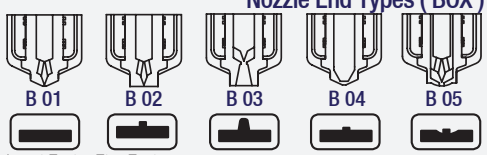


Order Example: SSM x d1 x L x BOX (Nozzle End Type)

SSM → Code
d1 → Nozzle Diameter
L → Nozzle Length
BOX → Nozzle End Type



Nozzle End Types (BOX)



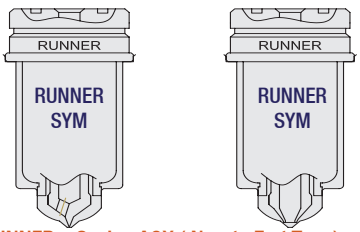
Pointed End | Flat End | Internal Break | Jetting | Lentile

In order; will be presented with slot detail technical drawing.

Code	d1	L	C	BOX	Resistance Watt
SSM...	22	46	8	Plug-in Type Sleeve Spinning Economic Model Nozzle End Types: B01 B02 B03 B04 B05 According to Selection In Order M Spinning	225 Watt
SSM...		56			290 Watt
SSM...		66			290 Watt
SSM...		76			350 Watt
SSM...		86			350 Watt
SSM...		96			400 Watt
SSM...	25	46	10		250 Watt
SSM...		56			290 Watt
SSM...		66			350 Watt
SSM...		76			400 Watt
SSM...		86			400 Watt
SSM...		86			470 Watt
SSM...		96			470 Watt
SSM...	32	46	12		250 Watt
SSM...		56			350 Watt
SSM...		66			350 Watt
SSM...		76			400 Watt
SSM...		86			470 Watt
SSM...		96			470 Watt

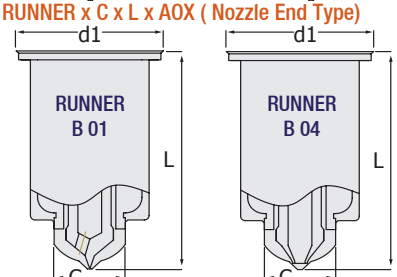
Attention !!! **Technical information is absolutely essential in order.**
Resistance Watts: It is changed according to material density.
Gate Diameters: It will be determined in accordance with the order.

RUNNER Spinning Nozzle A SERIE



Order Example: RUNNER x C x L x AOX (Nozzle End Type)

RUNNER → Code
d1 → Nozzle Diameter
L → Nozzle Length
BOX → Nozzle End Type



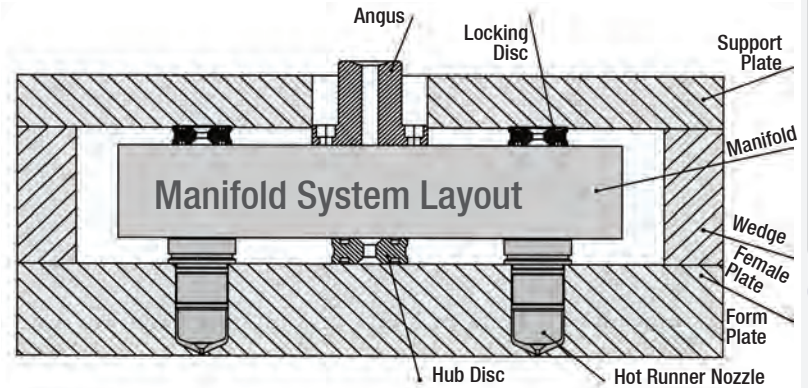
Pointed End | Runner Trace of hot runner nozzle to be left on product | Pointed End

In order; will be presented with slot detail technical drawing.

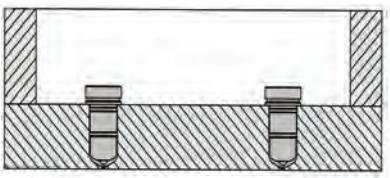
Code	d1	L	C	BOX	Resistance Watt
RUNNER	30	49	15	Plug-in Type Sleeve Spinning Multi Serie Systems Economic Model Nozzle End Types: B01 B04 According to Selection In Order M Spinning	250 Watt
RUNNER		59			290 Watt
RUNNER		69			350 Watt
RUNNER		79			400 Watt
RUNNER		89			400 Watt
RUNNER		99			470 Watt
RUNNER	32	49	17		250 Watt
RUNNER		59			290 Watt
RUNNER		69			350 Watt
RUNNER		79			400 Watt
RUNNER		89			470 Watt
RUNNER		99			470 Watt
RUNNER	34	49	19		290 Watt
RUNNER		59			350 Watt
RUNNER		69			400 Watt
RUNNER		79			470 Watt
RUNNER		89			470 Watt
RUNNER		99			620 Watt

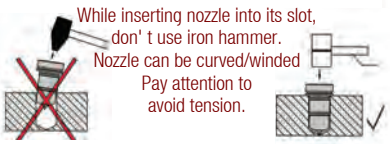
Attention !!!
Resistance Watts: It is changed according to the material density.

Recommended Assembly Process of Hot Runner Nozzles

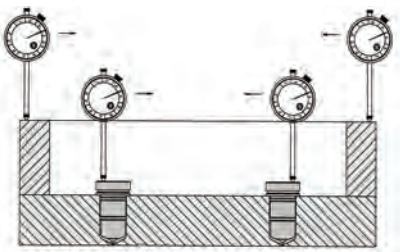


Mounting Examples of Hot Runner Nozzles

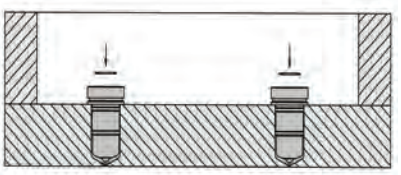




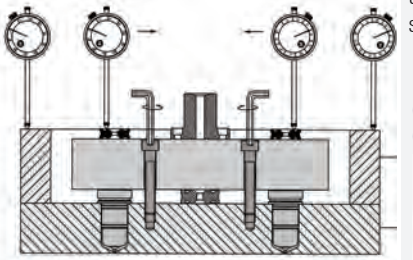
1 - Form Plate: Check that nozzle slot measurement are properly processed in accordance with given tolerance.
2 - Insert unsealed nozzle in its place with the help of gavel balancedly.



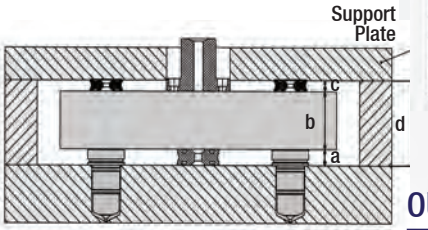
3 - Measure nozzle cap height with dial gauge and reset it.



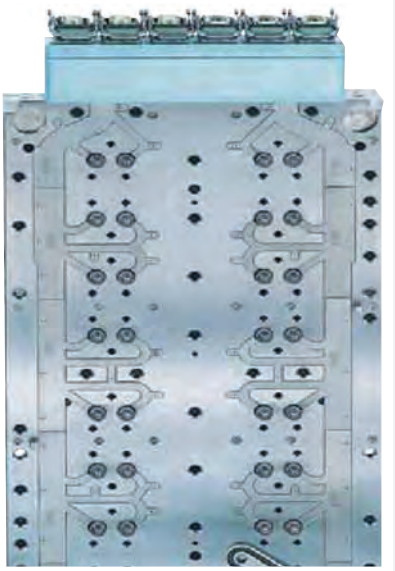
4 - Insert copper sealing gasket on nozzles.

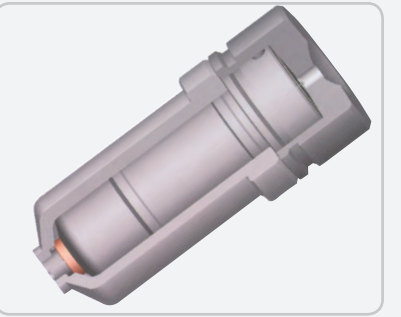


5 - Insert manifold and wedge/ bridge plate.
6- Tight manifold connection screw in order slowly and balancedly by controlling connection corners of manifold without distorting.



7- Mount support plate. For sealing, A + B +C > d can be made sealing at required area.

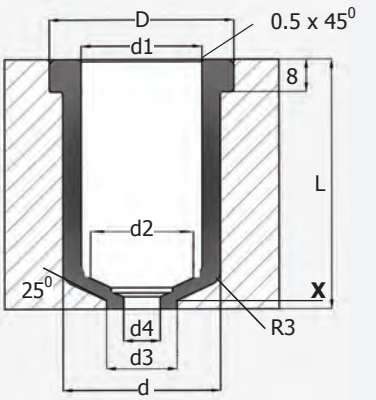




OUTER SLEEVE Serie : SB

It is a useful unit used when desired to change existing injection mould which is cold runner system to hot runner system or using in situations that the creation of water channel using extra cooling of nozzle in hot runner system should be required.

Meterial : 1.2344 **Hardness :** ± 52 HRC
Code: Y01 / Pointed End Nozzle Type
Code: Y02 / Pointed End Nozzle Type

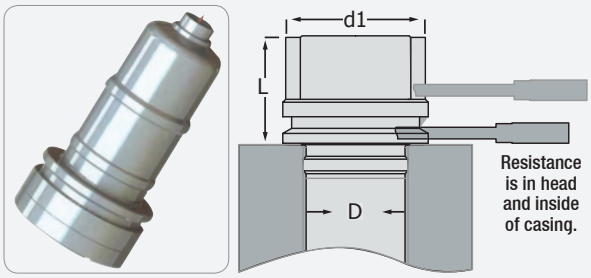


OUTER SLEEVE Serie : SB

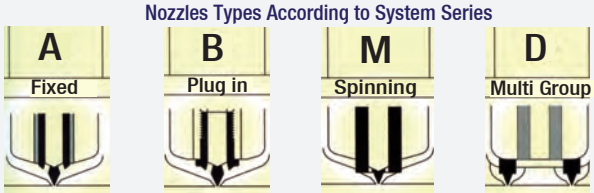
Order	d	d1	d2	d3	d4	D	L
SB25Y2	32	40	22	14	8	39	46
SB25Y1				18			56
SB32Y2	40	32	29	14	10	46	66
SB32Y1				18			76
SB40Y1	48	40	37	14	14	54	86
SB40Y2				18			96

In order : Pls. place an order with order code by selecting length (L) according to the determined diameter.
Data in Table is an document related to flat end sleeve structure.
When requesting pointed end outer sleeve; also gate end diameter should be added to order.
As per request: Our production is available for desired material and measurement is available.

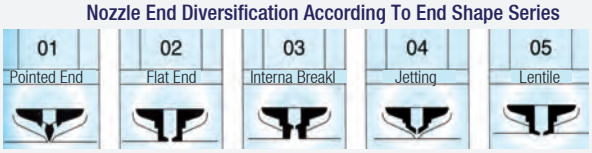
In Usage of Hot Runner Nozzles: Inlet MAIN RUNNER NOZZLES of Mould Serie: ASM



Nozzles Types According to System Series



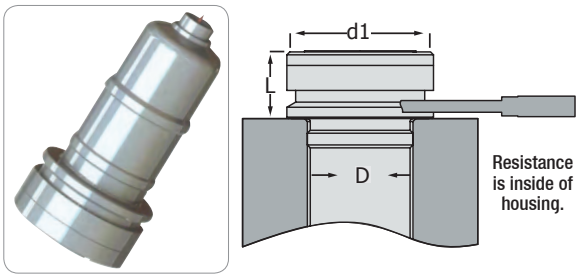
Nozzle End Diversification According To End Shape Series



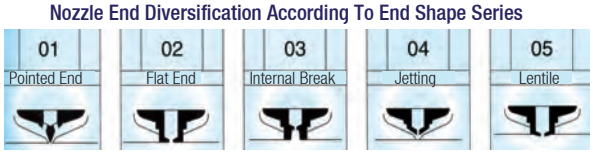
Main Runner Nozzles;
Head Resistance is added to Heat Resistance type engineering plastics (PC, PA, PBT, PET, PVC, PBBT) hot runner nozzles. Temperature control of the hot runner nozzle is provided with 2 Pieces Thermocouples. Head resistance nozzles are for SM -SMM (Multi Nozzle).

Hot Runner; Main Runner Nozzle For One Eye Mould — SM - SMM

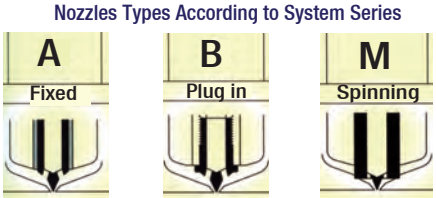
Code	D	L	d1	d1
ASM 18	**Ø 18**	15 mm		Ø 25
ASM 22	**Ø 22**	15 mm		Ø 29
ASM 25	**Ø 25**	15 mm		Ø 32
ASM 32	**Ø 32**	15 mm		Ø 39
ASSM 22	**Ø 22**	15 mm		Ø 27
ASSM 25	**Ø 25**	15 mm		Ø 30
ASSM 32	**Ø 32**	15 mm		Ø 27



Nozzle End Diversification According To End Shape Series



Nozzles Types According to System Series

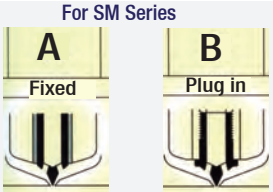


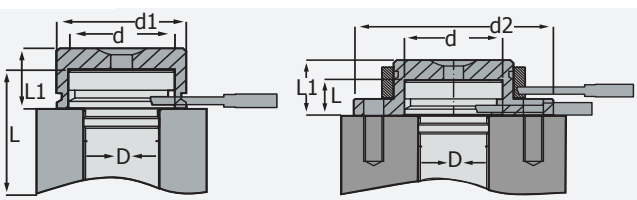
Main Runner Nozzles;
In general Plastic injection (PP,POM, ABS,PE,HDPE,PS etc.) applications, hot runner nozzles sealing gaskets are cancelled and head thickness measurement is increased. ASM Types Main Runner Nozzles are for SM and SSM Series.

Hot Runner; Main Runner Nozzle For One Eye Mould — SM - SSM

Code	D	L	d1
ASM 18	**Ø 18**	15 mm	Ø 25
ASM 22	**Ø 22**	15 mm	Ø 29
ASM 25	**Ø 25**	15 mm	Ø 32
ASM 32	**Ø 32**	15 mm	Ø 39
ASSM 22	**Ø 22**	15 mm	Ø 27
ASSM 25	**Ø 25**	15 mm	Ø 30
ASSM 32	**Ø 32**	15 mm	Ø 27

For SM Series

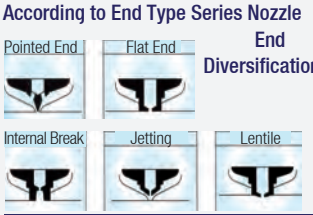




Main Runner Nozzles; Head Section Flanged and Plain Type Caps for hot runner nozzles. It is for using sealed standard hot runner nozzles as main runner nozzles in mould. For materials with high melting temperature, the resistance is added in order to not having cooling in used caps, main runner caps are only in SM Series.

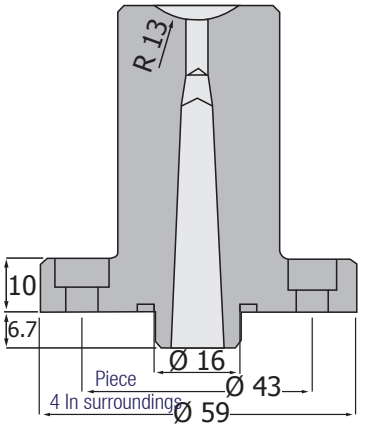
Code	Type	D	L	d	d1	d2	L1	Resistance
SS 22 Z00	**Plain**	Ø 22	13 mm	Ø 29	Ø 39	Ø 65	19.8	-
SS 22 Z01	**Flanged**							150 Watt
SS 25 Z00	**Plain**	Ø 25	13 mm	Ø 32	Ø 39	Ø 65	19.8	-
SS 25 Z01	**Flanged**							175 Watt
SS 32 Z00	**Plain**	Ø 32	13 mm	Ø 39	Ø 46	Ø 72	19.8	-
SS 32 Z01	**Flanged**							225 Watt
SS 40 Z00	**Plain**	Ø 40	20 mm	Ø 49	Ø 56	Ø 72	26.8	-
SS 40 Z01	**Flanged**							290 Watt

According to End Type Series Nozzle End Diversification

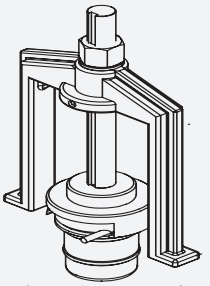


MANIFOLD ANGUS SERIE: SA

Unit providing the first connection from injection group to hot runner manifold system.



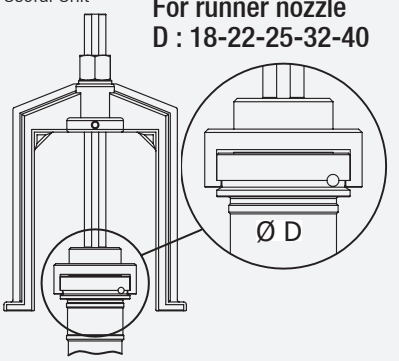
Order : SA 01 00 V02



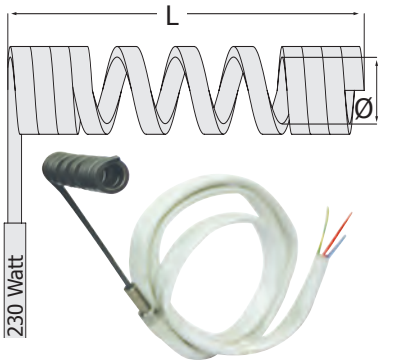
NOZZLE EXTRACTOR APPARATUS SERIE: MCA

In dismantle process of hot runner nozzles from mould plate, it is used in dismantle processes not to damage runner nozzles.
Useful Unit

For runner nozzle D : 18-22-25-32-40



Order : MCA 18



RUNNER NOZZLE RESISTANCES

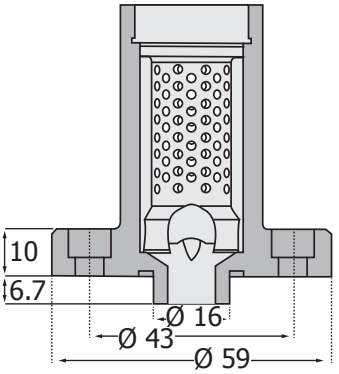
They are heater resistance, used in nozzles that are used in hot runner moulds **for necessary information refer to page 273.**
Standard Series and Groups as per request.

Resistance
200 Watt
225 Watt
250 Watt
290 Watt
350 Watt
400 Watt
470 Watt

Resistance
620 Watt
690 Watt
850 Watt
950 Watt
1100 Watt
1200 Watt

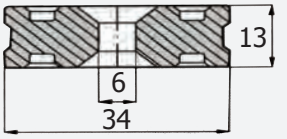
FILTERED ANGUS SERIE: SB

Unit providing the first connection from injection group to hot runner manifold system.
*** Unit avoiding blockages / damages due to raw material in dusty or chamfer environment.**



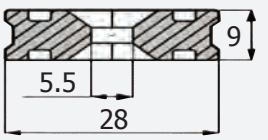
Order : SB 01 00 V02

HUB DISC SERIE: SD02

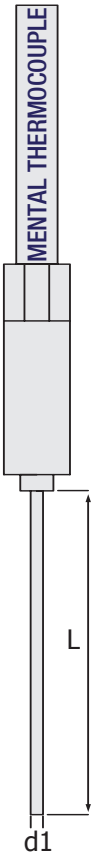


Order : SD02 00 V 01

LOCKING DISC SERIE: SD03



Order : SD03 00 V 02



GATE VALVE HOT RUNNER CONTROL THERMOCOUPLE SERIE: MT015

In Gate Valve System Hot Runner Nozzles, it is a thermocouple providing to make precision temperature from casing.

MENTAL THERMOCOUPLE

Order	d1	L
MT 015 80	Ø 1.5 mm	80
MT 015 100		100
MT 015 120		120

GATE VALVE Hot Runners

Short Cycle Times,
Super Runner Trace Quality
for High Quantity of Stamp

Medical Pharmaceutical Industry

In Packing with thin wall thickness

In locking cover systems

In Small Plastic Parts

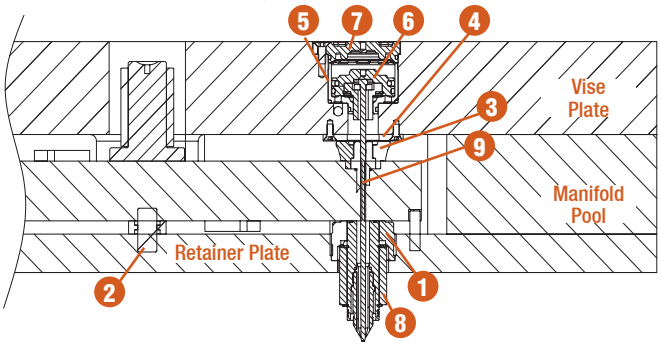
In Engineering Plastics

Cosmetics (Personal Care) Products

GATE VALVE Hot Runners

* Minimum pressure decrease
* Minimum Abrasion in long working hours
* Small Short Cycle Times
* Precision Temperature Settings
* Low Injection Pressures
* In Normal and Full Hard Injection and Thin Walled Products
* Cosmetic Appearance Runner Trace
* Common Usage Area for all Plastic Raw Material and Each Model from small to large

Manifold GATE VALVE Top Piston Hot Runners



Section View of Gate Valve Nozzle Group:

1- Gate Valve Hot Runner Nozzle
2- Manifold Locating Pin
3- Pin Bedding Element and Locking Disc
4- Locking Thrust Disc
5- Piston Jacket
6- Piston - Pin Group
7- Piston Cover
8- Hot Runner Nozzle Resistance and Thermocouple
9- Gate Valve Ejector Pin

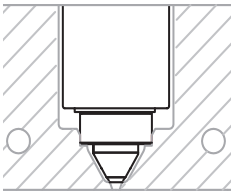
GATE VALVE HOT RUNNER

Top Reciprocating Serie: MVG-A

Gate Valve Hot Runner Nozzles: In difficult positions that normal hot runner applications are difficult, it is used in stamp applications of difficult objects, products, raw materials having thin wall thickness in cavity or Enginering Thermo plastics with injections that are hard.

Nozzle End Type Options in Gate Valve Hot Runner Systems:

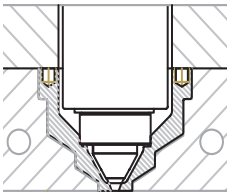
Gate Valve is changed with end type bushings in hot runner systems. Standard Large VG Hot Runner Nozzles are compatible with all bushings.



Gate Valve E-04

Standard End Type

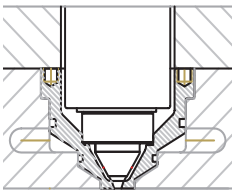
Ejector Pin cuts the goods in mould slot. The trace left on product is close to excellent cosmetically.



Bushing VG CB - Y02

Gate Valve Plain Bushing

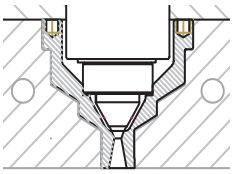
Plain Bushing: Ejector Pin cuts the goods on bushing surface. Processing of slot detail in mould is easier.



Bushing VG B - Y02

Gate Valve Air Channel Type

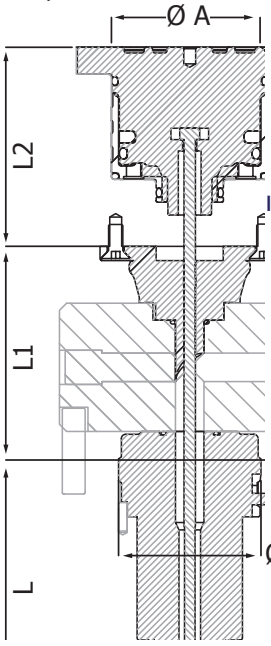
It is used when extra cooling is requested around cooled plain bushing nozzle. Usage in transparent, optic, cosmetic parts is required.



Bushing VG B - Y03

Gate Valve Internal Break

If injection in mould will be made to hot runner slot or to bring product near nozzle is difficult due to cavity, this product should be used. They leave a conical runner trace from the point that injected.



For companies requiring High Quality Injection Products

Economical Presentation. It is an absolute essential application with its Order Example

Top Reciprocating Gate Valve Hot Runner Systems MVG-A

Code	D	L	C	L1	L2	A	ENJ
MVG-A	Ø 38	66 ~ 166mm	Ø 18	74.8 mm	60 mm	Ø 55	~150 gram
	Ø 50	80 ~ 280mm	Ø 25		60 mm	Ø 55	~300 gram
	Ø 60	100 ~	Ø 35		70 mm	Ø 80	~1000 gram
	Ø 70	120 ~	Ø 45		75 mm	Ø 100	1000~ gram

L1 Size: It can be changed according to the manifold thickness.
It is recommended to give your orders according to Order Example

MVG-A D L E04

- MVG-A: Manifold Gate Valve Top Reciprocating Nozzle
- D: Nozzle Diameter
- L: Nozzle Length
- E04: Nozzle End Type

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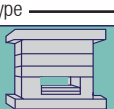
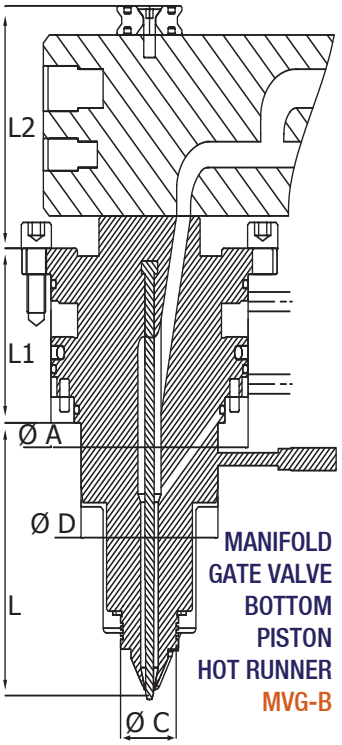


Section Injection Mould

BOTTOM PISTON



MANIFOLD GATE VALVE BOTTOM PISTON HOT RUNNER MVG-B

Order Example

MVG-B D L E 04

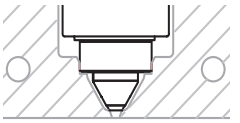
- MVG-B: Manifold Gate Valve Top Piston Nozzle
- D: Nozzle Dia.
- L: Nozzle Length
- E 04: Nozzle End Type

Bottom Piston Gate Valve Hot Runner Systems MVG-B

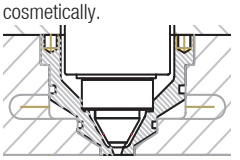
* L2 Size: It can be changed according to the manifold thickness.

Code	D	L	C	L1	L2	A	ENJ
MVG-B	Ø 56	66 ~ 166mm	Ø 18	50 mm	64.8 mm	Ø 80	~150 gram
	Ø 62	80 ~ 280mm	Ø 22	50 mm	64.8 mm	Ø 85	~300 gram
	Ø 72	100 ~	Ø 32	55 mm	64.8 mm	Ø 95	~1000 gram
	Ø 80	120 ~	Ø 42	55 mm	64.8 mm	Ø 105	1000~ gram

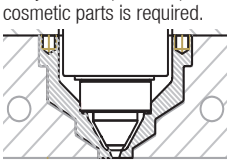
Nozzle End Type Options:
In Gate Valve Hot Runner Systems, end type is changed with bushings. Standard Large VG Hot Runner Nozzles are compatible with all kinds of bushings.



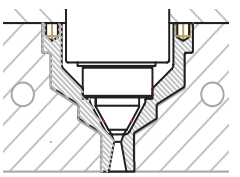
Gate Valve E-04
Standard End Type
Ejector Pin cuts the goods in mould slot. The trace left on product is close to excellent cosmetically.



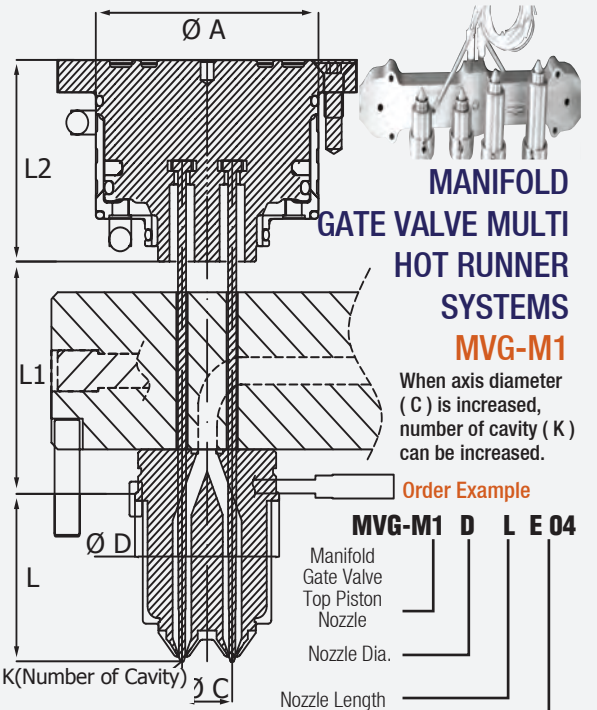
Bushing VG B - Y02
Gate Valve Water Channel Type
It is used when extra cooling is requested around cooled plain bushing nozzle. Usage in transparent, optic, cosmetic parts is required.



Bushing VG CB - Y02
Gate Valve Plain Bushing
Plain Bushing: Ejector Pin cuts the goods on bushing surface. Processing of slot detail in mould is easier.



Bushing VG B - Y03
Gate Valve Internal Break
If injection in mould will be made to hot runner channel or to bring product near nozzle is difficult due to cavity, this product should be used. They are left a conical runner trace from the point that injected.



MANIFOLD GATE VALVE MULTI HOT RUNNER SYSTEMS MVG-M1

When axis diameter (C) is increased, number of cavity (K) can be increased.

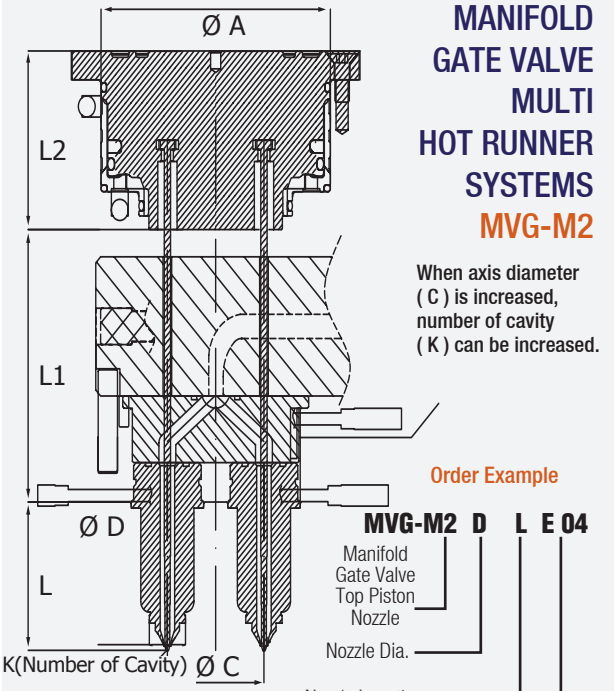
Order Example

MVG-M1 D L E 04

- MVG-M1: Manifold Gate Valve Top Piston Nozzle
- D: Nozzle Dia.
- L: Nozzle Length
- E 04: Nozzle End Type

*L2 Size: It can be changed according to the manifold thickness.

Code	Ø D	L	Ø C	K	L1	L2	Ø A
MVG-M1	46-70	49-109	16-40	2-8	67.8	50-55	72-96



MANIFOLD GATE VALVE MULTI HOT RUNNER SYSTEMS MVG-M2

When axis diameter (C) is increased, number of cavity (K) can be increased.

Order Example

MVG-M2 D L E 04

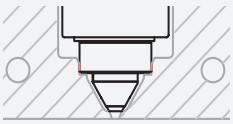
- MVG-M2: Manifold Gate Valve Top Piston Nozzle
- D: Nozzle Dia.
- L: Nozzle Length
- E 04: Nozzle End Type

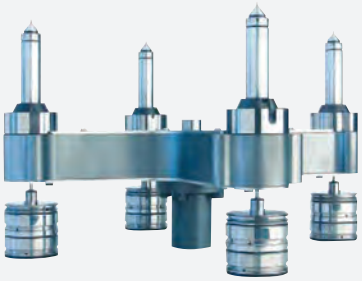
* L2 Size: It can be changed according to the manifold thickness.

Code	Ø D	L	Ø C	K	L1	L2	Ø A
MVG-M2	15-32	49-109	40-80	2-8	89.8	55-65	95-135

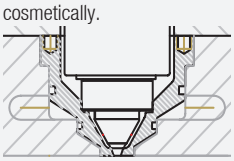
It is recommended to give your orders according to Order Example.

Nozzle End Type Options :
In Gate Valve Hot Runner Systems, end type is changed with bushings. Standard Large VG Hot Runner Nozzles are compatible with all kinds of bushings.

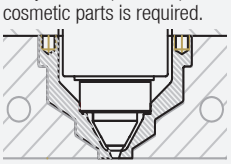




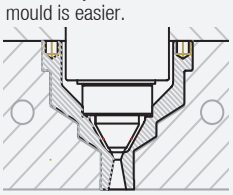
Gate Valve E-04
Standard End Type
Ejector Pin cuts the goods in mould slot. The trace left on product is close to excellent cosmetically.



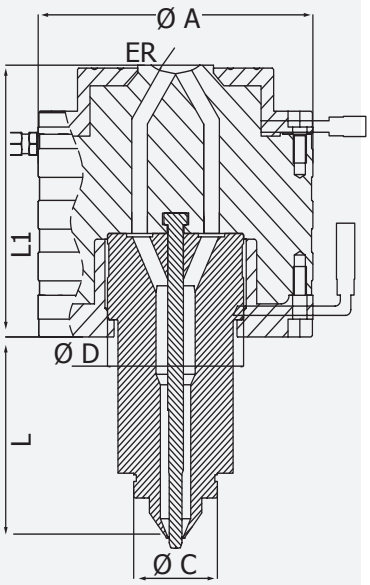
Bushing VG B - Y02
Gate Valve Water Channel
Type It is used when extra cooling is requested around cooled plain bushing nozzle. Usage in transparent, optic, cosmetic parts is required.



Bushing VG CB - Y02
Gate Valve Plain Bushing
Plain Bushing: Ejector Pin cuts the goods on bushing surface. Processing of slot detail in mould is easier.



Bushing VG B - Y03
Gate Valve Internal Break
If injection in mould will be made to hot runner channel or to bring product near nozzle is difficult due to cavity, this product should be used. They are left a conical runner trace from the point that injected.



SINGLE GATE VALVE MAIN RUNNER HOT RUNNER SYSTEMS SVG

Order Example.

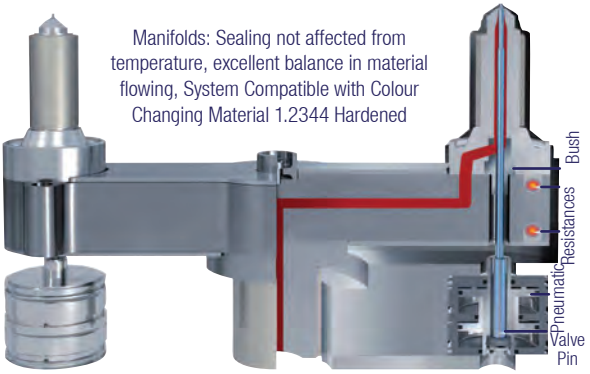
SVG D L E 04

- SVG — Single Gate Valve
- D — Nozzle Dia.
- L — Nozzle Length
- E 04 — Nozzle End Type

Single Gate Valve - MAIN RUNNER Hot Runner Systems

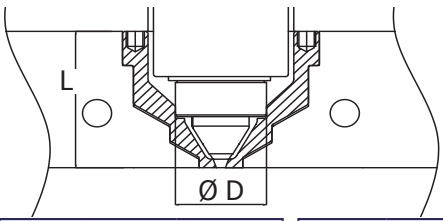
It is recommended to give your orders according to Order Example.

Code	D	L	C	L1	ER	A	ENJ
SVG	Ø 42	60 ~ 180mm	Ø 22	84 mm	15 mm	Ø 90	~300 gram
	Ø 52	70 ~	Ø 32	94 mm	15 mm	Ø 105	~1000 gram
	Ø 62	90 ~	Ø 42	104 mm	15 mm	Ø 120	1000~ gram



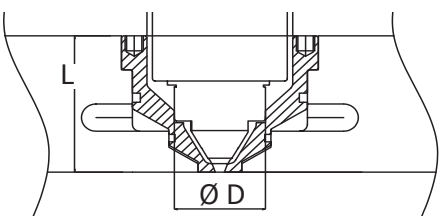
Manifolds: Sealing not affected from temperature, excellent balance in material flowing, System Compatible with Colour Changing Material 1.2344 Hardened

GATE VALVE BUSHING APPLICATIONS



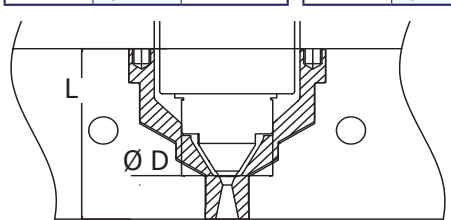
GATE VALVE BUSHING VG B Y02

For MVG-A Nozzles			For MVG-A,SVG Nozzles		
Code	D	L	Code	D	L
VG B Y02	Ø 18 Ø 25 Ø 35 Ø 45	40 mm	VG B Y02	Ø 18 Ø 22 Ø 32 Ø 42	40 mm



GATE VALVE WATER C. BUSHING VG CB Y02

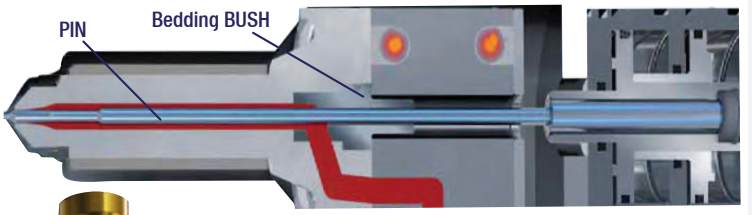
For MVG-A Nozzles			For MVG-A,SVG Nozzles		
Code	D	L	Code	D	L
VG CB Y02	Ø 18 Ø 25 Ø 35 Ø 45	40 mm	VG CB Y02	Ø 18 Ø 22 Ø 32 Ø 42	40 mm



GATE VALVE INTERNAL BREAK BUSHING VG B Y03

For MVG-A Nozzles			For MVG-A,SVG Nozzles		
Code	D	L	Code	D	L
VG B Y03	Ø 18 Ø 25 Ø 35 Ø 45	50 mm	VG B Y03	Ø 18 Ø 22 Ø 32 Ø 42	50 mm

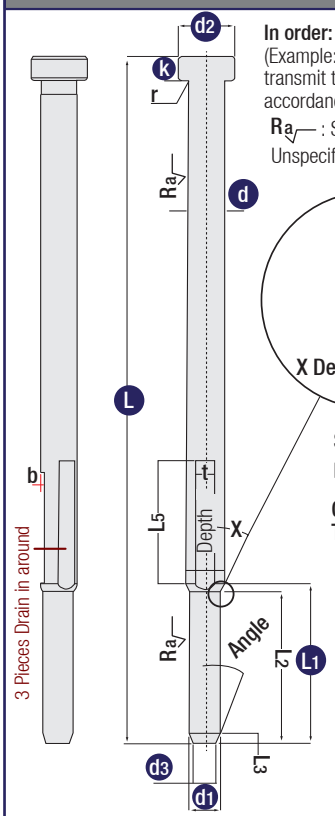
In Gate Valve Hot Runner Systems, end type can be changed with bushings.



GATE VALVE PIN / BUSH (Production As per Request)

Gate Valve Pin: Mounting and demounting of valve pin are such as the side picture, they will be produced in desired material and sizes.
Gate Valve Pin Bush / Bushings: The seconds bedding bush (Gate Valve Pin Bush) in nozzle is to avoid expansion and bending of movable pin under load and heat, it can be changed by demounting.
As per request in order, technical drawing or sample is required.
The products will be produced in precision and faithfully.

ORDER EXAMPLE OF GATE VALVE PIN



In order: The dimensions specified (Example: L) on technical drawing, transmit to our company in accordance with information ..
Ra : Surface Roughness
Unspecified bevels are 45^0

Special bush is produced as per request.

Geometrical Production Tolerances:

PERPENDICULARITY	0.02	Axis
PARALLELISM	0.02	
CONCENTRICITY	0.02	Axis

Tolerance for tin pre plating can be -0.008, after plating it can be +0.01.
Specify Step Bevel Dimensions ..... !
Specify channel slotted processing measurement ..... !
Specify tin plating area and its length ..... !
Specify full size dimension and tolerance ..... !
Material: Specify material and hardness as HSS or 1.2344.....!
Specify quantity..... ! (For high quantities, pls. request special price)
Specify general tolerance values ± ..... !

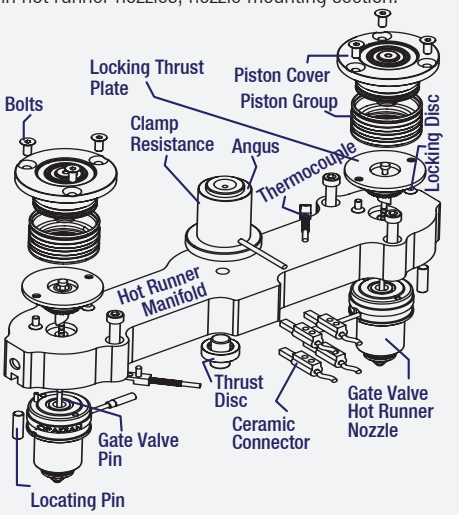
Special Notes: For precision production of Gate Valve Pin, sending the previous existing pin or bush sample offers good production.

In your orders: Pls. request an offer from our company in a way that given in example .... !

Gate Valve System MOUNTING

1. Step Mounting of Nozzles:

We recommend to make according to details in hot runner nozzles, nozzle mounting section.



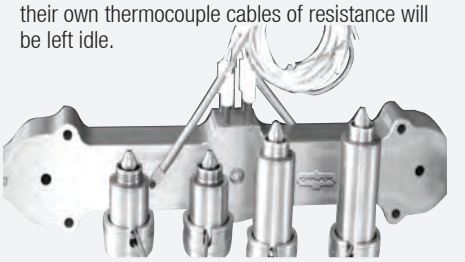
Mounting Sequence :

THRUST PLATE

* Insert nozzles into their slot in centering pin direction, put gaskets.
* Seat manifold into its axis with hub disc and locating pin and tight the bolts in a balanced way.
* At the upper side of manifold, Place pin bedding element and locking disc into their slots.

CLAMP PLATE

* Insert locking thrust disc.
* In manifold pool axis, place resistances around manifold without harming.
* Bring clamp plate on manifold pool and make its centering and tight the bolts.
* Place piston jacket into its slot.
* Insert piston pin group that is involved in product packing as mounted inside of piston jacket.
* Close piston cover and tight the bolts.
* Lay the mould in a way that nozzle ends can be seen, insert thermocouples and resistances in to their place and secure with retaining ring that given.
* Finally, you can make Hot - Letter - Group Mould Core Connection to the system that you mounted.
* While making plug connection, external thermo couple cables in hot runner nozzles will be used, their own thermocouple cables of resistance will be left idle.



RESISTIVE LINEER POTENTIOMETERS OPTIC MEASUREMENT SCALE

Lineer
(Rectilinear)
Rotary
(Sliding Arm)
Position
Metering
Scale

Digital Reader
As per request

LPT
Lineer 33 Scale

Digital Reader
As per request

LPH
Lineer 33 Scale

Digital Reader
As per request

LPM
Lineer 33 Scale

Technical Specifications

Usage Area: Due to Easy Mounting Opportunity and being Economic, they are products with large usage area, are given output data as Potentiometric / mm. Mainly, they are used in **Plastic Injection Machines,** Marble Machines and **Hydraulic Presses.** At sliding models.

Usage Area: Thanks to its Top Sliding Structure, it provides mounting opportunity up to long measurement length. They are given output data as Potentiometric / mm. Mainly, they are used in **Plastic Injection Machines, Hydraulic Presses,** due to having IP 53 protection class. At sliding models.

Usage Area: Due to its articulated structure, also they can be used for angular motion measurement purpose, thanks to both side the articulated structure, they can measure the distance between two independent points. Mainly they are used in **Pipe/ Sheet Bending Machines and Packaging Machine.** At Sliding Model.

Model	**Order** No **: LPT x Length.mm**	**Order** No **: LPH x Length.mm**	**Order** No **: LPM x Length.mm**
Measuring Length	From 30 mm up to 125 mm (Selection according to the measure)	From 100 mm up to 1500 mm (Selection according to the measure)	From 50 mm up to 600 mm (Selection according to the measure)
Linearity	± % 0.05	± % 0.05	± % 0.05
Resistance	5 - 10 KOhm	5 - 10 KOhm	5 - 10 KOhm
Working Temperature	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C
Max. Speed	< 5 m/s	< 1.5 m/s	< 5 m/s
Mechanical Life	100.000.000 Cycle	100.000.000 Cycle	100.000.000 Cycle
Housing Material	Aluminium	Aluminium	Aluminium
Shaft Material	Stainless Steel	-	Stainless Steel
Supply Voltage	28V DC Max.	28V DC Max.	28V DC Max.
Electrical Connection	4 Pole Connection	4 Pole Connection	4 Pole Connection
Protection Class	IP 65	IP 40 & IP 53	IP 54
Connection	Mechanic	Mechanic	Mechanic
Housing Size	33 x 33 mm	33 x 33 mm	33 x 33 mm

Position Metering Scale: They are produced compatible with international measurement standards, by selecting top caliber/quality materials. Linearity controls are made punctiliously. These Scales are for reading lineer & rotary & sliding motions measurement controls. They are commonly used in all production machines and benches at machine industry, except the selected products involved in our catalogue, different types and models are also available.

Special Prices for Higher Quantities..

RESISTIVE LINEER POTENTIOMETERS OPTIC MEASUREMENT SCALE

Lineer
(Rectilinear)
Rotary
(Sliding Arm)
Position
Metering
Scales

SLPT
Slim 18 Lineer Scale

SLPC
Slim 18 Lineer Scale

SLPS
Slim 18 Lineer Scale

Technical Specifications

Usage Area: Thanks to its small casing structure, it provides mounting facility in narrow areas. They are preferred in many automation applications and given output data as Potentiometric / mm. mainly, they are used in **Plastic Injection Machines, Textile Machines and Test Machines.** At sliding models.

Usage Area: Thanks to its Top Sliding Structure, it provides mounting opportunity up to long measurement length. They are given output data as Potentiometric / mm. Mainly, they are used in Marble Machines, **Pipe/Sheet bending Machines, Textile Machines.** At sliding models.

Usage Area: Thanks to Spring Return Structure, it can be used in special applications. They are given output data as Potentiometric. Mainly, they are used in **Plastic Injection Machines, Quality Control Machines and Textile Machines.** At sliding machines.

Model	Order No : SLPT x Length.mm	Order No : SLPC x Length.mm	Order No : SLPS x Length.mm
Measuring Length	From 10 mm up to 400 mm (Selection according to the measure)	From 10 mm up to 300 mm (Selection according to the measure)	From 10 mm up to 100 mm (Selection according to the measure)
Linearity	± % 0.05	± % 0.05	± % 0.05
Resistance	5 - 10 KOhm	5 - 10 KOhm	5 - 10 KOhm
Working Temperature	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C
Max. Speed	< 5 m/s	< 5 m/s	< 5 m/s
Mechanical Life	50.000.000 Cycle	50.000.000 Cycle	50.000.000 Cycle
Housing Material	Aluminium	Aluminium	Aluminium
Shaft Material	Stainless Steel	Stainless Steel	Stainless Steel
Supply Voltage	28V DC Max.	28V DC Max.	28V DC Max.
Electrical Connection	Cabled Standard 1 Metre	Cabled Standard 1 Metre	Cabled Standard 1 Metre
Protection Class	IP 53	IP 53	IP 53
Connection	Mechanic	Mechanic	Mechanic
Housing Size	18 x 18 mm	18 x 18 mm	18 x 18 mm

Special Prices for Higher Quantities..

Position Metering Scale: They are produced compatible with international measurement standards by selecting top caliber/quality materials. Linearity controls are made punctiliously. These Scales are for reading lineer & rotary & sliding motions measurement controls. They are commonly used in all production machines and benches at machine industry, except the selected products involved in our catalogue, different types and models are also available.

CONTACTLESS POSITION SENSORS / CORDED EXTENDER POTANTIOMETERS AND ENCODERS

Lineer
(Rectilinear)
Rotary
(Pivoting)
Position
Metering
Scales

MST
CONTACTLESS POSITION SENSOR

Usage Area: National Type Position Sensors work with Magnetostrictive Principle. Due to measuring as contactless, they long lived. They have high protection class. T**hey can be worked in water and oil.** Generally, they are used by inserting inside of piston. Sliding Type.

DWP
CORDED POTENTIOMETER

Usage Area: Corded Potentiometers are given potentiometric output in 1800 mm measurement length, they are preferred with its economic price and easy mounting opportunity in long measurement length. They are frequently used in Injection **Machines**. Rotary Type

DWE
CORDED ENCODER

Usage Area: Corded Encoders are preferred in industry in terms of their mounting facility in narrow areas. By means of steel cord wrapping around return spring roller, they are converted pals quantity producing as a result of turning of encoder connected into this mechanism into lineer distance.

Technical Specifications

Model	Order No : MST x Length	Model	Order No : DWP x Length	Model	Order No : DWP x Length
Measuring Length	From 10 mm up to 2000 mm (Selection according to the measure)	Measuring Length	1800 mm	Resolution	From 500 mm to 3500 mm
Resolution	16 BIT	Linearity	± 0.1 mm	Outlet Type	A, B, Z, or $A,\overline{A}$ $B,\overline{B}$ $Z,\overline{Z}$
Repeatability	< 0.05 mm	Resistance	5 -10 K	Channels	Pushpull - TTL - HTL
Outlet	0... 10V , 10...0 V	Working Temp.	- 20 / + 80 ^{0}C	Max. Speed	2 m/sec
Supply Voltage	24V DC ± %10	Max. Speed	< 1.5 m/s	Supply Voltage	5V DC 8V - 24V DC 5V - 24V DC
Max. Speed	< 10 m/s	Mechanical Life	5.000.000	Working Temp.	- 20 / + 80 ^{0}C
Max. Current Consumption	50 mA	Housing Material	ABS / Aluminium and Stainless Steel	Housing Material	ABS / Aluminium and Stainless Steel
Max. Outlet Values	10.5V	Shaft Material	-	Protection Class	IP 50
Inverse Voltage Protection	Yes	Supply Voltage	28V DC max.	Cable	2.5 mt. Standard
Electrical Connection	4 Pinned Hydraulic Type	Protection Class	IP 54	Shaft Dia.	-
Protection Class	IP 66	Housing Size	81 x 81 x 86 mm	Housing Size	81 x 81 x 86 mm

Special Prices for Higher Quantities..

Position Metering Scale: They are produced compatible with international measurement standards by selecting top caliber/quality materials. Linearity controls are made punctiliously. These Scales are for reading lineer & rotary & sliding motions measurement controls. They are commonly used in all production machines and benches at machine industry, except the selected products involved in our catalogue, different types and models are also available.

Lineer (Rectilinear) **Rotary** (Pivoting) **Position Metering Scales**	 Digital Reader As per Request  **PRI 50** **OPTIC 50 ENCODER** **Usage Area:** They are Economic sensors commonly used in industry and work with optical principle. The number of square wave given in a tour is called as PULSE. Various outlet types are available. The product having 50 mm casing diameter, are produced in 6-8 mm shaft diameter a standard. As standard, is packaged with L flange and Plastic Coupling. Rotary Model.	 Digital Reader As per Request  **PRI 50 SH** **OPTIC 50 ENCODER** (Semi Hole) Shaft **Usage Area:** They work with circular principle. The number of square wave given in a tour is called as PULSE. They are selling according to number of PULSE. The product having 50 mm casing diameter, are produced in 6-8 mm shaft diameter a standard. They are used in Packaging Machines, Elevator Machines, Hydraulic Presses. Rotary Model.	 Digital Reader As per Request  **PRI 58** **OPTIC 58 ENCODER** **Usage Area:** They are Economic sensors commonly used in industry and work with optical principle. The number of square wave given in a tour is called as PULSE. They are selling according to number of PULSE. Various outlet types are available. The product having 58 mm casing diameter, are produced in 6-8 mm shaft diameter a standard. Rotary Model.
Technical Specifications			
Model	**Order** No **: PRI 50 x** Pulse	**Order** No **:PRI 50 SH x** Pulse	**Order** No **: PRI 58 x** Pulse
Resolution (Number of Pulse)	100- 200- 300- 360- 400- 500 600- 720- 1000- 1024- 1800 2000- 2048- 2500- 3600 4000- 4096- 5000	100- 200- 300- 360- 400- 500 600- 720- 1000- 1024- 1800 2000- 2048- 2500- 3600 4000- 4096- 5000	100- 200- 300- 360- 400- 500 600- 720- 1000- 1024- 1800 2000- 2048- 2500- 3600 4000- 4096- 5000
Outlet Type	Pushpull - TTL - HTL	Pushpull - TTL - HTL	Pushpull - TTL - HTL
Channels (Outlet Direction)	A, B, Z, or $A,\overline{A}$ $B,\overline{B}$ $Z,\overline{Z}$	A, B, Z, or $A,\overline{A}$ $B,\overline{B}$ $Z,\overline{Z}$	A, B, Z, or $A,\overline{A}$ $B,\overline{B}$ $Z,\overline{Z}$
Max. Speed	4000 RPM	4000 RPM	4000 RPM
Supply Voltage	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC
Working Temperature	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C
Cable	2.5 (Standard) 5 Cable - 8 Cable	2.5 (Standard) 5 Cable - 8 Cable	2.5 (Standard) 5 Cable - 8 Cable
Protection Class	IP 54	IP 50	IP 50
Shaft/Hole Dia.	Ø 6 - Ø 8 mm	Ø 6 - Ø 8 mm	Ø 6 - Ø 8 - Ø 10 mm
Shaft Material	Stainless Steel	Stainless Steel	Stainless Steel
Housing Material	Aluminium	Aluminium	Aluminium
Housing Dia.	50 mm	50 mm	58 mm

Special Prices for Higher Quantities..

Position Metering Scale: They are produced compatible with international measurement standards by selecting top caliber/quality materials. Linearity controls are made punctiliously. These Scales are for reading lineer & rotary & sliding motions measurement controls. They are commonly used in all production machines and benches at machine industry, except the selected products involved in our catalogue, different types and models are also available.

RESISTIVE LINEER POTENTIOMETERS OPTIC MEASUREMENT SCALE

Lineer (Rectilinear) **Rotary (Pivoting) Position Metering Scale**

Technical Specifications

Digital Reader As per Request

PRI 100 H
OPTIC 100 ENCODER
(Full Hole) Shaft

Usage Area : They are full hole shaft products with 100 mm casing dimeter worked with optical principle. The product with 100 mm casing diameter, are produced in 25,28,32,38 mm hole diameter as standard. With its hole shaft structure, they are ideal for use on rear of engine. They are used in **Elevator Machines** and many automation application. Rotary Model.

Digital Reader As per Request

MRI 50
OPTIC 50 ENCODER
(Magnetic) Shaft

Usage Area : MRI 50 Serie Magnetic Encoders are produced in 50 mm casing diameter, 6-8 shaft diameter and 2-1024 pulse range as standard. Due to working with magnetic principle, their protection class is high. Rotary Model.

Digital Reader As per Request

PRI 58 SH
OPTIC 58 ENCODER
(Semi Hole) Shaft

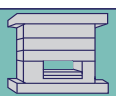
Usage: They are semi hole shaft products having 58 mm casing diameter and work with optical principle. The products with 58 mm casing diameter are produced in 6-8-10 mm hole diameter as standard. With its hole shaft structure, they are ideal for use on rear of engine. They are used in elevator machines and Hydraulic Presses. Rotary Model.

Model	Order No : PRI 100 H x Pulse	Order No : MRI 50 x Pulse	Order No : PRI 58 SH x Pulse
Resolution (Number of Pulse)	1024 Pulse / Circuit	2-4-8-16-25-32-40-50-64-80 100-125-128-160-200-250 254-400-500-512-1024	100-200-300-360-400-500 600-720-1000-1024-1800 2000-2048-2500-3600-4000
Outlet Type	Pushpull - TTL - HTL	Pushpull - TTL - HTL	Pushpull - TTL - HTL
Channels (Outlet Direction)	A, B, Z, or A,$\overline{A}$ B,$\overline{B}$ Z,$\overline{Z}$	A, B, Z, or A,$\overline{A}$ B,$\overline{B}$ Z,$\overline{Z}$	A, B, Z, or A,$\overline{A}$ B,$\overline{B}$ Z,$\overline{Z}$
Max. Speed	4000 RPM	4000 RPM	4000 RPM
Supply Voltage	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC	5V DC 8V - 24V DC 5V - 24V DC
Working Temperature	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C	- 20 / + 80 ^{0}C
Cable	2.5 Meter (Standard)	2.5 Meter (Standard)	2.5 Meter (Standard)
Protection Class	IP 50	IP 50	IP 50
Shaft/Hole Dia.	Ø 25 - 28 - 35 - 38 mm	Ø 4 - Ø 6- Ø 8- Ø 10 mm	Ø 6 - Ø 8 - Ø 10 mm
Shaft Material	Stainless Steel	Stainless Steel	Stainless Steel
Housing Material	Aluminium	Aluminium	Aluminium
Housing Dia.	100 mm	50 mm	58 mm

Position Metering Scale: They are produced compatible with international measurement standards by selecting top caliber/quality materials. Linearity controls are made punctiliously. These Scales are for reading lineer & rotary & sliding motions measurement controls. They are commonly used in all production machines and benches at machine industry, except the selected products involved in our catalogue, different types and models are also available.

Special Prices for Higher Quantities..

Section Injection Mould



Page 295

Injection Mould COOLING SYSTEMS

Cooling of Mould : For providing suitable cooling, features of moulded material, material shape, mould structure and heat quantity to be transferred should be known. In cooling with water, cooling water channels should not be very close to mould surface. Otherwise, temperature changes can be caused thermal shocks on mould surface. Water channels should not be so far from moulded surface. Because, in this case, heat transfer should not be provided sufficiently.

Water Channels can be created far away 2 / 3 times of mould plate channel diameter.

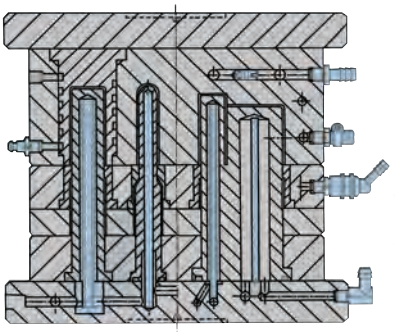
In arranging channels and creating of inlet and outlets, the balance providing circulation of water in certain pressure and speed. Water should be circulated in channels the way that transfering maximum heat. Water discharge should be provided to keep mould in certain temperature. There should not be any difference between inlet and outlet temperatures of cooling water. Cooling water, generally should be entered into mould as 20-250ºC and should be came out as 50 -55º.

Effect of Cooling Water on Mould:

Injection Errors	Solutions
Drawing - Distortion-Sinking	Cooling period
Fragibility-Crackage - Shrinkage	Should be increased
Visible Ejector Traces	and
Tension Whitening	Mould Water
	Runner System
	Should be controlled

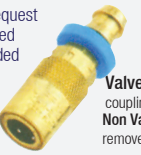
Automatic Sockets

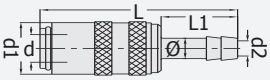
Automatic sockets and bushes compatible with mould cooling systema and injection machines, are commonly used in plastic moulds cooling systems and metal injection moulds. To use in water - air and oil flowings, different types are available and when desired mounting/ demounting facilities on mould, automatic coupling sockets should be used . They can be worked up to 10 bar pressures and approximate 100ºC . For accurate and efficient cooling in mould cooling system not living any problem, to choose coupling /socket system to be most suitable to the temperature of your mould system and mounting area in the correct way is important, wide options related to this system are presented at following pages.



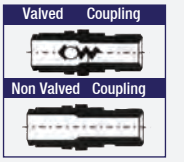
www.guvenal.net

As per request Unclamped Hose Ended Coupling





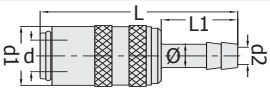
Valved System: Provides controlled water flow, when coupling is removed, water flow is closed (Vaned)
Non Valved System: With free water flow, when bush is removed, circuit is open (Valveless).



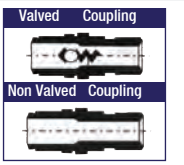
AUTOMATIC, FAST CLUTCH, SMALL SIZE EURO TYPE — Serie: W 560

Order (Valved - Non Valved .d x L)		Connection Measure Ø	Small Size				
Valved	Non Valved		d	L	d1	d2	L1
W 560 - HGV 06	W 560 - SG 06	6 mm 1/4"	9	46	17	4,5	17
W 560 - HGV 10	W 560 - SG 10	10 mm 3/8"				**6**	

As per request Unclamped Hose Ended Coupling



Valved System: Provides controlled water flow, when coupling is removed, water flow is closed (Vaned)
Non Valved System: With free water flow, when bush is removed, circuit is open (Valveless).



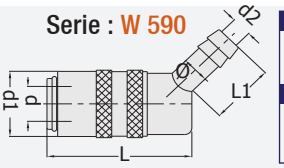
AUTOMATIC, FAST CLUTCH, STANDARD SIZE EURO TYPE

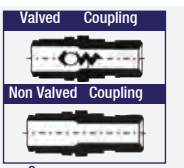
Order (Valved - Non Valved .d x L)		Connection Measure Ø	Standard Size				
Valved	Non Valved		d	L	d1	d2	L1
W 590 - HGV 10	W 590 - HG 10	10 mm 3/8"	13	60	23	8	23
W 590 - HGV 13	W 590 - HG 13	13 mm 1/2"				**10**	

EURO TYPE

As per request Unclamped Hose Ended Coupling

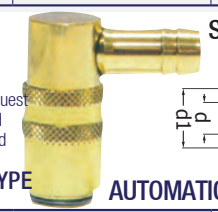
Serie : W 590





AUTOMATIC,FAST CLUTCH COUPLING, 45⁰ ANGLE

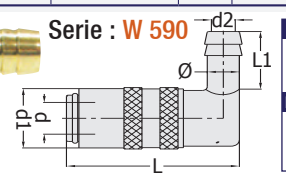
Order (Valved - Non Valved .d x L)		Connection Measure Ø	Standard Size				
Valved	Non Valved		d	L	d1	d2	L1
W 590 -HGV 1045	W 590 - HG 1045	10 mm 3/8"	13	51	23	8	23
W 590 -HGV 1345	W 590 - HG 1345	13 mm 1/2"				**10**	

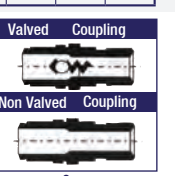


As per request Unclamped Hose Ended Coupling

EURO TYPE

Serie : W 590



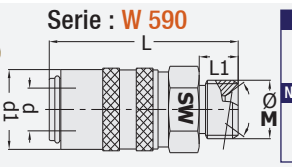


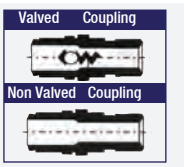
AUTOMATIC,FAST CLUTCH COUPLING, 90⁰ ANGLE

Order (Valved - Non Valved .d x L)		Connection Measure Ø	Standard Size				
Valved	Non Valved		d	L	d1	d2	L1
W 590 - HGV 1090	W 590 - HG 1090	10 mm 3/8"	13	51	23	8	17
W 590 - HGV 1390	W 590 - HG 1390	13 mm 1/2"				**9**	

Male Gear Type Bush is also procurement be altered

Serie : W 590

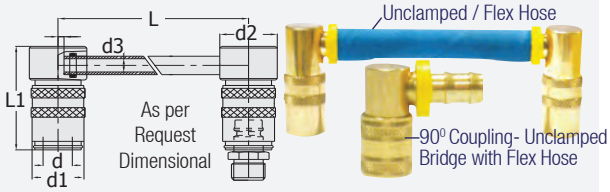




AUTOMATIC,FAST CLUTCH COUPLING, MALE GEAR EURO TYPE

Order (Valved - Non Valved .d x L)		Connection Measure M	Standard Size				
Valved	Non Valved		d	L	d1	L1	SW
W 590 - EGV 13	W 590 - EG 13	**G 1/4"**	13	52	23	11	21
W 590 - EGV 21	W 590 - EG 21	**G 1/2"**					

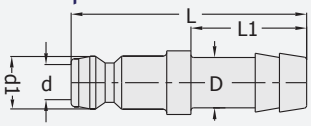
Except Automatic Fast Clutch Coupling **Standard Hose Connected (Clamped)** Types, also **Unclamped / Fast Flex Hose Connected** Automatic Fast Connected Coupling **Types** are available.



Automatic Fast Clutch DOUBLE BRIDGE EURO TYPE W590KG

Order No (d x L)	d	L	L1	d1	d2	d3
W590 - KG 125	13	125	53	23	26	10 13 Flex Hose
W590 - KG 250		250				
W590 - KG 500		500				

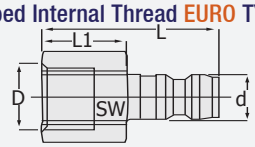
Automatic Fast Clutch BUSH / END Hose Input EURO TYPE W590HR



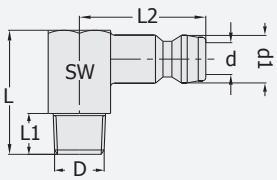
Order No : (d x L)	(Thread) D	d	L	L1	d1
W590 FR 10	10 - 3/8"	9	41	24	13
W590 FR 13	13 - 1/2"	9	45	28	13

Automatic Fast Clutch BUSH / END Capped Internal Thread EURO TYPE

Serie : ORD

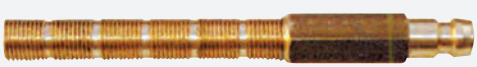


Order No : (d x L)	(Thread) D	d	L	L1	SW
ORD M10	M10 x 1.5	13	24	10	11
ORD M12	M12 x 1.75		27	13	14
ORD 1/8	G 1/8"		24	10	11
ORD 1/4	G 1/4"		33	13	14

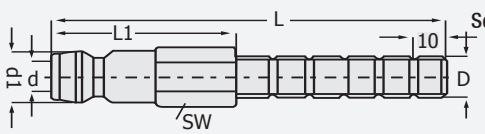


Automatic Fast Clutch BUSH / END 90⁰ ORTHOGONAL EURO TYPE

Order No (d x L)	(Thread) D	d	L	L1	L2	d1	SW
W590 ER 13-90	R 1/4"	9	34	12	25	13	15
W590 ER 14-90	M14 x 1.5						15
W590 ER 17-90	G 3/8"						17

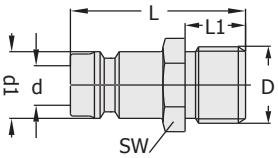


Serie : TO



Automatic Fast Clutch THREADED BATCH BUSH EURO TYPE

Order No (d x L)	(Thread) D	d	L	L1	d1	SW
T 060 BLM10100	M10 x 1	9	100	40	13	14
T 060 BLM14100	M14 x 1.5					17
T 060 BL 10300	G 1/4"					14

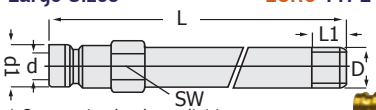


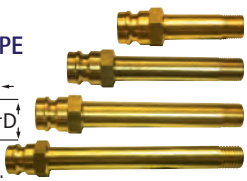
Standard Size

Automatic Fast Clutch BUSH / End EURO TYPE

	Order No : (d x L)	(Thread) D	d	L	L1	d1	SW
Small Type	W560 ER M10	M10 x 1	6	24	7	9	11
	W560 ER 10	G 1 x 8	6	24	7	9	11
	W560 ER 13	G 1/4"	6	26	9	9	14
Standard Type	W590 ER M10	M10 x 1	9	31	9	13.5	14
	ORE M10	M10 x 1.5	9	31	9	13.5	14
	ORE M12	M12 x 1.75	9	31	9	13.5	14
	W590 ER M14	M14 x 1.5	9	31	9	13.5	14
	W590 ER M16	M16 x 1.5	9	31	9	13.5	17
	ORE 1/8	G 1/8"	9	31	7	13.5	14
	ORE 1/4	G 1/4"	9	31	9	13.5	14
	W590 ER 17	G 3/8"	9	31	9	13.5	17
Large Type	W690 ER M24	M24x1.5	13	51	16	19	27
	W690 ER 21	G 1/2"	13	47	12	19	22
	W690 ER 26	G 3/4"	13	51	16	19	27

Automatic Fast Clutch BUSH / End Large Sizes EURO TYPE





* Our production is available as per request.

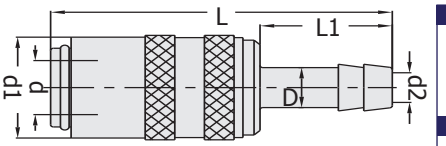
	Order No : (d x L)	(Thread) D	d	L	L1	d1	SW
Standard Type	ORE M10.060	**M10** x 1.5	6	**60**	11.5	13	14
	ORE M10.080			**80**			
	ORE M10.100			**100**			
	ORE M10.120			**120**			
	ORE M10.150			**150**			
	T090 BU150 (Non Thread)	FLAT Ø 14	9	**150**	-	13	15
Standard Type	ORE M12.060	**M12** x 1.75	7	**60**	11.5	13	14
	ORE M12.080			**80**			
	ORE M12.100			**100**			
	ORE M12.120			**120**			
	ORE M12.150			**150**			
	T090 BU300 (Non Thread)	FLAT Ø 14	9	**300**	-	13	15
Standard Type	ORE 1/8.060	**G 1/8"**	6	**60**	11.5	13	14
	ORE 1/8.080			**80**			
	ORE 1/8.100			**100**			
	ORE 1/8.120			**120**			
	ORE 1/8.150			**150**			
	T090 BU450 (Non Thread)	FLAT Ø 14	9	**450**	-	13	15
Standard Type	ORE 1/4.060	**G 1/4"**	8	**60**	12.5	13	14
	ORE 1/4.080			**80**			
	ORE 1/4.100			**100**			
	ORE 1/4.120			**120**			
	ORE 1/4.150			**150**			
	T090 BU500 (Non Thread)	FLAT Ø 14	9	**500**	-	13	15

Material : Brass / Yellow Material
Max. Temperature: 100⁰C

* Bush, is supplied separately.

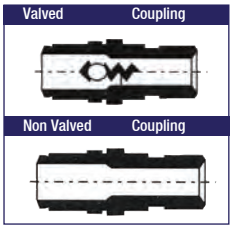
*** Flat Type - Large Size**

It is suitable for Large Injection Moulds.



Valved System : Provides controlled water flow, when coupling is removed, water flow is closed (Vaned).

Non Valved System : With free water flow, when bush is removed, circuit is open (Valveless).



Automatic Fast Clutch, HOSE INPUT COUPLING, Large Size EURO TYPE

Serie : W 690

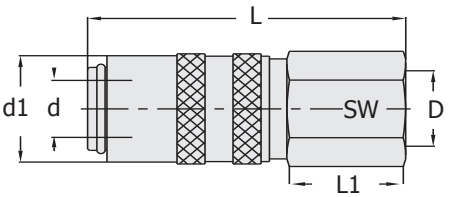
Order (Valved - Non Valved d x L)		Connection Measure **D**	Standard Size				
Valved	Non Valved		**d**	**L**	d1	d2	L1
W 690 - HGV 19	W 690 - HG 19	19 mm 3/4"	19	90	31	13	32

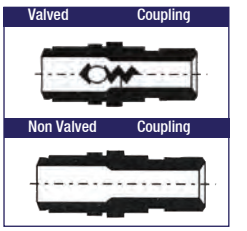
Note: For bush/ end interts, refer to Euro Type Automatic Fast Clutch at the next page...

* Bush, is supplied separately.

*** Closed Female Toothed Large Size Type**

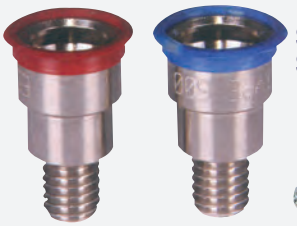
It is suitable for large injection moulds.





Automatic Fast Clutch, FEMALE COUPLING, Large Size Casing EURO TYPE

Order (Valved - Non Valved d x L)		Connection Measure Ø	Standard Size				
Valved	Non Valved		**d**	**L**	L1	d1	SW
W 690 - DGV 21	W 690 - DG 21	G 1/2"	19	70	14	31	30
W 690 - DGV 24	W 690 - DG 24	M24 x 1.5	19	72	16	31	30
W 690 - DGV 26	W 690 - DG 26	G 1/4"	19	72	16	31	30



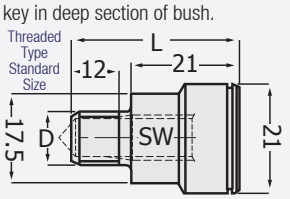
Standard Size

Long Size

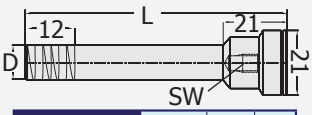
Material: Brass / Yellow Nickel Plated

AUTOMATIC, FAST CLUTCH COLOURED BUSH / END

In cases requiring continous and high pressure resistance, also desired mounting and demounting facility on mould, this system bushes can be used. The can be worked up to 13 Bar pressure and approximate 150^{0}C They are free flow. **Mounting :** For fast detection **BLUE** (Cold Circuit) and **RED** (Hot Circuit), female bush can be selected as per request. At mounting to mould, it is screwed to the threaded section water runner plate with alien key in deep section of bush.



Thread - Colour Definition Long Size Bush

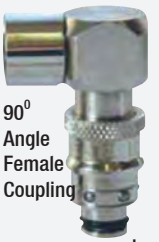


Order	D	L	SW
W600 ER10	R 1/8"	31	6
W600 ER13	R 1/4"	33	8
W600 ER17	R 3/8"		8
W600 M10	M10 x1.5		6
W600 M14	M14 x1.5		8

* In order, pls. specify colour as per request

Order	D	L	SW
W600 10.100	R 1/8"	100	6 Alien
W600 10.150		150	
W600 10.200		200	
W600 10.250		250	
W600 13.100	R 1/4"	100	8 Alien
W600 13.150		150	
W600 13.200		200	
W600 13.250		250	

AUTOMATIC, FAST CLUTCH COLOURED BUSHED LARGE / POWERFUL TYPE COUPLINGS

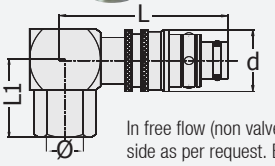


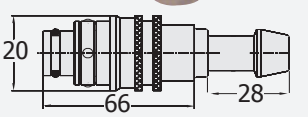
90^0 Angle Female Coupling

In fast / practical (one-handed) usages, hot oil connections, cold, hot water inlet and outlets, plastic moulds. **Especially : in metal injection zamak casting and aluminium injection cooling system, powerful and fast used.**

Never make corrosion

Flat Type Automatic Coupling





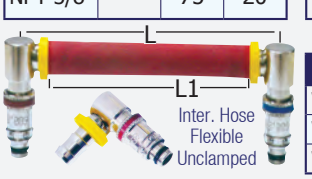
In free flow (non valved) system, the valve can be added at rear side as per request. Bush connections are at side section.

90^0 Angular Female Coupling W600 DG

Order	d	L	L1
BSP 1/4"	20	48.5	17
BSP 3/8"		75	20
NPT 1/4"		60	15
NPT 3/8"		75	20

Flat Type Coupling W600 HG

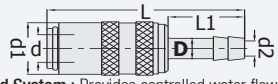
Order	Connection Ø
W600.8 HG06	6 mm -1/4"
W600.8 HG08	8 mm -5/16"
W600.8 HG10	10 mm -3/8"
W600.8 HG12	12 mm -15/32"
W600.8 HG13	13 mm -1/2"



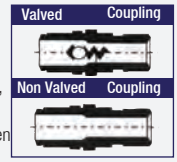
DUAL BRIDGE SYSTEM W600 UG

Order	L	L1
W600 UG 125	125	101
W600 UG 250	250	226
W600 UG 500	500	425

As per request, unclamped Hose Inlet Coupling



Valved System : Provides controlled water flow, when coupling is removed, water flow is closed (Vaned).
Non Valved System : With free water flow, when bush is removed, circuit is open (Valveless).



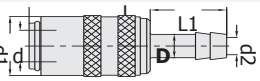
AUTOMATIC, FAST CLUTCH COUPLING, SMALL SIZE USA TYPE

Serie : W 506

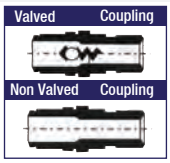
Order (**Valved** - Non Valved .d x L)		Connection Measure **D**	Small Size				
Valved	Non Valved		**d**	**L**	d1	d2	L1
W 506 - HGV 06	W 506 - SG 06	6 mm 1/4"	9	56	17	4,5	27
W 506 - HGV 10	W 506 - SG 10	10 mm 3/8"				**6**	

As per request, unclamped Hose Inlet Coupling

W 509



Valved System : Provides controlled water flow, when coupling is removed, water flow is closed (Vaned).
Non Valved System : With free water flow, when bush is removed, circuit is open (Valveless).



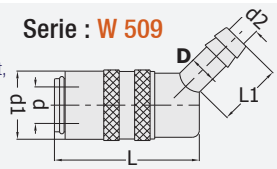
AUTOMATIC, FAST CLUTCH COUPLING, STANDARD SIZE USA TYPE

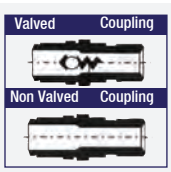
Order (**Valved** - Non Valved .d x L)		Connection Measure **D**	Standard Size				
Valved	Non Valved		**d**	**L**	d1	d2	L1
W 509 - HGV 10	W 509 - HG 10	10 mm 3/8"	13	68	23	8	29
W 509 - HGV 13	W 509 - HG 13	13 mm 1/2"				**10**	

USA TYPE

As per request, unclamped Hose Inlet Coupling

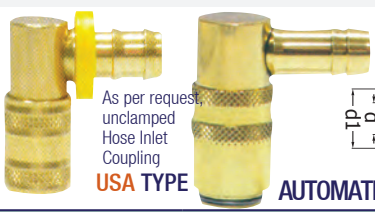
Serie : W 509





AUTOMATIC,FAST CLUTCH COUPLING, 45^0 ANGULAR

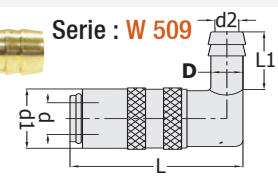
Order (**Valved** - Non Valved .d x L)		Connection Measure **D**	Standard Size				
Valved	Non Valved		**d**	**L**	d1	d2	L1
W 509 -HGV 1045	W 509 - HG 1045	10 mm 3/8"	13	38	23	8	29
W 509 -HGV 1345	W 509 - HG 1345	13 mm 1/2"				**10**	

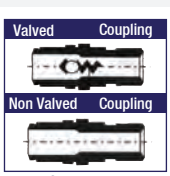


As per request, unclamped Hose Inlet Coupling

USA TYPE

Serie : W 509



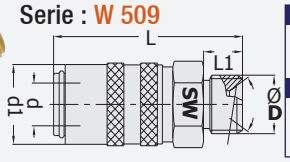


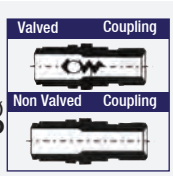
AUTOMATIC,FAST CLUTCH COUPLING, 90^{0}ANGULAR

Order (**Valved** - Non Valved .d x L)		Connection Measure **D**	Standard Size				
Valved	Non Valved		**d**	**L**	d1	d2	L1
W 509 - HGV 1090	W 509 - HG 1090	10 mm 3/8"	13	39	23	8	29
W 509 - HGV 1390	W 509 - HG 1390	13 mm 1/2"				**10**	

Male type coupling will be supplied separately

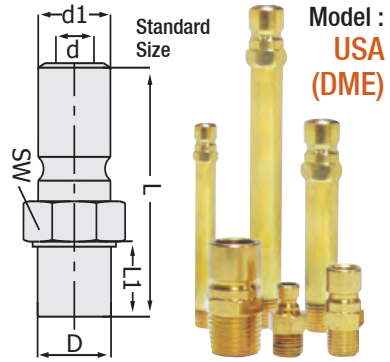
Serie : W 509





AUTOMATIC, FAST CLUTCH COUPLING, MALE THREAD USA TYPE

Order (**Valved** - Non Valved .d x L)		Connection Measure **D**	Standard Size				
Valved	Non Valved		**d**	**L**	d1	L1	SW
W 509 - EGV 13	W 509 - EG 13	**G 1/4"**	13	59	23	18	21
W 509 - EGV 21	W 509 - EG 21	**G 1/2"**					



Model : USA (DME)

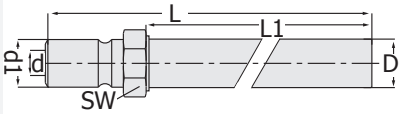
Automatic Fast Clutch BUSH / END

Model : USA — Small Size Bush

Order	**D**	d	L	L1	d1	SW
506 ER06	G 1/8"	6	24	7	9	11
506 ER08	G 1/4"	6	26	9	9	14
506 ER M10	10 x 1	6	24	7	9	11

Model : USA — Standard Size Bush

Order	**D**	d	L	L1	d1	SW
509 ER09	G 1/8"	6	31	7	13	13
509 ER13	G 1/4"	9		9		16
509 ER17	G 3/8"	13		13		19
509 ER21	G 1/2"	15		13		21
59 ER M10	10 x 1	6		9		14
59 ER M14	14 x1.5	13		13		16



Model : USA — Long Size Bush

Order	**D**	d	L	L1	d1	SW
509 EUR09 x (Length) L	G 1/8"	6	60 80 100 150	9	13	13
509 EUR13 x (Length) L	G 1/4"	8	60 80 100 150 200	13	13	16
509 EUR17 x (Length) L	G 3/8"	9	60 80 100 150 200	13	13	19

INNER CONNECTOR, SLEEVE

Inter Kit in Connection System **DSN**

Order	D	L	SW
DSN 01	M5	12	8
DSN 02	1/8"	22	14
DSN 03	1/4"	26	17
DSN 04	3/8"	26	22
DSN 05	1/2"	30	27

FEMALE -THREADED SCREWED, COUPLING

Hose Inlet Connected, Female Coupling **DHR**

Order	D	d1	L
DHR 01	1/8"	08	27
DHR 02	1/4"	09	30
DHR 03	1/4"	13	36
DHR 04	3/8"	13	36
DHR 05	1/2"	16	43

INTERMEDIATE JOINT- DOUBLE NIPPLE

Double Side Threaded, Complementary Coupling **ONE**

Order	D-d	L
ONE 01	1/8"-1/8"	21
ONE 02	1/8"-1/4"	23
ONE 03	1/4"-1/4"	23
ONE 04	1/4"-3/8"	23
ONE 05	1/4"-1/2"	29
ONE 06	3/8"-3/8"	23
ONE 07	3/8"-1/2"	29

REDUCTION CONVERTOR

Double Side / Internal and External Threaded Different Type **DEN**

Order	D-d	L
DEN 01	1/8"- M5	11
DEN 02	1/4"- M5	11
DEN 03	1/4"-1/8"	11
DEN 04	3/8"-1/8"	13
DEN 05	3/8"-1/4"	14
DEN 06	1/2"-1/4"	18
DEN 07	1/2"-3/8"	18

HOSE ATTACHING COUPLING

Segmented Hoses, Attachment Kit **HKE**

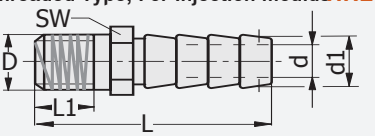
Single **HKE**

Triple **HKT**

Order	D	L
HKE 01	04 mm	50
HKE 02	06 mm	50
HKE 03	08 mm	50
HKE 04	09 mm	50
HKE 05	13 mm	60
HKE 06	16 mm	60
HKE 07	19 mm	60

Hose Inlet, Mould COUPLING/END

Threaded Type, For Injection Moulds **HRE**

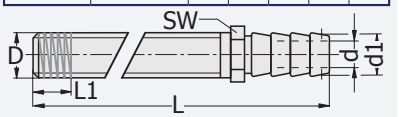


Material: Brass/Yellow **STANDARD TYPE**

Order	D	d	L	L1	d1	SW
HRE 08	M8 x 1.25	6	36	9	12	13
HRE 10	M10 x 1.5	6	36	9	12	13
HRE 12	M12 x 1.75	7	36	9	12	13
HRE 14	M14 x 2	8	40	9	12	14
HRE 16	M16 x 2	9	40	9	14	16
HRE 1/8	G 1/8"	6	36	10	12	13
HRE 1/4	G 1/4"	8	36	10	12	14

Material: Hard Plastic **HARD PLASTIC**

Order	D	d	L	L1	d1	SW
HRP 10	M10 x 1.5	6	36	9	12	13
HRP 12	M12 x 1.75	7	36	9	12	13

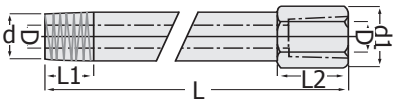


Material: Brass/Yellow **LONG SIZES**

Order	D	d	L	L1	d1	SW
HRU M08060	M8 x 1.25	6	60	9	12	13
HRU M08080			80			
HRU M08100			100			
HRU M08120			120			
HRU M08150			150			
HRU M10060	M10 x 1.5	6	60	9	12	13
HRU M10080			80			
HRU M10100			100			
HRU M10120			120			
HRU M10150			150			
HRU M12060	M12 x 1.75	7	60	9	12	13
HRU M12080			80			
HRU M12100			100			
HRU M12120			120			
HRU M12150			150			
HRU M1/8060	G 1/8"	6	60	10	12	13
HRU M1/8080			80			
HRU M1/8100			100			
HRU M1/8120			120			
HRU M1/8150			150			
HRU M1/4060	G 1/4"	8	60	10	12	14
HRU M1/4080			80			
HRU M1/4100			100			
HRU M1/4120			120			
HRU M1/4150			150			

Distance Extender (Long Size) COUPLING

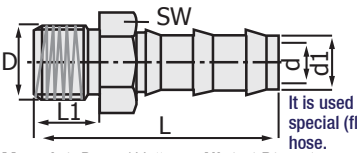
Similar to Dual Side, Threaded Extender **ARU**



Order	D	d	L	L1	L2	d1
ARU 18060	G 1/8"	10	60	10	14	14
ARU 18080			80			
ARU 18100			100			
ARU 18150			150			
ARU 14060	G 1/4"	13	60	10	15	16
ARU 14080			80			
ARU 14100			100			
ARU 14150			150			

Unclamped End, Threaded Coupling **THR**

Unclamped Connection with Flexible Hose



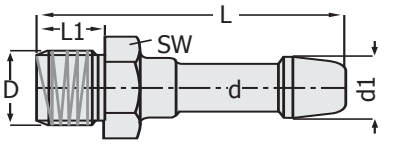
It is used with special (flex) hose.

Material: Brass/ Yellow - **Nickel Plated**

Order	D	d	L	L1	d1	SW
THR 06	G 1/8"	4	43	8	6	14
THR 10		5.5			10	
THR 09	G 1/4"	6	46	11	9	17
THR 13		8			13	
THR 17	G 3/8"	9	52	12	13	19

Fast Connected End, COUPLING **HR**

Normal Hose, Fast Connected, Clamped Type



Material: Brass/ Yellow - **Nickel Plated**

Order	D	d	L	L1	d1	SW
HR 08	G 1/8"	5.5	43	8	08	14
HR 09	G 1/4"	6	46	11	9	17
HR 13	G 1/4"	8	51	11	13	17
HR 17	G 3/8"	9	52	12	13	17
HR 16	G 1/2"	11	54	14	16	23

SMALL BALL VALVE KKV

As per Request, Color Selection

Mini Ball Valve

Order	D	L
KKV 06	G 1/4"	38
KKV 10	G 3/8"	38
KKV 16	G 1/4"	45

Manuel Controlled Valve

* Button Type Mini Valve
* 1/4" Male Threaded Regulator **Order No :** 18652

Pls. Packaged O-RING SET

*** 368 Piece Serie**
*** 30 Different Size**
NBR Rubber resistance to oil and acids. 60 - 90 Hardness. Economic and you should be kept at your hand.
Content : Diameter from 3 mm up to 30 mm. Thickness 2-2.5-3-4

SEALING CHEMICALS

Liquid TEFLON and BAND - LIGUID WASHER

In Threaded Connections

Teflon Band 10 mt. x 13 mm
Order Code: : **GL.10321**

WINKEL Teflon Reinforced Bush Sealing Chemical
Order Code : **678511F50**

404 Liquid Washer:
300^0 Heat Resistance Sealing, Sealing Everywhere
Order Code : **SK404** (Red)
Order Code : **SM404** (Blue)

HOSE CLAMPS

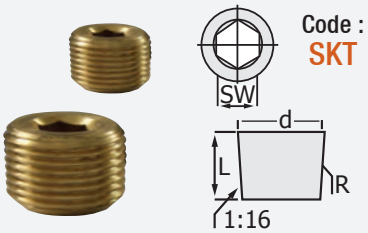
Order	Capacity
HK 1016	10 x 16
HK 1319	13 x 19
HK 1623	16 x 23
HK 1825	18 x 25
HK 2032	20 x 32
HK 3251	32 x 51

Stainless / Inox Material
Extra Quality Clamp
Capacity : 12 x 20
Order No : HKI 1220

INDUSTRIAL TYPE LIQUID HOSES

Polyamide: For **Polyurethane** water hoses in automatic systems

Order	In/Out Ø
HS06 1/4"	**d:**4 x **d1:**6
HS08 5/16"	**d:**5 x **d1:**8
HS10 3/8"	**d:**8 x 10
HS13 1/2"	10 x 12.5
HS16 5/8"	**d:**10 x 16
HS19 3/4"	**d:**13 x 19



Code : **SKT**

WATER RUNNER PLUG, CONICAL TYPE

Yellow Brass Material/ Blind Plug:
It is to plug on /to close unwanted water holes in injection moulds. **Mounting :** It is inserted according to the product diameter by threading.

WATER RUNNER PLUG, Yellow Material

Order	R	d	L	SW
SKT 18	**G 1/8"**	9.4	11.2	5
SKT 14	**G 1/4"**	12.8	12.5	7 ALIEN
SKT 38	**G 3/8"**	15.9	14.1	8 ALIEN
SKT 12	**G 1/2"**	20.5	17.8	10

Code : **CKT**

WATER RUNNER PLUG, CONICAL TYPE

Stainless Steel / Conical Type
It is to plug on / to close unwanted water holes in injection moulds.
Mounting: It is inserted according to the product diameter by threading.

Order	R	d	L	SW
CKT 18	**G 1/8"**	9.4	11.2	5 ALIEN
CKT 14	**G 1/4"**	12.8	12.5	7 ALIEN

Code : **SDT**

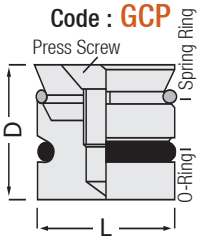
WATER RUNNER PLUG, FLAT TYPE

Yellow Brass Material/ Blind Plug
It is to plug on /to close unwanted water holes in injection moulds.
Mounting : It is inserted according to the product diameter by threading.

WATER PUNNER PLUG, Yellow Material

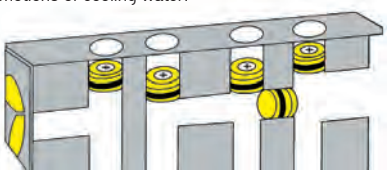
Order	R	d	L	SW
SDT 18	**G 1/8"**	9.4	11.2	5
SDT 14	**G 1/4"**	12.8	12.5	7 ALIEN
SDT 38	**G 3/8"**	15.9	14.1	8 ALIEN
SDT 12	**G 1/2"**	20.5	17.8	10

Code : **GCP**



WATER RUNNERS O-RING PLUG

Water Runners, Plugging and Routing
It is adjusted fixing plug in order to use canceling of unwanted holes in water runner system of injection moulds or to direct flow motions of cooling water.



Mounting Information : The channel diameter of water runners should be at least 01 mm greater than O-Ring plug. Any process (threading etc.) on channel mounting and any mechanical process on unit should not be done. O-Ring plug is never rusting, wall thickness of diameter on unit can be adjusted via O-Ring. The fixing on water runner can be done on holes from end to end or at any point.
Working Temperature Range : Between 10 and 250^{0}C
Pressure Capacity : Ø 6 - 8 mm = 16 Kg./ cm^2
Ø 10-12 mm = 18 Kg./cm^2 Ø 14-16mm = 25 Kg./cm^2

WATER RUNNERS O-RING PLUG

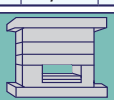
Order	D	L	Mounting Dia
GCP 06	Ø **6**	10	6.1 mm
GCP 08	Ø **8**	10	8.1 mm
GCP 10	Ø **10**	11	10.1 mm
GCP 12	Ø **12**	12	12.1 mm
GCP 14	Ø **14**	14	14.1 mm
GCP 16	Ø **16**	14	16.1 mm
GCP 20	Ø **20**	14	20.1 mm

*** With Economical Price At Our Shelf Stocks**

FLEXIBLE "Cooling Liquid" HOSE

Hard Plastic (Derlin) Flexible Liquid Transfer System
Even at narrow tolerance high pressures, it guarantees the directional stability. Definite resistance to all chemicals. Combine System with modular passing system as per request. Compatible with bench.
1/4"Operation Pressure: 6 Bar Flow Rate 15 lt./min.
3/8" Operation Pressure: 6 Bar Flow Rate 25 lt./min.

Order	Dia.	Length
PSE.14	1/4"	280 mm
PSE.18	3/8"	320 mm



Section Injection Mould

AUTOMATIC FAST CLUTCH

Metal Nut Proportional Nipple

Max. Heat : 100⁰

Order	Ø Hose
S2 0606	6 ~ 4 mm
S2 0808	8 ~ 6 mm
S2 1010	10 ~ 8 mm
S2 1212	12 ~ 9 mm
S2 1414	10 ~ 14 mm
S2 1616	12 ~ 16 mm

Metal, Nut Elbow Socket Male Threaded

Non Corrosive

Yellow Casting Nickel Plated

Order	Tooth	Hose
S4 1806	1/8"	6 ~ 4
S4 1406	1/4"	6 ~ 4
S4 1808	1/8"	8 ~ 6
S4 1408	1/4"	8 ~ 6
S4 1410	1/4"	10 ~ 8

Max. Heat:100⁰

Metal, Nut Socket

Order	Tooth	Hose
S1 1806	1/8"	6 ~ 4
S1 1406	1/4"	6 ~ 4
S1 1808	1/8"	8 ~ 6
S1 1408	1/4"	8 ~ 6
S1 1308	3/8"	8 ~ 6
S1 1410	1/4"	10 ~ 8
S1 3810	3/8"	10 ~ 8
S1 1210	1/2"	10 ~ 8

Metal Nut "T" Socket

Non Corrosive

Yellow Casting Nickel Plated

Max. Heat: 100⁰

Order	Hose
S3 0606	6 ~ 4
S30808	8 ~ 6
S3 1010	10 ~ 8
S3 1212	12 ~ 9

Plastic Automatic Clutch Socket

Material: Polyester
Max. Heat : 80⁰

Order	Tooth	Hose
P1 M608	M6	8 mm
P1 1804	1/8"	4 mm
P1 1806	1/8"	6 mm
P1 1406	1/4"	6 mm
P1 1408	1/4"	8 mm
P1 1410	1/4"	10 mm
P1 1412	1/4"	12 mm

Plastic Automatic NIPPLE

Order	Hose
P2 0404	4 mm
P2 0606	6 mm
P2 0808	8 mm
P2 1010	10 mm
P2 1212	12 mm

Material: Polyester
Max. Heat : 60⁰

HOSE FASTENERS

Metal Automatic Nipple Socket

Yellow Casting /Nickel Plated

Non Corrosive

Max. Heat: 100⁰

Order	Hose
M2 0404	4 mm
M2 0606	6 mm
M2 0808	8 mm
M2 1010	10 mm
M2 1212	12 mm

Metal Automatic Rotary Elbow

Max. Heat: 100⁰

Yellow Casting Nickel Plated

Order	Tooth	Hose
M4 1806	1/8"	6 mm
M4 1406	1/4"	6 mm
M4 1408	1/4"	8 mm
M4 1410	1/4"	10 mm
M4 1412	1/4"	12 mm

Metal, Automatic Coupling

Yellow Casting Nickel Plated

Order	Tooth	Hose
M1 M604	M6	4 mm
M1 1804	1/8"	4 mm
M1 1806	1/8"	6 mm
M1 1406	1/4"	6 mm
M1 1408	1/4"	8 mm
M1 1410	1/4"	10 mm
M1 1412	1/4"	12 mm
M1 3810	3/8"	10 mm

Metal Automatic "T" Socket

Non Corrosive

Yellow Casting Nickel Plated

Order	Hose
M3 0404	4 mm
M3 0606	6 mm
M3 0808	8 mm
M3 1010	10 mm
M3 1212	12 mm

Automatic Plastic Elbow

Material: Polyester
Max. Heat : 60⁰

Order	Hose
P5 0404	4 mm
P5 0606	6 mm
P5 0808	8 mm
P5 1010	10 mm
P5 1212	12 mm
P5 1616	16 mm

Automatic Plastic Reduction

Material: Polyester

Order	Hose
P8 0604	4 ~ 6
P8 0806	8 ~ 6
P8 1008	10 ~ 8
P8 1210	12 ~ 10

Max. Heat : 60⁰

FITTING GROUP

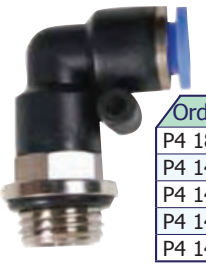
Plastic, Central Leg - Threaded "TE"

Max. Heat : 60⁰

Order	Tooth	Ø
P6 1806	1/8"	6
P6 1406	1/4"	6
P6 1408	1/4"	8
P6 1410	1/4"	10
P6 3810	3/8"	10
P6 1412	1/4"	12

Plastic, Threaded Rotary Elbow

Material: Polyester



Order	Tooth	Hose
P4 1806	1/8"	6 mm
P4 1406	1/4"	6 mm
P4 1408	1/4"	8 mm
P4 1410	1/4"	10 mm
P4 1412	1/4"	12 mm

Plastic Quintet Manifold

Material: Polyester

Order	Hose
M5 444	4/4/4/4/4
M5 555	5/5/5/5/5
M5 666	6/6/6/6/6
M5 888	8/8/8/8/8
M5 1010	10/10/10/10
M5 1212	12/12/12/12

Automatic Plastic 3 Input "T"

Material: Polyester

Max. Heat : 60⁰

Order	Hose
P3 0404	4 mm
P3 0606	6 mm
P3 0808	8 mm
P3 1010	10 mm
P3 1212	12 mm
P3 1616	16 mm

Automatic Plastic 3 Inlet Reducer

Material: Polyester

Max. Heat : 60⁰

Order	Hose
P1 668	6-6-8
P1 886	8-8-6
P1 108	8-8-10
P1 102	10-10-8
P1 212	10-10-12
P1 210	12-12-10

Plastic Dual " Y "

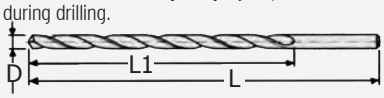
Order	Hose
P1 0404	4 / 4 ~ 4
P1 0604	6 / 6 ~ 6
P1 0808	8 / 8 ~ 8
P1 1010	10 /10~10
P1 1010	12 /12~12

Automatic Clutch Sockets : They are essential elements of pneumatic and hydraulic systems in machine production. **Nowadays in Mould Industry :** This product is commonly used in connections of cooling systems in injection mould outer group. They are used at **Metal** Products, Metal Injection, **Plastic** Products and Plastic Moulds.

WATER RUNNER DRILLS

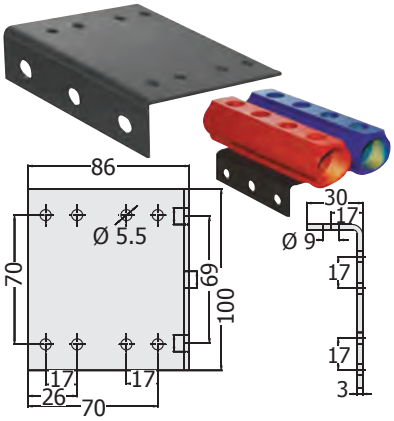
Very Long Drill Bit GT 100 Type

It is a long chip channel drill bit having great helix angle than normal. Especially, "10 XD" Perforation Process is provided on the deep surfaces. Due to its special helix structure, it works comfortably and does not squash into the middle strong steel and aluminium materials by carrying chip outside during drilling.

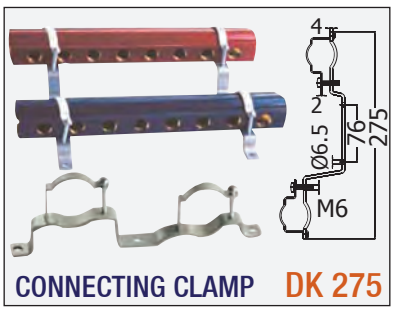


Water Runner Drills MG

Order No	Ø D	L	L1
MG1 035	3.5 mm	165 mm	115 mm
MG2 035		210 mm	145 mm
MG3 035		265 mm	180 mm
MG1 040	4 mm	175 mm	120 mm
MG2 040		220 mm	150 mm
MG3 040		280 mm	190 mm
MG1 050	5 mm	198 mm	135 mm
MG2 050		245 mm	170 mm
MG3 050		315 mm	210 mm
MG1 060	5.5 mm 6 mm	205 mm	140 mm
MG2 060		260 mm	180 mm
MG3 060		330 mm	225 mm
MG1 065	6.5 mm	215 mm	150 mm
MG2 065		275 mm	190 mm
MG3 065		350 mm	235 mm
MG1 070	7 mm 7.5 mm	225 mm	155 mm
MG2 070		290 mm	200 mm
MG3 070		370 mm	250 mm
MG1 080	8 mm 8.5 mm	240 mm	165 mm
MG2 080		305 mm	210 mm
MG3 080		390 mm	265 mm
MG1 090	9 mm 9.5 mm	250 mm	175 mm
MG2 090		320 mm	220 mm
MG3 090		410 mm	280 mm
MG1 100	10 mm 10.5 mm	265 mm	185 mm
MG2 100		340 mm	235 mm
MG3 100		430 mm	295 mm
MG1 110	11mm 11.5 mm	280 mm	195 mm
MG2 110		365 mm	250 mm
MG3 110		455 mm	310 mm
MG1 120	12mm 12.5 mm	295 mm	205 mm
MG2 120		375 mm	260 mm
MG3 120		480 mm	330 mm
MG1 130	13 mm	295 mm	205 mm
MG2 130		375 mm	260 mm
MG3 130		480 mm	330 mm



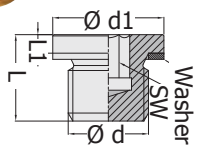
SKID PLATE DK 80.100



CONNECTING CLAMP DK 275

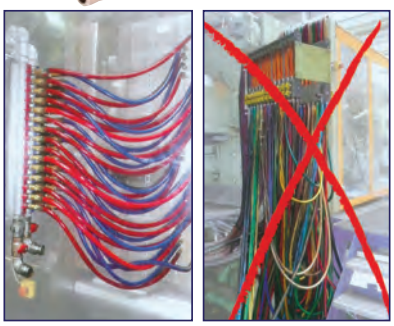
CAPPED PLUG

It is used as blind plug for closing unwanted holes.

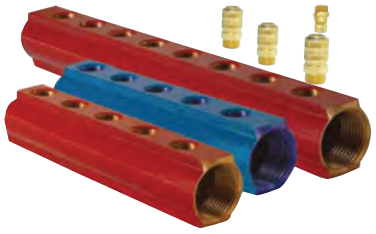


Order	d	L	L1	d1	SW
PPD 13	G 1/4"	15	3	18	6
PPD 17	G 3/8"	15	3	22	8
PPD 21	G 1/2"	18	4	24	10
PPD 26	G 3/4"	20	5	32	12
PPD 33	G 1"	21	5	39	17

Order: KVFM 13 G 1/4"
KVFM 21 G 1/2"
Ball Valve KVFM 26 G 3/4"
KVFM 33 G 1"



With distribution collector, undesired miscibility on machine and mould can be avoided.



DISTRIBUTION COLLECTORS DK

Distribution of Injection Mould Cooling Water, Inlet and Outlet Regulation System

They are produced in order to clear up disarrangement in inlet and outlet water runner systems at injection moulds cooling systems.

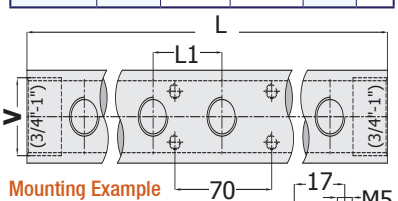
Material: Anodic Painted Aluminium

Distribution Collector 1/4" Serie : DK 14

Order No	N. of Socket	Socket Thread D	Valve Thread V	Leng. L	L1
DK 1404	4 Pcs.	1/4"	Inlet 1" Outlet 1"	150	30
DK 1405	5 Pcs.			180	
DK 1406	6 Pcs.			210	
DK 1408	8 Pcs.			270	
DK 1410	10 Pcs.			330	
DK 1412	12 Pcs.			390	

Distribution Collector 1/2" Serie : DK 12

Order No	N. of Socket	Socket Thread D	Valve Thread V	Leng. L	L1
DK 1204	4 Pcs.	1/2"	Inlet 1" Outlet 1"	165	35
DK 1205	5 Pcs.			200	
DK 1206	6 Pcs.			235	
DK 1208	8 Pcs.			305	
DK 1210	10 Pcs.			375	
DK 1212	12 Pcs.			445	



Mounting Example

At order: Pls. specify desired colour. As per request, Special Distribution collector production is available.

For Mounting Elements:

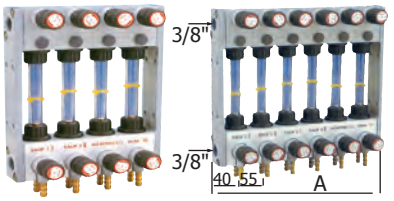
1- Pls. select thread measurement (1/4" - 1/2") of automatic fast connected coupling (Valved Type) and Male Threaded (W 590) to be used on distribution collectors and specify quantity.
2- Pls. specify type and diameter for main valve (V). (3/4" or 1") or type as per request.
3- Specify plug for tompion across valve (TK).
4- Select model for distribution connector connection.
5- As per request, hose diameter and lengths can be specified and also order can be completed with sealing products.

CIRCULATION REGULATOR ESR

It is used as flow indicator of mould cooling water in injection systems.

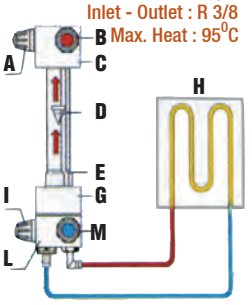
It is designed to control circulation flow and also to repeat settings regularly. Measurement scale of transparent tubes is monitored at desired level, accurate /safe flow is supplied with monitoring the deviation Position and On-Off buttons. Circulation regulators are domestic production and spare parts are available.

Inlet-Outlet distribution couplings of transparent tubes can be adjusted with Anodized/ Light Aluminium Casing and controlled system has been created with buttons.



Circulation Regulators (Flow Indicators) :
As per request
they are supplied as group of 4-6-8-10-12'.

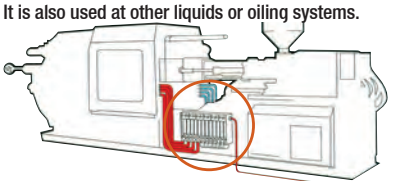
Flow Rate : 0-18 lpm
Inlet - Outlet : R 3/8
Max. Heat : 95°C



A : Control Valve
B : Water Outlet
C : Flow Manifold
D : Float
E : Calibrated Transparent Type
G : Receiver Section
H : Mould Distribution
I : Cut-off Valve
L : Supply Manifold
M : Water Inlet

Order No	N. of Tubes	Outlet Cycle	Size A
ESR. 04	4 '	Bush/ End	240
ESR. 06	6 '	R:1/4"	360
ESR. 08	8 '		480
ESR. 10	10 '	10 mm	600
ESR. 12	12 '	Hose	720

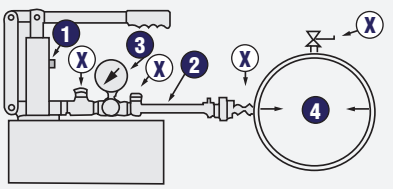
It is also used at other liquids or oiling systems.



MANUAL PRESSURE TEST PUMP

Injection Mould Cooling System **Code :**
7 Bar: Water Runner Flow Testing Device **SSY**

Testing System with Manual Pressure Pump:
Complete the mounting of tie bar piston with screw and screwdriver involved in testing device that you purchased. Fill testing hose **(2)** with water (Air inside of hose should be drainaged.) Close valve / button**(1)** on the piston, connect testing hose mould runner system (Ensure that system is closed completely).
Fill the tank with water and run pump by pushing. Keep valve **(1)** button open, continue to pumping, when manometer pressures is reached to desired level, close valve numbered **1. No** If the pressure does not fall, test is positive. If the pressures falls, there is a leak in the test tube.



1- On-Off Valve/Button of System Testing Hose
2- Resistant to Pressure Manometer / Pressure
3- Indicator
4- Mould Water Runner Circuit
X- As per Request, Mini Ball Valve can be Added.

Order No	Working Pressure	Flow Rate
SSY.6	6.3 Mpa	25 ml / s.

CONSANTRATE DESCALER LIQUID

Order No : Art. Nr. 800598

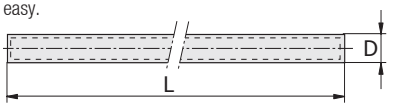
Specifications : In order to avoid choking due to intense lime in machines and moulds running with water at places that urban water and well water are quite limy, 1 **kg. descaler is used in 10 Kg.** water (according to the lime status). It does not harm the system in moulds and machines (**Plastic/Copper**). **Usage Area :** It is used to solve lime under all circumstances or as additive to the water in all limy surfaces, it is a **Concentrate Product**.

HEAT TRANSFER PIPE GH

Closed Circuit (Compressed Gas) Copper Pipe

Deep Male Core Cooling in Injection Mould:
The cooling system is formed by rising heat to the upper points via compressed gas in pipe expeditiously, **in Mounting** at least **70%** of conductor pipe remains inside the core, **30%** of mould should remain in mould water runner.

Advantages of System : It minimizes the number of defective final products during stamping resulting from shrinkage or cold deformation. Due to that, fast control of temperature is ensured, very high product precision is obtained. Thus, pore formation inside the product /object is avoided. During the injection, it ensures obtaining products in right colours. By ensuring to extend mould life more, it drags main costs down. Its application and mounting are very easy.

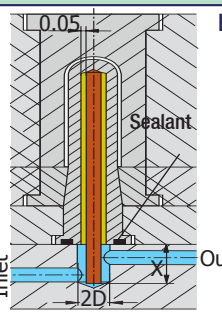


D	L
Ø 3	40
	60
	80
	100
	120
	150
Ø 4	40
	60
	80
	100
	120
	150
	185
	200

D	L
Ø 5	60
	80
	100
	120
	150
	200
Ø 6	60
	80
	100
	120
	150
	185
	200
	250

D	L
Ø 8	80
	100
	120
	150
	185
	200
	250
Ø 10	100
	120
	150
	185
	200
	220
	250
	300

Order : **GH** D x L | Sealant Winkel Mix

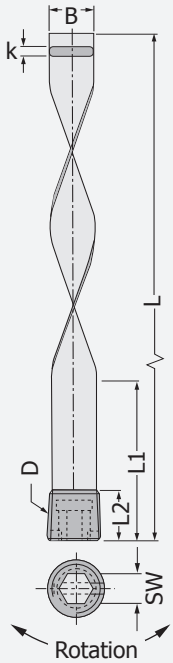


REPAIR PASTE

Winkel Mix Waser: :
It is a model used against water. Especially, it can be applied for pipe and metal cracks.

Order No :
200017 / 56 gr.

Mounting : * Mounting area of core slot of mould should be at least 0.01 - 0.2 mm larger than the conductor pipe diameter.* Don' t forget to plug all cooling holes of conductor pipe remaining open after mounting.* When area inside of conductor pipe cooling channel is extended, heat transmission is increased proportionally.



BDP	BSP
Flat Type	Spiral

DEEP COOLING SEPARATOR

Deep Male / Die Cooling Spiral & Sheet Bar

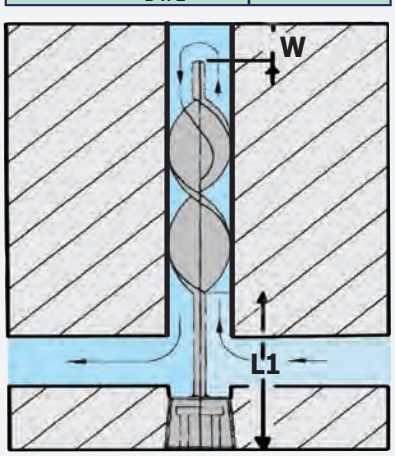
It is a deep male/die modular system for water flow system in injection moulds rapid water cooling process. It is processed from high quality yellow material in long size precision compatible with abrasion resistance and is resistant to high liquid pressure. Conical threaded rotary base strengthens water flow hole.

Spiral & Flat Type Separators

BDP BSP

B x k Sheet Bar	D NPT	L mm	L1 mm	L2 mm	W mm	SW Allen
8.5 x 16	1/8"	101	51	8	8.5	5
		203	102			
2.4 x 11.5	1/4"	127	51	10	11.5	7
		254	102			
2.4 x 11.5	3/8"	152	51	10	15	8
		300	102			
2.4 x 18.5	1/2"	203	102	10	18.5	10
		406	76			

Order : **BSP / BDP** D x L — Material : Yellow/ Brass

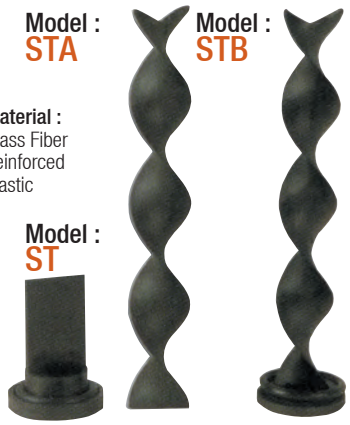


Model : **STA**

Material : Glass Fiber Reinforced Plastic

Model : **STB**

Model : **ST**



PLASTIC, SPIRAL / MODULER DEEP COOLING SEPARATOR

It provides effective flow opportunity by creating balanced turbulance in water flow hole.

The cooling water flows by following plastic spiral helixes (such as waterfall). Since spiral plastic material is glass fiber reinforced, it always remains cold, it never causes choking and corrosion in cooling channels, at different types according to the usage model of modular system spiral plastic (Refer to following section)

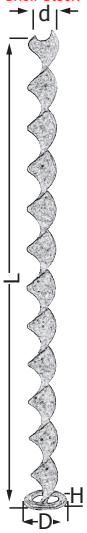
1- At technical drawing in figure 1 and 3 if cooling water flow is entering by striking at the entrance of spiral or to the close area, based or base reinforced model should be selected.

2- If cooling water flow is entered by striking at the medium or top section of spiral (or within required water runners), don't use based model, because; water flow continues its turbulent flow by exiting from the level it entered, at the systems in Figure 2 , flat model is selected.

PLS. BASED SPIRAL — STB Economic Shelf Stock

d	L	D	H
8	100	15	4
	200		
	300		
10	100	18	4
	200		
	300		
12	100	22	4
	200		
	300		
16	100	25	4
	200		
	300		
20	100	30	4
	200		
	300		
	400		
25	100	35	4
	200		
	300		
	400		

Order : STB d x L



O -Ring

PLS.BASED SPIRAL — STA Economic Shelf Stock

d	L	S	D
8	96	20	STC 8
	196		
	296		
10	96	20	STC 10
	196		
	296		
12	96	25	STC 12
	196		
	296		
16	96	25	STC 16
	196		
	296		
20	96	25	STC 20
	196		
	296		
	396		
25	96	25	STC 25
	196		
	296		
	396		

Order : STA d x L

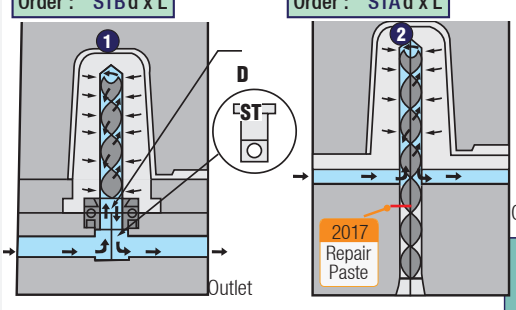
As per Request

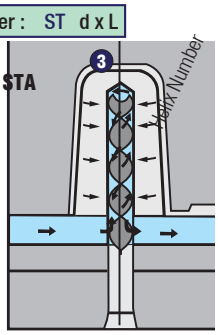
ST GCP PLUG O -Ring

PLS. BASED SPIRAL — ST Economic Shelf Stock

D	L	H	T
8	25	2	1.5
	30		1.5
	35		1.5
	40		
10	25	2.5	1.8
	30		1.8
	35		1.8
	40		
12	25	3	2.0
	30		2.0
	35		2.0
	40		
16	25	4	3.0
	30		3.0
	35		3.0
	40		
20	25	5	3.0
	30		3.0
	35		3.0
	40		
25	30	6	4.0
	35		4.0
	40		

Order : ST d x L





Economical Price in 2 Different Models

English User Guide

Pantograph Pen WHETTING MACHINE

HSS or Carbide / DIAMOND Pen / Rod & Perforator is precision whetting machine with quick simple operation and negative angular radius, also complex rapid cutting edge designed for whetting in desired form.

Technical Specifications:

Product	Capacity
Max. Pliers	5 Piece (4-6-8-10-12)
Grinding Dia.	Max. Dia. 2 - 25
Apex Angle	0° - 180°
Channel Angle	0° - 45°
Negative Angle	0° - 26°
Shaft / Cycle	3600 RPM
Grinding Wheel	HSS EKW 100 / Diamond U2 F
Motor	1 / 3 Hp 220V 50 / 60 Hz.
Machine Dimen.	45 x 40 x 35 cm
Package Dimen.	55 x 45 x 47 cm
Weight	45 Kg.

Standard Accessories:
Model U2 (Full Radius Whetting) Precision

* EKW D-100 HSS Whetting Wheel
* Stone Connecting Flange/Mounting Assembly
* Stone Correcting Flange
* Lighting Lamp
* Spare Drive Belt
* Locking Pin and Hand Tool Kit
* 5 Piece Pliers (4-6-8-10-12)

Standard Accessories:
Model U2 / E (Flat Type) Economic Model

* **It does not make radius whetting.**
* EKW D-100 HSS Whetting Wheel
* Stone Connecting Flange/Mounting Assembly
* Stone Correcting Flange
* Lighting Lamp
* Spare Drive Belt
* Locking Pin and Hand Tool Kit
* 5 Piece Pliers (4-6-8-10-12)
* **Drill Whetting Equipment**
* **Mill Whetting Equipment**
* **Lathe Tool Holder Whetting Equipment**

Product Campaign We give U2 - C Machine Desk as present...

Pantograph Pen WHETTING MACHINE

Single edged mill blades are auxiliary grinding machines of general CNC /milling machine in fabricating of complex designed work piece, retouching precision surface, writing in thin characters, whetting of end /pen to be used at engraving machines.

Optional Accessories : (As per Request)

Code	Content
U2-C	Positioning Desk Suitable to Machine
U2-F	Diamond CBN Stone
U2-P	Ext. PLIERS (2-3-5-7-9-16-18-20-25)
U2-E	Mill Whetting Equipment
U2-T	Drill Whetting Equipment
U2-L	Lathe Tool Holder Whetting Equipment

Machine Desk
U2 - C

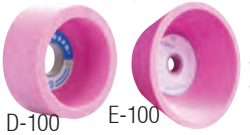
U2 - P
Whetting Pliers

U2 - F

C 180

U2 - E Diamond Grind Stone

U2 - TDE
Stone Whetting Diamond



D-100 E-100

U2 - EKW
HSS Pen Whetting Wheels

U2 - T Drill Whetting

U2 - E
Mill Whetting Equipment

U2 - L
Lathe Tool Holder Whetting Equipment

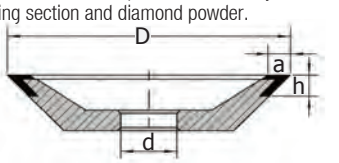
Repair - Maintenance - Spare Part Service
English User Manual

Order : Model U2
(Radius Grinding) Precision

Order : Model U2 / E
(Flat Type) Economic Model

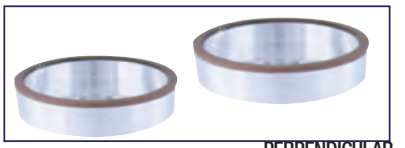
DIAMOND DISH WHEEL Conical Type

It is used for whetting of hard metal engraving pens or other hard tools.
Hard Aluminium compound main casing, resin cutting section and diamond powder.

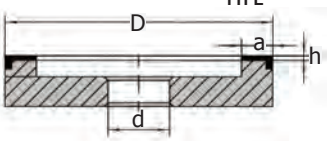


Diamond, Conical Type / CBN 75

Order	D	d	a	h
U2F.7553	Ø 75	20	5 mm	3 mm
U2F.10053	Ø 100	20	5 mm	3 mm
U2F.10063			6 mm	3 mm
U2F.10083			8 mm	3 mm
U2F.12553	Ø 125	32	5 mm	3 mm
U2F.15053	Ø 150	32	5 mm	3 mm

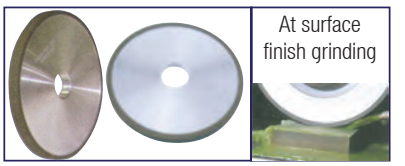


DIAMOND DISH WHEEL PERPENDICULAR TYPE

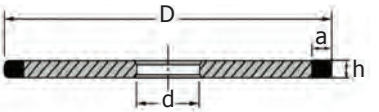


Diamond, Perpendicular Type / CBN 75

Order	D	d	a	h
C180.10053	Ø 100	20	5 mm	3 mm
C180.12553	Ø 125	20	5 mm	3 mm

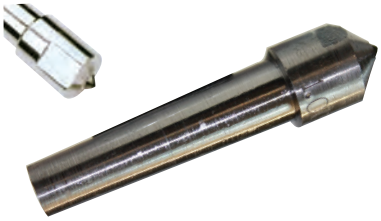


DIAMOND DISH WHEEL DISC TYPE



Diamond, Disc/Wheel Type / CBN 75

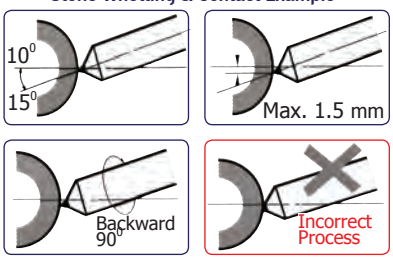
Order	D	d	a	h
C182.7563	75	20	6	3
C182.10084	100	20	8	4
C182.12584	125	32	8	4
C182.15084	150	32	8	4
C182.175104	175	32	10	4
C182.200104	200	32	10	4

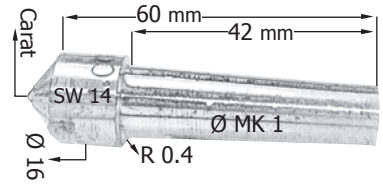


STONE WHETTING DIAMOND TDE

Single Point Contact Stone Whetting Diamond (as per request, multi point models are available) is for to correct and to form grind stone at whetting and cutting machines, it is used by mounting to equipment on grinding/cutting / whetting machines. Pls. pay attention to picture details for Precision Stone Whetting Process!

Stone Whetting & Contact Example





Standard (Economic) **Model : TDE**

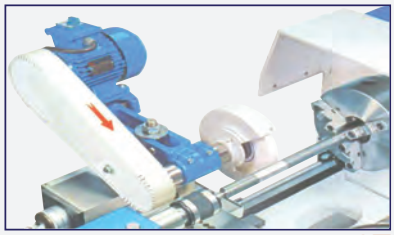
Order	Diamond Carat	Grinding Wheel Dia.
TDE030	0.30	Ø 100
TDE050	0.50	Ø 200
TDE075	0.75	Ø 250
TDE100	1.0	Ø 300
TDE150	1.5	Ø 400
TDE200	2.0	Ø 500
TDE300	3.0	Ø 600

High Quality Stone Correcting **Model : TDA**

Order	Diamond Carat	Grinding Wheel Dia.
TDA030	0.30	Ø 100
TDA050	0.50	Ø 200
TDA075	0.75	Ø 250
TDA100	1.0	Ø 300
TDA150	1.5	Ø 400
TDA200	2.0	Ø 500
TDA300	3.0	Ø 600

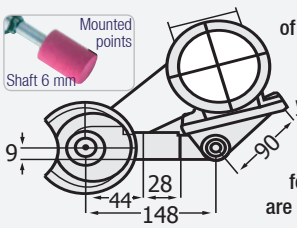
Diamond Drill Line Pen ECK

Diamond Drill Clip-On Pen to draw and to mark on metal plates at machine and mould productions, design processes. **Order No : ECK 13741**



Lathe Grinding, Surface / Hole ST

It is an excellent machine for inner hole grinding with easy to mount to the lathe workbench. During the inner hole works, it maintains many difficult processes, in addition to external grinding processes together. Also grinding process can be made on flat surfaces with 15/25% metal removing values at external grinding and operation opportunity up to 150 mm (up to 600 mm with additional equipment) and E 125 Dish Stone Connection to the stone connection on equipment. Its mounting is completed by inserting flange to the section involving Lathe Workbench Support/ Pen Holder, the flange axes of all lathe workbenches can be different, therefore flange axis intervals can be requested from our company.



Guaranty of domestic products is for two years and spare parts for service are available.

Support Grinding Machine Suitable to Dia. 175 Stone

Machine Technical Data	Order No : ST - 175 Grinding
Motor Power	0.5 HP 380 V ~ 50 Hz
Speed m /min.	2800 m /min.
Shaft / Wheel Size	175x20x20 (25/32)
Suitable Machine	1 and 1.5 Mt. Lathe

* Hole Grinding Equipment is with machine.

Support Grinding Machine Suitable to Dia. 175 Stone

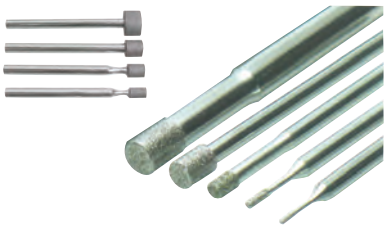
Machine Technical Data	Order No : ST - 201 Grinding
Motor Power	1 HP 380 V ~ 50 Hz
Speed m /min.	2800 m /min.
Shaft / Wheel Size	200x20x20 (25/32)
Suitable Machine	2 Meter Lathe

* Hole Grinding Equipment is with machine.

Support Grinding Machine Suitable to Dia. 202 Stone

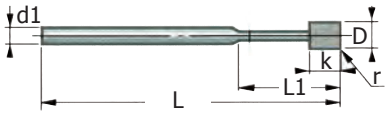
Machine Technical Data	Order No : ST - 202 Grinding
Motor Power	2 HP 380 V ~ 50 Hz
Speed m /min.	3000 m /min.
Shaft / Wheel Size	200x20x20 (25/32)
Suitable Machine	2 Meter and Over Lathe

* Hole Grinding Equipment is with machine.



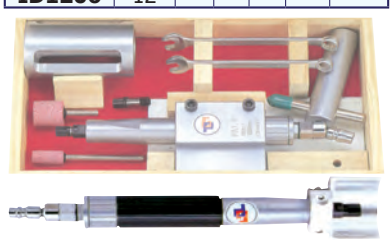
INNER HOLE DIAMOND MILLS ID

Diamond mills produced with electrolysis spraying method of diamond power make precision measure completion and surface finishing process inside holes. It is for polishing and levelling at (Ejector Sleeve etc.) works or all hard steel hole works, glass / ceramic / mould surfaces or inside of holes.



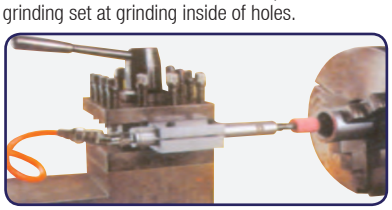
Inner Hole Polishing Diamond Mill

Order	D Ø	d1 Ø	k	L	L1 mm	Sand Grit
ID103	1.0	3	5	45	8	200
ID153	1.5				8	# 150
ID203	2.0				12	
ID253	2.5				15	
ID303	3.0					
ID403	4.0					
ID406	4.0	6	10	80	22	# 100
ID506	5.0					
ID606	6.0					
ID806	8.0					
ID1006	10					
ID1206	12					



HOLE Grinding PNEUMATIC KIT GP

Lathe workbench connected air fed precision grinding set at grinding inside of holes.



Standard Set Accessories / Kits

Order No : GP 8244 L (As per request, air inserts)

* 1 Piece Hole Grinding Machine (30.000 RPM)
* 2 Piece Hold Pliers : Ø 3 and 6 mm
* 4 Piece Hole Grinding Mounted Points
* Equipment mounting of machine to the bench
* Wrench Set for mounting
* Protective cover for machine - 1/4" Coupling

Steel Grinding WHEEL EKR

In cylindrical or Surface Grinding Machine:
All grinding processes, in fact, are surface grinding as well as with "surface grinding" term refers to grinding processes of flat surfaces. It is possible to collect surface grinding into three groups according to machine types.
1- Flat Wheel : They are used at vertical shaft, intermittent base surface grinding machines.
2- Flat Wheel : They are used at vertical shaft, rotary base surface grinding machines.
3- Cylinder -Dish and Ring Wheels : They are used at horizontal shaft surface grinding machines.

Flat Type.1
Rotating Speed: 35 m /s

For special size and quality demands, pls. call our company...

Flat Type Steel Grinding WHEELS

Order Specify Colour	Dimension Dia.xThicknessxHole	Sand
EKR.1752032	175 x 20 x 32	
EKR.1752051	175 x 20 x 51	
EKR.2000820	200 x 8 x 20	
EKR.2004016	200 x 40 x 16	
EKR.2002020	200 x 20 x 20	
EKR.2002032	200 x 20 x 32	
EKR.2002051	200 x 20 x 51	# 36 K6V Coarse
EKR.2002520	200 x 25 x 20	
EKR.2002532	200 x 25 x 32	
EKR.2002551	200 x 25 x 51	
EKR.2502576	250 x 25 x 76.2	# 46 K6V Medium
EKR.2503076	250 x 30 x 76.2	
EKR.2504076	250 x 40 x 76.2	
EKR.3002076	300 x 20 x 76.2	
EKR.3002576	300 x 25 x 76.2	# 60 K6V Fine
EKR.3003076	300 x 30 x 76.2	
EKR.3004076	300 x 40 x 76.2	
EKR.30040127	300 x 40 x 127	
EKR.35040127	350 x 40 x 127	
EKR.35050127	350 x 50 x 127	
EKR.40040127	400 x 40 x 127	

EKR (Pink Colour): Hard/ Medium Steel Grade
EKW (White Colour): High Hard Steels
SCG (Green Colour): Carbide / High Steels
NK (Grey Colour): General Purpose All Kinds of Steels

Flat Type.1
Rotating Speed: 35 m /s

Steel WHETTING WHEELS EKR

It is used at general or special purpose machines or grinding motors for all whetting processes.

Order	Dimension Dia.xThicknessxHole	Sand
EKR10025	100 x 25 x 20	# 36 Coarse
EKR12520	125 x 20 x 20	
EKR15020	150 x 20 x 20	
EKR15025	150 x 25 x 20	# 46 Medium
EKR17520	175 x 20 x 20	
EKR17525	175 x 25 x 20	
EKR20020	200 x 20 x 20	# 60 Fine
EKR20025	200 x 25 x 20	

Flat Type.1
Rotating Speed: 35 m /s

Steel WHETTING WHEELS NK

General Purpose Whetting Stones, Aluminium oxide abrasive are ideal on all kinds of steel.

Order	Dimension Dia.xThicknessxHole	Sand
NK15020	150 x 20 x 20	# 36 Coarse
NK15025	150 x 25 x 20	
NK17520	175 x 20 x 20	# 46 Medium
NK17525	175 x 25 x 20	
NK20020	200 x 20 x 20	
NK20025	200 x 25 x 20	

Flat Type.1
Rotating Speed: 35 m /s

Steel WHETTING WHEELS SCG

Generally, they are used as fixed or with lathe. Especially, they are for hard steels or carbide materials. It is Green Silicon Carbide Abrasive Content.

Order	Dimension Dia.xThicknessxHole	Sand
SCG15020	150 x 20 x 20	# 80 J5V Fine
SCG15025	150 x 25 x 20	
SCG17520	175 x 20 x 20	
SCG17525	175 x 25 x 20	
SCG20020	200 x 20 x 20	
SCG20025	200 x 25 x 20	

Whetting / Grinding Motors

Workshop Type General Purpose Grinding / Whetting Works

Machine Technical Data	Order No : QSM-150 Grinder	Order No : QSM-175 Grinder	Order No : QSM-200 Grinder
Motor Power	450 W / 230 V - 50 Hz	450 W/230 V-50 Hz	450 W/230 V-50 Hz
Speed m /min.	2850 m /min.	2850 m /min.	2850 m /min.
Shaft/ Wheel Size	Ø 20 / 150 x 20 / 25	175 x 20 x 20	200 x 20 x 20
Machine Dimension	210 x 410 x 295 mm	220 x 420 x 300	245 x 450 x 330
Weight	12 Kg.	14 Kg.	16 Kg.

Polishing Motor

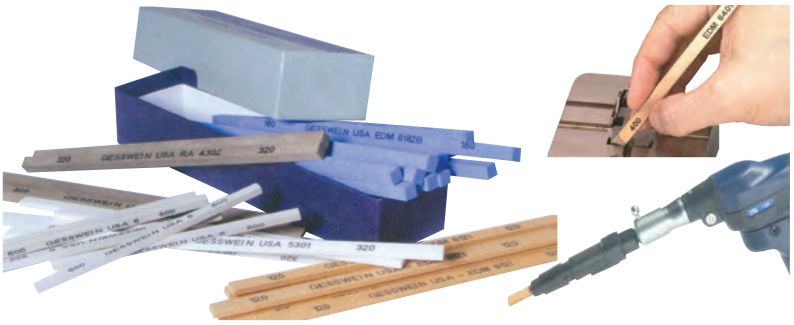
Machine Technical Data	Order No : PSM - 250 Polishing
Motor Power	1.5 kW /400 V - 50Hz
Speed m /min.	2850 m /min.
Shaft/ Felt Size	Ø 25 / 250 x 25 / 32
Machine Dimension	250 x 63 x 350 mm
Weight	23 Kg.

Whetting, Grinding Machine

Positioning Desk

Screwed Fixing Foot. 3 Rack Type Pool Top Section

Order **BKM.3**



Mould Polishing - Steel Surface Levelling POLISHING STONES EG

Surface Levelling - EDM (Electro Erosion) Polishing Stones are produced to make excellent levelling on coarse surfaces passing over hard shell on work piece surface. It takes the form of surface it works with by making fast cutting. Do not plunge in the corners, it works sensitively on figured surfaces, such polishing stones are suitable to work as manual or filing machine, sand rate/diversification, operation style and the selection of polishing stones according to the work piece surface and material position is important. Hard and complex, especially for deep areas, long size polishing stones can be selected, at flat and wide areas, short size polishing stones can be less fragile by avoiding skidding/ escaping. At handling, care to use holder. Different type holders at filing machines present extensive usage opportunity. For softer and clean polishing stone usage, you can use your polishing stones by steeping in low oil liquid (EDM Gas) etc. To use right graduation from coarse gas stone to fine one on application surface is important. Cleaning of operation area also has importance.

Polishing Stone Selection Table TYPE / DIMENSION / SAND / Operation Sequence

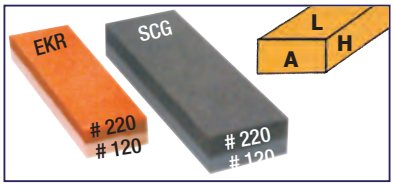
Type & Size Width x Length	Type & Size Width x Length	Type & Size Diameter x Length	Type & Size Width x Length	Sand	Process
Square	Rectangle	Round	Triangular	# 120	Levelling Process
4 x 4 x100	6 x 3 x150	Ø 6 x150	8 x 8 x150	# 150	
6 x 6 x150	13 x 3 x150	Ø 8 x150	10 x 10 x150	# 180	
8 x 8 x150	13 x 6 x150	Ø 10 x150	-	# 220	Pre Polishing
10 x 10 x150	-	Ø 12 x150	-	# 280	
				# 320	
				# 400	
				# 600	Last/Final Polishing
				# 800	
				# 1000	

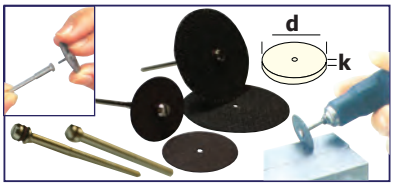
Order EG. TYPE / DIMENSION / SAND

Giving orders in specified form, especially Polishing Stone Related to General Use EDM (Erosion) Surface is suitable.

Polishing Stone Holders: Hand / Manual and Machine Holders

Product	Hand Run Holder				Machine Run Holder		Filing Machine Holder			
Capacity	6 x 3	13 x 3	4 - 6	8 - 10	13 x 3	13 x 6	AR 661	AR 667	AR 666	AR 662
Order	G.613		G.468		G.133					





Block COMBINE Polishing Stone BG

Large Surface Levelling and Chamfering /Deburring
SCG: Hard Steel / **EKR:** General Steel Work Pieces

Order	Measure / Dim. A x H x L
BG100	16 x 25 x 100
BG125	20 x 40 x 125
BG150	25 x 50 x 150
BG200	25 x 50 x 200

Cutting Disc Separate Stone KS

It is used in cutting processes of all metals including hard steel at rotary tool machines.

Order	Dimension d x k	Drill Chuck
KS25	25 x 0.65	Ø 2.35 mm
KS40	40 x 1.0	
KS60	60 x 1.5	Ø 3.0 mm

CERAMIC POLISHING STONE

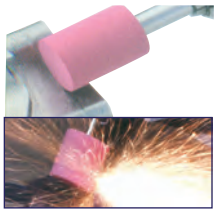
Ceramic polishing stones prepared by pressing with resin binder spraying screened, gauged micron diamond particles on powerful fiber textured ceramic, polishing stones have the feature of resistance with flexible structure against breakage, it is an excellent running in kit as levelling kit at precision end points, corners, also narrow channels and angular/ feather spaces, especially mould surface applications. According to traditional similar kits, it is resistance to fast abrasion in shorter period. It provides advantage with fine kits at precision scale.

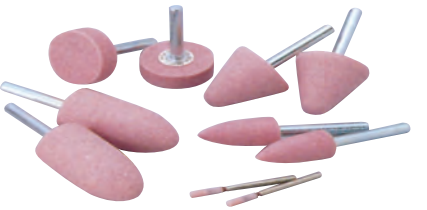
Selection Table :

Type / Sand		Thickness : 1 mm	Dia :3 mm
CSC	# 180		
CSO	# 250		
CSD	# 280		
CSN	# 360	Dimension	Dia
CSB	# 400	1 x 4 x100	Ø 3 x 100 mm
CSY	# 700	1 x 6 x100	
CSR	# 1200	1 x10x100	

Order TYPE/SANDxDIMENSION

SELECTION TABLE





Pink, Mounted Levelling Points — Shaft 3 mm

They are combine suitable to soft and hard surfaces. **Imported Product**
With formation of aluminium oxide textured and ceramic binder in fast metal removal feature, the levelling points provide the desired performance on all kinds of surfaces, after process, it can be ready for polishing by cleaning off stone traces on surface and form surface with mounted polishing rubbers. There should be at least 10 mm connecting length at clamping plier. Work should be soft without pressing.
Speed = Speed and Max.= 50 m / sec. Calculation : $n = \frac{V\ (m/s) \times 60.000}{D\ (mm) \times 3.14}$

Mounted points can be selected from table.

Type Form A / R Shaft 3 mm							
Order	256A	308A	410A	510A	612A	816A	1016A	813R
D x L	2.5 x 6	3 x 8	4 x 10	5 x 10	6 x 12	8 x 16	10 x 16	8 x 13

Type Form B / R Shaft 3 mm								
Order	30B	40B	50B	60B	80B	100B	120B	1224R
D x L	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	12x24

308T	310T	412T	710T	412J	616J	816J	1016J	609S
3 x 8	3 x 10	4 x 12	7 x 10	4 x 12	6 x 16	8 x 16	10 x 16	6 x 9

612P	815P	1018P	412K	515K	816K	132E	133E	162E
6 x 12	8 x 15	10 x18	4 x 12	5 x 15	8 x 16	13 x 2	13 x 3	16 x 2

MANNESMAN 12 Shank Stone

DEDECO Spiral Stone

Extra Quality - Dedeco Mounted Points / Sets

Order	Product
DST03	DEDECO / USA Hard Metal /Maroon
DST04	General / Soft Blue / White Stone
92560	12 Pcs. Spiral Mounted Point Set

Pink, Mounted Levelling Points — Shaft 6 mm

Type Form A Shaft 6 mm								
Order	1608A	2008A	2016A	2510A	2520A	3220A	4025A	5030A
D x L	16 x 8	20 x 8	20 x16	25 x10	25 x20	32 x20	40 x25	50 x30

Type Form B Shaft 6 mm								
Order	1015B	1620B	2020B	2030B	2040B	2525B	2532B	3240B
D x L	10 x15	16 x20	20 x20	20 x30	20 x40	25 x25	25 x32	32 x40

Type Form C / F Shaft 6 mm								
Order	2508C	3208C	4010C	1220D	2035D	0816F	1320F	2032F
D x L	25 x 8	32 x 8	40 x10	12 x20	20 x35	8 x 16	13 x20	20 x32

Type Form E Shaft 6 mm								
Order	0816E	1230E	1640E	2030E	2040E	2525E	2540E	3240E
D x L	8 x 16	12 x30	16 x40	20 x30	20 x40	25 x25	25 x40	32 x40

Type Form G / H J Shaft 6 mm								
Order	2016G	2520G	10H	15H	20H	1225J	1632J	2040J
D x L	20 X16	25 x20	Ø 10	Ø 15	Ø 20	12 x25	16 x32	20 x40

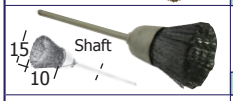
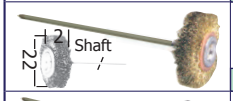
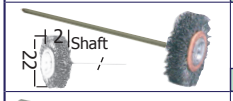
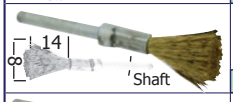
Perforated DISC STONES

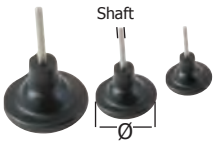
Due to being circular, mostly it is used at thread ranges, cutting set ends and mould/machine production.

Order	Product
DP 2516	Dia. 25 x 1.6 mm #80 Sand - Soft Stone
DP 2532	Dia. 25 x 3.2 mm #80 Sand - Soft Stone
VM23	Screwed Drill Chuck 2.35 or 3 mm

Metal WIRE, MOUNTED BRUSH

It solves injection residues, also it is very successful for cleaning deep burrs and EDM Erosion Traces (with 14 micron diamond paste) during polishing process. Pls. try it..!

	Conical Wire, Mounted Brush Yellow/ Brass Wire Shaft: 2.35 or 3 mm **Order : STF158**
	Conical Wire, Mounted Brush Yellow/ Brass Wire Shaft: 2.35 or 3 mm **Order : SMF158**
	Wire Disc, Mounted Brush Yellow/ Brass Wire Shaft: 2.35 or 3 mm **Order : STF222**
	Wire Disc, Mounted Brush Yellow/ Brass Wire Shaft: 2.35 or 3 mm **Order : SMF222**
	Pen, Wire Mounted Brush Inox / Metal Wire Shaft: 2.35 or 3 mm **Order : STF148**
	Pen, Wire Mounted Brush Inox / Metal Wire Shaft: 2.35 or 3 mm **Order : SMF148**



Adhesive Emery /Mounted Rubber

Angular grinder having adjustable speed makes levelling on larger surfaces and precision operations on contours thanks to flexibility of holder. **DZ**

Order	Ø Dia.	Emery	Rubber	Shaft
DZ 10	Ø 10		Ø 10	
DZ 18	Ø 18	# 080	Ø 18	
DZ 30	Ø 30	# 120	Ø 30	**3 mm**
DZ 45	Ø 45	# 220	Ø 45	
DZ 70	Ø 70	# 320	Ø 70	**6 mm**
DZ 80	Ø 80	# 400	Ø 80	
DZ 100	Ø 100		Ø 100	
DZ Set	5 + 5 Coarse / Fine Emery+ Holder			

* At order, pls. specify shaft measure and emery sand.

SPIRAL BAND Holder +Emery

SMALL SIZE SET PACKING **SHAFT 3 mm** ML

It is sold in cylindrical wound emery cloth and rubber holder package: 5 + 5 Thick / Thin Emery + Rubber Set. (10 Emery + Rubber)

SPIRAL BAND Set or As Unit

Set	Order	Rubber	Emery
5 Pieces Emery 120 Sand	**ML.04**	Ø 4	# 120
5 Pieces Emery 320 Sand	**ML.05**	Ø 5	# 320
	ML.06	Ø 6	# 400
1 Piece Rubber Holder	**ML.08**	Ø 8	# 600
	ML.10	Ø 10	# 1000

* As per request: Emery & Rubber are available as unit.

SPIRAL BAND Holder + Emery

LARGE SIZE PIECE **SHAFT 6 mm** SBL / Z

Cylindrical wound emery cloth and rubber holder, shaft 6 mm, for larger work pieces.

Order	Emery	Sand
SPZ.12	Ø 12 x 25	
SPZ.15	Ø 15 x 25	
SPZ.20	Ø 20 x 30	# 80
SPZ.25	Ø 25 x 30	# 120
SPZ.30	Ø 30 x 30	# 220
SPZ.40	Ø 40 x 30	
SPZ.50	Ø 50 x 30	
SPZ.60	Ø 60 x 35	

Order	Rubber	Shaft-Length
SPL.12	Ø 12	Ø 6 - 60
SPL.15	Ø 15	Ø 6 - 60
SPL.20	Ø 20	Ø 6 - 60
SPL.25	Ø 25	Ø 6 - 60
SPL.30	Ø 30	Ø 6 - 60
SPL.40	Ø 40	Ø 6 - 65
SPL.50	Ø 50	Ø 6 - 65
SPL.60	Ø 60	Ø 6 - 65

* As per request: Our production on emery (Fine sand) are available.

Mounted Polishing RUBBERS

Rubbered / Soft Type - Finish Polishing

Type Form RK Shaft 3 mm					
Order	**RK04**	**RK05**	**RK06**	**RK08**	**RK10**
D x L	4 x 13	5 x 15	6 x 17	8 x 20	10 x20

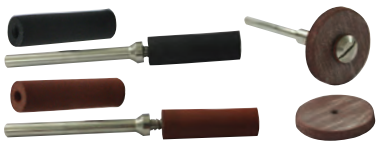
Type Form RB Shaft 6 mm					
Order	**RB15**	**RB20**	**RB25**	**RB30**	**RB35**
D x L	15 x25	20 x25	25 x25	30 x30	35 x35

Mounted Polishing RUBBERS

Ceramic / Hard Type - Leveling Polishing

Type Form CK Shaft 3 mm					
Order	**CK04**	**CK05**	**CK06**	**CK08**	**CK10**
D x L	4 x 13	5 x 15	6 x 17	8 x 20	10 x20

Type Form CB Shaft 6 mm					
Order	**CB15**	**CB20**	**CB25**	**CB30**	**CB35**
D x L	15 x25	20 x25	25 x25	30 x30	35 x35



Pen / Disc Polishing Rubbers

Pen Rubber	Order	Disc Rubber	Order
Red (General)	: KK06	Red (General)	: DK06
Black (Hard)	: KS06	Black (Hard)	: DS06
Threaded Drill Chuck : DM03		Screwed Drill Chuck : VM03	

Cylindrical, Mounted Polishing Felt Shaft 3 mm

It is used at last/ final polishing with diamond compounds. Also, it can be applied with other polishers. Even it is used at very high cycles, it does not burn. Double fired flet is **imported product.** In application, avoid Extreme High Pressure..! In polishing: Diamond Compound is used by thinning.

Type Form AB Shaft 3 mm	D L 3 mm							
Order	0408A	0509A	0610A	0810A	1014A	1220A	1520A	2020A
D x L	4 x8	5 x 9	6 x 10	8 x 10	10 x 14	12 x 20	15 x 20	20 x 20

Type Form AB Shaft 3 mm								
Order	0408C	0509C	0610C	0810C	1013C	1214C	1220A	1218H
D x L	4 x8	5 x 9	6 x 10	8 x 10	10 x 14	12 x 20	15 x 20	20 x 20

0410J	0512J	0616J	0817J	1014J	1020J	1220J	1225J	1218T
4 x 10	5 x 12	6 x 16	8 x 17	10 x 14	10 x 20	12 x 20	12 x 25	12 x 18

08B	10B	12B	18B	1014R	1225R	2505L	2207L	2210L
Ø 8	Ø 10	Ø 12	Ø 18	10 x 14	12 x25	25 x 5	22 x 7	22 x10

Presentation as 10 Felt - Holder Set

Adhesive, Pooled / Disc Felt / Mounted Rubber Holder

Order	Disc Felt	Hole
Y18D	Ø 18 x 4 mm	7 mm
Y30D	Ø 30 x 4 mm	12
Y45D	Ø 45 x 4 mm	18

Order	Shank Holder	Shaft
DZ18	Ø 18 Rubber	Ø 3 mm
DZ30	Ø 30 Rubber	
DZ45	Ø 45 Rubber	

Cylindrical, Mounted Polishing Felts Shaft 6 mm

It is used as paste with diamond compounds at last / final polishing.

Type Form AC Shaft 6 mm	D L 6 mm						
Order	1520A	2020A	2025A	2530A	3040A	14B	20B
D x L	15 x 20	20 x 20	20 x 25	25 x 30	30 x 40	Ø 14	Ø 20

Type Form AC Shaft 6 mm							
Order	2110E	3015E	4020E	5030E	1520C	2025C	2530C
D x L	25 x 10	30 x 15	40 x 20	50 x 30	15 x 20	20 x 25	25 x 30

Type Form AC Shaft 6 mm							
Order	1018K	1220K	1525K	2025K	2530K	1530H	1030G
D x L	10 x 18	12 x 20	15 x 25	20 x 25	25 x 30	15 x 30	10 x 30

Flat-Mounted Polishing Felt

Usage with machines Shaft 3 mm

Could polishing, by moisturizing with diamond compound.

Order No	Product Dimension	Shaft Shank
S06D	6 x 6 x 25 mm	Ø 3 mm
S10D	10 x 10 x 35 mm	
S12D	12 x 12 x 45 mm	

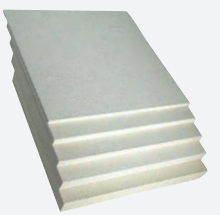
G.133

Manual Run, Rod Felt

Usage with machines, Square Felt

At machines: It is used with plastic holder equipment (G.133).

Order No	Product Dimension
E06K	6 x 6 x 150 mm
E10K	10 x 10 x 150 mm
E12K	12 x 12 x 150 mm



Polishing Felt Plate

Cutting at set or equipment applications

As per request: It can be adhered to your set by cutting.

Order No	Product Dimension
P325	6 x 250 x 250 mm
P625	10 x 250 x 250 mm
P1025	12 x 250 x 250 mm

Polishing Kits: Wood Lappings

It is suitable to polish with wood sets at narrow and radius areas of moulds, areas unsuitable to use polishing stones or ceramic stones and desired clear levelling / brightness without disturbing the surface. Also, it is suitable for levelling of erosion traces and rough lines on surfaces.

Hard, Mounted Wood

Order	Dimension	Type
AC 06	6 x 6 x150	Square
AC 10	10x10 x150	
AC 12	12x12x150	
AC 03	6 x 3 x 150	Rectangle
AC 13	13 x 6 x 150	
AC 20	20 x 8 x 150	
ACS 6	6 x 150	Round
ACS 8	8 x 150	

Bars, Wood Felts

Order	Dimension
ASK 06	Ø 6 x 15 Cylinder
ASK 10	Ø 10 x 20 Cylinder
ASK 15	Ø 15 x 25 Cylinder
ASK 20	Ø 20 x 30 Cylinder
ASK Ø 10	Ø 10 Sphere

Wood polishing kits especially rods are especially used at manual or machine applications, mounted wood kits are used at machine applications. During application, pls. use moisturizer.

"PLEXIGLASS" Polishing Kits

It bec omes a precision diamond diamond riffler at application on surfaces of and and long surface applications, work pieces, diamond narrow paths ,compound long surface, especially application with plexiglas at narrow rod, pls try it! In use by machines, G.133 Holder is used.

Order	Dimension	Type
PC 06	6 x 6 150 mm Plexsi Glas	Square
PC 08	8 x 8 x 6 mm Plexsi Glas	
PC 13	13 x 6 x 150 mm Plexsi Glas	Rectangle
PC 19	19 x 8 x 850 mm Plexsi Glas	

Hair, Mounted Brushes for Diamond Compound

Hair brushes faciliating polishing process and not requiring extra kits form excellent surfaces with fine micron diamond pastes at final polishing.

Mould Polishing, DIAMOND COMPOUNDS SDP

Quality Diamond Powder, is in well screened precision micron scale.

It is highly concentrated -vegetable oil and polisher chemical mixture.

Economical price presented - At box packaged as 20 gr. injector.

Hard material mould cleans chips including EDM Erosion Traces by removing at difficult areas from levelling process to surface preparation/ polishing process. During work, compound can flake/dry on surfaces, in this case, add oil and water based moisturizers (compound thinner SDS.200 gr.) 1-2 Drops

Order No	Micron Value	Diamond Composition	Packing		Usage Area
SDP.01	**0 / 1 µ**	#60.000	20 Gr.	As per request, in 40 Gr. Packing.	Final Polishing Finish Specular Gloss
SDP.02	**2 / 1 µ**	#14.000	20 Gr.		
SDP.03	**3 / 2 µ**	#8.000	20 Gr.		
SDP.05	**5 / 3 µ**	#4.000	20 Gr.		
SDP.07	**7 / 5 µ**	#3.000	20 Gr.		Pre Polishing Precision Gloss
SDP.10	**10 / 7 µ**	#1.700	20 Gr.		
SDP.14	**14 / 7 µ**	#1.500	20 Gr.		
SDP.20	**20 / 14 µ**	# 1.100	20 Gr.		
SDP.28	**28 / 20 µ**	#800	20 Gr.		Fast Lapping Surface Preparation
SDP.40	**40 / 28 µ**	#550	20 Gr.		
SDP.60	**60 / 40 µ**	#500	20 Gr.		

Application: It should be applied generally in applications with felt and it should be applied as straight lines with circular motions and through to end finish on large burrs at surface, during work, cleaning is very important and it absolutely should be done at every stage. Right sequence from coarse micron to fine micron should be followed. Polishing kits for each micron paste should be specified and should be used only at that micron, absolutely don't mix with other micron pastes. For cleaning and washing mould surface, (WINKEL 415218) Cleanser Spray Product is economical and provides facility. As surface protector, our new product WINPLAST is excellent as flexible surface coating.

Diamond Paste Moisturizer

In application with diamond paste: It is used as 1+2 drop thinner at turbid positions and provide penetration of paste on the surface. In application with polishing stones, use excessively. It is presented in 200 Gr. packing, (as per request) also 5 Kg. packing is available.

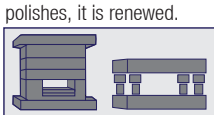
Order **SDS - 200**

Usage: Diamond Compound / Polishing Stones

MARPOL - Metal Polish / Cleaning Compound

Precision metal work pieces lose their gloss in time and can be oxidized. In this case, Marpol metal polish cleans surfaces and purifies from rust and dirts without disturbing surface sensitivity, is a very good dirt remover, it does not remove burrs and only cleans and polishes, it is renewed.

Order **MARPOL Metal Polish**



ULTRASONIC FILING MACHINE

Especially, much faster for polishing of tie piece and Side Surfaces: 22.000 vibration/cycle per second, right angle should be seized during usage. It is an advanced technological product realizing all difficult works with stroke forward / backward motions and ultrasonic and precision applications with its max. 45 Watt Outlet Power.

Pls try it...! **Order:** U-Lap 106 **Unit:** Control box - Levelling arm - Diamond Riffler and Polishing Stone Kit - Armboard - Adjustment Kits **Power Supply:** AC 220 **Ultrasonic Power:** 45W,2 Level **Stroke Power:** 10 - 35 um **Vibration:** 15 - 25 kHZ **Harmony:** Automatic, Feed - Back System **Machine Dimensions:** 152 x 100 x 72 mm

ELECTRONIC LEVELING - POLISHING

STRONG - 204 / Rotary Tool 50.000 m/m - 50 Hz - 220 V

With electronic cycle adjusted control unit, it starts with micro motor rotary tool at desired speed. It can work faster and serially with foot switch, desk-top precision works can be done with practical and powerful electronic machine.

Economic Presentation. Unit: Cycle Adjusted Control Box - Micro Motor Rotary Tool - 3 mm Pliers - Wrench Set - 2 Pieces Spare Coal. **Order :** Strong - 204

DRAMER MULTI SET

Order : DRAMER 627

50 Pieces Rotary Instrumented Unit

Easy With Easily Changed Drill Chuck System, High Speed and Speed Adjusted (10.000 - 37.000 mm) Powerful Motor - Light and Easy Use Spiral Lock and Spiral Hanger (3.2 mm) - Drill Chuck - 18 Cutting Disc - Engine Stand - Emery Stones - Cylindrical Emeries - Mounted Points - Polishing Felts - Wire Brushes - Mini Milling and Drilling Ends etc. **Professional Brand: DRAMER**

ELECTRICAL SPIRAL MOTOR

Economic and Modular for Leveling and Polishing

Cycle adjustments of our domestic products spiral whip used electrical motors are done serially and sensitively with pedal system, powerful motors provide facilities to users at levelling and polishing. Rotary Spiral Spring in Spiral Whip is only for sets to be used with 2.35 - 3 - 4 mm pliers. However, in some cases, 6 mm Pliers also can be used softly without pressing. To avoid rising heat at long uses, to wait at short intervals can be required. Repairing of Spiral Motor/ Speed Pedal and Spiral Whip spare parts, is in interest of our company. To provide continuance of work in uses, spare whip can be kept.

ELECTRICAL MOTOR

Order	Product
BM22A	25.000 d/d Power:**125**Watt
BM23A	25.000 d/d Power:**200**Watt
BM26A	25.000 d/d Power:**275**Watt
BM24A	22.000 d/d Power:**500**Watt

MONOPHASE 220 - 230 V SPEED PEDAL

Motor Hanger Screwed Connection

Adjustable Length-Rotary Arm-Modular

M18A	Motor Hanger

Speed Pedal and Cable Connections of Spiral Whipped Motors are presented in packing. To use motor stably, we recommended to use motor hanger.

MOTOR / SPEED PEDAL

In addition, spares are available. Cable system is included.

Order	Product
BM...W	Foot Switch

At order: Specify current motor watt.

SPIRAL WHIP WITH TOOL PIECE

Suitable To Use With Electrical Motors

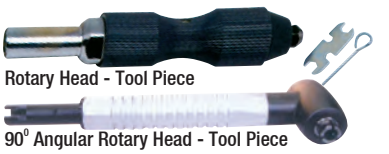
Spiral Whip front and rear rotary bearings are SKF Bearings, they work without balance and vibration. Repairing- spare parts- service is available at our company.

Order	Product
M19KK	Spiral Whip Length 965 cm
M19FTK	Ratchet Whip without Tool Piece
YP... Ø	Spare Pliers 2.35 - 3 - 4 - 6

ELECTRICAL FILING

Forward / Backward Motion: It is used with **0 - 6 mm** whip without tool piece.
Cycle: 10.000 cycle / min.
Holder Drill Chuck: 3.5 mm
Weight: 600 Gr.
Model: FPK - R Electrical Diprofil Branded Electrical Filing Machine is more powerful than similar models. It is provided to present 6.5 mm device connection opportunity.

DIPROFIL



ROTARY HEAD - TOOL PIECE

For Ratchet Type Whips without Tool Piece:
For 3 mm plier capacity / connection sets

Order	Product
M20KPT	Rotary Head - Tool Piece
DK 36	Rotary - 90⁰ Angular Tool Piece

CAMPAIGNED HOBBY SETS

Powerful 135 Watt Motor - 32.000 m/min Cycle Adjusted Leveling and Polishing Kits, 50 Piece Rotary Tool Set with Plastic Carrier Bag.

HOBBY LEVELLING / POLISHING SET

200 Pieces various drilling - cutting - whetting- grinding - polishing kits in wood box. **Products:** Mannesman / Germany branded.

Plier :2.35/3.0 Pneumatic, Precision-Rotary Machine

Standard Accessories

AG - 260: ROTARY SPIRAL
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AG-260	Mounted Point/Felt/Brush/Diamond Burr etc.		
Capacity	Speed m/m	Machine Dimensions	Weight
2.35 / 3	60.000	Ø 17 x 159 L	130 gr.

Plier : 3.0 mm Pneumatic, Precision-Rotary Machine

Standard Accessories

AG - 360: ROTARY SPIRAL
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AG-360	Mounted Point/Felt/Brush/Diamond Burr etc.		
Capacity	Speed m/m	Machine Dimensions	Weight
3.0 mm	60.000	Ø 20 x 160 L	140 gr.

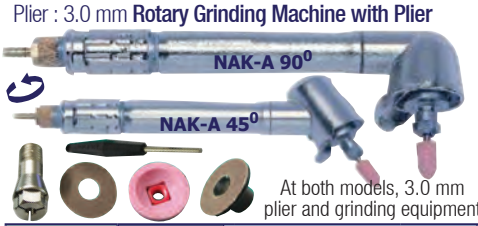
Plier : 3 / 6 Pneumatic, Precision-Rotary Machine

Standard Accessories

AG - 460: POWERFUL SPIRAL
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AG-460	Mounted Point/Felt/Brush/Diamond Burr etc.		
Capacity	Speed m/m	Machine Dimensions	Weight
3 - 6 mm	35.000	Ø 22 x 180 L	170 gr.

Plier : 3.0 mm Rotary Grinding Machine with Plier



At both models, 3.0 mm plier and grinding equipment

NAK-A 45⁰	NAK-A 90⁰	Mounted Point /Felt /Brush etc	
Capacity	Speed m/m	Machine Dimensions	Weight
3 / Ø 30	35.000 **NAK 45⁰** 18 x 160		190 gr.
3 / Ø 30	35.000 **NAK 90⁰** 18 x 155		185 gr.

PNEUMATIC, PRECISION-ANGULAR, AND FLAT GRINDING MACHINE

Standard Accessories

AG 45⁰ - AG 90⁰
At both models, Grinding Equipments

AG - 45⁰	AG - 90⁰	Grinding Stone /Emery Disc	
Capacity	Speed m/m	Machine Dimensions	Weight
Ø 30	23.500 **AG 45⁰** Ø 17 x 153		180 gr.
Ø 30	23.500 **AG 90⁰** Ø 17 x 140		170 gr.

SPARES

1 - 3 mm
Ceramic Stone Holder

Order	Set
AR - 664 1 mm AR - 665 3 mm Ceramic Polishing Stone Holder	AR - 030 AR - 070 SAR - 070 AR - 300 AR - 991 Optional

Dia. 3.0 mm
Ceramic Stone Holder

Order	Set
AR - 662 Circular Ceramic Stone Holder 3 x 100	AR - 030 AR - 070 SAR - 070 - - Optional

6.3 x 13 mm
Polishing Stone/ Felt Holder

Order	Set
AR - 666 6.3 x 13 AR - 667 3.2 x 13 Gas Stone Holder	AR - 030 AR - 070 AR - 300 SAR - 070 AR - 991 Optional

Grinding Wheel /Emery Disc

Order	Set
AGC -01 AGS -01 AGP -01 Ø 30 mm	NAK - A 45 NAK - A 90 AG - 45 AG - 90 Optional

Dia. 2.35 - 3 and 6 mm
Pneumatic Tool Holder Plier

Order	Set
AG - 672 Dia. 2.35 AG - 673 Dia. 3 mm AG - 676 Dia. 6 mm Plier	AG - 260 AG - 360 AG - 460 NAK 45⁰ NAK 90⁰ Optional

Stroke: 0.30 Precision Pneumatic Filing Machine

Standard Accessories

AR-030: SHORT STROKE
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AR-030	Ceramic Stone / Diamond Riffler/ Flat Felt		
Stroke	Speed m/m	Machine Dimensions	Weight
0.30 mm	40.000	Ø 28 x 200 L	200 gr.

Stroke: 0.70 Precision Pneumatic Filing Machine

Standard Accessories

AR-070: LONG STROKE
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AR-070	Ceramic Stone / Diamond Riffler/ Flat Felt		
Stroke	Speed m/m	Machine Dimensions	Weight
0.70 mm	35.000	Ø 28 x 200 L	200 gr.

Stroke: 3.0 Precision Pneumatic Filing Machine

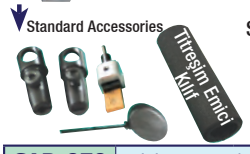
Standard Accessories

AR-300: EXTRA LONG STROKE
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AR-300	Polishing Stone/Ceramic Stone/Diamond Riffler		
Stroke	Speed m/m	Machine Dimensions	Weight
3.0 mm	10.000	Ø 23 x 200 L	250 gr.

Stroke: 7.0 Precision Pneumatic Filing Machine

Standard Accessories



SAR 070: VERTICAL MOTION
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

SAR-070	Polishing Stone/Ceramic Stone/Diamond Riffler		
Stroke	Speed m/m	Machine Dimensions	Weight
0.70 mm	15.000	Ø 18 x 180 L	250 gr.

Stroke: 0.6 Handle Type Precision Filing Machine

Standard Accessories

AR 991: HANDLE MODEL
Economic Priced Plastic Boxed Set at extra high speed, high torque - polishing, levelling works.

AR - 991	Polishing Stone/Ceramic S/ Diamond Riffler/Felt		
Stroke	Speed m/m	Machine Dimensions	Weight
0.60 mm	4500	Ø 30x140x206	660 gr.

Reliable Label

HARD METAL (DIAMOND) MILLS

Complete Hard Metal, 3 and 6 mm Moulder Type Levelling and Deburring Mills

Kits not polluting environment (Dusty Emery process etc.) is used at works such as large size (6 mm) tool levelling, precision points (opening runner etc.) inside of small size (3 mm) tool mould , also deburring processes.

While working : Cutting chip flow direction with protective cover is required, to avoid splashing of burr, face protector shield or protective glasses should be used.

Cutting kits : The length inside of plier should be kept moderately (Shaft should be 3/1)

Working Speeds : Should be according to processing experience and materials. At electrical or pneumatic rotary machines and generally deburring processes generally using hand power and rotary speed, mounting and use should be made carefully and should comply with the recommended speed. Our options compared to similar products, have longer life and more variety, creating usage advantages. In addition, kits are available for levelling of welding bent and welding place. (At circular channels and bevelling processes, smoothing of mouth of pipe, chamfering of mouth of pipes, propeller channel, EDM copper processes and so on.) At harder materials, slow speeds can reach to higher speeds for small complex processes, during usage continuous motion and light pressure can be applied. At application lower than required speed and pressing higher, abrasion can occur at the mouth of mill, very high temperatures should be prevented. (This case affects the connection solder of head.) "U" shaped mill kits, shaves as chips during cutting, it should be handled carefully.

Important Safety Instructions!!!

Wear ear protector !

Face Protector Shield should be used.

Wear non skid gloves.

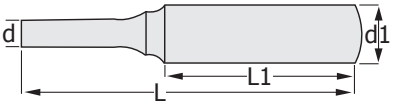
Definitely wear protective glasses.

Pls. comply with working speed instructions.

Note: To prevent choking of threads while processing quite difficult materials, using cutting oil, grease, gas oil and chalk is recommended.

Moulder Mill, Order Information:

Technical Drawing Example



Dimensioning information at the order table

As per request: Cutting Geometries

TYPE A **TYPE B** **TYPE C** **TYPE D**

Type A : With its cross cut geometry, it is ideal for high coarse metal removing at cast iron steel > 60 HRC, Stainless Steel, Nickel-Based Alloys and Titanium Alloys.

Type B : To obtain smooth surface and high coarse metal removing, it is suitable at cast iron steel > 60 HRC, Stainless Steel, Nickel-Based Alloys and Titanium Alloys.

Type C : It is suitable to use at coarse processing of light metals, plastics, non-Ferrous Metals, aluminium, intermediate grade steel and cast iron.

Type D : Precision Milling Attitude creates shorter chips. Thanks to excessive impact resistance, it has high contact angle. It is suitable to use coarse processes of cast iron steel > 55 HRC, Stainless Steel, Nickel-Based Alloys and Titanium Alloys with high metal removing.

Cutting Speed According to Material Groups

Material	Application	Cutting Speed
Steels up to 38 HRC. Without heat treatment	Coarse Processing Fine Processing	450-600 m/min. 500-600 m/min.
Steels up to 38 HRC. With heat treatment	Coarse Processing Fine Processing	250-300 m/min. 350-450 m/min.
Stainless, (Inox) Austenitic - Fernitic	Coarse Processing Fine Processing	250-350 m/min. 350-450 m/min.
Non-Ferrous Metals Aluminium, Brass	Coarse Processing Fine Processing	250-350 m/min. 350-450 m/min.
Cast Iron Heat Treated, Grey	Coarse Processing Fine Processing	450-600 m/min. 500-600 m/min.

Recommended Cutting Speed /Cycle (m /min.)

Tool Dia.	250	300	350	400	500
	Cycle (RPM)				
2 mm	40.000	48.000	56.000	64.000	80.000
3 mm	27.000	32.000	37.000	42.000	53.000
4 mm	20.000	24.000	28.000	32.000	40.000
6 mm	13.000	16.000	19.000	21.000	27.000
8 mm	10.000	12.000	14.000	16.000	20.000
10	8.000	10.000	11.000	13.000	16.000
12	7.000	8.000	9.000	11.000	13.000
16	5.000	6.000	7.000	8.000	10.000
20	4.000	5.000	6.000	6.000	8.000

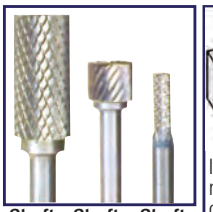
Application Examples:

It is for * Deburring * Contouring * Peripherical and face milling * Narrow angular surface milling * Milling for weld preparation * Milling of weld surface.

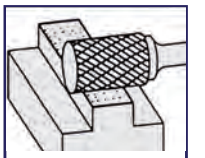
Advantages :

Provides high concentricity

* Smooth working performance.
* Delete chatter marks.
* Reduces tool/machine abrasion.
* Allows user to work more safely.
* Increases tool life and metal removing performances.



Shaft : 6 mm **Shaft : 4 mm** **Shaft : 3 mm**



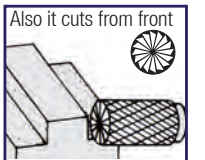
It removes impact resistant high burrs, creates high surface quality.

Tungsten, Diamond Carbide Mill

Cylindrical Mill According to Din 8033 Code : **SA**

Order	d	d1	L1	L	Type
SA.42(Type)	3	2.5	11	38	A
SA.43(Type)		3.0	14	38	
SA.14(Type)	6	5.0	16	50	B
SA.1 (Type)		6.0	16	50	C
SA.3 (Type)		9.5	19	63	D
SA.5 (Type)		12.7	25	69	

Shaft : 6 mm **Shaft : 6 mm** **Shaft : 3 mm**



Also it cuts from front

It removes burrs at side and inner surfaces, creates high surface quality.

Tungsten, Diamond Carbide Mill

Head Cutter Cylindrical Mill Code : **SB**

Order	d	d1	L1	L	Type
SB.42(Type)	3	2.5	11	38	A
SB.43(Type)		3.0	14	38	
SB.14(Type)	6	5.0	16	50	B
SB.1 (Type)		6.0	16	50	C
SB.3 (Type)		9.5	19	63	D
SB.5 (Type)		12.7	25	69	

Shaft : 6 mm **Shaft : 4 mm** **Shaft : 3 mm**

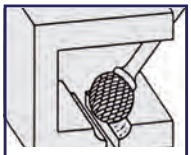
It removes burrs at side and inner surfaces, creates high surface quality.

Tungsten, Diamond Carbide Mill

Head Cutter Cylindrical Mill Code : **SC**

Order	d	d1	L1	L	Type
SC.42(Type)	3	3.0	14	38	A
SC.42ML2		3.0	14	50	
SC.14(Type)	6	5.0	16	50	B
SC.1 (Type)		6.0	16	50	C
SC.3 (Type)		9.5	19	63	D
SC.5 (Type)		12.7	25	69	

Shaft : 6 mm | Shaft : 4 mm | Shaft : 3 mm



It creates smooth surfaces, ball shaped combination for round ended surfaces.

Tungsten, Diamond Carbide Mill

Ball Shaped Carbide Mills Code : **SD**

Order	d	d1	L1	L	Type
SD.41 (Type)	3	2.5	2.3	38	A
SD.42 (Type)		3.0	2.5	38	
SD.14 (Type)	6	5.0	4.0	50	B
SD.1 (Type)		6.0	5.0	50	C
SD.2 (Type)		8.0	6.4	50	D
SD.3 (Type)		9.5	8.0	52	

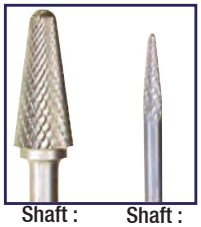
Shaft : 6 mm | Shaft : 3 mm

For improving narrow, long corners and at thin narrow/ threaded channels.

Tungsten, Diamond Carbide Mill

Conical Pointed End Mill Code : **SG**

Order	d	d1	L1	L	Type
SG.41 (Type)	3	3.0	6.0	38	A
SG.43 (Type)		3.0	9.5	38	
SG.1 (Type)	6	6.0	16	50	B
SG.2 (Type)		8	19	63	C
SG.5 (Type)		12.7	25	69	D
SG.6 (Type)		16	25	69	



Shaft : 6 mm | Shaft : 3 mm

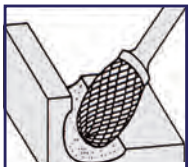
With hole chamfers, on surfaces of radius precision figures.

Tungsten, Diamond Carbide Mill

Flattened Ended, Wood Type Code : **SL**

Order	d	d1	L1	L	Type
SL.41 (Type)	3	3.0	9.5	38	A
SL.42 (Type)		3.0	12.7	38	
SL.1 (Type)	6	6.0	16	50	B
SL.2 (Type)		8	22	69	C
SL.4 (Type)		12.7	28	76	D
SL.6 (Type)		16	33	80	

Shaft : 6 mm | Shaft : 3 mm



Processing inside of round & pipe type holes and etc.

Tungsten, Diamond Carbide Mill

Flame Shaped Mill Code : **SE**

Order	d	d1	L1	L	Type
SE.41 (Type)	3	3.0	5.5	38	A
SE.41ML		3.0	5.5	50	
SE.1 (Type)	6	6.0	9.5	50	B
SE.3 (Type)		9.5	16	60	C
SE.5 (Type)		12.7	22	66	D
SE.6 (Type)		16	25	69	

Shaft : 6 mm | Shaft : 3 mm

Processing bottom spaces of oval shaped figures and at round surfaces.

Tungsten, Diamond Carbide Mill

Oval Shaped Mill Code : **SH**

Order	d	d1	L1	L	Type
SH.41 (Type)	3	3.0	6.3	38	A
SH.41ML		3.0	6.3	50	
SH.1 (Type)	6	6.0	9.5	50	B
SH.2 (Type)		8.0	19	63	C
SH.5 (Type)		12.7	32	76	D
SH.6 (Type)		16	36	80	

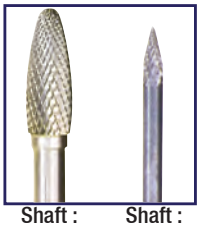
Shaft : 6 mm | Shaft : 3 mm

Reverse conical type to work at hard-to-reach rear sides surfaces.

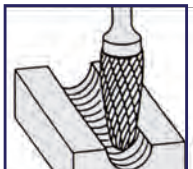
Tungsten, Diamond Carbide Mill

Head Cutting, Reverse Conical Mill Code : **SN**

Order	d	d1	L1	L	Type
SN.41 (Type)	3	2.5	3.0	38	A
SN.51 (Type)		6.3	6.0	44	
SN.1 (Type)	6	6.0	8.0	50	B
SN.4 (Type)		12.7	12.7	57	C
SN.6 (Type)		16	19	63	D
SN.7 (Type)		19	16	60	



Shaft : 6 mm | Shaft : 3 mm



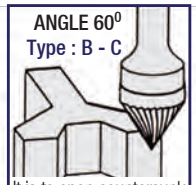
Processing of corners, bottom of round figures and surfaces

Tungsten, Diamond Carbide Mill

Radius End, Conical Carbide Mill Code : **SF**

Order	d	d1	L1	L	Type
SF.41 (Type)	3	3.0	6.0	38	A
SF.42 (Type)		3.0	12.7	38	
SF.1 (Type)	6	6.0	16	50	B
SF.3 (Type)		9.5	19	63	C
SF.4 (Type)		11	25	69	D
SF.6 (Type)		16	25	69	

Shaft : 6 mm | Shaft : 3 mm



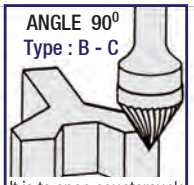
It is to open countersunk and to chamfer with specific end angles.

Tungsten, Diamond Carbide Mill

ANGLE 60⁰ Conical Moulder Type Mill Code :**SJ**

Order	d	d1	L1	L	Type
SJ.42 (Type)	3	3.0	2.5	38	A
SJ.1 (Type)	6	6.0	4.0	50	
SJ.3 (Type)		9.5	8.0	55	B
SJ.5 (Type)		12.7	11	58	C
SJ.6 (Type)		16	14.5	61	D
SJ.7 (Type)		19	17.5	65	

Shaft : 6 mm | Shaft : 3 mm



It is to open countersunk and to chamfer with specific end angles.

Tungsten, Diamond Carbide Mill

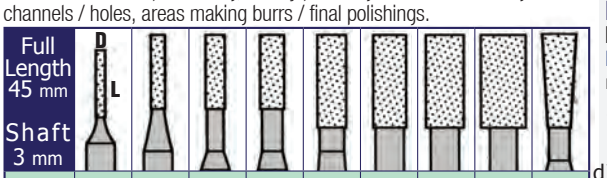
ANGLE 60⁰ Conical Moulder Type Mill Code :**SK**

Order	d	d1	L1	L	Type
SK.42 (Type)	3	3.0	1.5	38	A
SK.1 (Type)	6	6.0	3.0	50	B
SK.3 (Type)		9.5	4.7	52	C
SK.6 (Type)		16	8	57	D

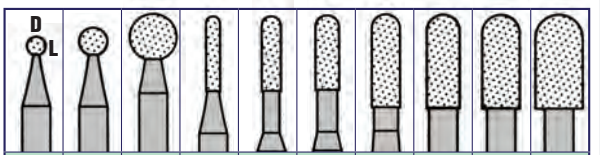
DIAMOND / CBN MILLS WITH Electrolysis Connector

Sharp, Super Hard Abrasive Mould Parts, Maximum Cutting

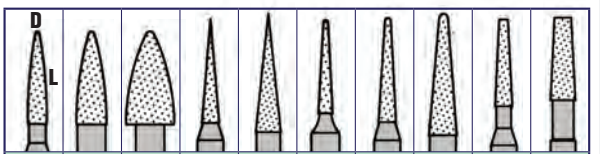
These abrasive particles created with well screened diamond and electrolysis connector come outside from connector by leaving wide chip spaces that prevents the rise of kits even at high metal removing ranges. It is used at mould processing, mostly polishing runners or levelling other channels / holes, areas making burrs / final polishings.



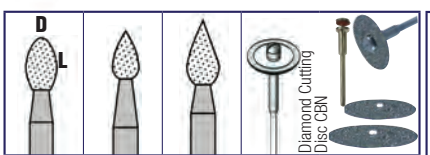
Order	10A	15A	20A	25A	30A	35A	40A	50A	30V
D x L	1x8	1.5x8	2x8	2.5x8	3x10	3.5x10	4x10	5x10	3x10



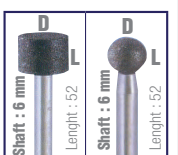
20B	30B	50B	15C	20C	25C	30C	35C	40C	50C
Ø 2	Ø 3	Ø 5	1.5x8	2 x 8	2.5x8	3x10	3.5x10	4x10	5x10



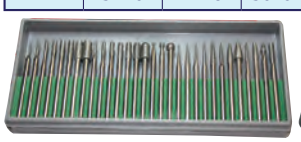
20F	30F	50F	20P	30P	15R	20R	30R	20T	30T
2x10	3x10	5x10	2x12	3x15	1.5x10	2x12	3x14	2x10	3x10



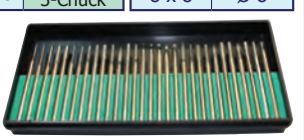
40Q	30S	40S	30D	Ø 18 Disc Ø 25 Disc 3-Chuck
4 x 7	3 x 6	4 x 8	30x0.5	



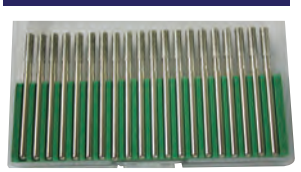
886L	86L
8 x 8	Ø 8



BMS 30 30 Pcs. Diamond CBN Set

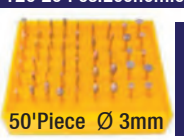


T30 30 Pcs. Economic CBN Set



BMS 30 20 Pcs. Diamond CBN Set

T20 20 Pcs.Economic CBN Set



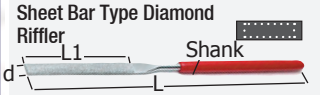
C280-300
13739
Economic
CBN Set

Diamond, Precision Riffler

In Tool Making Applications

Economic Riffles using with hand at mechanics requiring general sensitivity

Sheet Bar Type Diamond Riffler



Order	Shank	d x L1 x L
ELE-140	Ø4	5x 70 x140
ELE-160	Ø5	8x 50 x160
ELE-200	5.5	8x 70 x200

Half Round Diamond Riffler

Order	Shank	d x L1 x L
EYY-140	Ø4	5x 70 x140
EYY-160	Ø5	7x 50 x160
EYY-200	5.5	8x 70 x200

Round Diamond Riffler

Order	Shank	d x L1 x L
EYE-140	Ø4	Ø3x 70 x140
EYE-160	Ø5	Ø4x 50 x160
EYE-200	5.5	Ø4x 70 x200

Square Diamond Riffler

Order	Shank	d x L1 x L
DEE-140	Ø4	3.0x 70 x140
DEE-160	Ø5	3.6x 50 x160
DEE-200	5.5	3.6x 70 x200

Triangle Diamond Riffler

Order	Shank	d x L1 x L
UEE-140	Ø4	3.7x 70 x140
UEE-160	Ø5	5.0x 50 x160
UEE-200	5.5	5.0x 70 x200

Riffler Cleaning Brushes

Soft, Lined Brass Wired

Order	Products
1737	Beta File Brush
1738	4 Row Soft Brush
1739	Metal Hard Brush

Sheet Bar /Feather Diamond File

10 Pcs. Different Sandy Series

Order : TPF 10E

Retta Diamond Riffler Set

6 Pcs. Different Types, Standard Serie

Order : RKE 1005

Economic Diamond File Set

10 Pcs. Different Types, Standard Serie

Order : C 270 - 13710

Economic Diamond File Set

10 Pcs. Different Types, Thick and Long Serie

Order : C 270 - 13711

Economic Diamond Riffler Set

6 Pcs.Different Types, Files

One Sided	C 270 - 13726
Double Sided	C 270 - 13727

THICK TYPE DIAMOND RIFFLER

Sheet Bar Feathered/ Conical - Wide

In Tool Making Applications with Hand

a

3 Different Dimensional Model

b b Sand : # 100

Thick, Forging Shank-Non Skid, PVC Coated

Order	a	b (Angular)	Length
CF-503	6.1	0.60-2.40	L1 60 mm L 180 mm
CF-502	8.2	0.60-2.40	
CF-501	10.2	0.70-2.60	

THICK TYPE DIAMOND RIFFLER

Round - Wide Model, Hand Type

Thick, Forging Shank

Order	Shank	Dimension
IF 503	5 x 5	End Dia. :5.2 Length: 80 x 215

Half Round - Wide Model

Thick, Forging Shank

Order	Shank	Dimension
IF 502	11 x4	End : 9 x 4 Length: 80 x 215

Hand / Sheet Bar - Wide Model

Thick, Forging Shank

Order	Shank	Dimension
IF 501	11 x4	End : 11 x 4 Length: 80 x 215

Triangle - Wide Model, Hand Type

Thick, Forging Shank

Order	Shank	Dimension
IF 505	11 x4	End : 8 x 8 Length: 80 x 215

Square- Wide Model, Hand Type

Thick, Forging Shank

Order	Shank	Dimension
IF 504	6 x 6	End : 6 x 6 Length: 80 x 215

THICK & SHANK, Fitter

Type, Small Model Diamond Riffler

Ergonomic Shank

Order	Length	Width-Thickness
HX 4	100 4"	12.2 x 3.5 mm

Fitter Type, Large Model Riffler

Ergonomic Shank

Order	Length	Width-Thickness
HX 10	250 10"	18.5 x 4.5 mm

LARGE TYPE - DIAMOND FILE SET

5 P. Different Type Sheet Bar / Feather

Set Content: Sand : # 100 / # 200

Length: 180 - **Filing:** 70 - **Width:** 2.8 mm

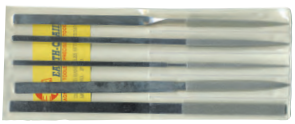
Length: 180 - **Filing:** 60 - **Width:** 2.5 mm

Length: 180 - **Filing:** 60 - **Width:** 2.5 mm

Length: 180 - **Filing:** 50 - **Width:** 2.0 mm

Length: 180 - **Filing:** 50 - **Width:** 2.2 mm

Order : CF 50



LARGE TYPE - DIAMOND FILE SET

5 P. Thick Type Sheet Bar, Forging Shank

Set Content: Sand : # 100

Length: 215 - **Filing:** 80 - **Width:** 5.2 mm

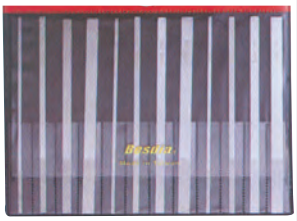
Length: 215 - **Filing:** 80 - **Width:** 9.0 mm

Length: 215 - **Filing:** 80 - **Width:** 11 mm

Length: 215 - **Filing:** 80 - **Width:** 8.0 mm

Length: 180 - **Filing:** 50 - **Width:** 2.2 mm

Order : IF 50



SHEET BAR / ANGULAR DIAMOND FILE SET

12' P. Large- Different Sand / Size

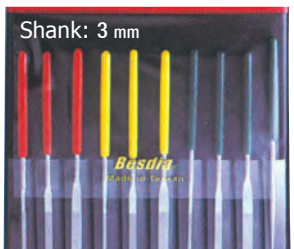
Set Content : Sand : # 150 # 200 # 400

12 Pcs. Sheet Bar

Angle Conical

4 Pcs. # 150 + **4 Pcs.** # 200 + **4 Pcs.** # 400

Order : CF 400



SHEET BAR / ANGLE - PVC SHANK, SET

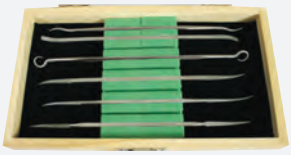
10 Pcs. - Shank 3 - Different Sand / Size

Red : # 200 Sand

Yellow : # 400 Sand

Green : # 600 Sand

Order : PTF 100



CURVED- DIAMOND FILE SET

6 Different Model Moulder Type

Oval, Sheet Bar, Hooked, Square, Triangle, Round

Order : BF 800

MOULDER TYPE, DIAMOND RIFFLER

7 Precision Different Model 10 Pieces

Sheet Bar Type : # 200 Sand 4 x 180 mm

Half Round : # 200 Sand 4 x 180 mm

Round Type : # 200 Sand 4 x 180 mm

Square Type : # 200 Sand 4 x 180 mm

Triangle Type : # 200 Sand 4 x 180 mm

Oval Type : # 200 Sand 4 x 180 mm

Sheet Bar : # 400 Sand 4 x 180 mm

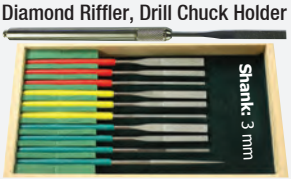
Sheet Bar : # 600 Sand 4 x 180 mm

Round : # 400 Sand 4 x 180 mm

Ladder Sheet Bar : # 200 Sand 4 x 180 mm

Order : PFL 100

Diamond Riffler, Drill Chuck Holder



MOULDER TYPE, DIAMOND RIFFLER SET

4 Different Model,10 Pieces -With Holder

Sheet Bar: 6 / 4 / 2 x 0.5 x130 mm # **200 Sand**

Sheet Bar: 6 / 4 / 2 x 0.5 x130 mm # **400 Sand**

Sheet Bar: 6 / 4 / 2 x 0.5 x130 mm # **600 Sand**

Round: 0.6 x 130 mm **# 600 Sand**

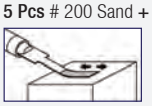
Order : PTF - 10T

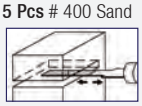
Diamond Riffler Drill Chuck Holder

FLEXIBLE SHEET BAR DIAMOND RIFFLER SET

With Manual Holder or Machine

5 Pcs # 200 Sand + **5 Pcs** # 400 Sand





Order : FAS - 400

MACHINE; DIAMOND FILE SET

12 Pieces Sheet Bar Different Sand/Size

Shank: 3 mm

Angular / Conical Sheet Bar: Sand Fineness:

6 x 0.5 x 73 mm : 3 Pieces # 200 -400 -600

3.3 x 0.5 x 73 mm : 3 Pieces # 200 -400 -600

6 x 0.5 x 56 mm : 3 Pieces # 200 -400 -600

3.3 x 0.5 x 56 mm : 3 Pieces # 200 -400 -600

Order : MTF - 100

Four Sided Filing

MACHINE; DIAMOND RIFFLER SET

5 Pieces Different Size 3 mm Shank

Sheet Bar, Oval, Half Round, Square, Round

Shank: 3 mm

Length: 90 mm

Order : MPF - 10

Four Sided Filing

CURVED, MACHINE DIAMOND RIFFLER SET

5 Pieces Different Size 3 mm Shank

Sheet Bar, Triangle, Half Round, Square, Round

Shank: 3 mm

Length: 85 mm

Order : MBF - 60

BLOCK ABRASIVE CLEANER

Levelling - Polishing - Whetting on Surfaces by Removing Fine Chips

Block Size: 50 x 20 x 80 mm

Red : 36 Sand

Blue : 60 Sand

Black : 120 Sand

Brown : 240 Sand

Flex/Elastic Polishing Rubber Super Eraser

Order : KS... Sand

PRECISION NEEDLE RIFFLERS

In Tool Making Applications

It is ideal to work at smallest surfaces, volumes, profiles and angles, thanks to forging privana, can be used with or without shank.

Sheet Bar Type Needle File

Order	Shank	a x b	L	Processing
SLE 140	Ø	5.5 x 1.35	140	4 Side Operation
SLE 160	3	6.2 x 1.45	160	

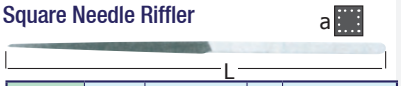
Half Round Needle Riffler

Order	Shank	a x b	L	Processing
SYY 140	Ø	5.0 x 1.75	140	3 Side Operation
SYY 160	3	5.5 x 2.0	160	

Round Needle Riffler

Order	Shank	a(Conical)	L	Processing
SYE 140	Ø	1.1 x 2.8	140	All Side Operation
SYE 160	3	1.2 x 3.0	160	

Square Needle Riffler



Order	Shank	a(Conical)	L	Processing
SKE 140	Ø	1.3 x 2.5	140	4 Side Operation
SKE 160	3	1.4 x 2.7	160	

Triangle Needle Riffler

Order	Shank	a(Conical)	L	Processing
SUE 140	Ø	1.0 x 3.2	140	3 Side Operation
SUE 160	3	1.3 x 3.4	160	

File Cleaning Brush

Order	Product	Model
1737	Beta Riffler Brush	Soft
1738	4 Row Soft Brush	Brass Wire
1739	Metal Hard Brush	In line

LATHE FILES - Fitter Rifflers

Rectangular Riffler, Pirivana, 2 Side Cutting

Opposite direction of front and rear side cutting (Single) increases safety by forcing file to keep away from lathe chuck during lathe works.

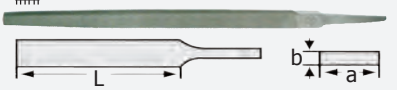
Fine Thread: Precision Filing Turned Parts, Two Side Cutting, Two Side Non Cutting

Lathe Rifflers / Shaft Rifflers **Eye-San Brand**

Order	Size	Tooth	a	b	L
MTE 100	4"	Coarse Medium Fine, as per request	10	2.5	100
MTE 150	6"		16	3.0	150
MTE 200	8"		20	4.0	200
MTE 250	10"		25	5.0	250
MTE 300	12"		30	6.5	300

SQUARE Type - Fitter Rifflers

Square Rifflers, Pirivana, 3 Side Cutting



Coarse Tooth: Square file, conical, pirivana, four sided cutting

Medium Tooth: Filing of square shapes, deburring

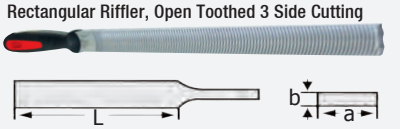
Fine Tooth: Precision filing, pre touch smoothing,

(Pls. specify thread at order) **Eye-San Brand**

Order	Size	Tooth	a	b	L
KTE 100	4"	Coarse Medium Fine as per request	6.3	4.0	100
KTE 150	6"		11	6.0	150
KTE 200	8"		14	8.0	200
KTE 250	10"		17	10	250
KTE 300	12"		20	12	300

Shank, Sheet Bar - ALUMINIUM RIFFLERS

Rectangular Riffler, Open Toothed 3 Side Cutting



Order	Size	Tooth	a	b	L
ALE 250	10"	Coarse	25	6.0	250
ALE 300	12"		30	6.5	300

ESD ESY Needle Riffler

PLASTIC - PLUG IN RIFFLER SHANKS

Ergonomic - Ideal Coating - Hard / Stable

Ergonomic - Ideal Coating - Hard / Stable Protects hands from sharp edges and corners, angular ring is prevented sliding of files. Make selection according to the file type and size.

Order	Type	Model	File Size
ESY 4 / 6			4" 6" 8" 10" 12"
ESY 08			
ESD 10			
ESD 12			
Needle Riffler	Ø	All Model Needle Rifflers	

SHEET BAR / HAND Type - Fitter Rifflers

Rectangular File, Pirivana, 3 Side Cutting

Coarse Tooth: Metal Removing, Deburring

Medium Tooth: General Surface Processing, Leveling

Fine Tooth: Precision Filing, pre touch smoothing

Sheet Bar (Pls. specify tooth at order) **Eye-San Brand**

Order	Size	Tooth	a	b	L
LHE 100	4"	Coarse Medium Fine as per request	10	2.5	100
LHE 150	6"		16	4.0	150
LHE 200	8"		20	5.0	200
LHE 250	10"		25	6.5	250
LHE 300	12"		30	7.0	300

HALF ROUND - Fitter Files

Herring bone riffler, Pirivana, 3 Side Cutting

Coarse Thread: Metal Removing, Deburring

Medium Thread: General Surface Processing, Circular Leveling

Fine Thread: Precision Filing, pre touch smoothing

H.Round (Pls. specify tooth at order) **Eye-San Brand**

Order	Size	Tooth	a	b	L
YYE 100	4"	Coarse Medium Fine, as per request	10	3.3	100
YYE 150	6"		16	5.0	150
YYE 200	8"		20	6.0	200
YYE 250	10"		25	7.0	250
YYE 300	12"		30	9.0	300

ROUND Type - Fitter Files

Round Type, Pirivana, 3 Side Cutting

Coarse Thread: Levelling inner radius, deburring

Medium Thread: General Surface Processing, Circular Leveling

Fine Thread: Precision Filing, pre touch smoothing

Round (Pls. specify tooth at order) **Eye-San Brand**

Order	Size	Tooth	a	b	L
YTE 100	4"	Coarse	Ø 4	4.0	100
YTE 150	6"	Medium	Ø 6	6.3	150
YTE 200	8"	Fine	Ø 8	8.0	200
YTE 250	10"	as per,	Ø10	10	250
YTE 300	12"	request	Ø12	13	300

TRIANGLE Type - Fitter Rifflers

Triangle Type, Pirivana, 3 Side Cutting

Coarse Tooth: Metal Removing, Deburring

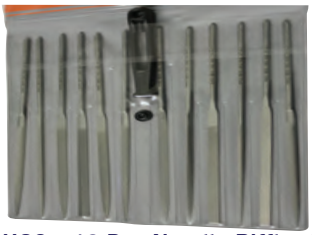
Medium Tooth: General Surface Processing, Leveling

Fine Tooth: Precision Filing, pre touch smoothing

Sheet Bar (Pls. specify tooth at order) **Eye-San Brand**

Order	Size	Tooth	a	b	L
UTE 100	4"	Coarse	Ø 4	4.0	100
UTE 150	6"	Medium	Ø 6	6.3	150
UTE 200	8"	Fine,	Ø 8	8.0	200
UTE 250	10"	as per	Ø10	10	250
UTE 300	12"	request	Ø12	13	300

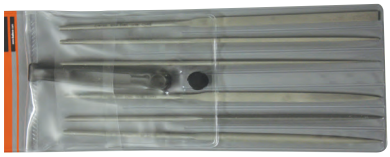
NEEDLE RIFFLER SETS



BAHCO - 12 Pcs Needle Riffler Set

12 Different Types 3 x 160 Needle Rifflers

Order : **BSE 12 -**12 Pcs. Needle Riffles

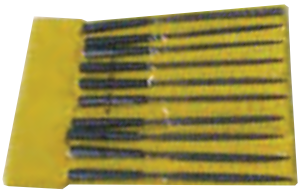


Triangle Round Square Sheet Bar H. Round

BAHCO - 6 Pcs. Needle Riffler Set

6 Different Types 3 x 160 Fitter Rifflers

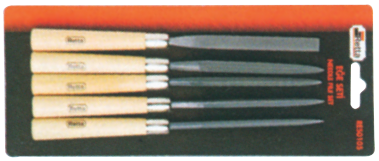
Order : **BSE 06 -** 12 Pcs. Needle Riffler



NEEDLE RIFFLER SET - 10 Pcs. Set

10Pcs. 3 x 140 Needle Riffler Different Model Presented

Order : **SE10** 10 Pcs. Needle Riffler



WOOD SHANK -5 Pics. NEEDLE RIFFLER SET

Triangle Round Square Sheet Bar H. Round

4 x 160 Different Type Needle Riffler 5 Pcs.

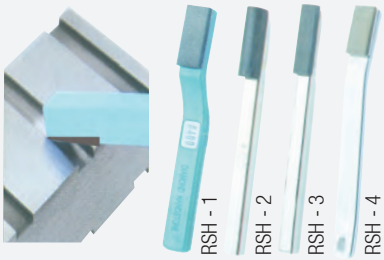
Order : **RESO 105**

Sheet Bar - Round - Square H. Round - Triangle - Knife Type

BETA / 6 Pcs. Needle Riffler Set

Professional, High Quality Riffler Set

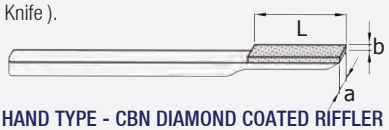
Order : **1720 B**



HAND TYPE-CBN DIAMOND COATED RIFFLER

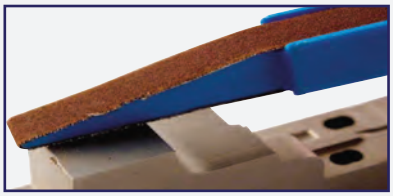
Levelling - Polishing - Whetting

CBN Binding Diamond Powder Loaded Equipment are used to obtain and polish precision smooth surfaces from burr lines and other surface defects without irritating. With non abrasive surfaces of tool, long working life it provides clean and smooth final surface. It is for more harder / heat treated work pieces. In addition; it is excellent for whetting of cutting tools (Scissor / Knife).



HAND TYPE - CBN DIAMOND COATED RIFFLER

Order	a x b x L	Sand	Holder
RSH 1	10 x 2 x 40	#200	Pls. Shank
RSH 2	5 x 2 x 40	#400	Steel Shank
RSH 3	5 x R2.5 x 40	#800	Steel Shank
RSH 4	10 x 2 x 30	#1200	Al. Shank



PEN TYPE - EMERY EQUIPMENT

Pratic, Manual Use - All Purpose, Economic

It is wedge shaped and from plastic layer based flexible plastic material, it provides opportunity to use each places of emery by pressing tension spring and turning emery belt. In addition; grinding belt,

Coarse Sand : # 180 and **Fine Sand :** # 320 can be purchased containing 10 pieces.

Holder Length : 310 mm **End :** 7 mm

Economic Product : It is suitable to use at areas that are hard to reach, with multi purpose usage area at hard works, it is most suitable equipment to use instead of file.

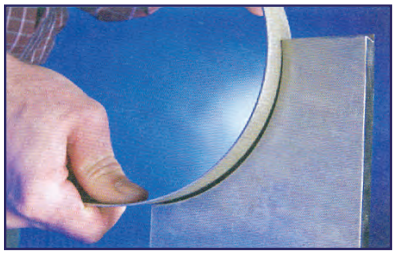
Kit: Alt ticks all the boxes at your workshops / home, car / boats.

Spring-Pls. Pen Equipment with Holding Emery

Order : **KZ 310**

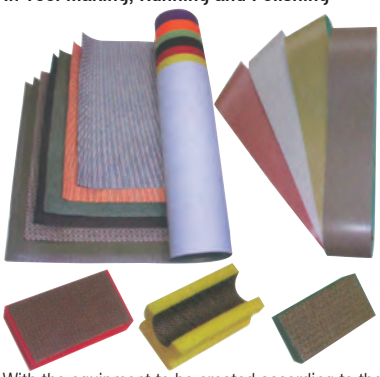
Spare Strip Emery 10 Pcs. Packing

Order : **ZK 155**



CBN DIAMOND COATED STRIP

In Tool Making, Running and Polishing



With the equipment to be created according to the work piece form that will be leveled or polished, a running in kit can be done by adhering on tool or using Double Sided Adhesive Band. They are flexible plates that are saturated with intense diamond powder CBN system on flexible cloth. For polishing and running in, it is most economical and new product.

It is possible to use with equipment by cutting plates with scissors in desired size as per request . Especially it is created very good surface brightness and leveling on hard and watery steel. The application can be done on sheet plate by using self adhesive tape or can be worked in tape belt shape. In addition; emery equipment can be created by adhering on pad / wedge.

CBN DIAMOND COATED STRIPS

Sand Number	Colour Code	Metal Tie	Order 50x100	Order 100x100
# 120	Black	Nickel	512N	112X
# 200	Red	Nickel	520N	120X
# 400	Yellow	Nickel	540N	140X
# 600	White	Nickel	560N	160X
# 1000	Blue	Nickel	5100N	1100X
# 500	White	Resiny	550R	150R
# 1000	Blue	Resiny	5100R	1100R

Order Example :

50 x 100 mm Metal / Nickel Binding # 400 Sand (Yellow) Cloth Band CBN Diamond Strip

Order Code : 540 N **or**

100 x 100 mm Resin Binding, Clothed #1000 Sand (Blue) Cloth Band CBN Diamond Strip

Order Code: 1100 R

Conical Cartridge ROLL EMERY SET

It is created from spiral wrap abrasives

During grinding, tool is kept in its place with grooved conical holder. It is ideal for grinding at limited and narrow areas. When the outermost coated abrasive is worn down, non worn abrasive found in lower layers appears. With 3 mm special holder for tool replacement thanks to very well metal removing performance (cloth emery),

Application : Pls. always grind by using end instead of surface at places that are hard to reach, holes, weld cleaning, deburring. Pls. always use wound emeries in a way that adhesive side is facing the holder. During use, grinding oil protects the surface brightness and tool life. Wear protector glasses.

Safe cutting speed is max. 11 m/s.

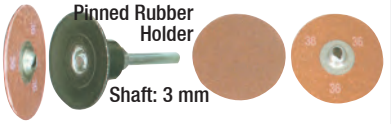
Conical Roll Emery

Order	Roll	Sand
RZ.06	6x38	# 80
RZ.10	10x38	
RZ.13	13x38	# 120
RZ.16	16x38	# 220
RZ.20	20x38	

Thread Drill Chuck: 3 mm

Order	Holder
TM 03	3 x 30
TM 06	6 x 60

Note : At conical roll emery orders, pls. specify sand selection.



Fast, Clip on Disc Emery & Holder

By turning metal threaded drill chuck and rubber pad bases binding to the center of clip on disc emery, it creates as excellent with retaning. The flexible base with vibrationless operation plunges on surface are avoided and presents fast disc replacement manually. They are used at rational grinding of surfaces, different contours, forming work piece / creating model.

Clip on Emery Disc

Order	Roll	Sand
KZD.38	Ø 38	# 36
KZD.51	Ø 51	# 80
KZD.76	Ø 76	#120

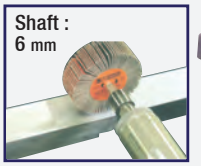
Pinned Holder Shaft: 6

Order	Rubber
KLT.63	6 x38
KLT.65	6 x51
KLT.67	6 x76

Fast, Clip On Set Pneumatic Machine 29 Pieces

Set Content : Pneumatic Grinding m. 90°
10 Pcs. Mounted Points (3 / 6)
5 Pcs. Disc Emery (51)
5 Pcs. Disc Emery (76)
2 Pcs Pinned Rubber Holder

Order : KZS 29 Set



6 mm SHANK - MOP EMERY

Axial, Slaty Emery, Array Set

In uses with suitable machines, surface gloss and tool protecting are provided with grinding oil.

In Application : Cutting speed as 15 -20 m / s is ideal. Precision grinding of circular surfaces provides ideal form to the work pieces contours. It is commonly used producing other tools and process equipment. During processing, it is recommended to use emery sand with coarse/fine settings instead of pressing more. Holder Shank Length, is 40 mm.

Pls. wear protective glasses, ear protector and gloves.

Order	Size - Shaft x Dia x Length	Sand
MZ**3**1515	Shank: 3.0 mm Ø 15 x 15	# 40
MZ**3**2020	Shank : 3.0 mm Ø 20 x 20	
MZ**6**2015	Shank : 6.0 mm Ø 20 x 15	
MZ**6**2520	Shank : 6.0 mm Ø 25 x 20	
MZ**6**3010	Shank : 6.0 mm Ø 30 x 15	# 80
MZ**6**3020	Shank : 6.0 mm Ø 30 x 20	#120
MZ**6**4015	Shank : 6.0 mm Ø 40 x 15	
MZ**6**4030	Shank : 6.0 mm Ø 40 x 30	#180
MZ**6**5020	Shank : 6.0 mm Ø 50 x 20	
MZ**6**5030	Shank : 6.0 mm Ø 50 x 30	#220
MZ**6**6020	Shank : 6.0 mm Ø 60 x 20	#320
MZ**6**6030	Shank : 6.0 mm Ø 60 x 40	
MZ**6**8020	Shank : 6.0 mm Ø 80 x 20	
MZ**6**8040	Shank : 6.0 mm Ø 80 x 40	

Holed Disc Emery

Polishing (polishing, varnishing) of parts that are hard to reach, pipe elbows, chamber bases (Concave and Surfaces, etc..) flexible supports, long life and high duty.

Order	Dia x Hole	Sand
DDZ.30	165 x 30	From # 40 Up to # 400
DDZ.50	165 x 50	

Shank - Fibrous Fiber, Mop Emeries

Abrasive fiber material is created with multi circular array. Tight winding of the layers provide long service life. These sets are mostly used for surface improvement processes.

Shank Fiber Mop

Order	**Shank 6**
SEM.30	30 x30
SEM.40	40 x30
SEM.50	50 x30
SEM.60	60 x30
SEM.80	80 x30

Emery Fiber Mop

Order	**Shank 6**
ZEM.30	30 x30
ZEM.40	40 x30
ZEM.50	50 x30
ZEM.60	60 x30
ZEM.80	80 x30

Industrial WIRE MOUNTED BRUSHERS

Steel Wire / Inox Wire / Brass Wire

Shank - Pen Brush : When brush is turned, wires or fringes are opened. Even at places that are hard to reach, it is ideal for deburring, cleaning, rust removing.

Dish Wire Brush : It is for on-face applications in a way that all brush face is contacted to the work piece. It is for cleaning, rust removing and smoothing.

Disc Wire, Mounted Brush: At general purpose cleaning, rust removing, smoothing, scale removing, weld smoothing, abrasion or coating removing, deburring at cast irons.

Brass Wire Pen Brush

Order	ShankxDia
STF -17	**6** x 17
STF -25	**6** x 25
STF -30	**6** x 30

Steel Wire Pen Brush

Order	ShankxDia
CTF -17	**6** x 17
CTF -25	**6** x 25
CTF -30	**6** x 30

Brass Wire Dish Brush

Order	ShankxDia
SCF -50	**6** x 50
SCF -75	**6** x 75

Steel Wire Dish Brush

Order	ShankxDia
CCF -50	**6** x 50
CCF -75	**6** x 75

Brass Wire Disc Brush

Order	ShankxDia
DTF -40	**6** x 40
DTF -60	**6** x 60
DTF-100	**6** x 100

Steel Wire Disc Brush

Order	ShankxDia
CDF -40	**6** x 40
CDF -60	**6** x 60
CDF-100	**6** x 100

Industrial - Perforated - Wire BRUSHES

Steel Wire / Inox Wire / Brass Wire

Pls. operate always under the brush center at fixed machines (Lathes grinders etc.). Short fringe brushes are fore more aggressive brushing - Long fringe brushes are provided to obtain flexible surfaces. By changing brush rotation direction, self whetting effect can be improved. To avoid adhesing scattered particles to the work piece, general cleaning of work piece should be done after brushing. High rotation speeds are increase brush performance. Tool contact pressure should be kept lower. Pls. take care to provide work piece contact only with wire ends. **Pls. take care holder hole diameter.**

Steel Wire Circle Brush

Order	Ø x Hole
DFC.100	100 x20
DFC.150	150 x25
DFC.175	175 x25
DFC.200	200 x25

Yellow Wire Circle Brush

Order	Ø x Hole
DFS.100	100 x20
DFS.150	150 x25
DFS.175	175 x25
DFS.200	200 x25

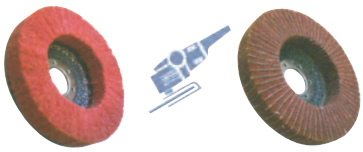
Dish Brush-Screwed Connection-Yellow / Steel Wire

Order : CFC 65 (M14 x 2 Ø 65 mm) - Yellow / Steel
Order : CFC 80 (M14 x 2 Ø 80 mm) - Yellow / Steel

Perforated Fiber Cored Mop Emery

The structure of emery coated between fiber layers enables improved metal removing and is provided to obtain more softer surface.

Order	Dia. x Thickness x Hole
EZ16532	165 x 30 x 25
EZ16534	165 x 30 x 45
EZ16552	165 x 50 x 25
EZ16554	165 x 50 x 45



Fibrous Flap Disc Emery Fiber

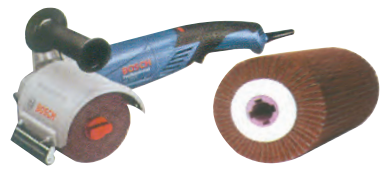
Fibrous and Emery Flap Discs

At precision cleaning and grinding large surfaces, removing of colour change on surface resulting heat source, mounting of stainless steel and finishing works.

Order	Dia. x Hole
EDF.110	110 x 22 Fibrous Flap
EZF.110	110 x 22 Emery Fiber

Motor, Circular Fiber Mops

Order	Dia. x Thickness x Hole
DEM.165	165 x 30 x 25
DEM.200	200 x 30 x 25

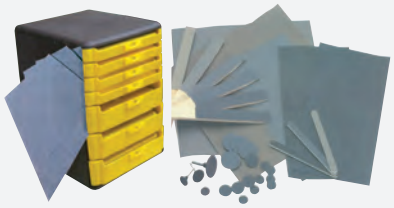


Wedged Fiber Mop and its Machine

Order	Dia. x Thickness x Hole
KDE.100	100 x 110 x 19
GSI14CE	BOSCH - 1400 W

Fibrous Fiber Plates (Usage by cutting)

Hole is created by cutting circular and can be used as one after the other. At grinding of channels and contours. **Order: EP 2328 COARSE or FINE and Dimension :** 230 - 280 mm Coarse or fine.



Coated Layer WATER EMERY

Layer Dim. : 230 x 280 mm. Latex Paper Plate is suitable to use at alloyed and unalloyed steels and non ferrous metals, extreme applications and general purpose usages.

Coarse Sand Surface Levelling / Smoothing

Sand	40	60	80	100	120
Size	Order (1 Layer) Sand Option				
230 x 280	SZ # 40	SZ # 60	SZ # 80	SZ # 100	SZ # 120

Medium Sand Surface Levelling / Forming

Sand	150	180	220	280	320
Size	Order (1 Layer) Sand Option				
230 x 280	SZ # 150	SZ # 180	SZ # 220	SZ # 280	SZ # 320

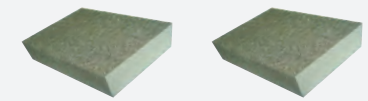
Fine Sand Final Surface Polishing Process

Sand	400	600	800	1000	1200
Size	Order (1 Layer) Sand Option				
230 x 280	SZ # 400	SZ # 600	SZ # 800	SZ 1000	SZ 1200

Spongebacked Water Emeries

Emery Width: 115 mm, Cutting as per request spongebacked emeries protect hands when used manually with its elasticity or can be used at vibrant / rotary machines, this product by laminating sponge at back of emery protects hand when used manually, and when used with machine plunges are avoided.

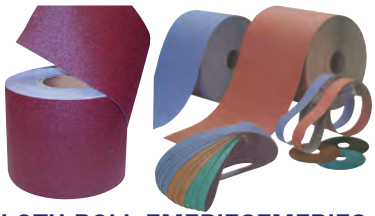
Sand	150	220	280	320	400
Size	Order (Acc. to 1 Mt.) Sand Option				
115 Cutting	SM # 150	SM # 220	SM # 280	SM # 320	SM # 400



Sponged - Hand Type Water Emery

Emery Size: 100 x 68 x 27 mm, Sponged Emery is flexible, sponged, soft and full elastic emery. Lower and upper sides as well as other sides of sponge are resin bonded with emery particles. It is used at all surfaces including curved and cambered surfaces. It is cleaned by shaking up and provides multi uses.

Sand	60	100	150	220	320
Size	Order (Acc. to Piece) Sand Option				
115 Cutting	EZ # 60	EZ # 100	EZ # 150	EZ # 220	EZ # 320



CLOTH ROLL EMERIESEMERIES

Cutting as per request, Flexible Cloth Emeries

It is suitable to grind all metal and material types manually. Tight Woven Soft Cloth, is two coat resinous with aluminium and oxide abrasives. To work with soft cloth emeries is easy by bending elastically, required roll lengths are cut as per request at varnishing and polishing processes, precision finishing of lathe pieces, mechanical works.

Coarse Sand Surface Levelling / Smoothing

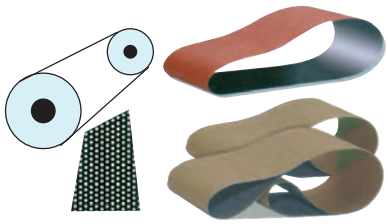
Sand	40	60	80	100	120
Order (Acc. to 1 Mt.) Sand Option					
Width 15 cm	BZ # 40	BZ # 60	BZ # 80	BZ # 100	BZ # 120

Medium Sand Surface Levelling / Forming

Sand	150	180	220	280	320
Order (Acc. to 1 Mt.) Sand Option					
Width 15 cm	BZ # 150	BZ # 180	BZ # 220	BZ # 280	BZ # 320

Fine Sand Final Surface Polishing Process

Sand	400	600	800
Order (Acc. to 1 Mt.) Sand Option			
Width 15 cm	BZ # 150	BZ # 180	BZ # 220



MACHINE, BAND EMERIES

According to the existing standard machines in market

Using suitable grinding oil at different materials increases Abrasion Performance and Tool Life of tools produced from coated abrasives substantially. It has highly abrasive performance, high tension resistance and suitable flexibility, Perfect Particle Adhesion.

Order Information : Pls. specify width, length, material type, particle size (sand fineness) and machine type& brand to be used....!

MACHINE, BAND EMERIES

Order	Dimension /Measure	Sand
B610100	610 x 100 mm	# 60
B1250100	1250 x 100 mm	# 80
B150050	1500 x 50 mm	# 100
B175050	1750 x 50 mm	# 120
B200050	2000 x 50 mm	# 220
B300050	3000 x 50 mm	# 400
		As per Request

Circular Vibrant Emery

Order : **05010**

Continous Current : 220 W
Current : 1.0 Ah
Base Diameter : 123 mm Velcro Emery
Abrasive Emery : 125 mm
Vibration per Minute : 12.000 /min.
Net Weight : 1.2 Kg. Dust Bag / Disc

Circular Vibrant Emery Cycle Adjusted

Order : **06030**

Continous Current : 310 W **Current :** 1.4 Ah **Base Diameter :** 150 mm Velcro Emery **Abrasive Emery :** 150 mm
Vibration per Minute : 4 Bin-10 Bin min.
Net Weight : 2.3 Kg. Dust Bag / Disc

Vibrant Sander Machine

Order : **B03710**

Continous Current : 190 W
Current : 0.9 Ah
Base Diameter : 93 x185 mm Velcro Emery **Abrasive Emery :** 150 mm
Vibration per Minute : 11.000 min.
Net Weight : 1.5 Kg. Dust Bag/Emery

Electronic Polishing Machine

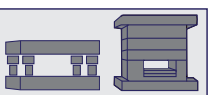
Order : **MX016160**
MAX - EXTRA

Continous Current : 1300 Watt
Diameter : 180 mm Disc Base
Abrasive Emery : 180 mm
Electronic Cycle : 1.000 - 3.800 m / m
Net Weight : 2.6 Kg. Polishing, Plush

Filing / Sanding

Order : **9032**

Current : 2.3 Ah
Continous Current : 500 Wat...
Band Measures : 9 x 533 mm
Band Speed : 300 - 1700 m / min.
Max. Sanding, Depth : 110 mm
Net Weight : 1.5 Kg. Polishing, Plush



VELCRO DISC EMERIES

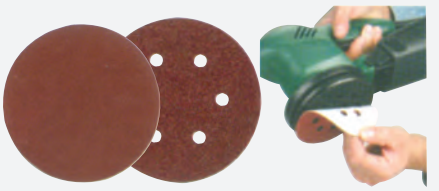
It consists from aluminium oxide coated polyamide cloth. Perforated and unperforated types are available. Back of emery is velcro and insert rapidly to the similar pads as serial replacement.

Perforated Type Ø 125 mm

Order	Sand
N- 33393	# 60
N- 33397	# 100
N- 33401	# 150
N- 33407	# 240
N- 33411	# 320
N- 33417	# 600

Perforated Type Ø 150 mm

Order	Sand
N- 33461	# 40
N- 33465	# 80
N- 33469	# 120
N- 33475	# 220
N- 33485	# 400
N- 33489	# 800



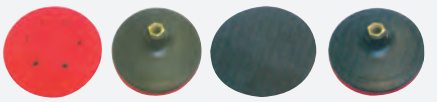
VELCRO DISC EMERIES

Flat Type / Disc Ø 115 mm

Order	Sand
N- 33501	# 40
N- 33505	# 80
N- 33509	# 120
N- 33515	# 220
N- 33521	# 320
N- 33525	# 400

Perforated Type Ø 150 mm

Order	Sand
N- 33663	# 60
N- 33667	# 100
N- 33671	# 150
N- 33677	# 240
N- 33681	# 320
N- 33683	# 360



VELCRO & ADHESIVE RUBBER DISC PAD

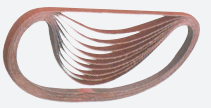
Fast Emery Replacement Discs, Screwed Type - ECONOMIC

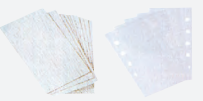
Velcro Disc /Pad

Order	Type
N-39051	115mm/ Flat
N-39065	150/Perfor.

Adhesive Flat Pad

Order	Type
N-39071	115mm/ Flat
N-39095	150/Perfor.





Band Emeries

For 9032 Electrical Machine

Decimal Packaged. Specify sand selection at order.

Band Emery Spares

Order	Size	Sand
A-34528	6 x533	# 60
A-34453	9 x533	80
A-34578	13 x533	100 120

Velcro Emeries

For B03710 Vibrant Machine

Decimal Packaged. Specify sand selection at order.

Velcro Emery Spares

Order	Size	Sand
A-31295	93 x185	# 60
P-01476	102x115	80
794 561-7	93 x228	100 120

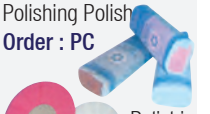
POLISHING SETS

Accessories for Electronic Polishing Machine

8 and 9 Pieces SetContents

1 x Velcro Sponged Polishing
1 x Support Disc Adhesive Pad
1 x Support Disc Rubber Pad
1 x Synthetic Hairy Polishing Cap
1 x Synthetic Wool Polishing Cap
3 x Velcro Flat Emery
1 x Velcro Polishing Discs

Polishing Polish **Order : PC**



Polishing Sisa Felt **Order : PSK**

Polishing Cloths **Order : PBK**

Polishing SETS

Order	Product
N-3393	9 Pieces Set Acc. to Ø 115 mm
N-3395	9 Pieces Set Acc. to Ø 125 mm
N-3397	9 Pieces Set Acc. to Ø 150 mm
N-33999	9 Pieces Set Acc. to Ø 180 mm

DUST / FUME PROTECTIVE MASK

Order	Product
STM	Yellow Dust Protective Face Mask
VTM	Ventile White / Fume Protective

* Other Safety Equipment (Gloves, Work Shoes, Helmet, Ear Plugs), refet to Page 88.

CLEANING BRUSHES

Order	Product
TF-1	No.1 Brush
TF-2	No.2 Brush
TF-3	No.3 Brush
TKF1	Pen Brush
SPT1	Spacer Small
SPT2	Spacer Great

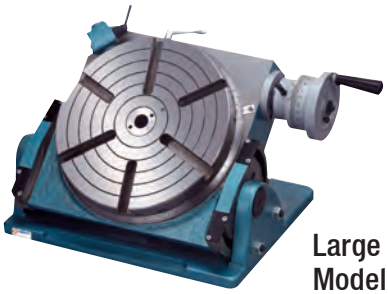
SWDT 207

EFLD

T28 093

MINI FLASHLIGHT (Powerful Light)

Order	Product
T28 093	9 Led, 52 gr. 92 cm, Flashlight
SWDT 207	100 Lumen, Clip on Flashlight
EFLD	Pocket Type, Punctuation Light



Large Model

UNIVERSAL ANGULAR ROTARY TABLE

Inclined Type Vertical and Horizantal Angle Rotary Table

It provides reaching of work pieces at every position in levelling and polishing processes and it has capacity to bind work piece up to 300 mm of rotary table surface that can be worked on it. In addition, by binding lathe chuck (Up to Ø 250 mm) on plate, round / oval and complex corner figured works can be connected.

Mould Levelling and Polishing, Rotary Table

Order Model	Table Dia.	Bed Height	Vertical Height	Product Weight
VU - 300 (14951)	300 mm	185 mm	170 mm	99.5 kg.

Small Model

SMALL T. ANGULAR ROTARY TABLE

Inclined T. Vertical and Horizontal Angle Rotary Table

It is in similar positions with above product to use in levelling and polishing processes. Smaller type is also presented economically.

Mould Levelling and Polishing Rotary Table

Order Model	Table Dia.	Bearing Height	Table Width	Product Weight
VU - 100 (14948)	100 mm	117 mm	228 mm	13.5 kg.
VU - 200 (14950)	200 mm	177 mm	429 mm	46 kg.

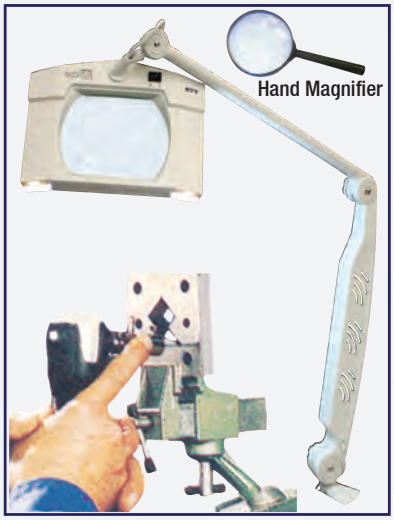
Mini - Rotary / Angular Vacuumed Clamp

Vacuumed Fixing system claws, plastic protected360º rotary angular tipping, moving polishing and levelling at small work pieces.

Order No : RMM0201

Claw Width: 65 mm

Max. Mouth Opening :30 mm



3 x Lensatic Bench Lamp

For non reflected and smooth, illuminated work places, monitoring of object by two eyes as 3 D with lamp - magnifying glass lens, free running, spring mechanism, secured swivel arm.

Order : ZLA (Table Lamp)

Binocular, Head Magnifier

Adjustable band belts, ligth model - Foldable up - protects from reflected lights.

Order : HL09 (Head magnifier)

Pocket Magnifier

Light lens fixed magnifier, can be used as size 10 scales and thus measurement Loop. Scale **Segmentation 0.1 mm / Length : 15 mm** Aplanatic (Size 10) Non Aspheric (Size 4)

Order : 183303 (Mitutoyo)

Surface Control Mirror

Plastic framed mirror with holding shank is used to get images from areas that are hard to seem.

Order : B1714 (Beta)

Workman Goggles (Unnumbered)

Order : KG01 (Transparent Glasses)

PLASTIC DRAWER KIT STAND

Transparent Boxes, Open Use - Locker

The materials used in polishing process, absolutely should be stored separately. In order not to mix tools and to protect regularly, we are recommended our stand.

22 Box Use Drawer Stand

Order	Width xLength x Height
HOBBY 144	400 x 220 x 660

19 Box Use Drawer Stand

Order	Width xLength x Height
HOBBY 113	400 x 220 x 500

Sanitary Paper / Cloth Stand

Stand Dimension : 450 x 330 x 940 mm

Paper Towel : 1 Roll : 350 Mt. Width: 25 Cm
Fast Break : 15 Cm ECONOMIC

It is produced completely from cellulose and absorber. It is excellent for washing/ cleaning of solvents and cleaning of precision tools without leaving a trace. Does not leave feathers, not easily tearable, Practically Used Ready Stand.

Order	Product
P-350	Paper Towel 350 Mt. x 25 cm
P-1000	Stand and Towel(Together)

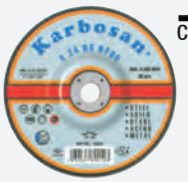
Curved Type
X 3

Combine - Grinding & Cutting

2 Processes With One Stone

Both grinding and cuttin processes can be done at the same time without changing stone. Max. 12.500 m / m

Order	Ø x Thickness x Hole
X3.12790	115 x 1.9 x 22
X3.12800	125 x 1.9 x 22
X3.12890	115 x 3.0 x 22

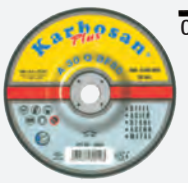


Curved Type
NK

GENERAL-GRINDING Stone

It is used at iron and steel metals.

Order	ØxThickness xHole	Cycle
10540	100 x 6.4 x16	15300
10550	115 x 6.4 x22	13300
10560	125 x 6.4 x22	12250
10570	180 x 6.4 x22	8500
10600	230 x 8 x 22	6650



Curved Type
NK

INOX GRINDING Stones

It is for hard steel and stainless.

Order	ØxThickness xHole	Cycle
10630	115 x 6.4 x22	13300
10640	125 x 6.4 x22	12250
10650	180 x 6.4 x22	8500
10660	180 x 8 x22	8500
10430	230 x 8 x22	6650

Curved Type
ZA

CAST- Grinding Stones

It is suitable for full cast resistant to Zircony Oxide abrasive.

Order	ØxThickness xHole	Cycle
10780	115 x 7 x 22	13300
10790	125 x 7 x 22	12250
10800	180 x 7 x 22	8500
10810	230 x 7 x 22	6650

Flat Type
NK

GENERAL - CUTTING Stones

General Purpose Steel / Cast

It is suitable for fixed cutting machine. At all metals and casts.

Order	Ø x Thickness x Hole
10840	300 x 3 x 25.4
10850	300 x 3 x 30
10860	350 x 2.5 x 25.4
10870	350 x 3.5 x 30

Flat Type
NK

General Purpose Cutting Stones

Suitable for al metal materials

All metals and cast materials

Order	ØxThickness xHole	Cycle
1020	115 x 2.5 x20	13300
1030	125 x 2.5 x20	12250
1040	180 x 3.0 x22	8500
1050	230 x 3.0 x22	8500

Thin Metals Cutting Stone

Thinline Fine Stone-General Steels

Order	ØxThickness xHole	Cycle
10440	100 x 1.0 x22	13300
10450	115 x 1.6 x22	13300
10460	125 x 1.0 x22	12250
10470	125 x 1.6 x22	12250
10480	180 x 1.9 x22	8500

For PIN CUTTING and Grinding

Flat Type
CUT & CUT

Fine / Steel, Cutting Stones

All Steels - INOX Materials

Order	ØxThickness xHole	Cycle
11500	115 x 1.0 x22	13300
10510	115 x 1.6 x22	13300
11520	125 x 1.0 x22	12250
11530	125 x 1.6 x22	12250

Flat Type
ALÜ.

ALUMINIUM - CUTTING Stones

Alloyed / Unalloyed Aluminiums

Order	ØxThickness xHole	Cycle
11100	180 x 3.0 x22	8500
11200	230 x 3.0 x22	8500
Thinline Fine Cutting Stone		
11030	115 x 1 x 22	13300
11060	125 x 1 x 22	12500
11070	125 x 1.6 x22	12500

Flat Type
INOX

STAINLESS - Cutting Stones

For Inox and Nickel Bazes Alloys

Order	ØxThickness xHole	Cycle
11190	115 x 2.5 x22	13300
10200	125 x 2.5 x22	12250
10210	180 x 3.0 x22	8500
10220	230 x 3.2 x22	6650

Flat Type
SC

Gray CAST- CUTTING STONE

Special comfortable cutting for all casts

Order	ØxThickness xHole	Cycle
11690	100 x 2.5 x16	15300
10280	125 x 2.5 x22	12250
10290	180 x 3.0 x22	8500
10300	230 x 3.0 x22	6650

Order :
JCO 355

JETCO
METAL CUTTING MACHINE

Economic with cutting stone
Power : 2.000 Watt / 8.7 Ampere
Speed : 3.800 cycle / min.
Stone Size : Ø 355 x 3.5 x 25.4 mm
Hub Shaft : (Stone Binding) : 25.4 mm
Machine Weight : 19 Kg.

Flat Type
NK
Middle Stone

GRINDING AND SPLIT Stone

Cutting / Splitting at Grinders

Order	ØxThicknessxHole
12300	150 x 2 x 20
12310	175 x 2 x 20
12320	190 x 2 x 28

EKR NK

SAW STONES

It is for whetting of disc and band saw.

Order	Ø x Thickness x Hole
13960	150 x 6 x 20 NK 60
13940	150 x 10 x20 NK 80
14180	175 x 8 x 20 EKR 60
14280	200 x 8 x20 EKR 60
14250	200 x10 x20 EKR 60
14350	250 x10 x25 EKR 60

Conical
EKR

DISH Grinding Stones

It is for multi purpose usages.

Whetting- Grinding of Machines Belonging to

Order	Dimension
14100	E - 50 Conical Stone
14110	E - 75 Conical Stone
14120	E - 100 Conical Stone
14130	E - 125 Conical Stone
14140	E - 150 Conical Stone

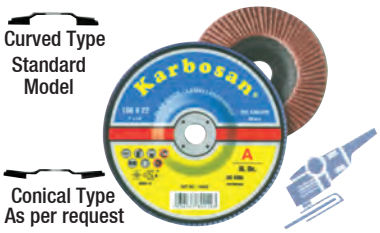
Flat
EKR

Flat DISH Grinding Stones

It is for multi purpose usages.

Whetting- Grinding of Machines Belonging to

Order	Dimension
14000	D - 50 Flat Stone
14010	D - 75 Flat Stone
14020	D - 100 Flat Stone
14030	D - 125 Flat Stone
14040	D - 150 Flat Stone

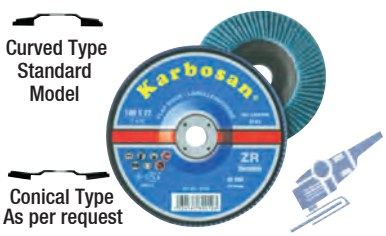


FLAP (Layered Emery) Discs

It shows a very good performance at aluminium oxide, A Type, General Purpose Coarse and Pre Levelling, Grinding Applications. In order to correct especially weld mistake areas that are hard to reach, it is for filler metal - steels - inox / stainless material surfaces. Max. Speed should be 50 m / s.

Pls. specify sand selection at order.

Order	Dimension	Sand
AFD100..Sand	Ø 100 x Hole 16	#40 #60 #80
AFD115..Sand	Ø 115 x Hole 22	
AFD125..Sand	Ø 125 x Hole 22	
AFD180..Sand	Ø 180 x Hole 22	

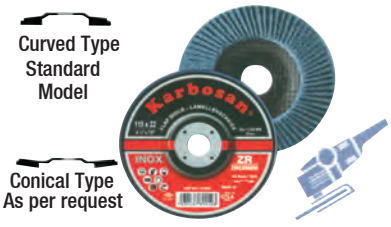


FLAP (Layered Emery) Discs

Zirconium, Aluminium Z Type Layered Emery provides high metal removing. It is for metal - aluminium hard steels - stainless materials. Does not heat up, long life. Max. speed 50 m / s.

Pls. specify sand selection at order.

Order	Dimension	Sand
ZR100..Sand	Ø 100 x Hole 16	#40 #60 #80
ZR115..Sand	Ø 115 x Hole 22	
ZR125..Sand	Ø 125 x Hole 22	
ZR180..Sand	Ø 180 x Hole 22	



FLAP (Layered Emery) Discs

It is ideal for small and medium work pieces with high performance, fast process created especially for INOX / Stainless Materials. Max. Sheed should be 50 m / s.

Pls. specify sand selection at order.

Order	Dimension
INOX 115.. Sand	Ø 180 x Hole 22
Sand Selection	# 40 - 60 - 80

FIBER / DISC EMERIES

It is for general steels and stainless materials produced with aluminium oxide abrasives. Max.speed should be 80 m /s. Does not heat up.

Order	Ø x Hole	Sand Fineness
SC 115..Sand	115 x 22	40-60-100 150-220 320-400
SC 125..Sand	125 x 22	
SC 180..Sand	180 x 22	

FIBER / DISC EMERIES

It is produced with silicon Carbide abrasives. It is suitable for non ferrous materials. Max. speed should be 80 m /s. Does not heat up.

Order	Ø x Hole	Sand Fineness
SC 115..Sand	115 x 22	40-60-100 150-220 320-400
SC 125..Sand	125 x 22	
SC 180..Sand	180 x 22	

FIBER / DISC EMERIES

It is produced with zirconium abrasives and for **General Product**, general steels - stainless - aluminium. Max. speed should be 80 m /s. Does not heat up.

Order	Ø x Hole	Sand Fineness
SC 115..Sand	115 x 22	40-60-100 150-220 320-400
SC 125..Sand	125 x 22	
SC 180..Sand	180 x 22	

PLASTIC (Emery Binding) DISC

It is used as base to connect disc emeries to the related machine.

Order	Product / Dimension
PD115P	115 x Hole 22 Metal
PD180P	180 x Hole 22 Metal

Electrical, ANGLE GRINDING

BOSCH

Order	Bosch - Angle Grinding
GWS 7-115	**115 mm 720 W 11.000 d/d**
GWS 12-125 CIE	**125 mm 1200 Watt** Adjustable Cycle 2800-11.000 d/d
GWS 11-125 CIE	**125 mm 1500 Watt** Adjustable Cycle 2800-11.000 d/d
GWS 21-180H	**180 mm 2100 W 8.500 d/d**
GWS 22-230H	**230 mm 2200 W 6.500 d/d**

Electrical, SANDING MACHINE

Capacity : Order
125 mm **GW5010**
150 mm **GW6010**
Continous Current : 440 Watt
Cycle : 4500 d /dak.
Current: 1.9 Ah
Weight : 1.1 Kg.

Electrical, MOULD GRINDING

Short Type

As per request
3 and 8 mm Pliers

Order	Mould Grinder
GGS 28 CE **BOSCH**	**650 Watt - 6 mm Pensli** Adjustable Cycle 12000-28.000 d/d
GD0602 **Makita**	**400 Watt - 6 mm Plier** Cycle 25.000 d / d

Electrical, MOULD GRINDING MACHINE

Long Type

As per request
3 and 8 mm Pliers

Order	Mould Grinder
GGS 28 LCE **BOSCH**	**650 Watt - 6 mm Plier** Adjustable Cycle 10000-28.000 d/d
GD0601 **Makita**	**400 Watt - 6 mm Plier** Cycle 25.000 d / d

Electrical, MOULD GRINDING MACHINE

Standard Type

As per request
3 and 8 mm Pliers

Order	Mould Grinder
GGS 8 CE **BOSCH**	**750 Watt - 6 mm Plier** Adjustable Cycle 2.500 - 8.000 d/d
GD0800C **Makita**	**750 Watt - 6 mm Plier** Adjustable Cycle 7.000-28.000 d/d

PNEUMATIC TOOLS

Order	Model
T18660	Wert : Diesel Gun
T18605	Wert : Sanding Gun
T18617	Wert : Paint Gun 1.4 mm

Entrapped Air Outlet Valve
Air Inlet : 1/4" 13 mm Hose

PNEUMATIC GREASE GUN

Order	Model
GP850N	Gison : 400cc. 5 Bar
T18611	Wert : 400cc. 5 Bar

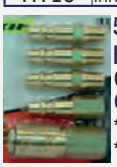
AIR COMPRESSORS

Order	Model
MT-200	MyTool :200 lt. Hooped
MT-100	MyTool :100 lt. Hooped
MT-050	MyTool :50 lt. Hooped

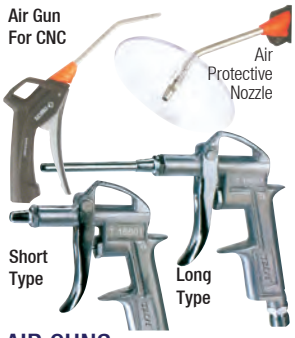
AIR HOSE

Polyurethane PU HoSE (Selling with meter)

Order	Model
HT06	Inner: 4 mm Outer: 6 PU
HT08	Inner: 5 mm Outer: 8 PU
HT10	Inner: 8 mm Outer: 10 PU
HT12	Inner: 10 mm Outer: 12.5 PU
HT16	Inner: 10 mm Outer: 16 PU



5 Pcs. Set Automatic Hose Nozzle Set
Order :
OS79901 - Gison
* 1 Pc Fast Binding
* 4 Pcs. Bush/ Male Female



AIR GUNS

Order	Model
T18601	Short Air Gun
T18603	10 cm Long Air Gun
T18606	22 cm Long Air Gun
ABG-3	CNC Air Gun

AIR CONDITIONER

Order	Model
T18624	1/4" - 2's Conditioner
Gas-11	Mini Lubricant
Gas-20	Mini - Oil & Water Filter
HSY-1	1 Kg. Conditioner Oil

AIR ACCESSORIES

Order	Model
RPT014	Air Regulator Cock
SPJ20	1/4" Single Hinged Bush
P3/6	3 - Pneumatic Tool Plier 6
GAS-7	Time Air Regulator

PNEUMATIC TOOL KIT 5 Pcs. Set

1 - Pneumatic Paint Gun
2 - Pneumatic Diesel Gun
3 - Air Gun
4 - Air gun manometer
5 - Spiral Hose 5 mt.
Order : OS 79 501 (OSCO)

ANGULAR : 90°

PNEUMATIC MOULDER GRINDER

Max. Cycle : 20.000 d / min.
Working Pressure : 6.3 Bar
Machine Length : 154 mm 90°
Machine Length : 178 mm 115°
Weight : 620 gr. 900 / 750 gr. 115°

Order	Model
824TA	Gison : 90° / 20.000 rpm
DG645	SAP : 115° / 18.000 rpm
P124	Osaka : 90° / 20.000 rpm

PNEUMATIC FLUSH CUTTER

Cutting Capacity : (Type Gison)
Iron :1 mm /Copper :1.6 mm Alm. 2mm
Cutting Capacity : (Type Osaka)
Iron :2.9 mm/Copper : 3.3 Alm. 3.3mm
Weight : (Gison -190) - Osaka 600 gr.

Order	Model
GP010	Gison : 1 x 1.6 mm
GP020	Gison : 2 x 2.6 mm
OPT1007	Osaka : 2.9 x 3.3 Cutting

Pneumatic METAL PLATE SHEAR

Cutting C. : Steel 1.2 mm Alu.1.6
Max. Cycle : Inner /2100 -Outer /2600 rpm
Length : Inner / 215 - Outer / 188 mm
Weight : Outer/1.33 Kg.-Inner/0.98Kg.

Order	Model
GP838C	Gison:For external cutting
GP838S	Gison:For internal cutting

PNEUMATIC MOULDER GRINDER

Plier Dia : 3 - 6 mm
Max. Cycle : 11.000 d / min
Air Pressure : 6.3 Bar
Machine Length : 168 mm
Machine Length : 280 / Long Type
Weight : 0.70 gr. **Long Type :** 0.80 gr.

Order	Model
W1854	Wert : Economic
824T	Gison : 25.000 RPM
DG-6	Sap : Long Type
DG-Y	Sap : 22.000 RPM
OPT121	Osaka : 22.000 Mini

MOULDER GRINDING SET

Set Content: : * 3 / 6 mm Plier
* 22.000 m / m Grinding Machine
* Shaft 3 mm 5 Pieces Spiral Stone
* Shaft 6 mm 5 Pieces Spiral Stone
* Air Connection Bush
* Wrench Set - Plastic Bag

Order	Model
824K	Gison : 10 Pieces Set
OPT-4	Osaka : Moulder Set

PNEUMATIC PRECISION GRINDING

Max. Cycle : 60.000 RPM (Micro Type)
Vibration Speed : 34.000 (Writing)
Machine Length : 132 Micro
Weight : 23 gr. Micro 24 gr.(Writing)

Order	Model
GP8243	Gison : Micro Type Precision
GP940	Gison : Diamond Type Writing

BALANCER

Pneumatic Tool Carrier

Order :
SB01C 1.5 mt. /1.5 - 3 Kg.
SB01F 1.5 mt. 3 - 5 Kg.
Hose Blancer : 8 mt.

PNEUMATIC DRILL MOTOR

Max. Cycle: 22.000 RPM Left / Right
Drill Chuck Capacity : 10 mm / 7
Machine Length : 205 mm
Hose Size : 6.5 mm
Weight : 920 gr. (Model - GP 340)

Order	Model
GP-330	Gison : 7 mm Drill
GP-340	Gison : 10 mm Drill
1047D	Bemato : 10 mm Drill

PNEUMATIC HANDHELD DRILL

Max. Cycle : 2400 RPM Left / Right
Drill Chuck Capacity : 10 mm / 13
Machine Length : 170 mm
Hose Size : 6.5 mm
Weight : 1100 gr.

Order	Model
GP835	Gison : 10 mm Drill
GP836	Gison : 13 mm Drill
V1045D	Bemato : 10 mm Drill
W-1852	Wert : 10 mm Drill

Capacity :
From 3'to 8 mm
Plier : 3 - 8 mm
Handheld Tapping Machine

PNEUMATIC TAPPING

Max. Cycle : 500 RPM Left / Right
Plier Capacity : 3 - 8 mm
Machine Length : 166 mm
Hose Size : 13 mm
Weight : OPC 1.8 Kg. - OPT 2.4 Kg
Pressure : 90 PSI **Torque :** 20 Nm.
Air Inlet : 3 / 8"

Order	Model
21808	OSAKA : 3 - 8 mm
P KC	OSAKA : 3 - 16 mm

PNEAUMATIC SCREWDRIVER
Flat Type

Max. Cycle : 1800 RPM Left / Right
Screw Dia : 2.2 / 4.2 mm
Machine Length : 180 mm
Screwing Torque : 0.2-1.5 Nm
Weight : 430 gr. (Model - OPC)

Order	Model
GP-867	Gison : 5-6 mm Caps.
GP-868	Gison : 6-8 mm Caps.
OPC	Osaka : Adjustable Type
W-1857	Wert : 5 mm Economic

PNEUMATIC SCREWDRIVER

Max. Cycle : 1800 RPM Left / Right
Screw Dia. : 3 / 6 mm
Machine Length : 178 mm
Screwing Torque : 45 - 115 Nm
Weight : 1100 gr. (Model - SAP)

Order	Model
GP-802	Gison : 90° Corner 5 - 6
SD - 6	Handle: 3-6 mm Handheld
1279 A	Bemato : Handheld 6
106	Max - Extra : Economic

Stepped
Torque Adjusted
Mini Lubricant
Air Connection
As per request,
Bit Holders

PNEUMATIC NUTRUNNER

Max. Cycle : 4500 RPM Left / Right
Set : 10 Pieces Die (9-27 mm)
Bit Holder Inlet Capacity : 3 / 4
Max. Torque : 68 Kg. m
Weight : 4.2 Kg. (Wert)

Order	Model
GW-15	Gison:1/2"Complete Set
1209 A	Bemato : 3/4" Gun
1855	Wert :1/2"Complete Set
1851	Wert : 3/4" Gun

PNEUMATIC NUTRUNNER
(Ratchet)

Max. Cycle : 150 d / min.
Set : 7 Pieces Bit Holders (10-19 mm)
Bit Holder Inlet Capacity : 1 / 2
Max. Torque : 7 Kg. m
Weight : 1.2 Kg. (Wert)

Order	Model
856 BK	Gison : 1/2" Ratchet Arm
1856	Wert : 1/2" Ratchet Arm
RW-3	Sap : 1/2" Ratchet Arm
IW-3A	Sap : 1/2" Nut Runner

PNEUMATIC SAW

Pulse Rate : 9000 bmp
Cutting Capacity : 1.6 mm
Pulse Length : 10 mm
Machine Length : 276 mm
Weight : 600 gr. (Gison)

Order	Model
848B	Gison : Pneumatic Saw
1053 D	Bemato : Pneumatic Saw
OPT313	Osaka : Pneumatic Saw

PNEUMATIC ANGLE GRINDING

Max. Cycle : 11.000 RPM
Grinding Stone : 125 mm (Gison:75)
Machine Length: 260 mm (Gison:190)
Cutting Capacity : Gison 3 mm
Weight : 0.92 Kg. (Gison)

Order	Model
847 N	Gison : Mini Fast Cutting
1237 A	Bemato : Grinder / 125

Spiral Air Hose

Order	Model
T18 607	5 x 8 Hose 7,5 Mt.
T18 615	5 x 8 Hose 15 Mt.

PNEUMATIC FILING MACHINE

Pulse Speed : 3700 bpm
Pulse Length : 10 mm
Machine Length : 174 mm
Working Pressure : 6.2 Atü
Weight : 1 Kg. (Model -Gison)

Order	Model
GP-948	Gison : Stroke 10 mm
OPT 315	Osak : Stroke 9 mm

PNEUMATIC SANDING MACHINE

Max. Cycle : 15.000 RPM
Emery Dia. : Disc Dia : 50 mm
Emery Dia. : Band 10 x 330
Machine Length : 152 mm Gison
Weight : 0.7 Kg (Gison)

Order	Model
823 A	Gison : 90° Disc Emery
822 A	Gison : Eccentric
1264 A	Bemato : Band 10 x 330

PNEUMATIC SURFACE EMERY

Max. Cycle : 12.000 RPM
Emery Dia. : Disc Dia : 125 / 150
Emery Dia. : Band 90 x 168
Eccentric Motion : 5 - 2.5 mm
Weight : 750 gr. (Gison)

Order	Model
303BS	Gison : 123 - Eccentric
1036D	Bemato : 150 mm Disc
1859	Wert : Vibrant Emery

During use, Pneumatic machines and tools should be used absolutely with conditioner unit that is in its installation or close to the machine and dry / oil air.

Shank Cutter GRINDING MACHINE EMG-413

HSS & Carbide / Diamond, 2-3-4 Edged Mill from 4 mm to 13 mm.

Don't throw dulled / corrupted, inactive mill kits, grind them for 5 minutes...Your kits is renewed by our machine having high quality comfortable use and fast operating practically. Grinding stones at grinder (Diamond Disc), HSS Mills or Diamond Mills (According to the diameter) is created with suitable edge selection (with changing plier cap) of 2 /3 /4 Edged Mills within 0.01 sensitivity tolerance. Spare grinding stones and pliers belonging to machine as well as all service training and English User Manual and Visual Video are available.

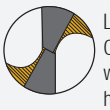
ACCESSORIES & GIFTS

- Machine Work Bench
- **ER Type (From 4 to 13) 10 Pieces Pliers.**
- SDC 300 Grinding Stone (Ø 4-5mm)
- **SDC 120 Grinding Stone (Ø 6-13mm)**
- 2 Pieces Pliers Installation System
- **Cable Connections (Fuse Slot)**
- English User Manual
- **Original / Visual Usage CD**

NEWEST DURABLE GUARANTEED PRODUCT

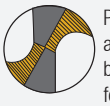
WE GIVE WORK BENCH AS A GIFT

Standard Swarf Evacuation Forms



Large Grinding Formed (HSS/ Cobalt) diamond shank cutter with recommended method for hard steel work pieces.

Standard Grinding Formed Alloyed or Unalloyed steels, stainless steel etc. work pieces (Hss) for general steels



Precise grinding formed aluminium and alloys, copper, brass and non ferrous materials for soft work pieces.

DRILL GRINDING MACHINE EDG-213

Standard Drill Bit (From 2 mm up to 13 mm) Grinding

With our newest model drill grinding machine, your inactive and corrupted drills take their new position by grinding in 5 minutes without requiring expertise and become ready to use again. Our **EDG -213** Machine compared with similar models is quite professional and precision and is under the guaranty of our company. Repair - Maintenance - Spare Part - Service Location with our machine as well as English user manual and Visual CD are available. Precison angle settings, that are not available at other models, presents high quality at our machine doing grinding operations according to the work pieces.

Robust - Precision Pliers / Cap Group

ACCESSORIES & GIFTS

- Machine Work Bench
- **ER Type (From 2 up to 13) 12 Pieces Pliers**
- CBN 400 Drill Grinding Stone
- **Plier Slot / Installation Cover**
- Alien Key (4-5-6 mm)
- **Cable Connections (Fuse Slot)**
- English User Manual
- **Original / Visual Usage CD**

Technical Specification:

Grinding Diameter: Up to: Ø 2mm ~ Ø 13 mm
Edge Grinding Angle : 90^0 ~ 140^0
Adjustable Grinding Disc Stone : CBN 400 Diamond
Motor / Voltage: 1/3 Hp 250 W - AC 220 V
Speed : 5.500 R. P. M Weight: 8,5 Kg.

WE GIVE WORK BENCH AS A GIFT

BAND GRINDING MACHINE EB - 125

It is used at levelling and polishing process of all kinds of flat and profile materials. It works serially and economically at every stage until obtaining smoothest surface from coarsest burss at materials such as steel- water steel - iron- stainless steel- cast- yellow- wood- bakelite and plexiglass. Casing is single piece cast and working parts are produced from quality steel precisely. Manual parts are chrome plated. Equalization of rotary parts has been made.

Sanding Grinding Strips

Other particles, qualities and dimensions are delivered as per request.

Orders can be always given as unit.

Technical Specifications :

Band Size : 1250 x 100 mm
Emery sand, as per request
Motor Power : 1.1 KW 1.5 HP 2800 m/m
Approximate Weight : 70 Kg.

Order : **EB-125** Band Grinding Machine

BAND GRINDING MACHINE EB - 150

It is used for grinding and deburring of all kinds of metal surfaces. It has steel casing and 360º circular and axial motions, tension mechanism is threaded system and has feature to use various length emeries between 145-155 cm. Machine is produced from highest quality materials and equalization of rotary parts has been made.

When required, lower platform can be made as cast foot.

Technical Specifications :
Band Size :
1500 x 100
Emery Sand,
as per request
Motor Power :
1.1 KW 1.5 HP
2800 m/m
Approximate Weight :
60 Kg.

Order : **EB-150** Band Grinding Machine

BAND GRINDING MACHINE EB - 3

It is used for grinding and deburring of all kinds of metal surfaces. For grinding curved parts, both sided Empty Workspace is available. It is used at works such as serial grinding with various diameters and width contact discs, internal grinding, concave and convex grinding for special works excluding standard ones. This model machine, also has to use various dimensional bands opportunity.

Cast foot at image can be inserted as per request.

Technical Specifications :
Band Size :
2000 x 50 mm (65 mm)
Emery Sand, as per request
Motor Power :
1.1 KW 1.5 HP 2800 d/d
Approximate Weight : 75 Kg.

Order : **EB-3**

POLISHING MACHINE

Order :
PM ...Motor Power

Technical Specifications :
5.5/ 7.5/ 10.5 HP
1400 - 2800 d/d

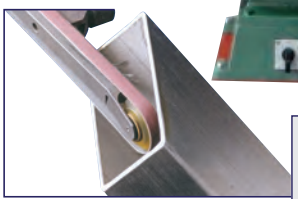
Felts and Wedges as per Request

BAND GRINDING MACHINE PB - 200

It is used for grinding and deburring of all kinds of metal surfaces. For grinding curved parts, both sided Empty Workspace is available. It is used at works such as serial grinding with various diameters and width contact discs, internal grinding, concave and convex grinding for special works excluding standard ones. This model machine, also has the ability to use various dimensional bands. Machine is produced from highest quality materials and equalization of rotary parts has been made.

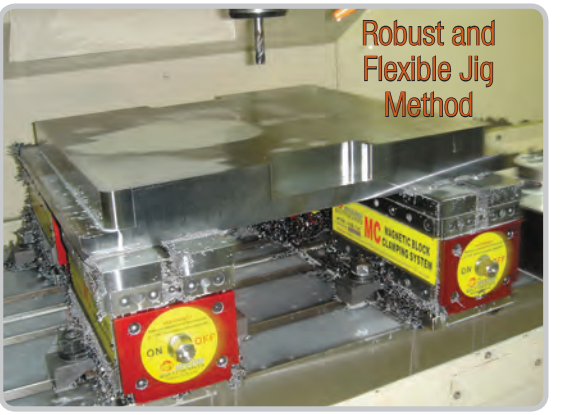
Cast foot is inserted as per request

Technical Specifications :
Band Size : 2000 x (50-65-100 mm)
Emery Sand, as per request
Motor Power : 5.5 HP 1400/2800 m/m
Approximate Weight : 95 Kg.



Order : **PB - 200** Polishing Band Grinding Mac.

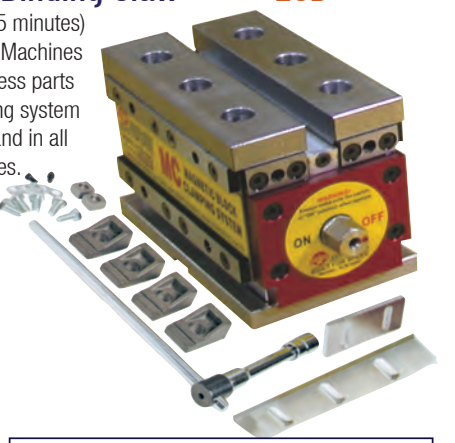
ECB SERIE (NEO. Dynamic) PERMANENT MAGNETIC JIG BLOCKS



Self Magnetic BLOCKS "WORKING POWER " Work Piece Binding Claw

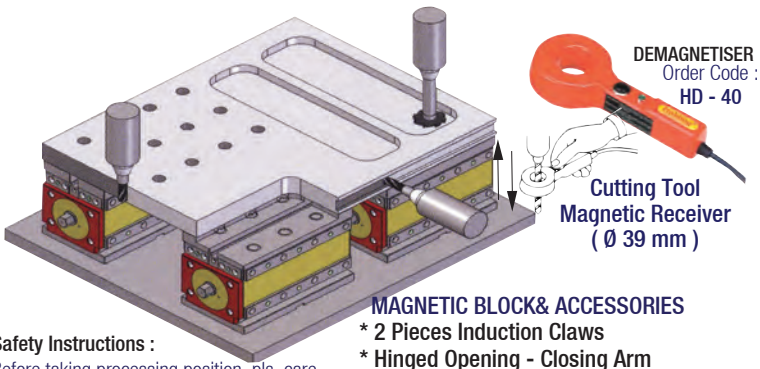
ECB

It is designed to bind work pieces practically and precisely as SAFELY and SERIALLY (on 5 minutes) at our (% 100) Clamp Harmonic CNC Horizontal Processing Benches or Universal Milling Machines in processing technology without requiring any power supply. Especially, it is ideal to process parts at mould production. While providing placement with balanced - easy adjustment in binding system according to the work pieces dimensions (multi uses), it offers processing as in all areas and in all directions (5 directional) on work pieces, also edge processing (single binding) opportunities. Magnetic block should be placed as effused from work pieces blocks on installation.



Processable, Induction Soft Claws According to Work Piece Form

Exchangeable; Surface Accuracy (Powder Paso) and surface can be revised with induction (Work Tool Steel) binding claws at each binding with claws. High claws are suitable for all intermediate processes (drilling / tapping / reaming and cutting), in addition these functional claws can be retted according to the model of parts to be processed or can be positioned by processing, exchanging the changeable claws economically is possible, by placing work pieces blinded on block as per request, large areas are provided and by putting plates one after the other, it saves time, side thrust claws on block are guided to the parts. **Magnetic Blocks are designed for medium and large work pieces and are not suitable for small work pieces.**



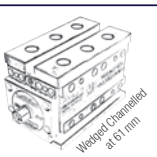
MAGNETIC BLOCK& ACCESSORIES

* 2 Pieces Induction Claws
* Hinged Opening - Closing Arm
* 4 Pieces Block Fishplate
* Side / Front / Rear Thrust Parallels
* Combined connection between two block
* English User Manual - Visual Video CD

Safety Instructions :

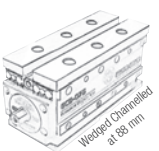
Before taking processing position, pls. care that on (ON - OFF) Switch is at ON position and the block is connected to machine plate. Magnetic Block is not suitable for materials not having metal sensitivity (Aliminium / Copper etc.).

! When magnetic block is in idle position, it should remain at (OFF) position, when faced with metal, it can be taken to ON position. Otherwise, it is defected.



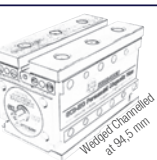
ECB -050

Hold Power : 500 Kgf / Pcs.
W. Piece Thick. : Such as15 mm
Sens. : 90⁰ = 0.015 / 100mm
X - Y = 0.01/100 mm
Dimension : Height : 78 mm
Length / Width 126 x 76 mm
Weight : 7 Kg.



ECB -075

Hold Power : 750 Kgf / Pcs.
W. Piece Thick. : Such as15 mm
Sens. : 90⁰ = 0.015 / 100mm
X - Y = 0.01/100 mm
Dimension : Height : 78 mm
Length / Width 174 x 76 mm
Weight : 9,5 Kg.

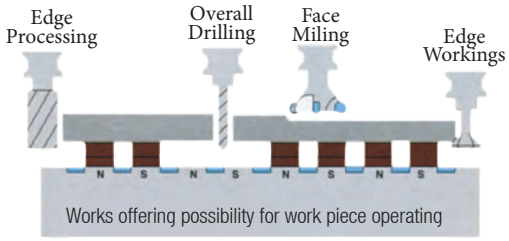


ECB -120

Hold Power : 1200 Kgf / Pcs.
W. Piece Thick. : Over 20 mm
Sens. : 90⁰ = 0.015 / 100mm
X - Y = 0.01/100 mm
Dimension : Height : 108 mm
Length / Width 188 x 108 mm
Weight : 18 Kg.

ECB -210

Hold Power : 2100 Kgf / Pcs.
W. Piece Thick. : Over 30 mm
Sens. : 90⁰ = 0.015 / 100mm
X - Y = 0.01/100 mm
Dimension : Height : 134 mm
Length / Width 234 x 133 mm
Weight : 36 Kg.



At Binding Work Piece Serie **Fast** Precision **Safe** Easy **Practical** New **System**

Magnetic Sensitive Poles, continue tightening without deforming.
Quite Practical System provides stylish appearance at your CNC bench.

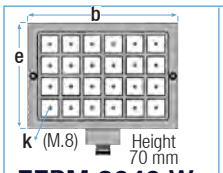
ELECTROMAGNETIC Work Piece CONNECTING TABLE

Stylish, Aesthetic 100% Clamp Compatible, Stainless Flexible Electromagnetic Holder Surface Magnetic Face; (At 4 Pole Sizes) 1500 Kgf / 100 cm²

Electromagnetic Table : Sustainable Magnetic Fastest and Powerful Jig with pre load (Connection cables are available)

At CNC vertical processing counters or Universal milling machines finishes unidirectional processings in desired sensitivities at one time (single binding) with opportunity of 5 axial operations at work piece or at multi operations, it saves time with fastest binding advantage as remove-insert (Open-Close) feature at incredibly short duration. **! Safety Precaution: After pre loading process, close the cover absolutely.** Optional fish plates are presented with products with special offers. Other square / spring type fish plates provide flexible binding to the unflattened work pieces. With functional operations, "V" Bed Lugs (Round and prismatic) can be connected. For accuracy repeating on square lugs presented with magnetic table, powder cutting can be given and slots can be created according to the small work pieces. More than one table can be connected to the control unit, with magnetic power controls that no other similar products have, magnetic power controls are provided on your work pieces .

We Present With Gifts



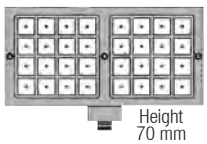
EEPM 3040 W

Width: 340 x Length: 430 mm
AC 380 / 440 V (Three-phase)
Pole / k : 24 Piece (Lug)

Presentation / Set
- Magnetic Table
- Control Unit
- Mobile Hand Unit
- Side Thrusts
- Connection Cables
- CNC Table/Locker
- 24 Pieces Lug
- Connecting Bolts
- English User M.
- Demo CD

EEPM 3040 W
1515 € / Euro
Prices valid on the basis of FOB Turkey

2 Pcs. Magnetic Table EEPM 3040 W
2605 € / Euro



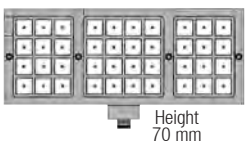
EEPM 4060 W

Width: 420 x Length: 590 mm
AC 380 / 440 V (Three Phase)
Pole / k : 48 Piece (Lug)

Presentation / Set
- Magnetic Table
- Control Unit
- Mobile Hand Unit
- Side Thrusts
- Connecting Cables
- CNC Table / Locker
- 48 Pieces Lug
- Connecting Bolts
- English User M.
- Demo CD

EEPM 4060 W
2495 € / Euro
Prices valid on the basis of FOB Turkey

2 Pcs. Magnetic Table EEPM 4060 W
4569 € / Euro



EEPM 40100 W

Width: 420 x Length: 990 mm
AC 380 / 440 V (Three Phase)
Pole / k : 84 Piece (Lug)

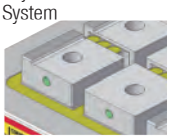
Presentation / Set
Magnetic Table
Control Unit
Mobile Hand Unit
Side Thrusts
Connecting Cables
CNC Cable / Locker
84 Pieces Lugs
Connecting Bolts
English User M.
Demo CD

EEPM 40100 W
3799 € / Euro
Prices valid on the basis of FOB Turkey

2 Pcs. Magnetic Table EEPM 40100 W
6859 € / Euro

Presentation/Gifts As Set:

Mobile, Magnetic Power Adjusted Hand Control System



* Magnetic Tray, Amplifiers Available Connecting Terminals / Bolts

* Tool/ Work Bench Suitable to CNC Counters.

* Demo Disc Visual Processing

* English User Manual

Page 333

MANUAL FORKLIFT

Adjustable Fork Width **Load : 1000 Kg.**
Lifting : 1600 mm

Economic Product
Preferred
At Palletized Loading

* Lifting process is controlled by hand and lowering process is controlled by foot.
* It is produced from steel profile.
* It is robust and long life.
* Compact Design for standard size loads and narrow areas.

Order	Lifting	Capacity
NL - MS 10 - 16	1600 mm	1000 Kg.

Machine Length	1500 mm
Machine Height	2100 mm
Machine Weight	250 Kg.

MANUAL FORKLIFT

Adjustable Fork Width **Load : 1000 Kg.**
Lifting : 3000 mm

Max. Height
3000 mm
With Telescopic
Piston

* At loading in different sizes, with its adjustable feature, it provides stack loads with precision and soft performance without deforming loads.

Order	Lifting	Capacity
NL - MS 10 - 30	3000 mm	1000 Kg.

Machine Length	1500 mm
Machine Height	2060 mm
Machine Weight	370 Kg.

MANUAL FORKLIFT

Adjustable Fork Width **Load : 1500 Kg.**
Lifting : 1600 mm

Economic Product
For Palletized Loadings
And Mould/Plate
Handling

* Safe Pedal Braking System provides the foot safety of the operator thanks to its direction wheels. Provides easy maneuver, compact design and economy of space.

Order	Lifting	Capacity
NL - MS 15 - 16	1600 mm	1500 Kg.

Machine Length	1500 mm
Machine Height	2100 mm
Machine Weight	260 Kg

MANUAL FORKLIFT

Adjustable Fork Width **Load : 2000 Kg.**
Lifting : 1600 mm

Economic Product
Preferred
At Palletized Loading

* Thanks to special designed balance foot, it is used for stacking and lifting of suitable size pallets. Also, it increases stability. Suitable design at mould workshops.

Order	Lifting	Capacity
NL - MS 10 - 16	1600 mm	2000 Kg.

Machine Length	1500 mm
Machine Height	2100 mm
Machine Weight	285 Kg.

MANUAL FORKLIFT

Adjustable Fork Width **Load : 1000 Kg.**
Lifting : 2500 mm

Designed holding pallet in each position, Special Forks designed for low height and large pallets.
Adjustable width forks
Adjustable width support leg

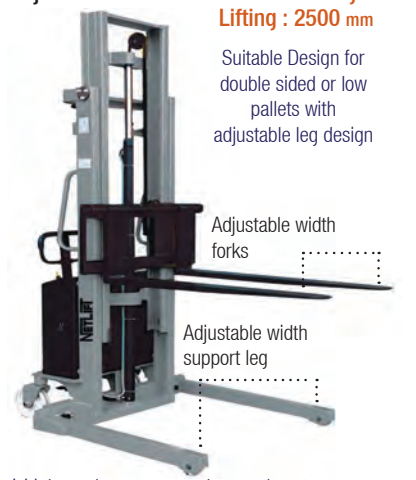
* Design holding pallet at each position.
* Special forks designed for low height large pallets.

Order	Lifting	Capacity
NL - MS 1025A	2500 mm	1000 Kg.

Machine Length	1500 mm
Machine Height	2100 mm
Fork Length..	915 mm
Min. Rotation Radius	1650 mm
Load Center	600 mm
Machine Weight	285 Kg.

SEMI ELECTRICAL FORKLIFT

Adjustable Fork Width **Load : 1000 Kg.**
Lifting : 2500 mm



Suitable Design for double sided or low pallets with adjustable leg design
Adjustable width forks
Adjustable width support leg

* Light and easy, manual control system, powerful 1.6 KV Lifting Motor / precise lift, emergency button for safety, safe pedal leg protection safety at direction wheels.

Order	Lifting	Capacity
NL - DYC 1025A	2500 mm	1000 Kg.

Machine Length	1550 mm
Machine Height	1770 mm
Fork Length.	915 mm
Out to Out Fork Width	210 - 800 mm
Lifting Speed	78 -150 mm / Sn.
Machine Weight	450 Kg.

SCISSOR PLATFORM

Lifting - Lowering - Hanling

Load Capacity : 500 Kg.
Lifting : 880 mm

Brake System
Pedal Fixing Wheeled

Hydraulic Lift System lifting load table with foot pedal. Hand pedal at handle lowering table in a controlled manner, folding arm.

Order	Lifting	Capacity
NL - TT 50	880 mm	500 Kg.

Table Dimension..... 815 x 500 x 50 mm
Min. Table Height..... 285 mm
Arm Height ..... 900 mm
Weight..... 81 Kg.

SCISSOR PLATFORM

Stair Scissor Trolley

Load Capacity : 750 Kg.
Lifting : 990 mm

Large Table Type
Short Scissor /Dynamic

Hydraulic Lift System lifting load table with foot pedal. Hand pedal at handle lowering table in a controlled manner, folding arm.

Order	Lifting	Capacity
NL - TT 75	990 mm	750 Kg.

Table Dimensions..... 1000 x 510 x 55 mm
Min. Table Height. ..... 420 mm
Arm Height ..... 990 mm
Weight..... 125 Kg.

SCISSOR PLATFORM

Double Scissor - High Lifting

Load Capacity : 800 Kg.
Lifting : 1500 mm

Double Scissor - Wide Table Area - High Lifting- Desired Positions- Folding Arm - Pedal Fixing Wheel Brake

Order	Lifting	Capacity
NL - TTD 80	1500 mm	800 Kg.

Table Dimensions ..... 1220 x 610 x 53 mm
Min. Table Height ..... 445 mm
Arm Height ..... 1015 mm
Weight..... 195 Kg.

SCISSOR PLATFORM

Lifting - Lowering - Handling
Extra Wide Table Product

Load Capacity : 500 Kg.
Lifting : 915 mm

Brake System
Pedal Fixing Wheeled

Hydraulic Lift System lifting load table with foot pedal. Hand pedal at handle lowering table in a controlled manner, folding arm.

Order	Lifting	Capacity
NL - TTX 50	915 mm	500 Kg.

Table Dimensions..... 1600 x 810 x 55 mm
Min. Table Height. ..... 290 mm
Arm Height ..... 975 mm
Weight..... 154 Kg.

SCISSOR PLATFORM

Lifting - Lowering - Handling
Extra Wide Table - High Lifting

Load Capacity : 1000 Kg.
Lifting : 1360 mm

Brake System
Pedal Fixing Wheeled

Hydraulic Lift System lifting load table with foot pedal. Hand pedal at handle lowering table in a controlled manner, folding arm.

Order	Lifting	Capacity
NL - TTX 100	1360 mm	1000 Kg.

Table Dimensions ..... 2035 x 750 x 55 mm
Min. Table Height..... 360 mm
Arm Height ..... 1000 mm
Weight..... 333 Kg.

SCISSOR PLATFORM

Double Scissor - High Lifting

Load Capacity : 350 Kg.
Lifting : 1300 mm

Double Scissor - Wide Table Area - High Lifting- Desired Positions- Folding Arm - Pedal Fixing Wheel Brake

Order	Lifting	Capacity
NL - TTD 80	1300 mm	350 Kg.

Table Dimensions..... 910 x 500 x 53 mm
Min. Table Height ..... 355 mm
Arm Height ..... 975 mm
Weight ..... 105 Kg.

Güvenal Group

"Productive Cooperation"

Güvenal
Mould Components Inc.

Güvenal
Machinery Trade Co. Ltd.

GTH
GTH Mould Components Manufacturing Industry Co. Ltd.

GTHkalıp
Mould Bases

Güvenal
Domestic & Foreign Trade Co. Ltd.

Güvenal shop
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