

Pascal mold change system



By means of Pascal Mold Change System,

Reducing the risk of accidents at workplace

Eliminating the shortage of skilled workers

Reducing non-productive time

Eliminate the need for overhead crane

Overhead crane operations are hazardous. Mold change by the changer table instead of the crane. → **page 28**

Reducing crane operation

Fewer skilled workers are available to operate cranes in a high level. In order to reduce crane operations as much as possible "Automatic mold leveling and vertical leveling equipment" is being introduced. → **page 30~33**

Reducing heavy workload in the machine

It is hard work to fix the mold in the machine with wrenches and spanners, also is dangerous to work with hands and feet under the mold or to crawl under the mold. Consider introducing magnetic clamps (→ **page 4~10**) that enables safe, easy, and instantaneously mounting or dismounting of molds.

Free up time for a skilled worker

There are very few employees per factory who can change molds, moreover, they may have many tasks on their hands. It is recommendable to create and work environment where anyone can change molds regardless of experience, gender, etc.

Reducing non-productive time

The time required to change molds and perform maintenance on the machine means the machines stop, which in turn means the production stops. Pascal helps reduce the time as much as possible and increase the production time.

Prohibition of mold rotating work by an overhead crane

Many crane manufacturers prohibit cranes from performing lifting and flipping operations. If an accident occurs where a crane is used for flipping operations despite the manufacturer's prohibition, the company will be held responsible. Consider installing a mold rotator to flip the mold during dangerous crane operations. → **page 56~59**



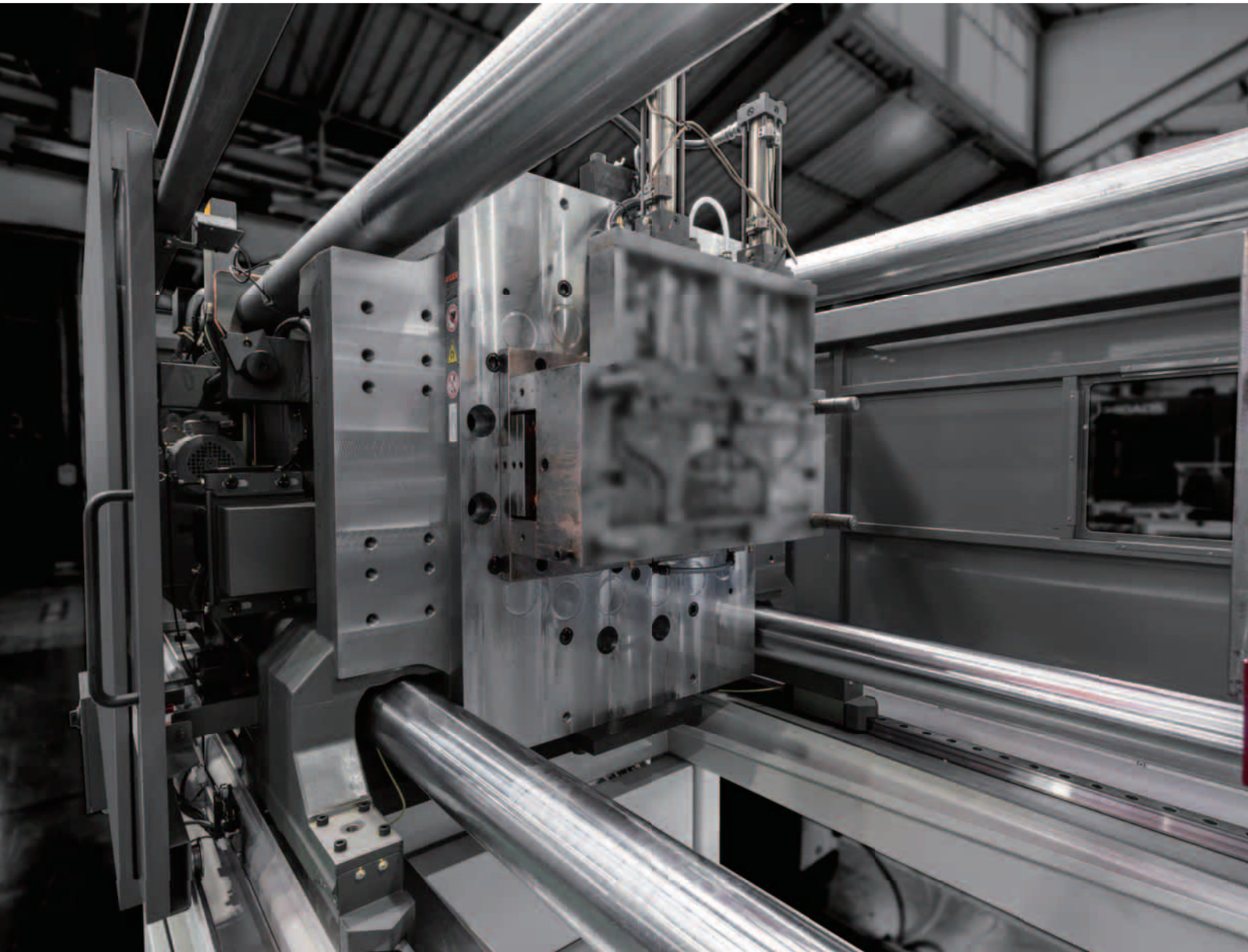
Detail info

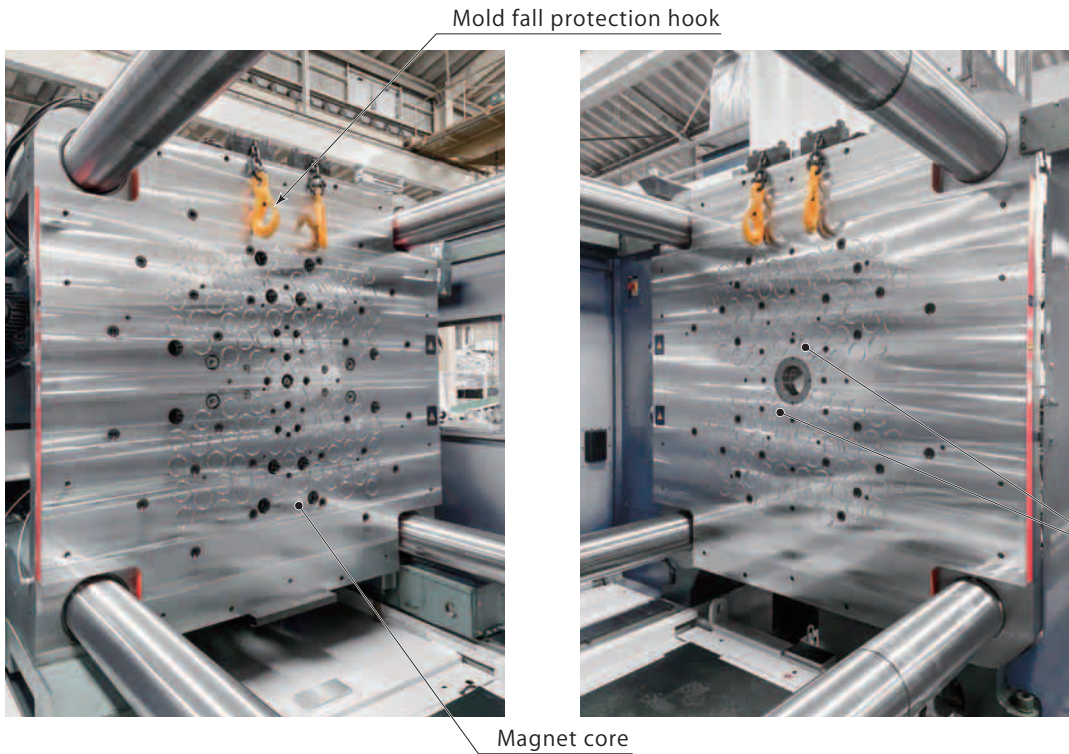
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Mag Clamp

Powerful permanent magnets(neodymium and alnico) clamp molds instantly.

Pascal MAG CLAMP(Magnet clamp) is a mold clamping system for injection molding machines that clamps and absorbs molds using a powerful magnetic force.



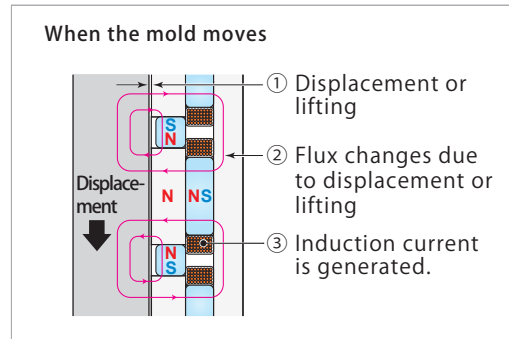


Displacement detection system standard



Mold Displacement Detection System **PAT.**

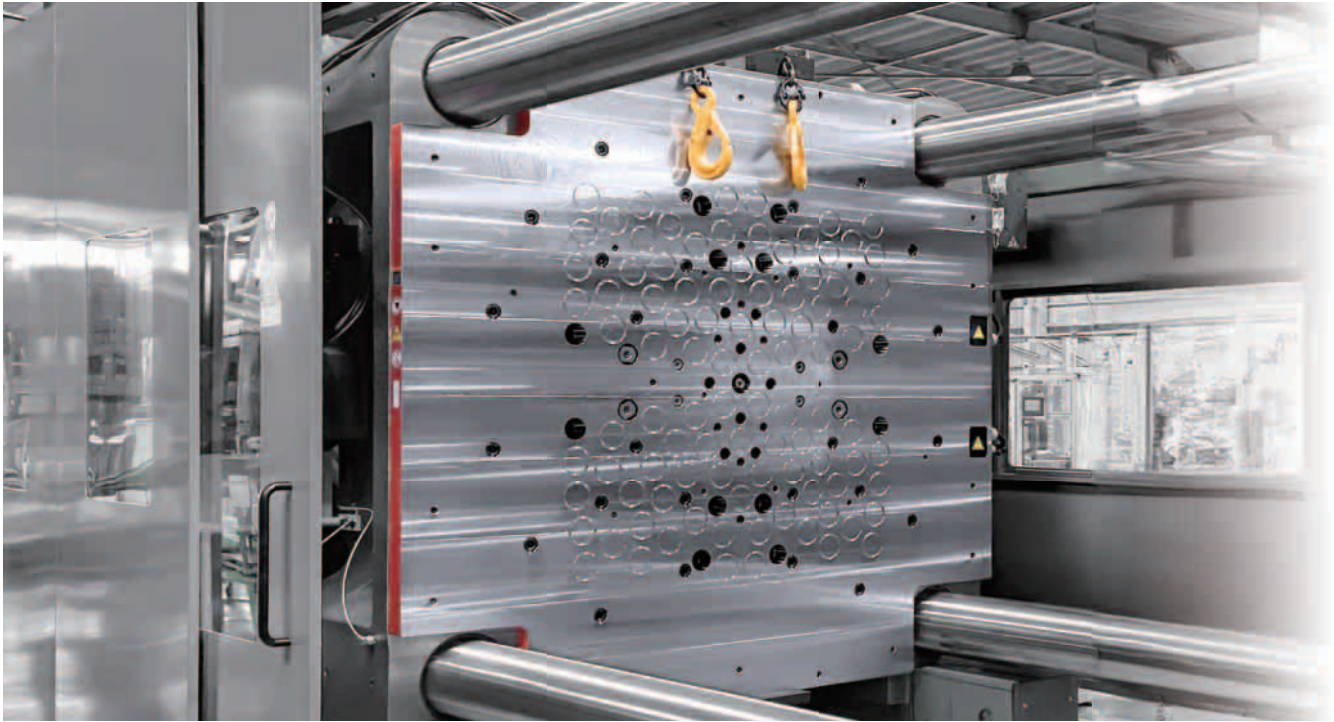
The electromagnetic coil incorporated in the magnetic core near the center of the clamping plate detects any displacement or floating of the mold (When the mold moves, the induced current generated in the electromagnetic coil is detected as a signal). Pascal Mag clamp is less affected by caps, bolts, holes, and grooves on the mold plate, so it can reliably detect mold displacement and floating.



Vertical mold loading

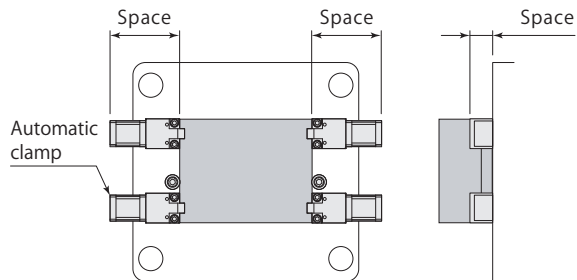
Not necessary to standardize mold plate size. (However, the clamping force of the mold depends on the size of the mold plate) Since the space for automatic clamp or mold mounting screws is not required, flexibility in mold design increases; enabling maximize the machine platen area.

Magnet

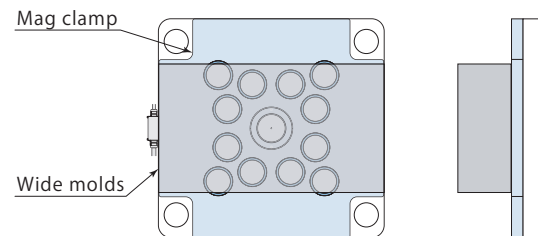


2,500kN (2,500ton) machine Vertical loading

Automatic clamps require mounting space on the machine platen.



Mag clamp allows greater flexibility in mold design.

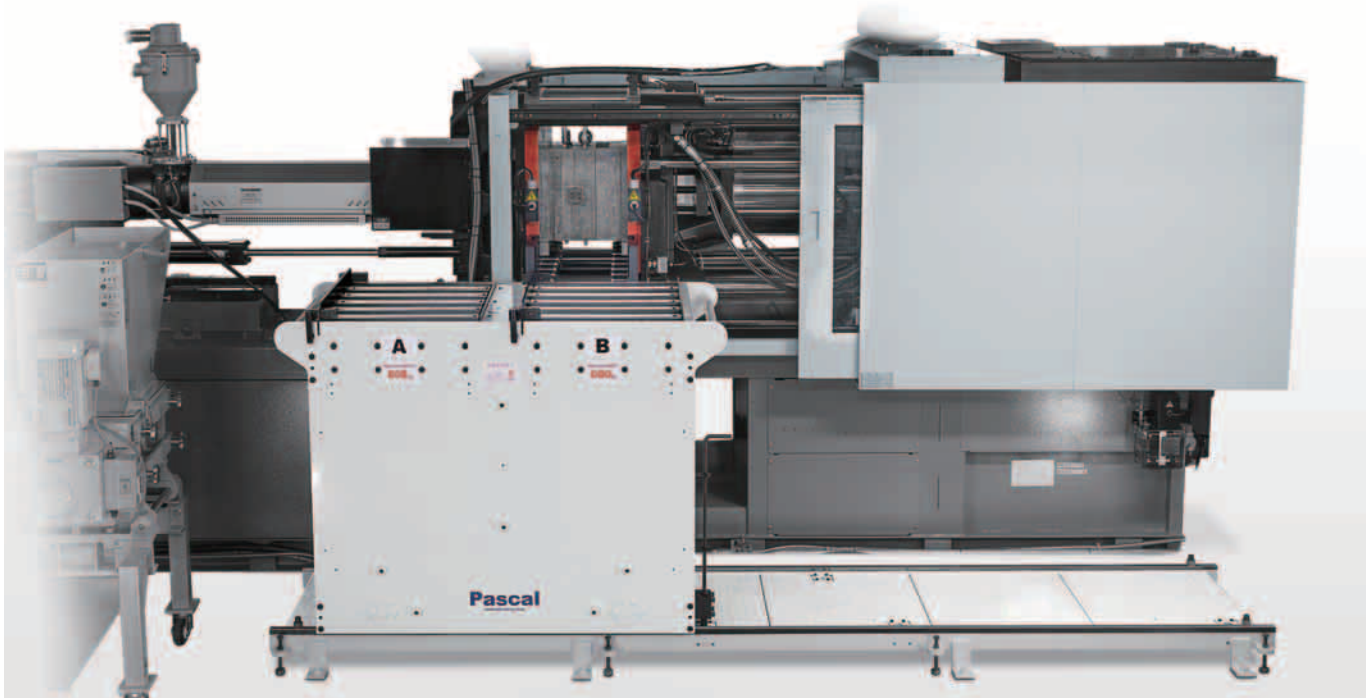


Horizontal mold loading

Even when mold height is not standardized, horizontal mold loading is possible simply by adjusting the mold transferring level.

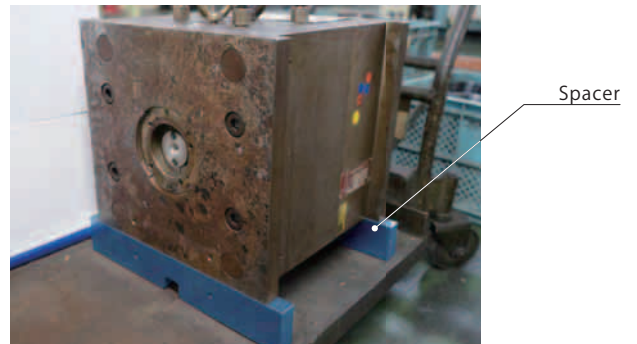
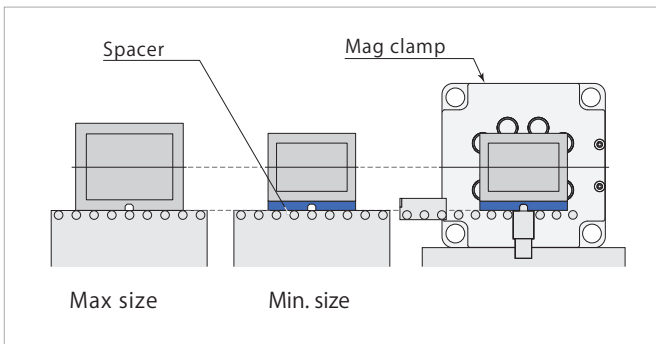
Mag clamps can be used for both vertical and horizontal mold loading

Magnet



500kN (50ton) machine Horizontal loading

Not necessary to remanufacture the mold plate.
Only additional spacers are required for horizontal mold loading.



Circle Core Mag Clamp **PAT. P.**

Low-cost model "Slim" type is added in product lineup.

In addition to the conventional standard shape of the clamp, a new "Slim" model with a simplified plate shape has been introduced to reduce costs.



Low-cost model
"Slim" type

Displacement
detection system
standard

Displacement
detection core

Magnet core

3,500kN (350ton) machine: Vertical loading Circle core mag clamp

Magnet

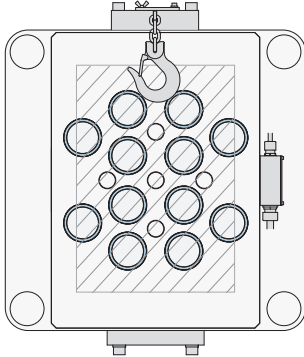
1 BY 1

120 °C

Mold Displacement Detection System

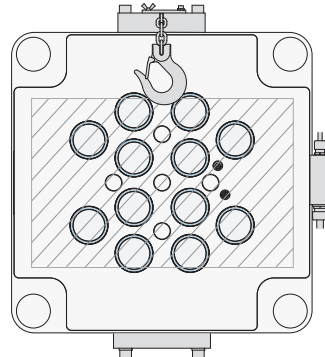
Slim plate

New



Slim model

It is best suited for when the mold width fits inside the tie bar.



Standard model

It is best suited for when the mold width fits inside the tie bar.

■ Technical Data

Model No.		MFA	MRA
Plate		Slim	Standard
Clamp force	kN	7	
Operating temperature	°C	120	
Flux height	mm	約 20 (Mold plate material: SS400)	
Plate thickness	mm	50	
Power Voltage		AC200 / 220V , AC380V, AC440V, AC480V	
Way of Control		1 BY 1	
Machine tonnage	kN	750~6,500	500~30,000
Sensor		MoldMold Displacement Detection System (Stationary / Moving platen)	

- Operating temperature is the temperature of the surface of the magnetic plate.
- Clamp force means the force generated by a magnet core.

Multi Mag Clamp **PAT.**

It helps to significantly reduce the initial cost for Mag Clamp

Multi Mag Clamp is a system that allows multiple Mag Clamps to share the control panel that was equipped for each Mag Clamp.

Slim plate &
Multi controller
Significant reduction
of mag clamp introduction cost

Multi controller

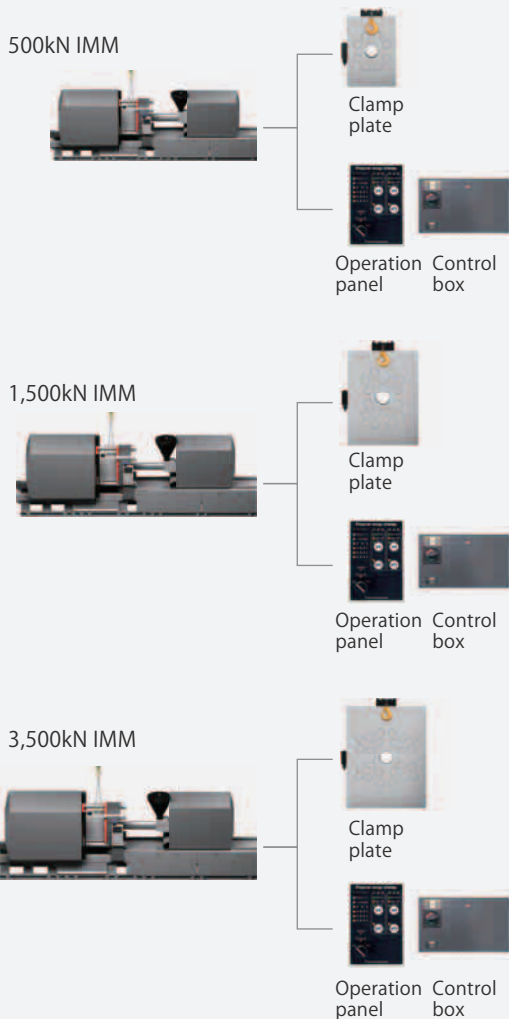


2,800kN (280ton) IMM Vertical loading
Circle core multi-mag clamp

- Magnet
- Multi
- 120 °C
- Proximity Switch
- Slim plate
- 4,000kN up to

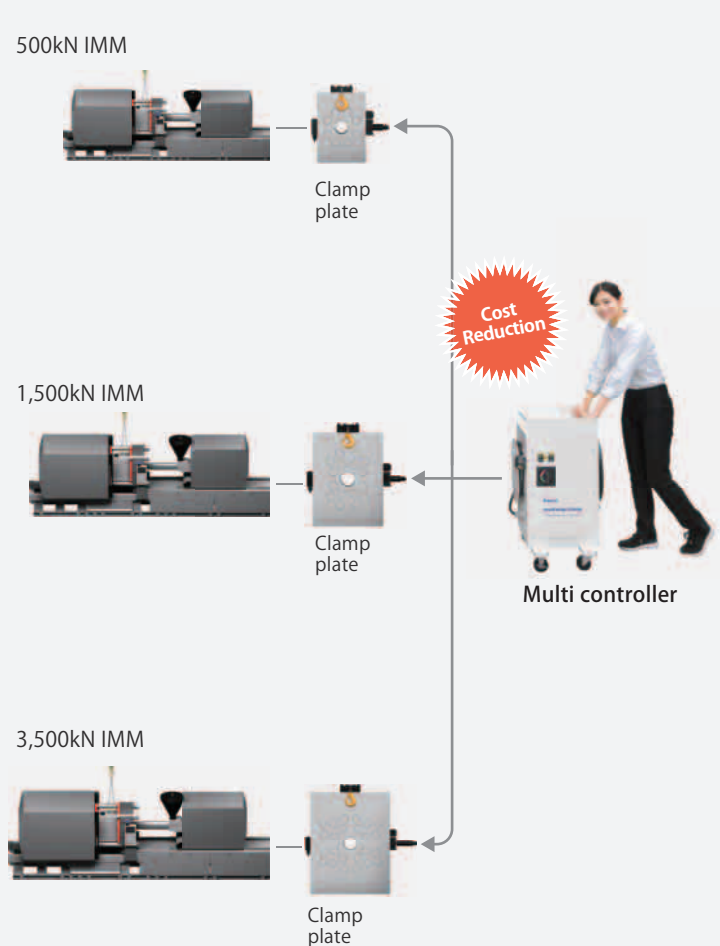
1 BY 1 Mag Clamp

Each Mag Clamp is equipped with a operation/control panel.



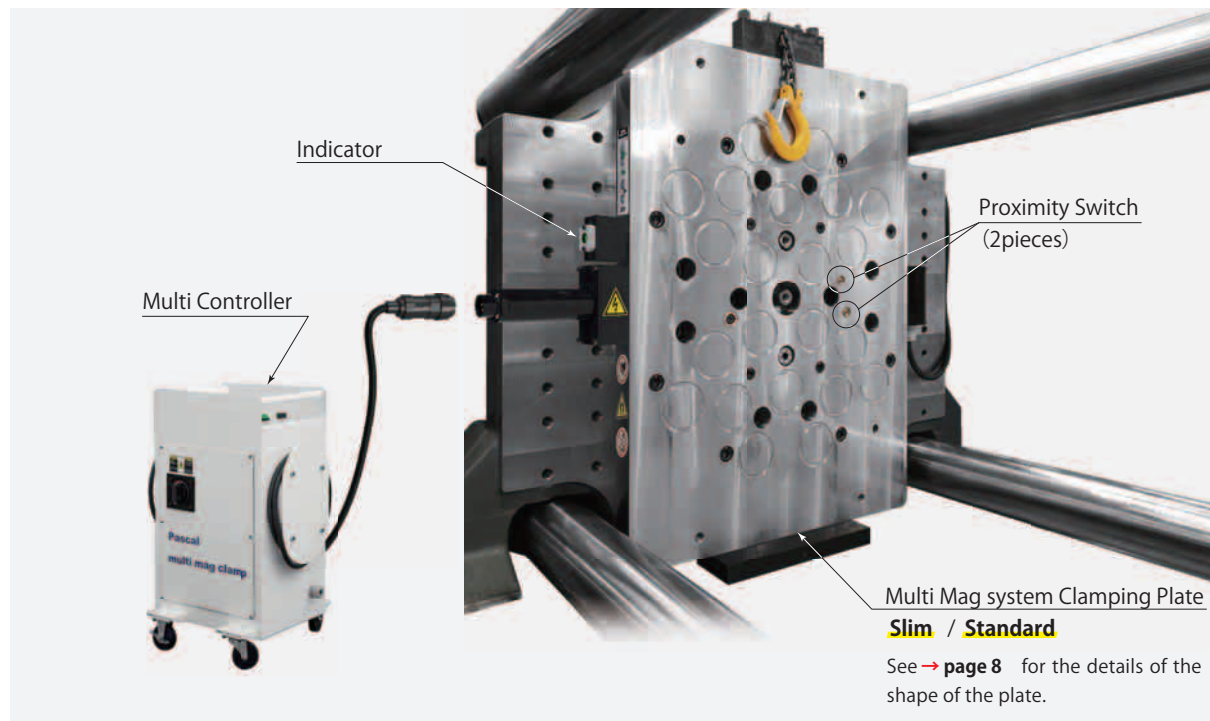
Multi Mag system

Multi Controller **for multiple Mag Clamps**



Multi Mag Clamp Specifications

Multi Mag system System Constitution



Multi Controller

This is a cart-type operation panel that can be shared by multiple mag clamps. Move it to the mag clamp and perform clamping/unclamping operations.



Indicator **PAT.**

Clamp status(ON or OFF) is indicated mechanically

When clamp
ON



When clamp
OFF

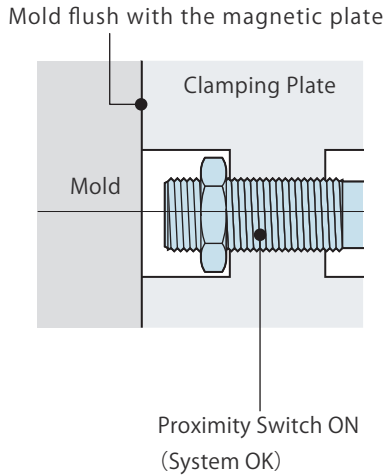


Multi Mag Clamp Specifications

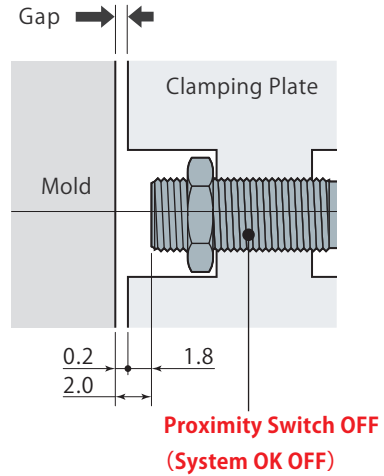
■ Sensor : Proximity Switch (Gap detection)

When the mold is more than 0.2mm away from the magnetic plate (floating), the proximity switch turns off and makes the moving platen stop. (The function differs from the conventional displacement detection. Contact Pascal for details.)

Normal clamped status



When the mold detaches



■ Technical Data

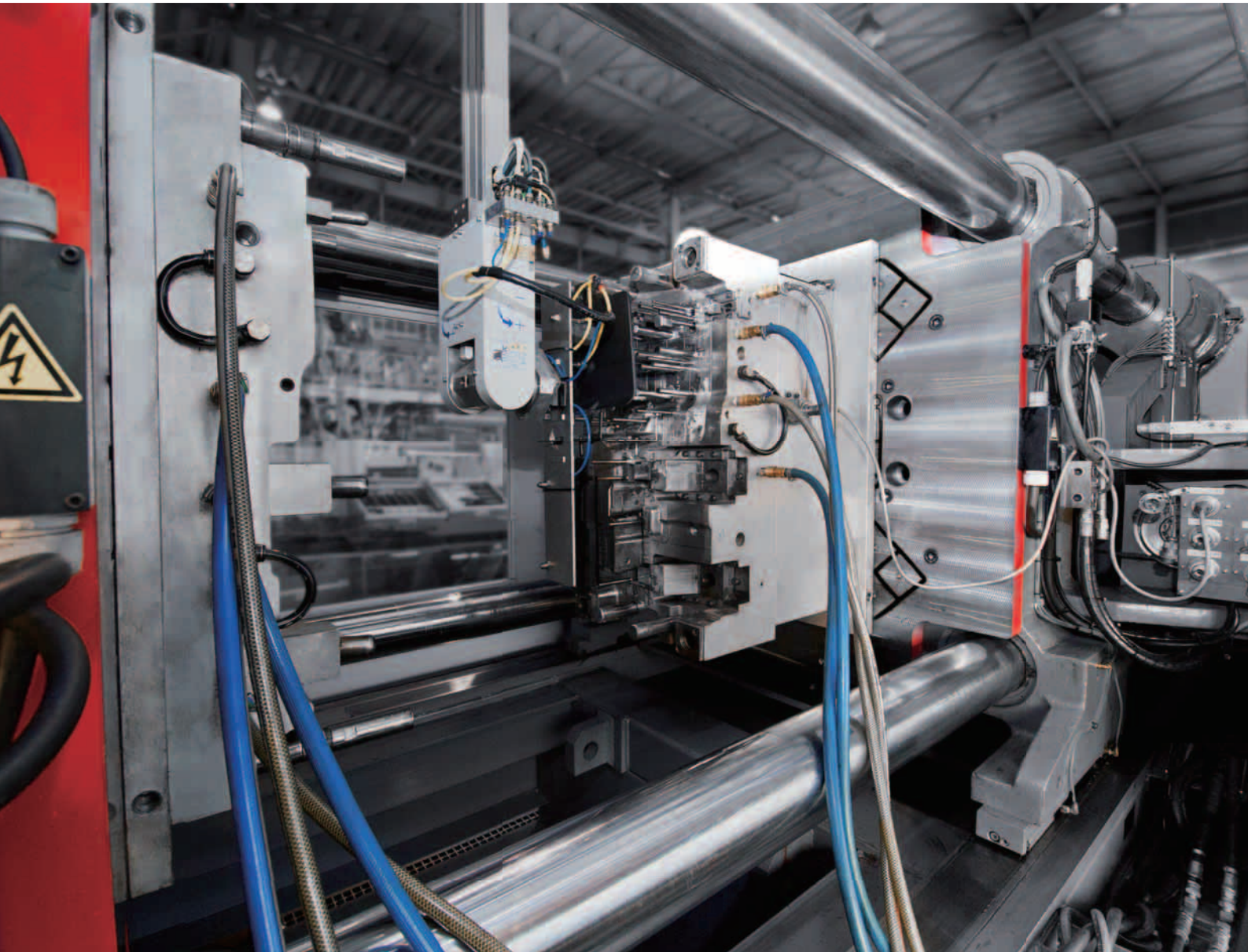
Model No.		MFA_M	MRA_M
Plate		Slim	Standard
Clamp force	kN	7	
Operating temperature	°C	120	
Flux height	mm	約 20 (Mold plate material: SS400)	
Plate thickness	mm	50	
Power Voltage		AC200 / 220V	
Way of Control		Multi	
Interlocking		Mold Open/Close (System Error)	
Machine tonnage	kN	800~4,000	500~4,000
Sensor		Proximity Switch (Stationary / Moving platen)	
Clamp status		Indicator	

- Operating temperature is the temperature of the surface of the magnetic plate.
- Clamp force means the force generated by a magnet core.

Square Core Mag Clamp

Reliability backed up by a delivery record of 7,000 unit

Square core type of Mag clamp is selected for Multi-color/Vertical molding machines, high temperature (120°C and over) and 35mm thickness of Mag plate.



Square Core Mag Clamp

Magnet

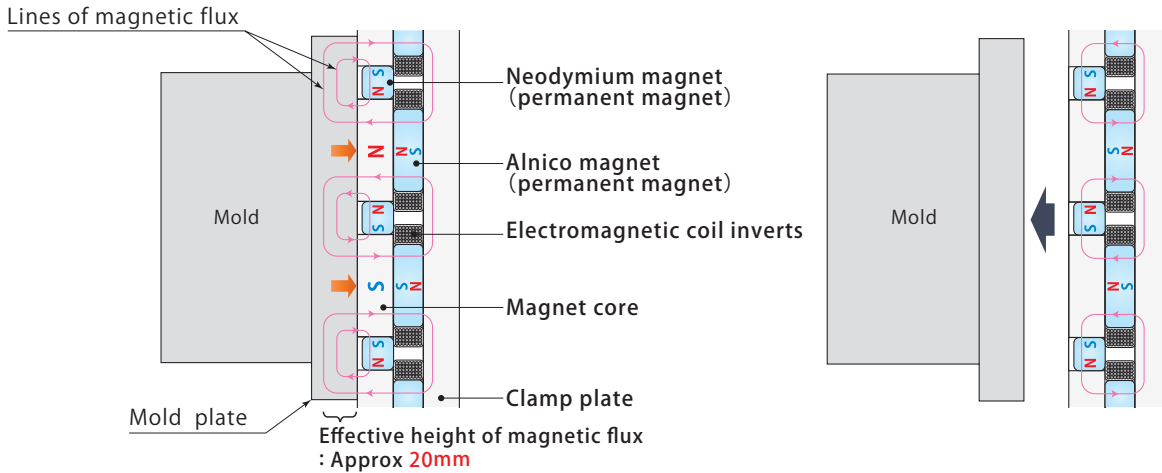
1 BY 1

80°C / 150°C / 180°C

Mold Displacement Detection System

Thin plate available

Structure and Function



Clamp (Magnetized)

- ① Electromagnetic coil is energized for in 0.5 sec.
- ② Polarity of alnico magnet is inverted. ③ Neodymium magnet and alnico magnet become homopolar
- ④ Magnet core becomes a strong magnet to clamp the mold.

Unclamp (Demagnetized)

- ① Electromagnetic coil is energized in 0.5 sec.
- ② Polarity of alnico magnet is inverted. ③ Magnetic flux of neodymium and alnico is not emitted from the surface of the magnet core so that the mold can be unclamped.

Technical Data

Model No.		MG□	
Clamp force	Standard 50,52*mm	70×70mm	7.35kN
		75×75mm	7.84kN
		115×115mm	15.68kN
	Thin Type 35mm	32×100mm	3.43kN
		50×50mm	2.45kN
		100×100mm	7.84kN
Operating temperature		°C	0~80
Flux height		mm	20 (Mold plate material: SS400)
Power Voltage		AC200 / 220V ±5% (50/60Hz)	
Sensor		Mold Displacement Detection System (Stationary / Moving platen)	

● Operating temperature is the temperature of the surface of the magnetic plate. 0 ~ 150°C or 0 ~ 180°C for heat proof type

● Clamp force means the force generated by a magnet core.

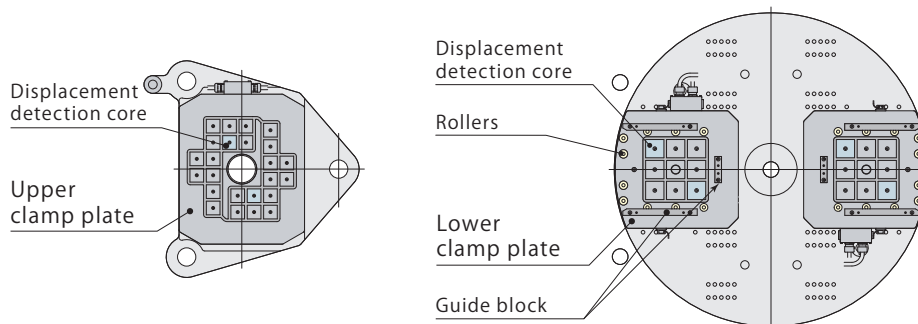
* : For injection molding machines of 4,500kN or more, the plate thickness is 52mm.

Mag Clamp for Vertical Molding Machines

The introduction of Mag Clamp to vertical molding machines can eliminate the need for bolt tightening in a narrow area at the machine (no temporary tightening or re-tightening work), resulting in a significant reduction in setup time. There is also need to standadize the mold size.



750kN (75ton) Vertical IMM (fixed table)



Mag Clamp for Multi-Color Molding Machines

Overwhelmingly improved efficiency. In combination use of Mag Clamp with a die leveler (→ page 30) or a die setter (→ page 32) can further reduce setup time.

Magnet



6,000kN (600ton) Two-color IMM Vertical loading Mag clamp

Hand tightening method	Mag clamp
<p>Mold changing time 60min (250ton class)</p> <ul style="list-style-type: none"> ● Limited power exertion. ● No visual. ● Need to move to operation / non-operation side to install / remove bolts. ● Easy to drop tools. ● Install bolts many times. 	<p>Mold changing time 15min (250ton class)</p> <ul style="list-style-type: none"> ● Simply use the operation panel to clamp and unclamp the mold.

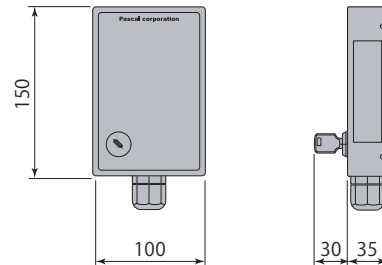
Mag Clamp System Constitution

Operation Panel

For vertical loading
model **ESMS-A**

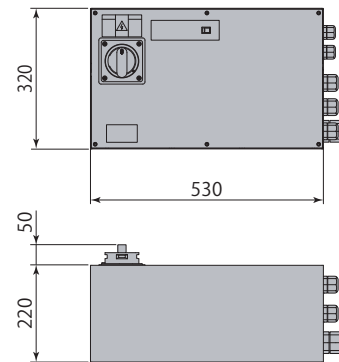


For horizontal loading
model **ESMS-B**



Control Panel

model **EMGR** for Circle core mag clamp
model **EMGS** for Square core mag clamp



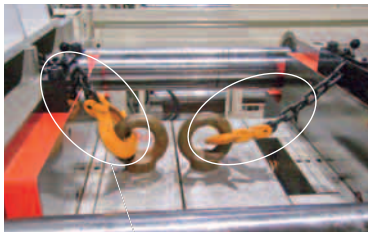
* Size for model EMGR/S-A2J2

Mag Clamp Specifications

Option

- Non standard voltage arrangement (50/60Hz)
- High temperature
 - 0 ~ 150°C
 - 0 ~ 180°C
- Rust proof, polish arrangement for clamp plate
- Additional magnet core
- Special core layout
- Horizontal loading arrangement
- DD mag clamp
- Proximity sensor to detect the mold covered
- Indicator
- Mold fall protection hook model MGR (Fixed side • Movable side)
- Die stopper

With a easily adjustable chain

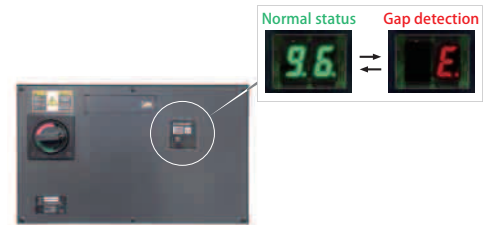


Mold fall protection hook

DD Mag Clamp

The clamp with DD sensor which can numerically check the mold. It can detect the clamp force decrease caused by heat, mold base material and a clearance between the mold and magnet core.

As for DD mag clamp, the status indicator is added to the control box.



Display panel
control panel built-in type

New

Indicator (Optional) PAT.P.

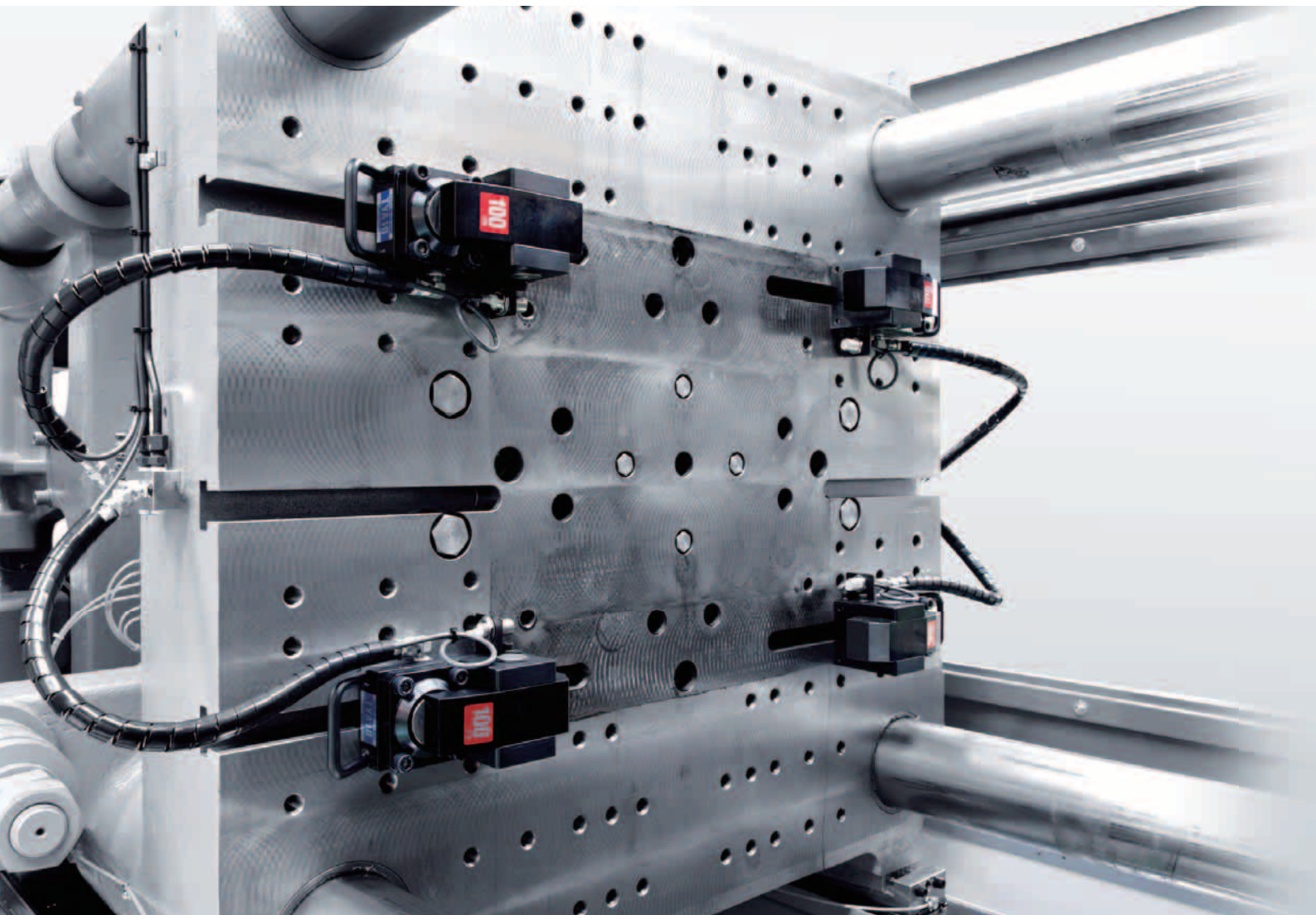
A mechanical indicator can be attached, which works with magnetic force of the plate.



Hydraulic Clamp

Suitable for the application that does not accept the Mag Clamp.

Hydraulic

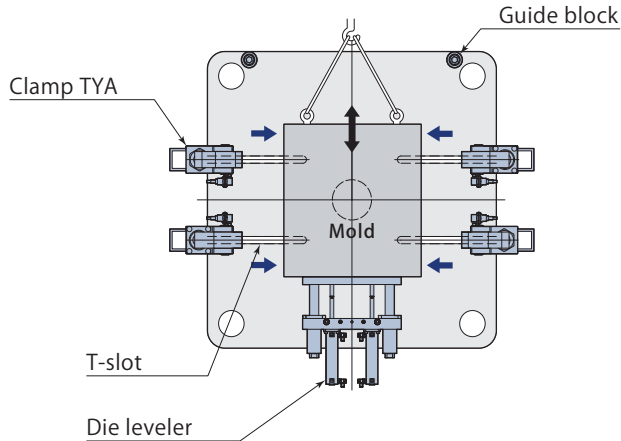


4,500kN (450ton) IMM Vertical loading Slidable clamp TYA

■ Slidable clamp & Die Leveler

Manual slide clamp

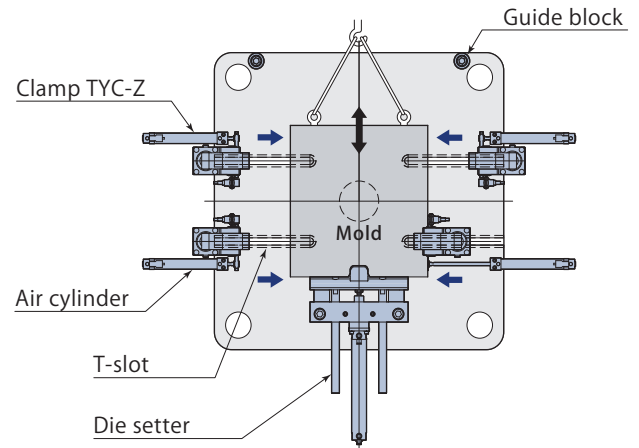
model **TYA** model **TYB** model **TYJ**



■ Auto Slide Clamp & Die Setter

Auto slide clamp with a pneumatic cylinder

model **TYC-Z** model **TYC-R**

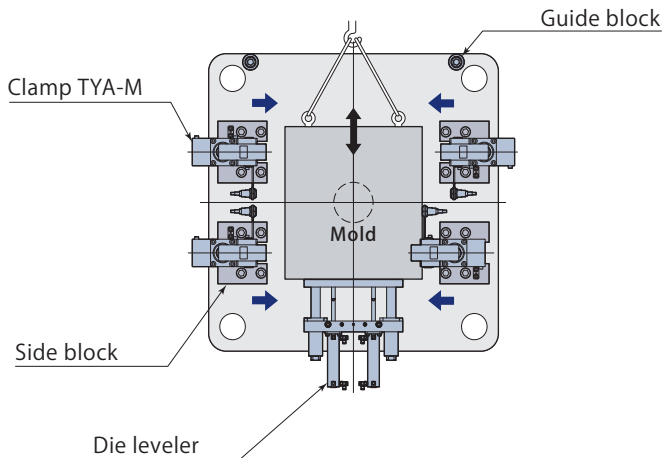


■ T-slott-less Slide clamp with Die Leveler

T-slot-less clamp and guide block

Slideable clamp without the machine T-slots

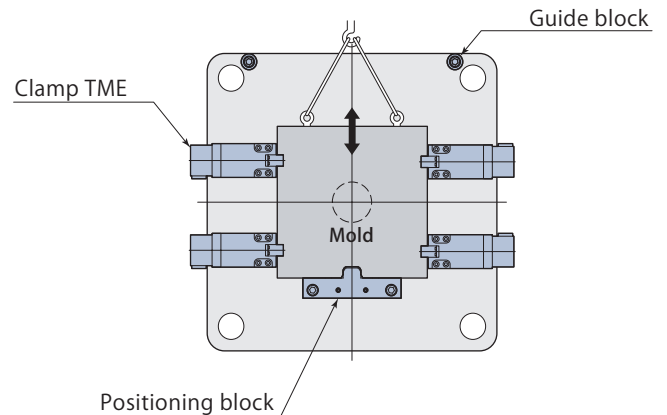
model **TYA-M** model **TYC-M**



■ Bolted clamp and Positioning block

Bolted clamp

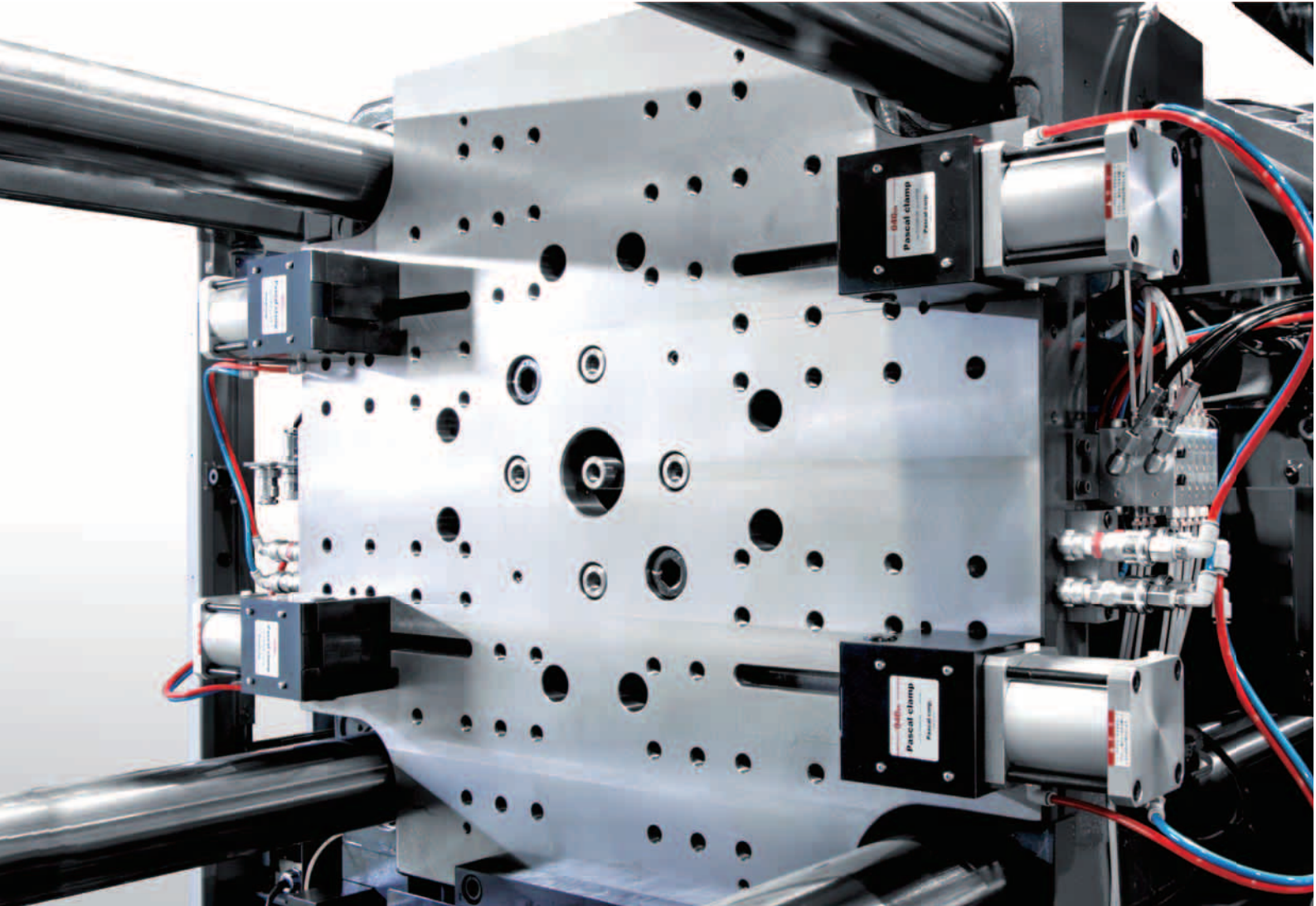
model **TME** model **TKB**



Pneumatic Clamp

Air-driven mechanical clamp which is suitable for the machine that cannot adopt Mag clamp.

A i r

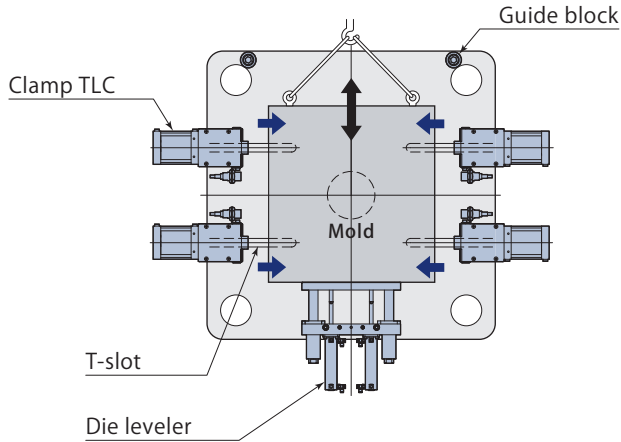


2,200kN (220ton) IMM Vertical loading Slidable clamp TLC

■ Slidable clamp & Die Leveler

Manual slide clamp

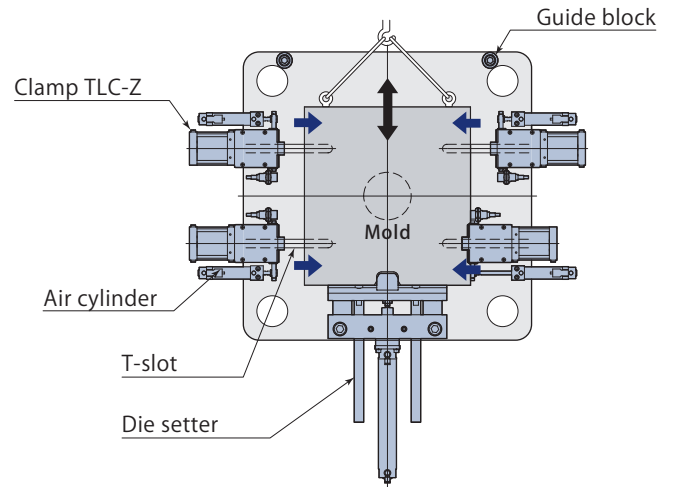
model **TLC**



■ Auto Slide Clamp & Die Setter

Auto slide clamp with a pneumatic cylinder

model **TLC-Z** model **TLC-R**

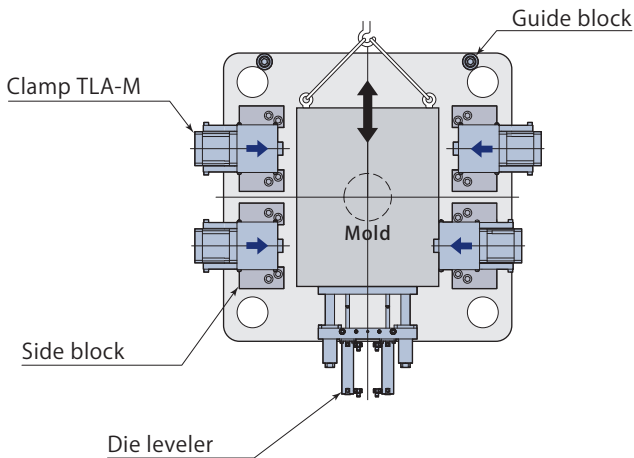


■ T-slott-less Slide clamp with Die Leveler

T-slot-less clamp and guide block

Slideable clamp without the machine T-slots

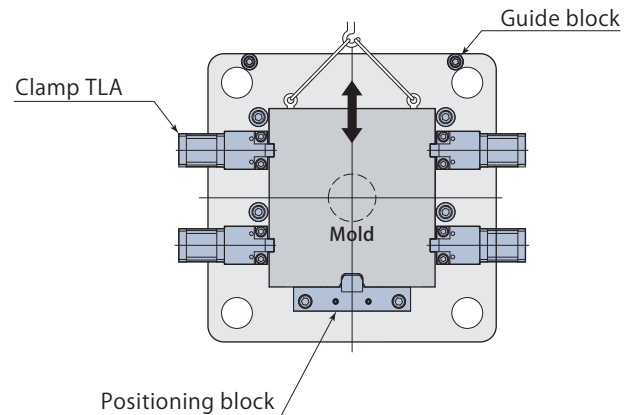
model **TLA-M**



■ Bolted clamp and Positioning block

Bolted clamp

model **TLA**



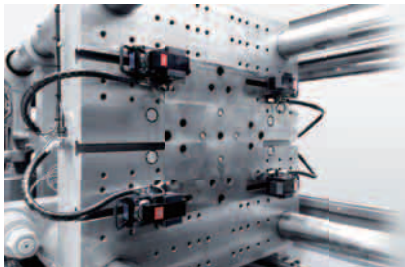
Hydraulic • Pneumatic Clamp Examples

Hydraulic

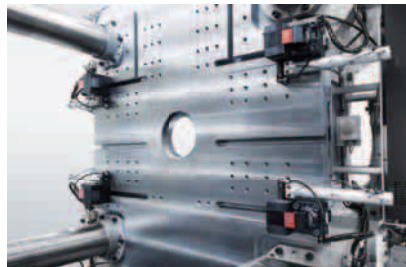
Air

Long Stroke

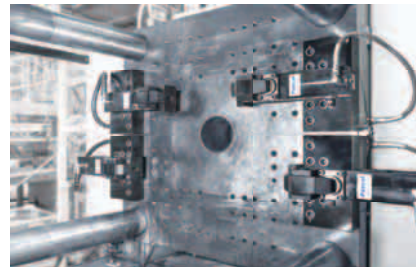
Hyd. Slidable clamp TYA



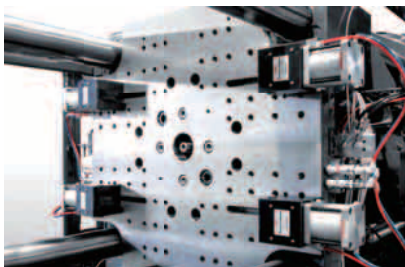
Hyd. Automatic slidable clamp TYC-Z



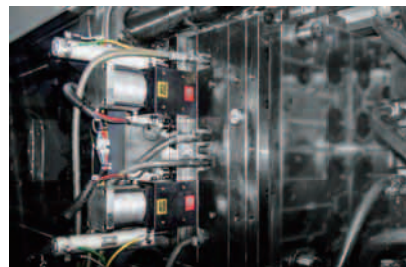
Hyd. Clamp, T-slot- less slidable type TYA-M



Air Slidable clamp TLC



Air Automatic slidable clamp TLC-Z



Air Clamp, T-slot- less slidable type TLA-M



Vertical IMM

Slidable clamp Long stroke type



There is a risk of mismounting the wrong size of mold in case of choosing long stroke type of clamp.

model **TYB** The max. 5mm (in case of using a lever spacer, max. 15mm) of dimensional variation can be absorbed.

Pin engagement groove

Magnet
Install the spacer tightly on the clamp body.

Lever spacer

Pin
The spacer is pulled up at unclamping.

model **TYJ** The max. 10mm lever stroke can accommodate dimensional variation of clamping height.

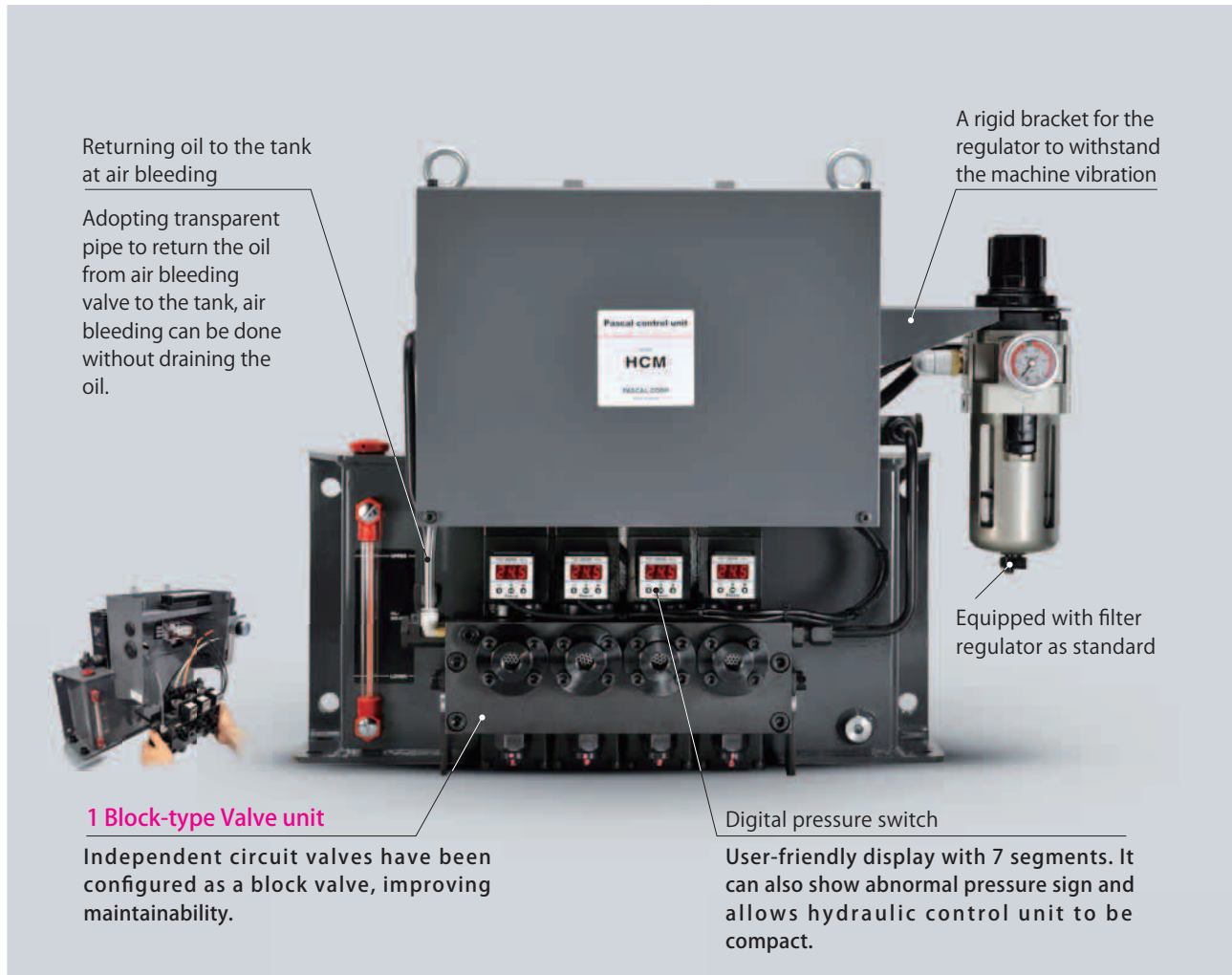
Thick ness +10_{mm} Allow

50_{mm} 45_{mm} 40_{mm}

Mold plate thickness

Control unit HCM

New control unit model HCM for easy maintenance



Hydraulic • Pneumatic Clamp System Constitution

Hydraulic

A i r

Operation Panel

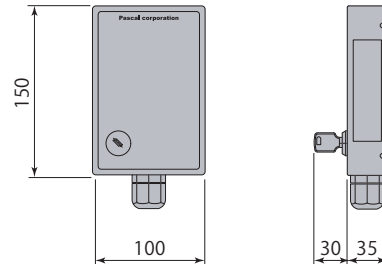
For vertical loading

model **ESTL-A**



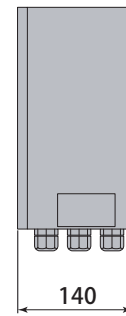
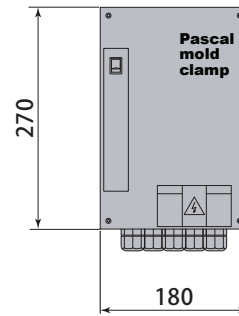
For horizontal loading

model **ESTL-B**



Control Panel

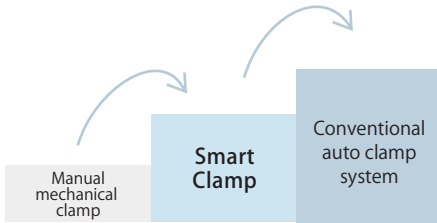
model **ECTL**



Operation Panel ELC-B/Smart Clamp

Operation panel ELC-B/Smart clamp

Simple, economical clamp system with more functionally limited than conventional system. A new system is being seen as an intermediate between manual and automatic clamp systems.



Recommended to those who

Intends to reduce initial cost for auto clamp and increase installation rate.

Intends to have simply clamp / unclamp the mold automatically.



	Smart Clamp System	Conventional auto clamp system
Introduction cost	◎	○
Operation panel	Operation panel model ELC-B 	Operation panel model ESTL-A 
Control unit	Control unit (To be installed in the machine control box) 	Control box model ECTL 

Applicable system

■ Hydraulic clamp

TYA	○
TYC-Z/R	×
TYA-M	○
TME	○
TKB	○

■ Pneumatic clamp

TLC	○
TLC-Z/R	×
TLA-M	○
TLA	○

Mold Change System (Horizontal Loading)

By combining the clamping system with a mold change table, a mold change system that does not depend on an overhead crane can be realized.



Carelessly coming under the craned mold.



Unhooking the mold stepping on the machine tie bar.

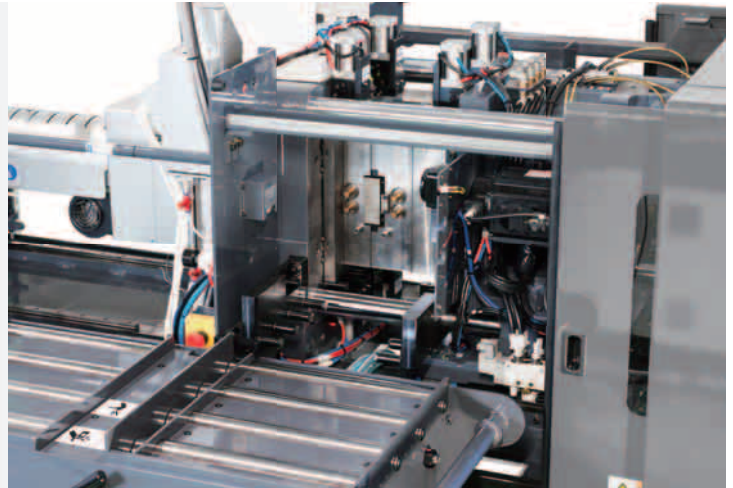
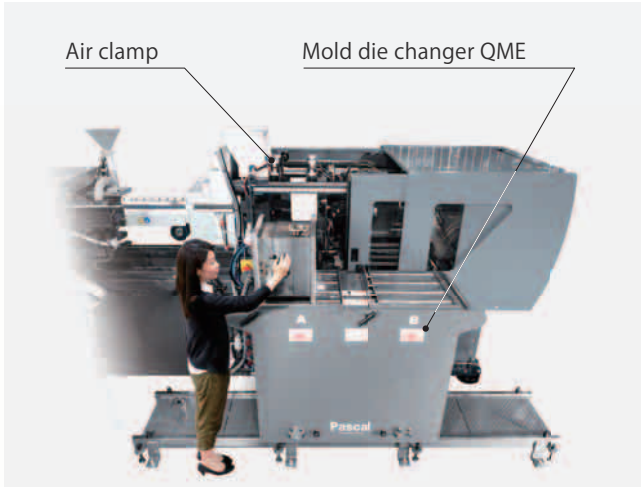


Improving the above work with hazards by horizontal change system

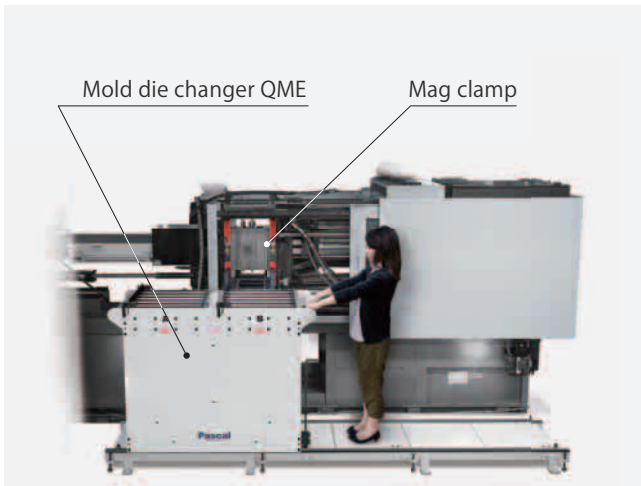
Magnet

Mold Changer

■ Mold Change system (Horizontal Loading) Pneumatic clamp and Mold Die Changer QME



■ Mold Change system (Horizontal Loading) Mag Clamp and Mold Die Changer QME



Locate Ring and Die Leveler

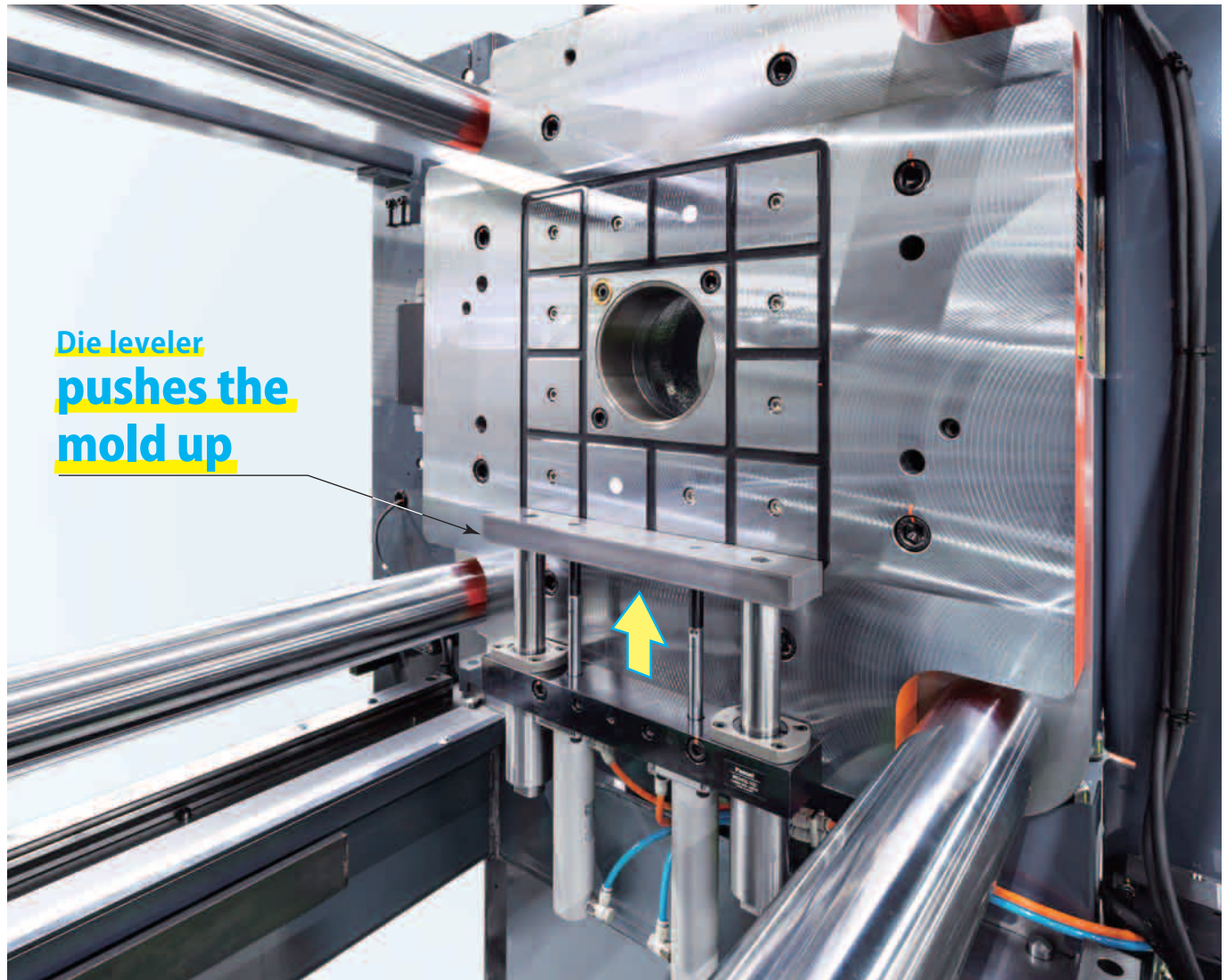
It can automate the leveling of the mold

Positioning tool

Leveling

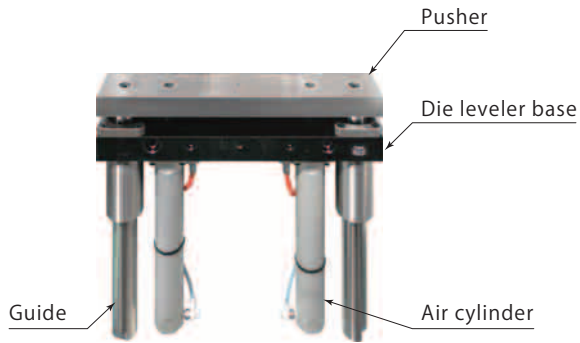
Up to 2.5 ton mold

The leveling can be achieved by the die leveler after the mold is positioned by the locating ring.



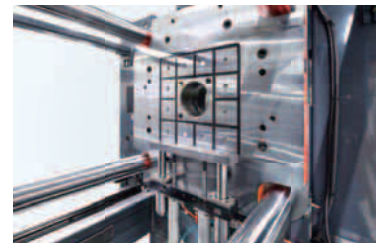
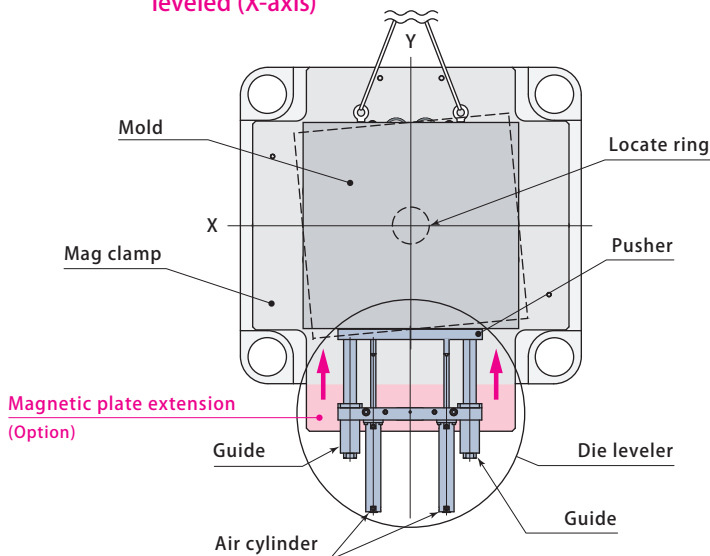
**Die leveler
pushes the
mold up**

1,000kN (100ton) IMM Vertical loading Die leveler & Locate ring & Mag clamp



Model No.	MDH04	MDH08	MDH12	MDH25
Mold Weight kg	400	800	1,200	2,500

When the pusher raises after the mold is centered by the locating ring, the tilted mold is correctly leveled (X-axis)



1,000kN (100ton) IMM Die leveler & Mag clamp



2,800kN (280ton) Two-color IMM Die leveler

Die Setter

Positioning tool

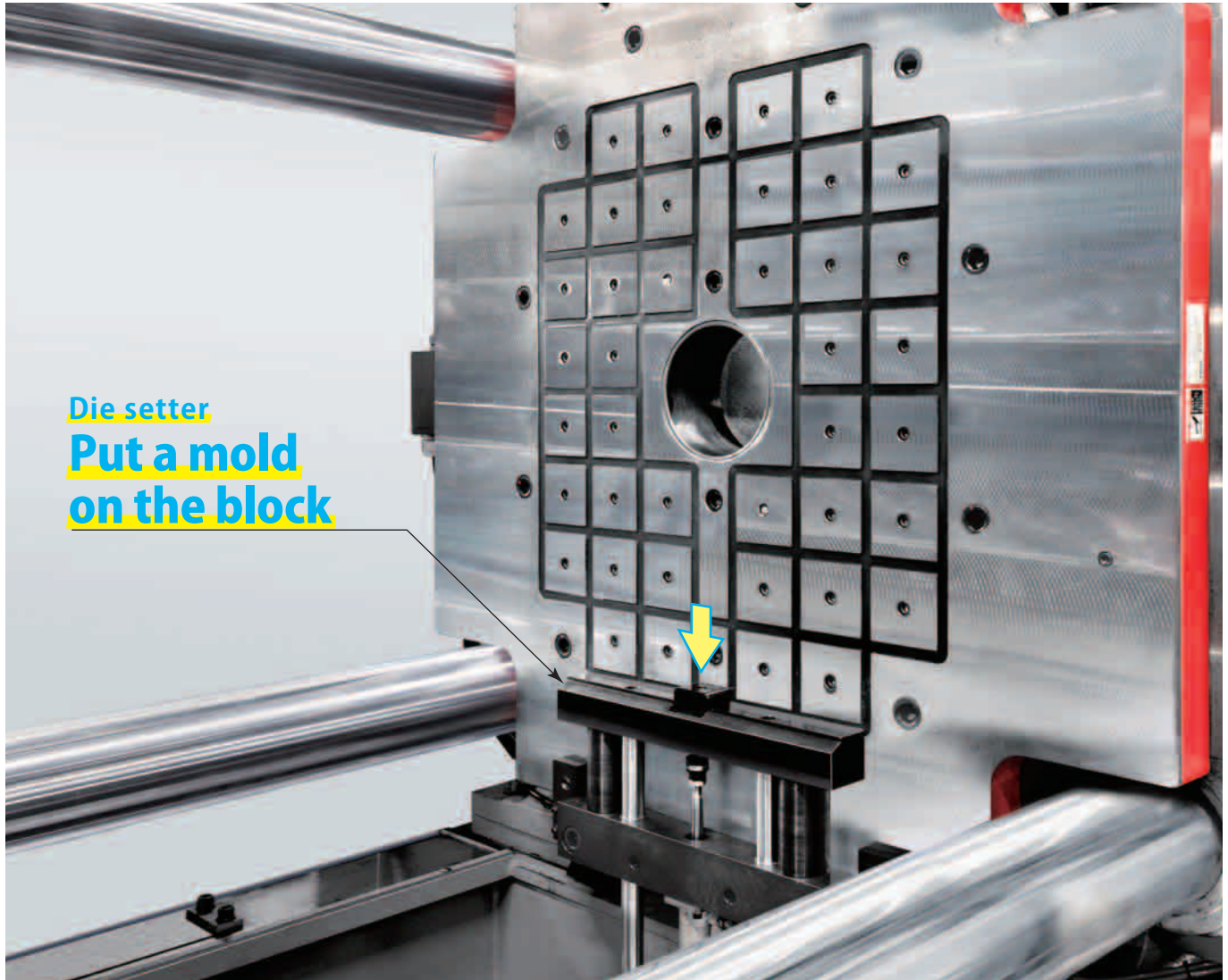
Leveling

Perpendicularity

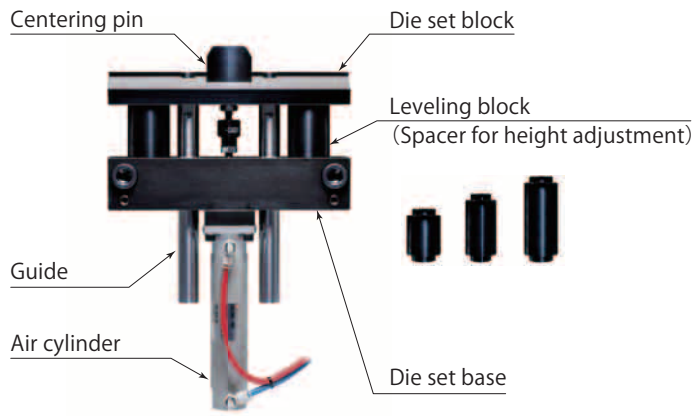
Mold Weight Max. 15 tons

Offering a Die Setter in place of locate ring

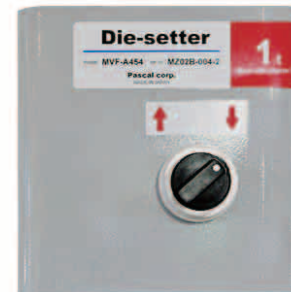
The mold positioning (X-Y axis) can be securely and easily done by simply placing the mold on the die setter.



3,500kN (350ton) IMM Vertical loading Die setter & Mag clamp

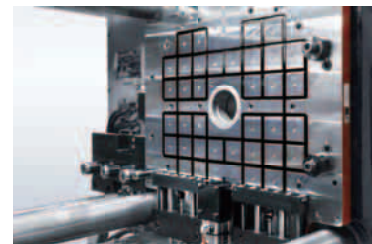
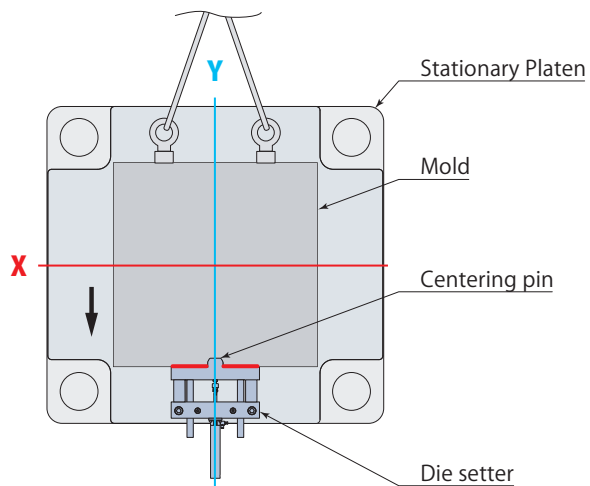


Operation panel

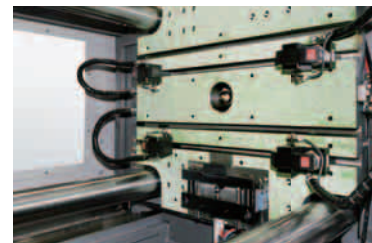


Model No.	MDL01	MDL03	MDL04	MDL06	MDL10	M DL15
Mold Weight kg	1,000	3,000	4,000	6,000	10,000	15,000

The level(X) is fixed by placing the mold on the die setter.
Vertical position (Y) is fixed by the center pin.



3,500kN (350ton) IMM Horizontal loading
Die setting roller & Mag clamp



1,800kN (180ton) IMM Vertical loading
Die setter & Hydraulic clamp, slidable type TYA040

Octagonal Locate Ring

For positioning a hoop insert mold

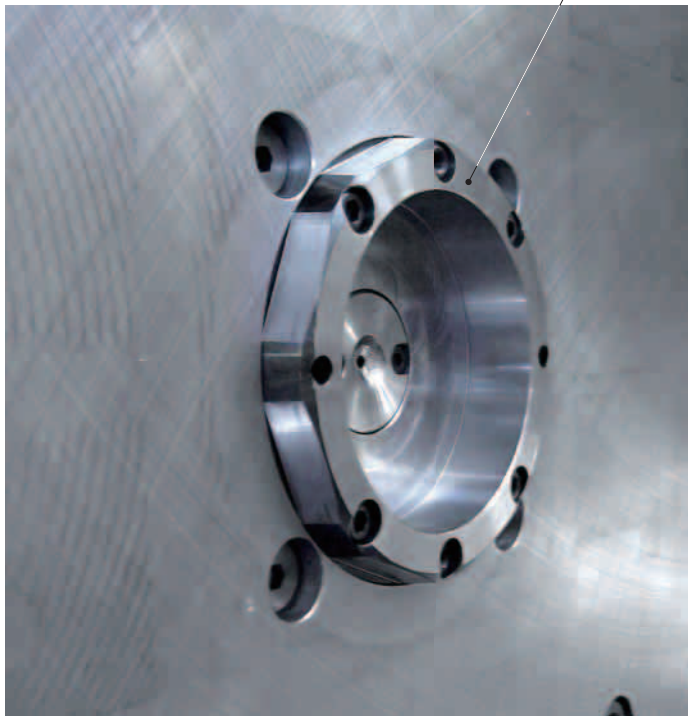
Positioning tool

Centering

Up to 2000kN Injection molding machine

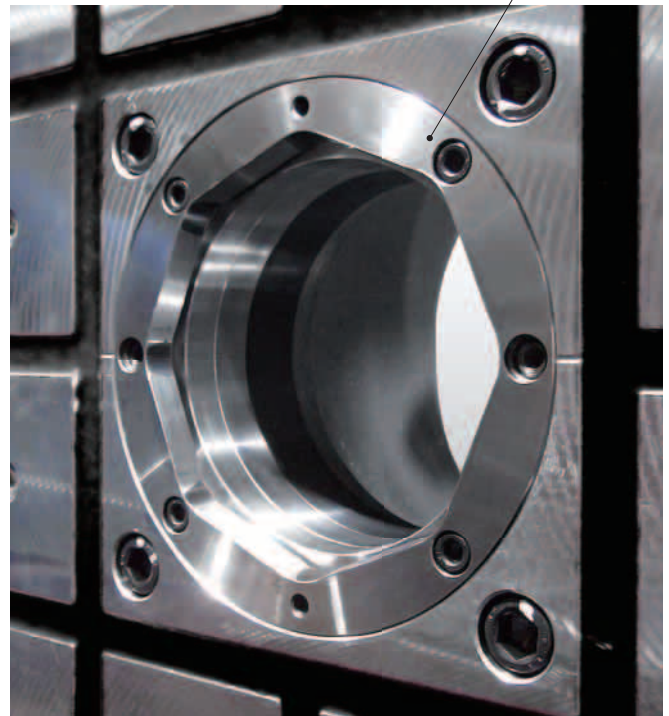
Mold positioning with octagonal (octagonal tapered cone) locate rings eliminates insert point misalignment and robot re-teaching, resulting in significant setup improvements.

Octagonal locate block
(Locate ring cylindrical)



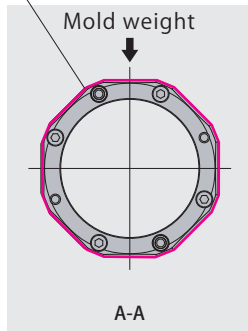
Mold side

Octagonal locate ring
(Base)



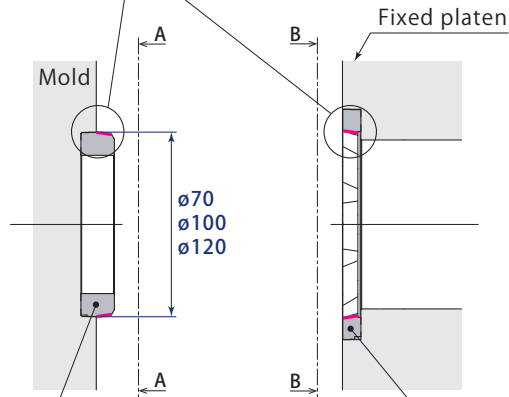
Fixed platen side

High rigidity can be obtained by receiving mold weight on multiple faces.



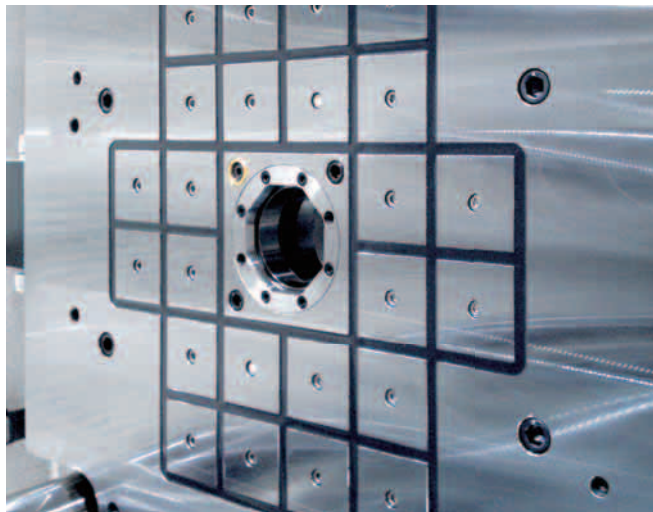
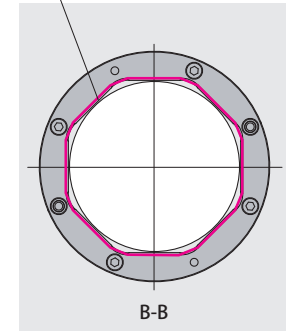
Octagonal locate block
MCL 70P / MCL 100P / MCL 120P

Taper allows easy mold setting.

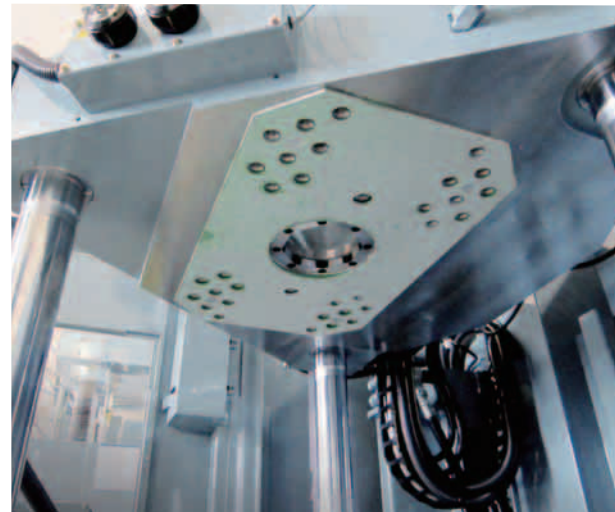


Octagonal locate ring
MCL 70S / MCL 100S / MCL 120S

Restrained 8-faces can provide easy centering.



1,800kN (180ton) IMM Vertical loading
Octagonal locate ring & Mag clamp



500kN (50ton) Vertical IMM
Octagonal locate ring (positioning for upper mold) & Roll

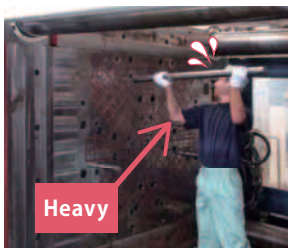
Mag Ejector Rod/Ball-Lock Ejector Rod

painful ejector rod change is dramatically improved.

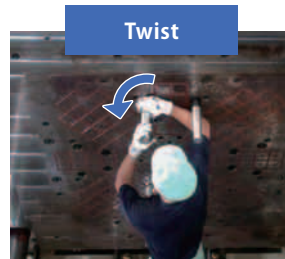
By separating the rod into fixed and detachable sections, one-touch detachment of the detachable rod is possible. This product has been adopted in many cases as a setup improvement product.



■ Before Time-consuming work Dangerous work

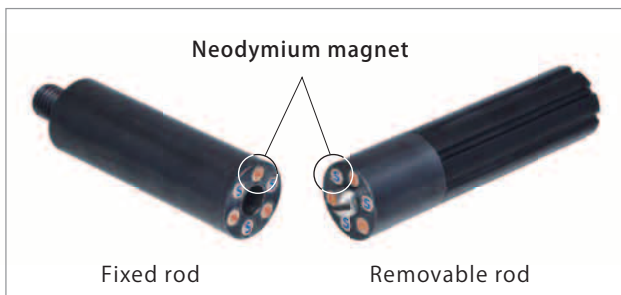


■ After Easy Safe Tool-less

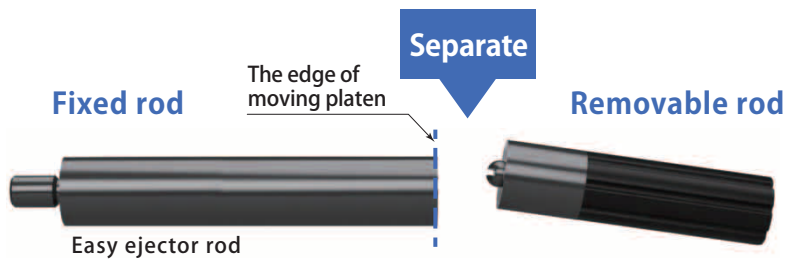
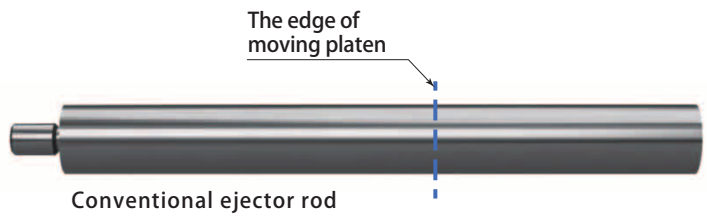
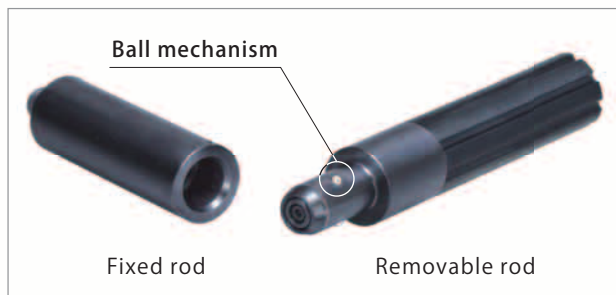


Ejector Rod Magnet Ball Lock

Easy ejector rod



Ball lock ejector rod



Product Line

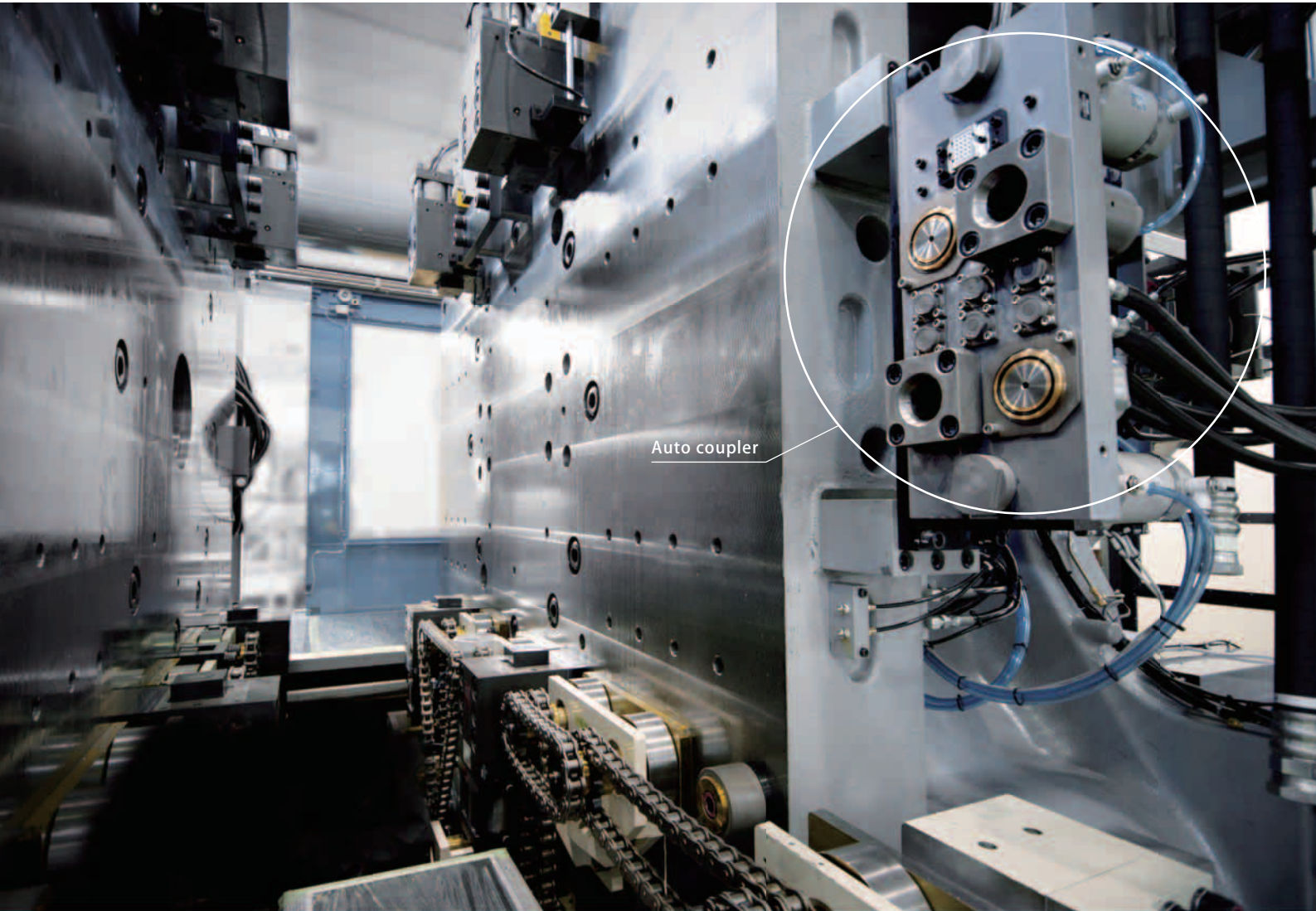
Name of Product	Mag Ejector Rod	Ball-Lock Ejector Rod
Ease to use	◎	○
Machine tonnage	up to 13,000kN	up to 25,000kN
Rod Diameter mm	ø26, ø40	ø26, ø40
Ejector Stroke	up to 300mm	up to 350mm

Auto Coupling System

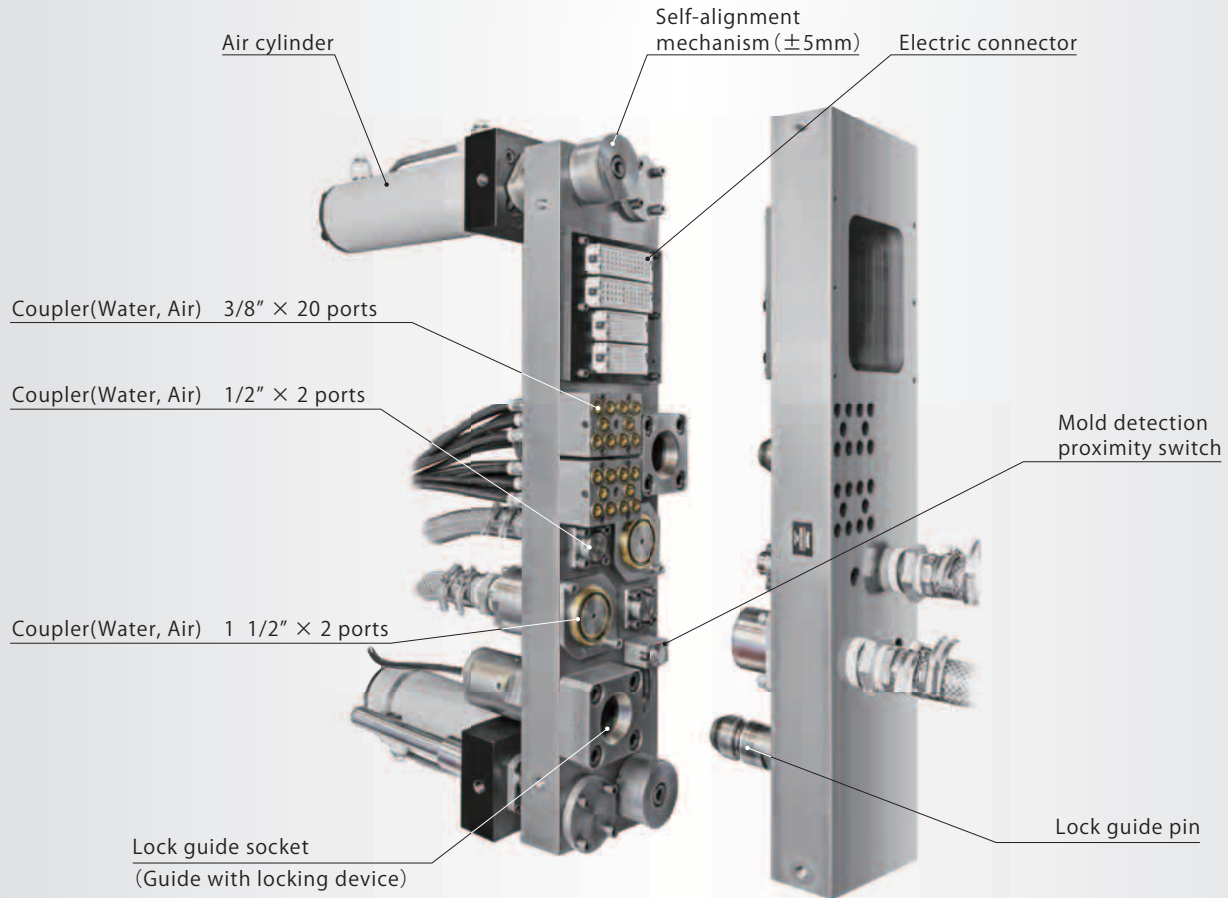
Multiple piping integrated on a block and couple/decouple automatically.

Automatic coupling system with a large number of delivery records for injection molding, press and diecasting machines.

Coupler



3,500kN (350ton) IMM Horizontal loading Auto coupler & Hydraulic clamp TKC



Module	Coupler, Electric connector, Lock guide, Mold detection proximity switch(Special)
Fluid	Hydraulic, Water, Air
Connection port	$3/8"$, $1/2"$, $3/4"$, $1"$, $1\ 1/4"$, $1\ 1/2"$, $2"$

C&C Coupler

Module Coupler, Electric connector

Fluid Hydraulic, Water, Air

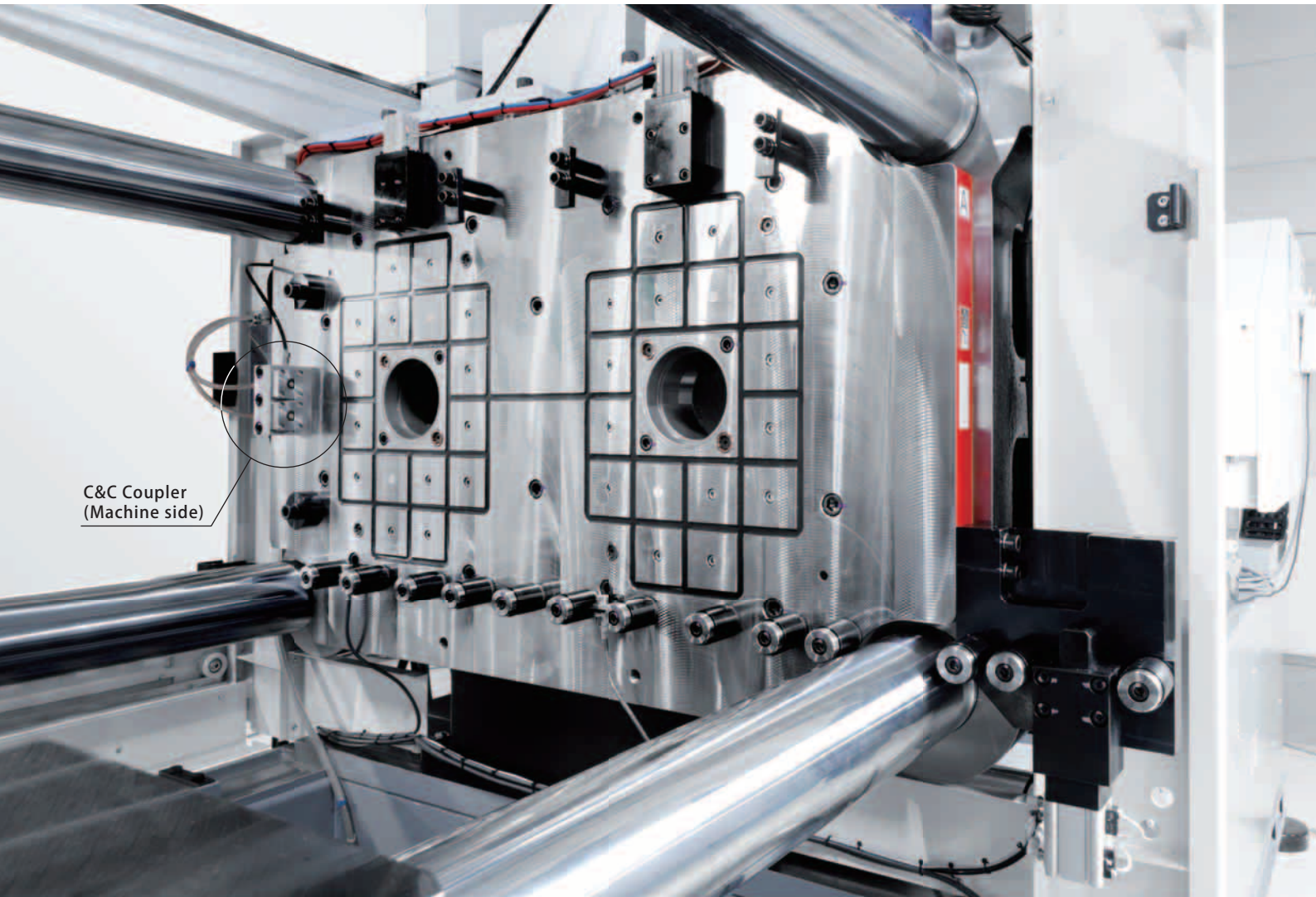
Pressure Max. 1MPa

Connection port 1/4"

Coupler

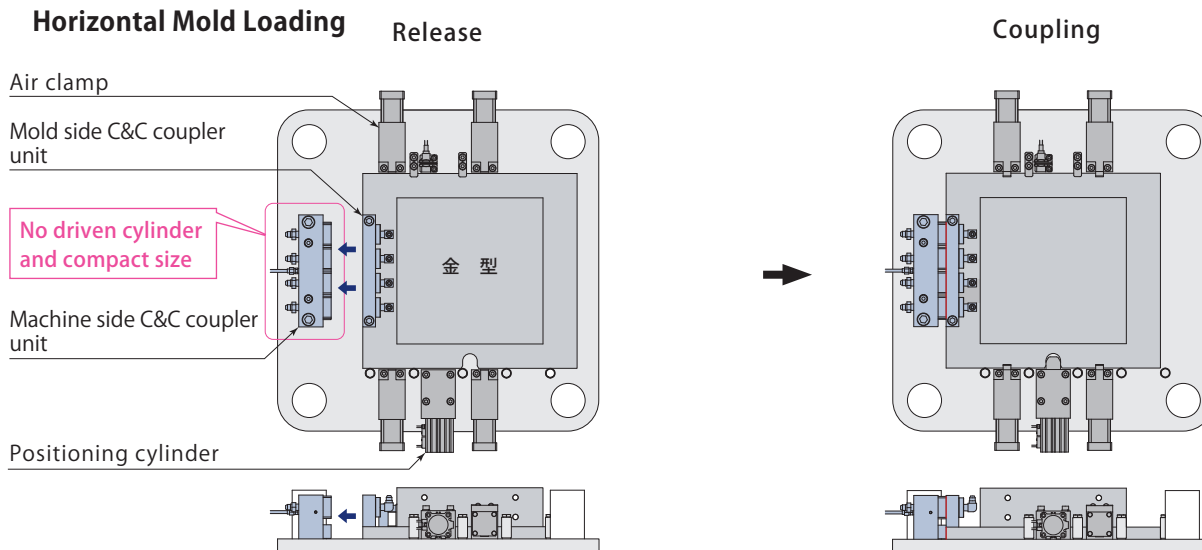
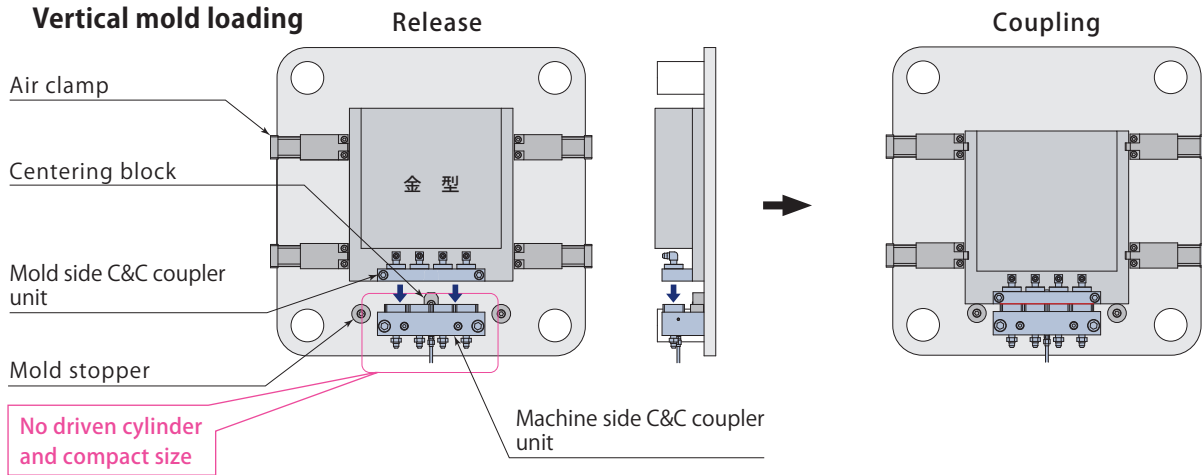
Mold loading and connection at the same time

A simple mechanism coupler that can be kept coupling by means of mold clamp.



C&C Coupler
(Machine side)

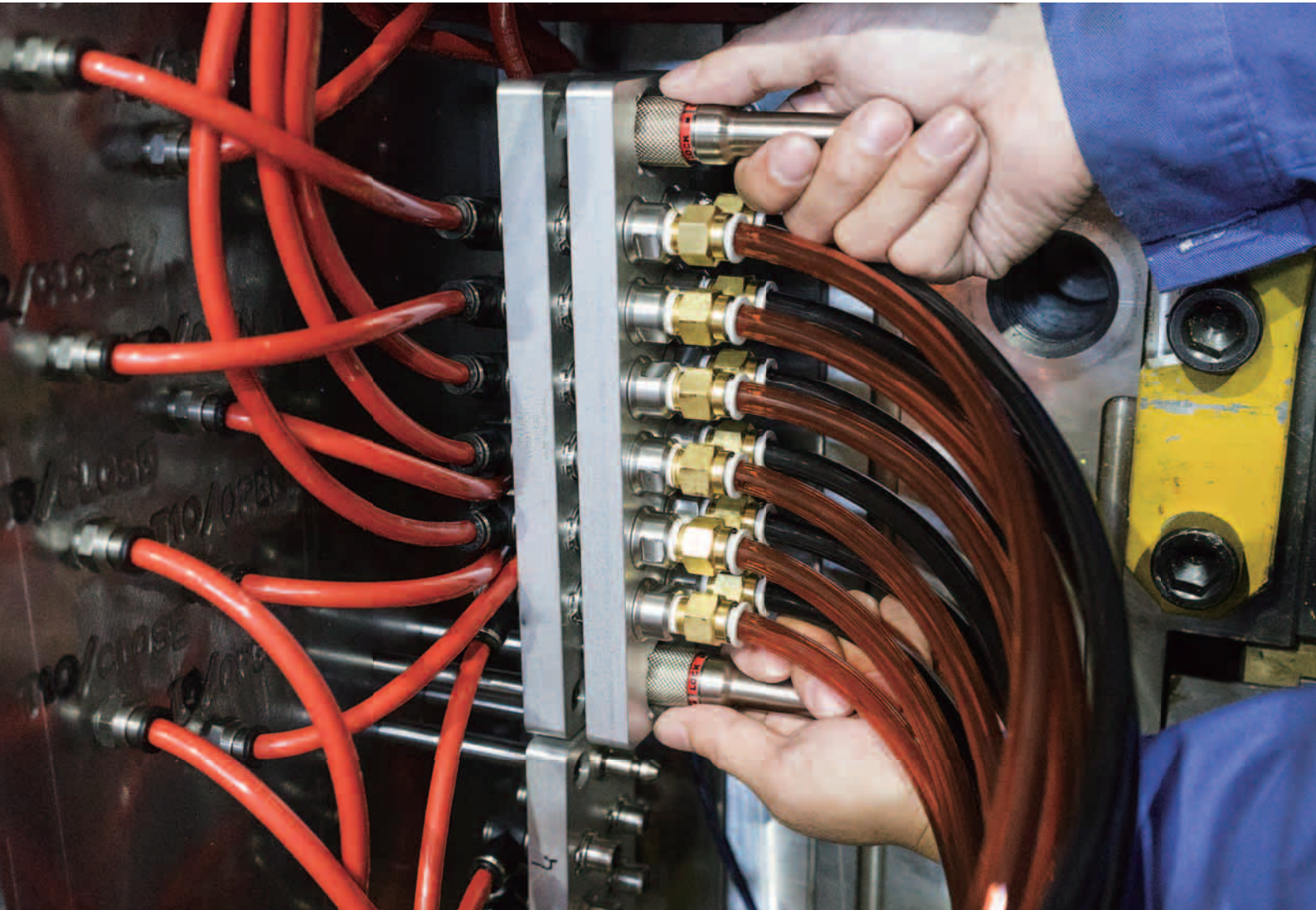
2,500kN (250ton) Two-color IMM Horizontal loading Fixed side Mag clamp & C&C coupler



Multi Coupling System

It can easily and securely connect multiple couplers by simply pushing lightly on the gripper, also shortens coupling time and prevents misplaced or forgotten connection.

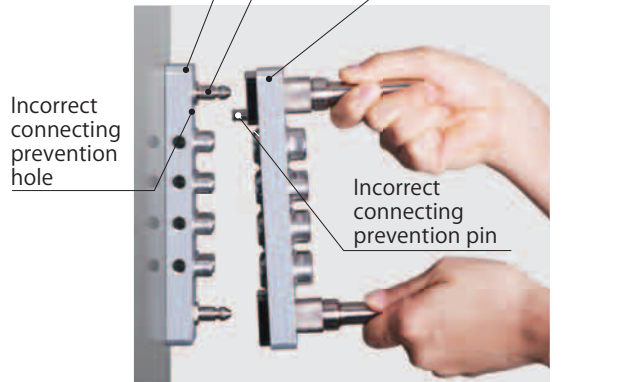
Coupler



18,000kN (1,800ton) IMM Multi coupler Open model

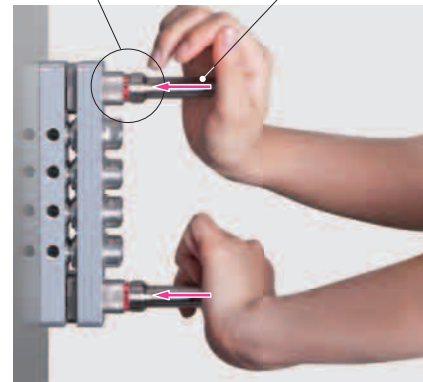
Coupling

Mold side (Plug) coupler Machine side (Socket) coupler



Insert coupler(female) along with a lock guide

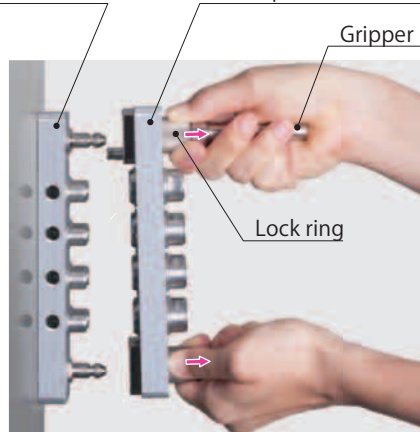
Indicator Gripper



Push the gripper lightly and locking complete

Release

Mold side (Plug) coupler Machine side (Socket) coupler



Coupling

The coupler can be disconnected by pulling the lock ring holding the gripper



The locking completion can be recognized at a glance with this indicator.

Release



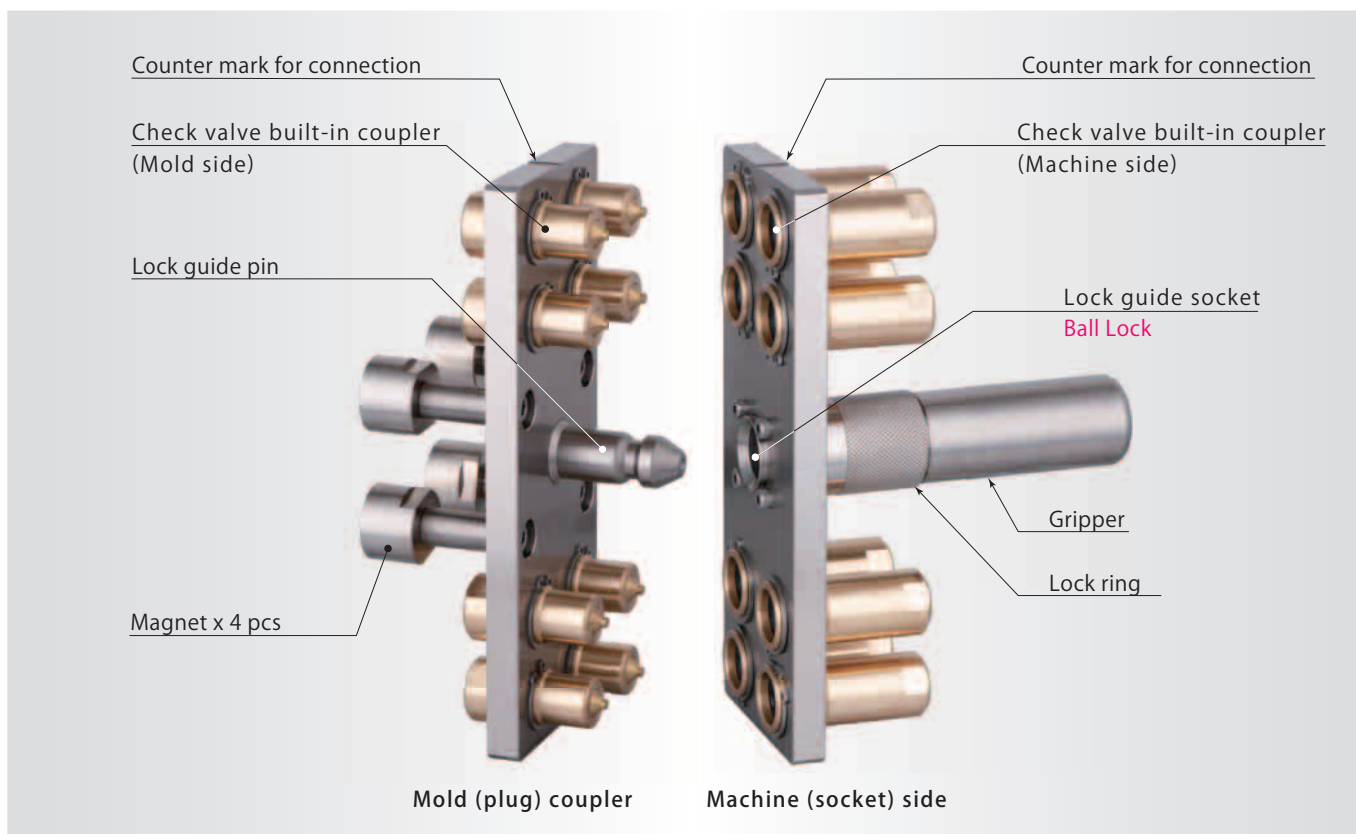
Lock ring

Multi Coupling System Model

Check Valve model model **MCC**

It can easily and securely connect multiple couplers by simply pushing lightly on the gripper.
It also shortens coupling time and prevents misplaced or forgotten connections.

Fluid	Hydraulic, Water, Air
Pressure	Max. 0.8MPa
Connection port	Rc1/4、 Rc3/8
Number of port	6、 8、 12

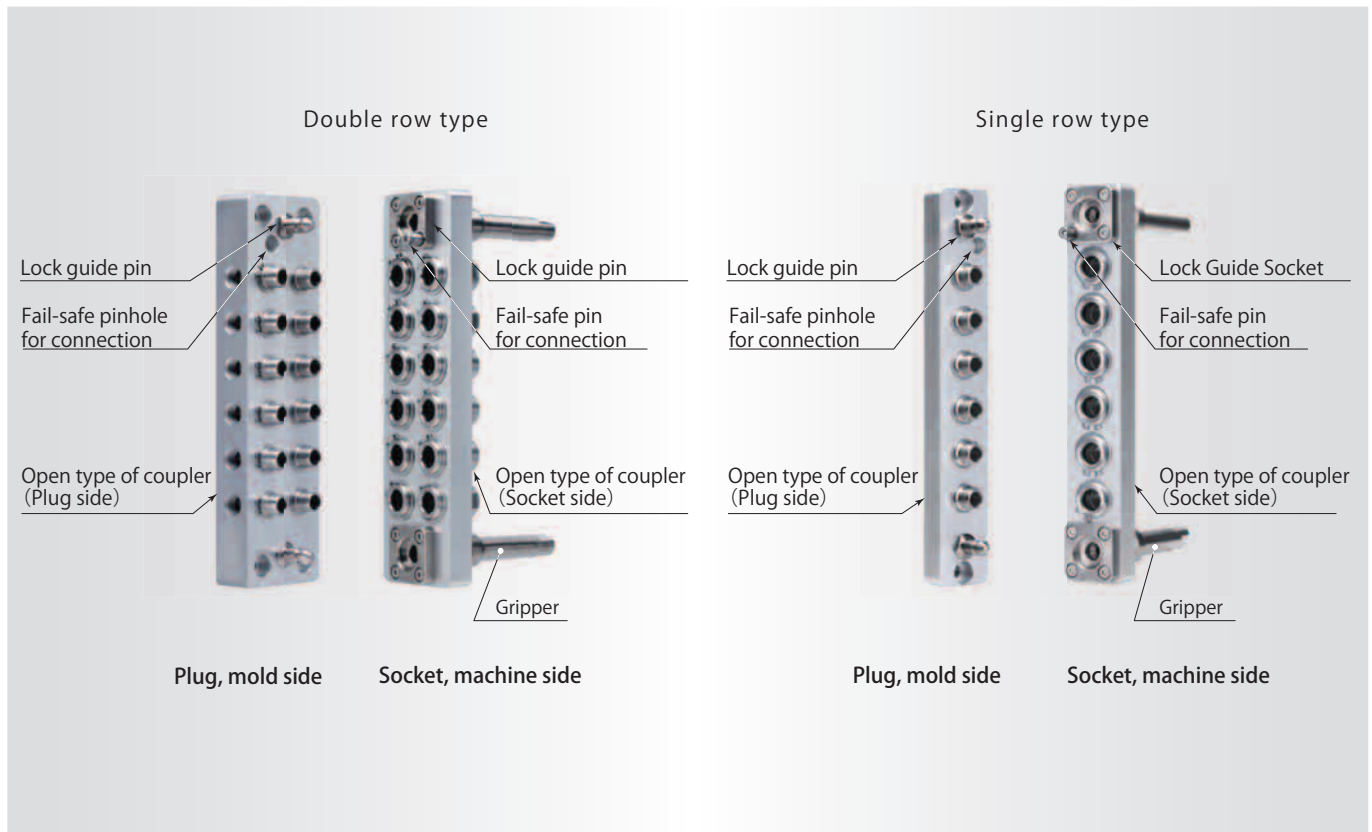


Multi Coupling System Model

Open (without check valve) Model model MCA

The open type of coupler has no check valve, resulting in less pressure loss and eliminating malfunctions caused by foreign substances or sludges entering the coupler.

Fluid	Hydraulic, Water, Air
Pressure	Max. 0.8MPa
Connection port	Rc1/4、 Rc3/8
Number of port	6、 8、 12



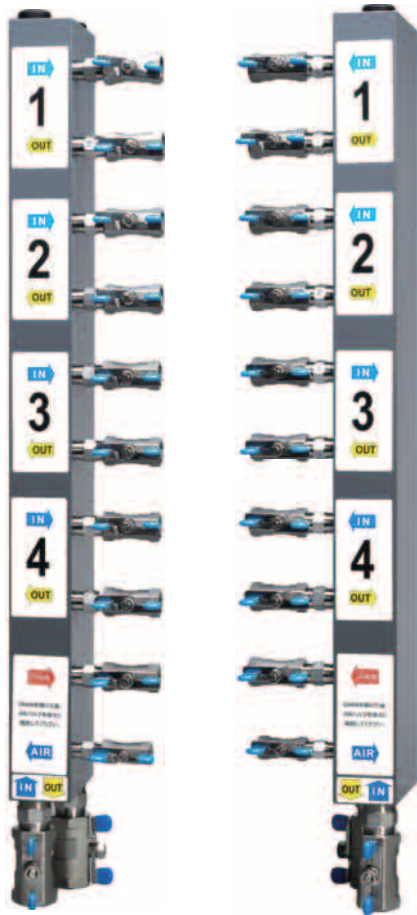
New Valve Stand

Coupler

A innovation for temperature-control piping begins with New Valve Stand
The aligned hose arrangement preventing misplaced hoses can speed up piping work.

Fluid	Hydraulic, Water, Air
Pressure	Max. 1MPa
Connection port	Rc3/8
Number of port	4, 6, 8, 12

Horizontal connection model model **MBA**



Stationary platen

Moving platen



3,500kN (350ton) IMM New valve stand horizontal connection model

New Valve Stand

The hoses do not create obstruction on the floor and around the machine, which contributes to a safer, tidier plant.

Fluid Hydraulic, Water, Air

Pressure Max. 1MPa

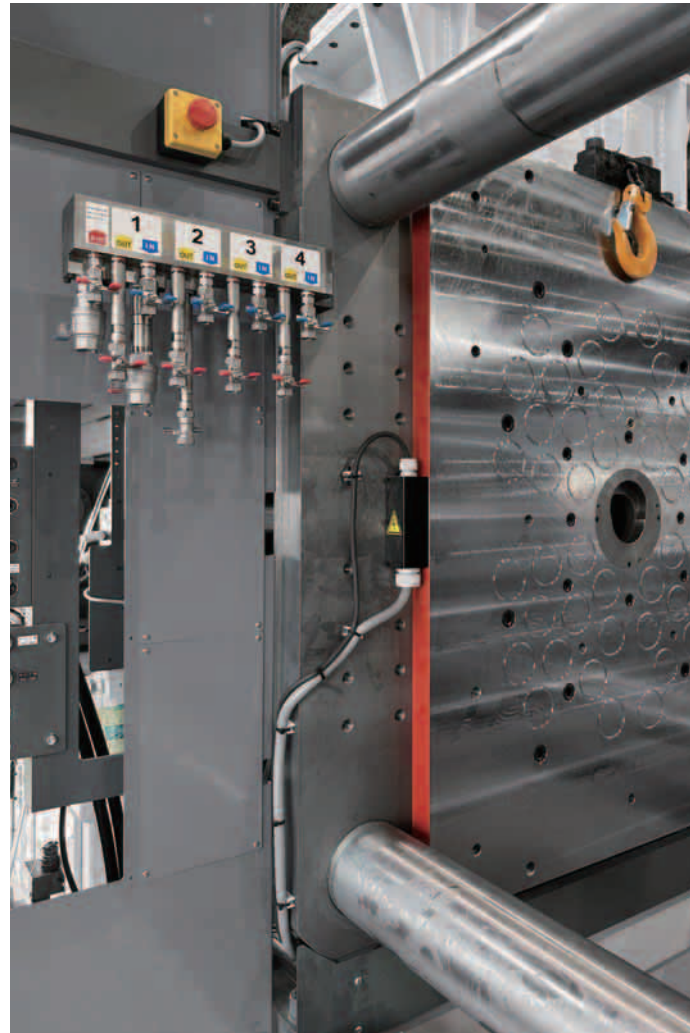
Connection port Rc3/8

Number of port 2, 4, 6

Vertical connection model model **MBA-V**



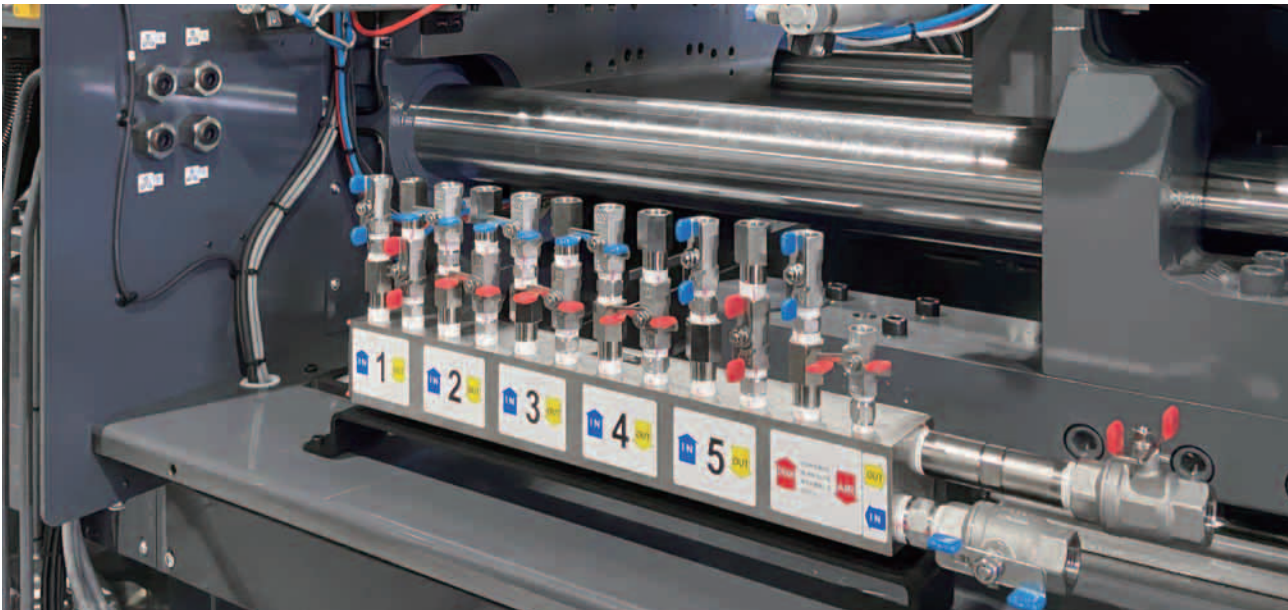
Rear view



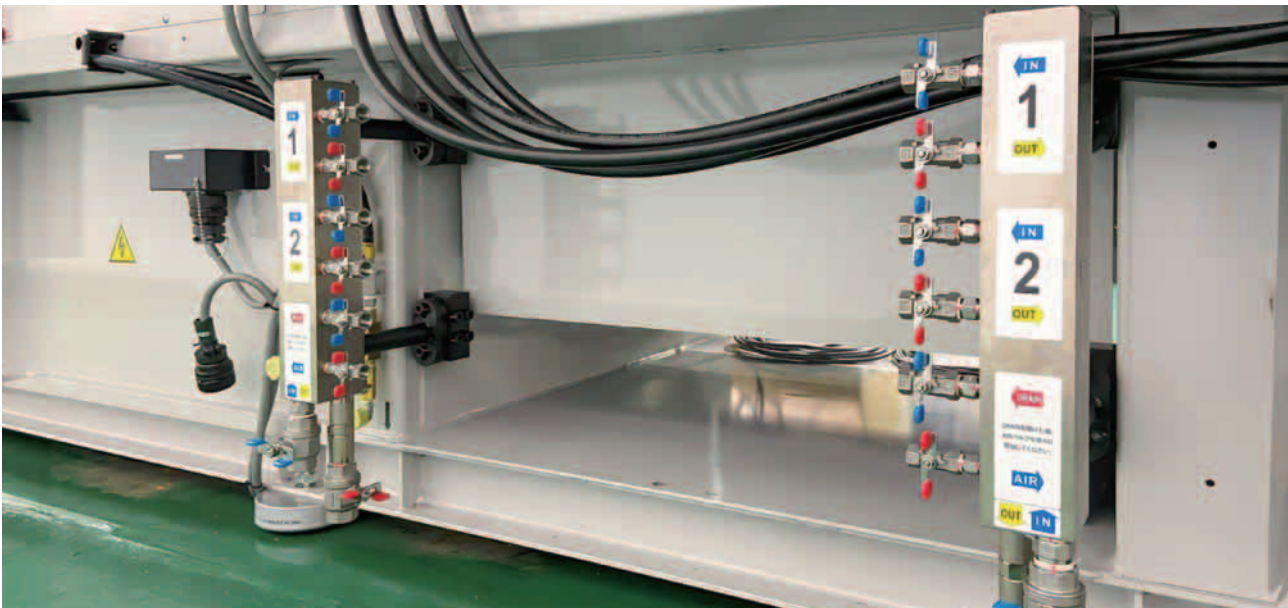
5,500kN (550ton) IMM New valve stand Vertical connection model

New Valve Stand Examples

Coupler



3,500kN (350ton) IMM horizontal mounting inside New valve stand horizontal connection model



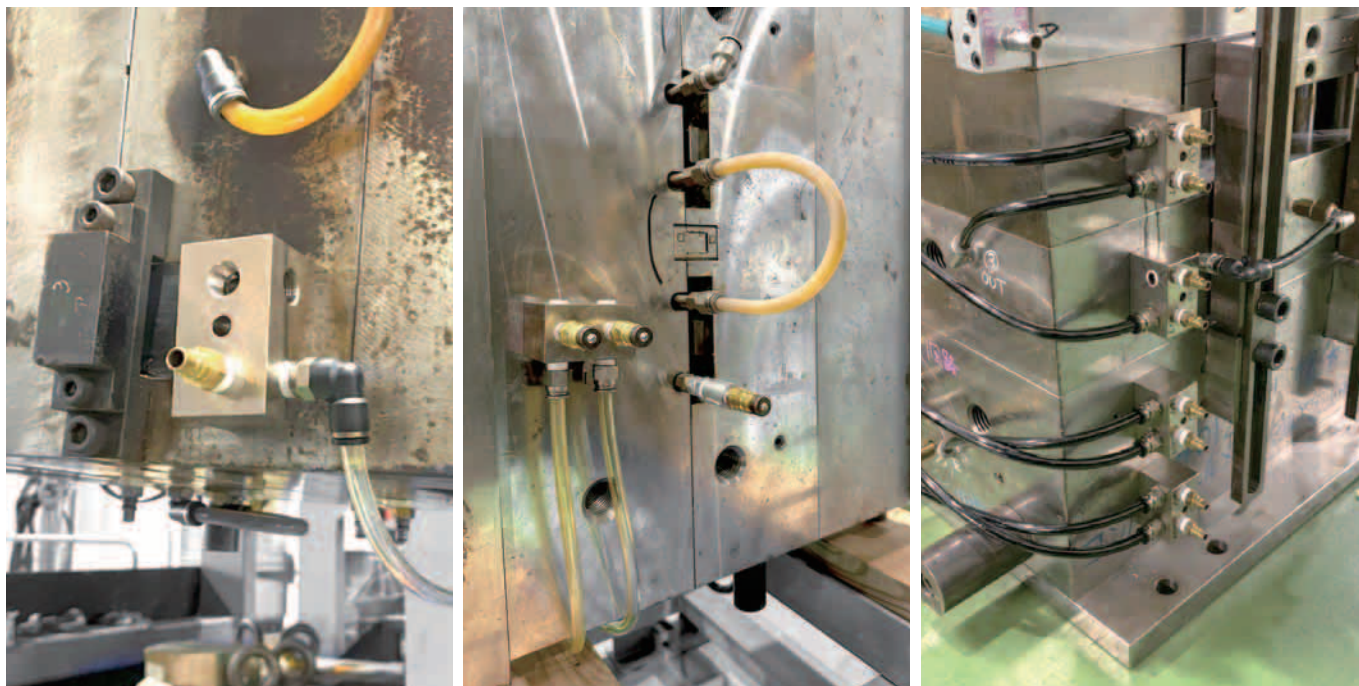
1,800kN (180ton) IMM bed mounting New valve stand horizontal connection model

Magnet Branch

One-touch mounting of manifold using permanent magnets

Flexible mounting of coupler connection ports and manifolds improves coupling operations.

Coupler



Neodymium magnet
(permanent magnet)

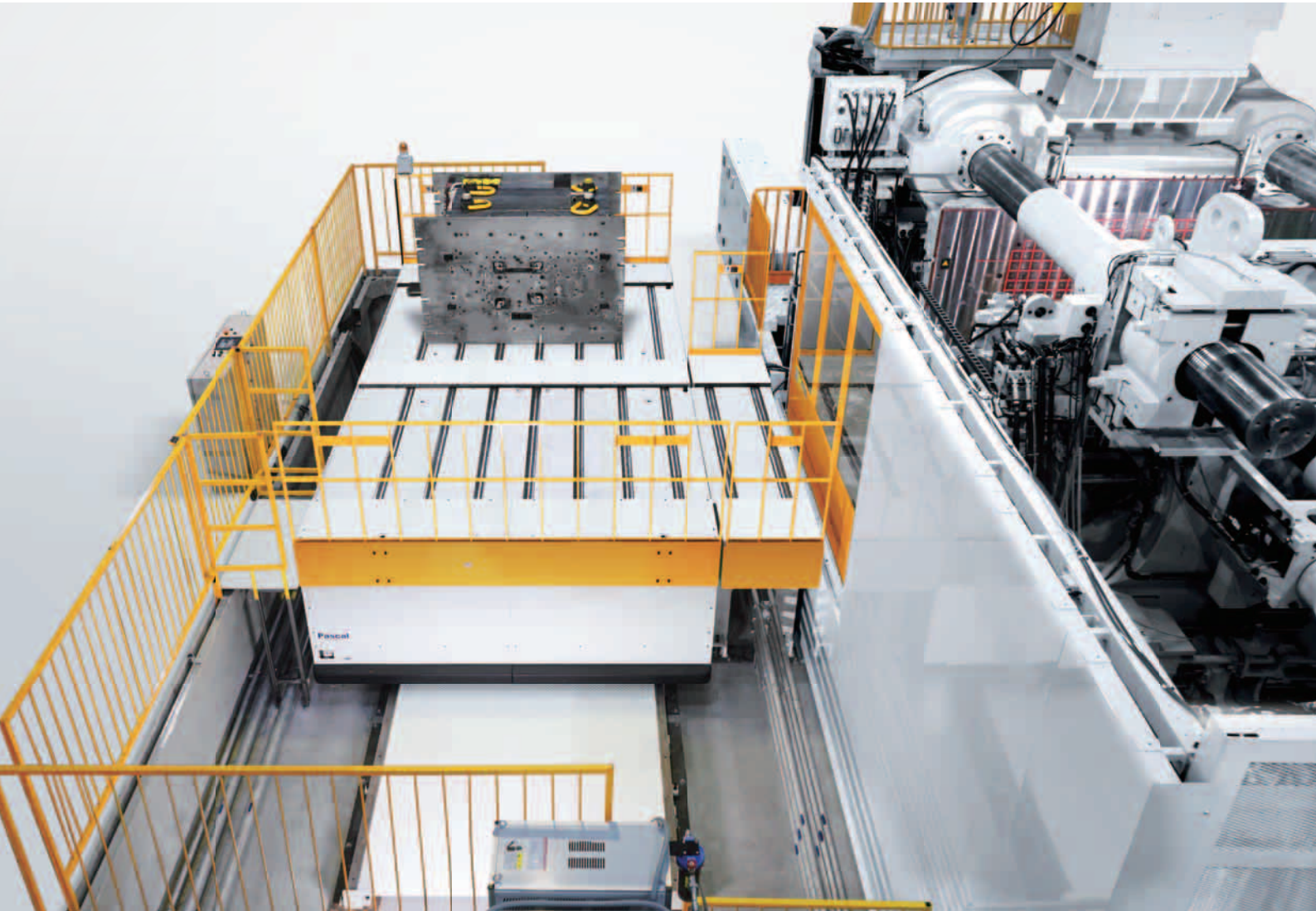
Model	Magnet Branch	
Compatible fluid	Water, air, mineral hydraulic oil	
Number of circuits	2 circuits (6 ports)	
Adsorption force	300 N	
Material	Steel (electroless nickel plating)	
Port size	6×Rc1/4	6×Rc3/8

Mold Die Changer

Mold Changer

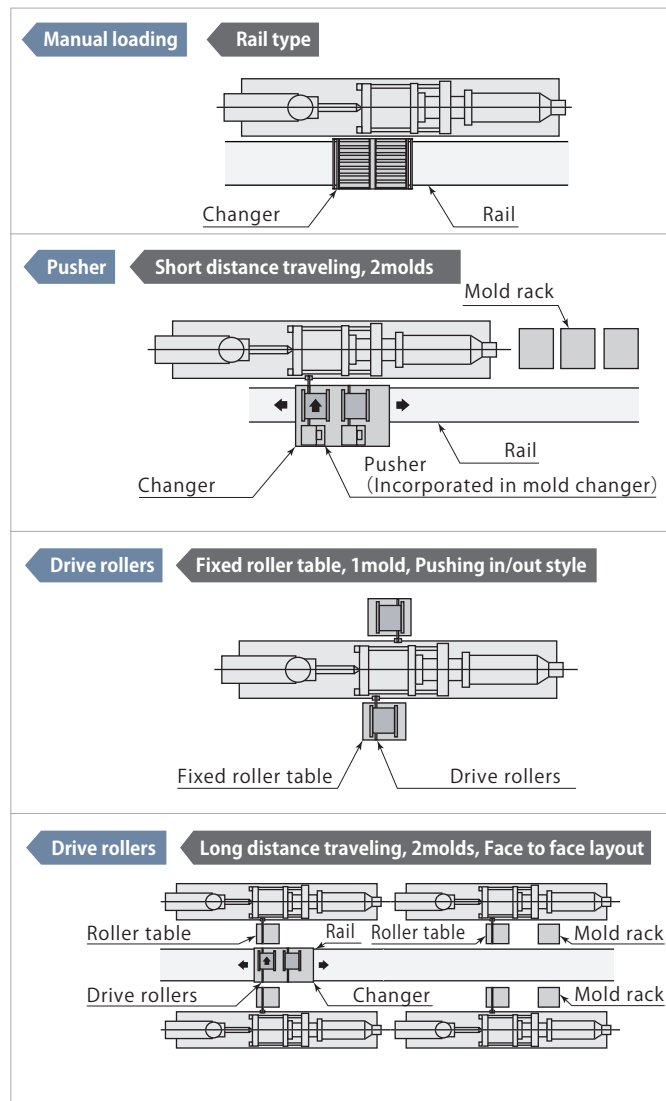
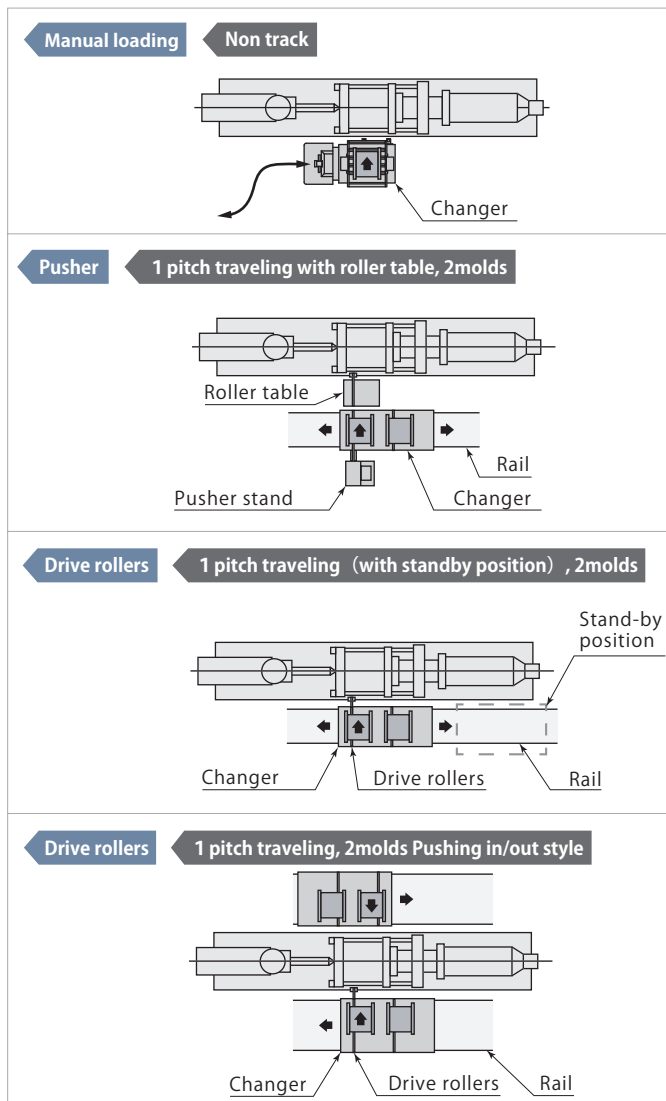
To ensure mold change operation to be quicker and safer

A mold changer is an automatic mold change system that significantly shortens the time required for changing molds compared to the conventional method of changing molds using a forklift or overhead crane.



30,000kN (3,000ton) IMM Horizontal loading
Mold changer : Powered, Drive rollers type 2 molds & Mag clamp

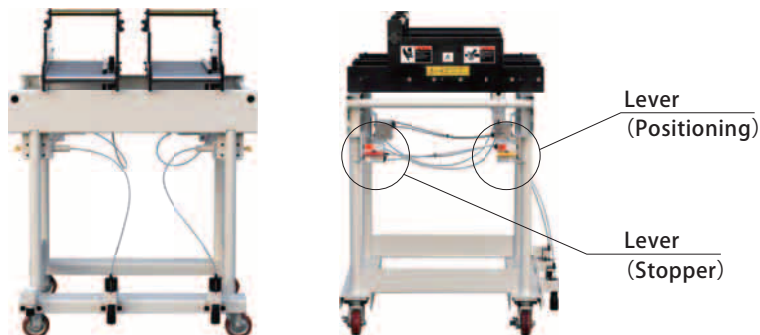
Examples for layout



Mold Die Changer Lineup

Mold Changer

Manual loading, Non track, Non elevated table type model **QMF**



Model No.	QMF1	QMF2
Machine (Tonnage)	400~1,000 kN (40~100 tonf)	400~600 kN (40~60 tonf)
Max. Mold Weight	600 kg	300 kg
Number of Stage	1 mold	2 molds

Manual loading, Non track, Table elevation type model **QMA**



Model No.	QMA1
Machine (Tonnage)	400~1,000 kN (40~100 tonf)
Max. Mold Weight	600 kg
Number of Stage	1 mold

Mold Die Changer Lineup

Mold Changer

Battery-powered, Non track, Table elevation type model **QMB**



Model No.	QMB1		
Machine (Tonnage)	400~4,500 kN (40~450 tonf)		
Max. Mold Weight	1,500 kg	2,500 kg	
Number of Stage	1 mold		

Manual loading, Rail type model **QME**

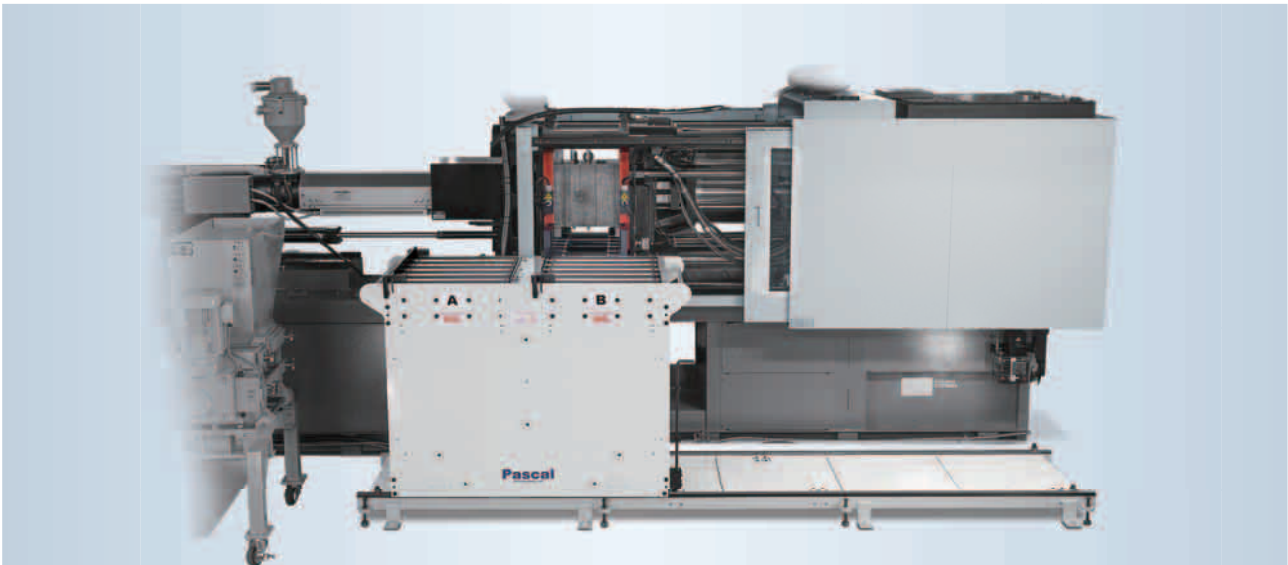


Model No.	QME						
Machine (Tonnage)	500 kN (50 tonf)	800 kN (80 tonf)	1,000 kN (100 tonf)	1,300 kN (130 tonf)	1,500 kN (150 tonf)	2,000 kN (200 tonf)	2,500 kN (250 tonf)
Max. Mold Weight	300 kg	400 kg	400 kg	600 kg	800 kg	1,000 kg	2,000 kg
Number of Stage	2 molds						

Mold Die Changer Examples



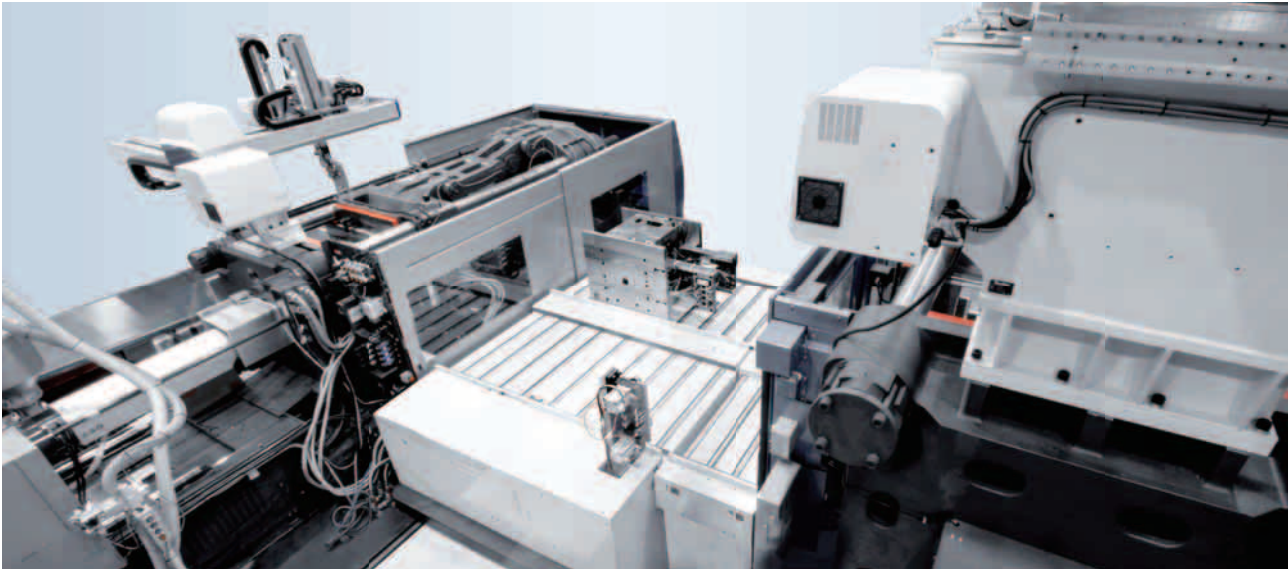
500kN (50ton) IMM Horizontal loading Mold changer : Manual loading, Non track, Table elevation type



1,750kN (175ton) IMM Horizontal loading Mold changer : Manual loading, Rail type

Mold Die Changer Examples

Mold Changer



4,500kN (450ton) IMM Horizontal loading Mold changer : Powered, Drive rollers type



12,700kN (1270ton) IMM Horizontal loading Mold changer : Powered, Drive rollers type

Mold Rotator model SMR

Electric Motor driven

Roller gear driven, Rolling type

The unique roller gear driven system (PAT.) provides semi-permanent durability.

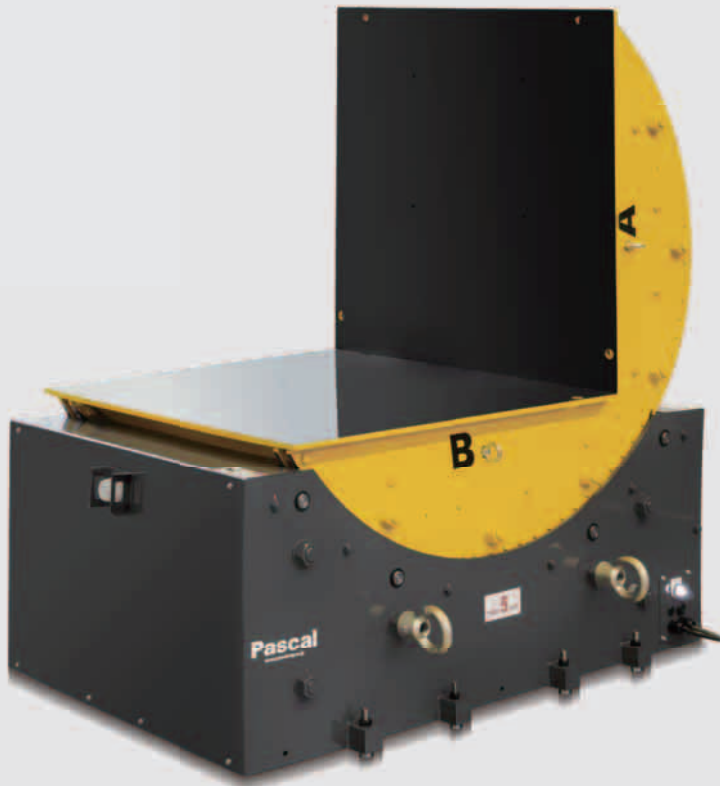
The rigid roller gear mechanism with excellent safety features provides sufficient rigidity to withstand sudden stops during operation.

Mold rotator

Rotatable weight 500kg

Maintenance Free

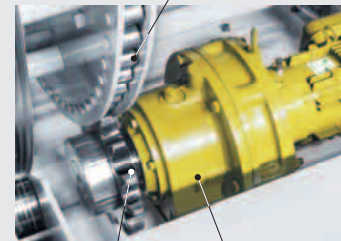
Rotation weight : 1, 3, 5, 10, 15, 20, 30, 50 ton



Back cover(Standard equipment)
PAT.P.



High rigidity roller gear



Large sized sprocket

Electric motor

Workpiece Rotator model SMR005

Electric Motor driven

Suitable to 180 degree rotate small workpieces

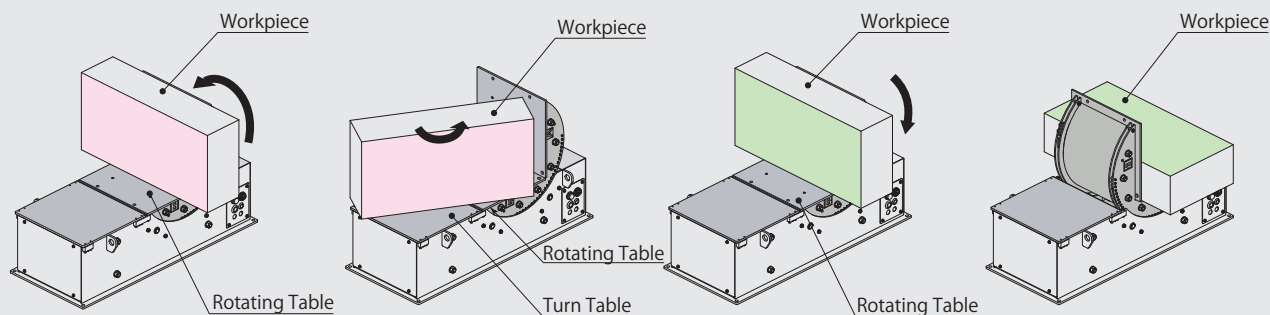
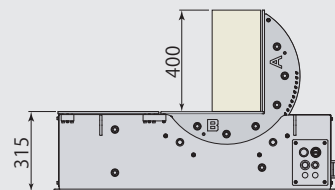
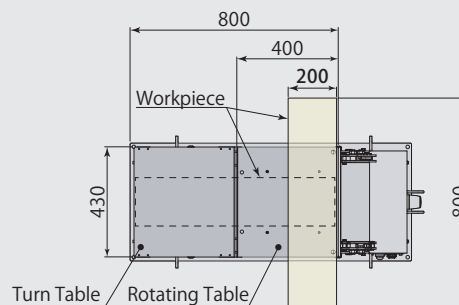
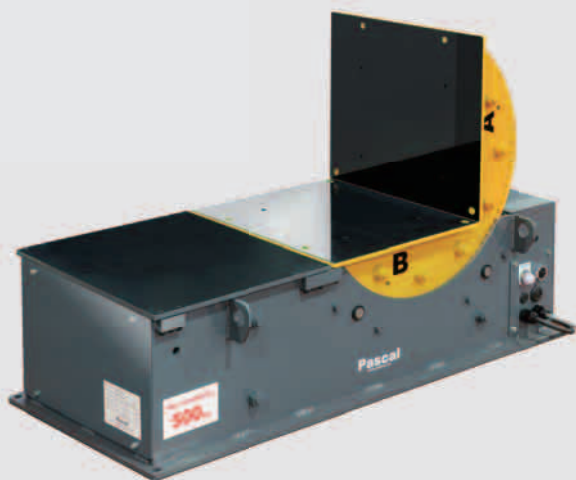
This compact rotator can easily rotate workpieces 90 deg or 180 deg without using an overhead crane.

Mold rotator

Rotatable weight 500kg

Maintenance Free

Rotation weight : 500 kg



Mold Rotator model SMF-M

Electric Motor driven

Flat table, roller gear type

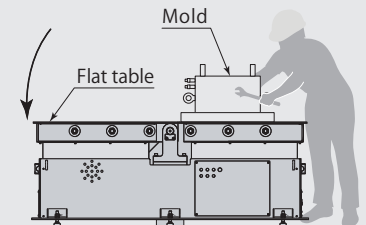
The unique rollera gear driven system (PAT.) provides semi-permanent durability. Maintenance work can be performed on the flat table.

Mold rotator

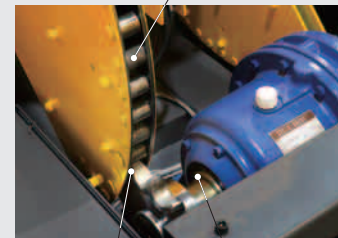
Rotatable weight 3 ~ 5 ton

Maintenance Free

Rotation weight : 3, 5 ton



High rigidity roller gear



Large sized sprocket

Electric motor

Mold Rotator_{model} SMF-H

Hydraulic

Flat table, hydraulic cylinder type

The model SMF-H adopts a unique hydraulic cylinder drive system that receives force from all axes, eliminating sliding wear on the structural parts and ensuring superior durability. Also, it can be embedded in the floor and the table is rigid enough to be passed by a forklift or a truck.

Mold rotator

Rotatable weight 10 ~ 30ton

Embeddabe in the floor

Rotation weight : 10, 15, 20, 30 ton

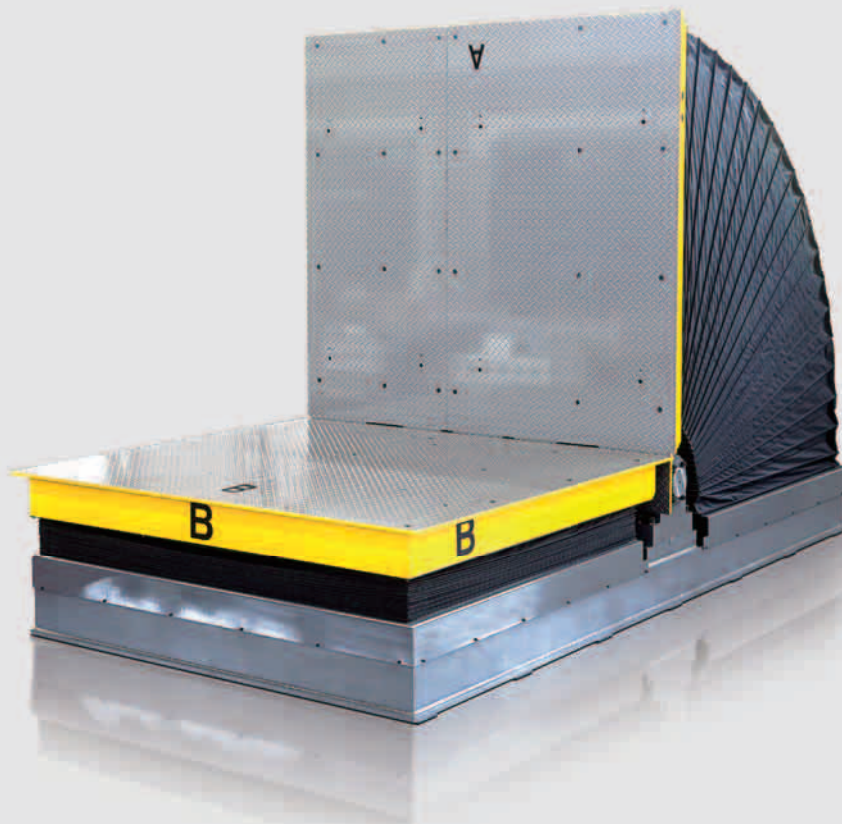


Table flattened after embeded

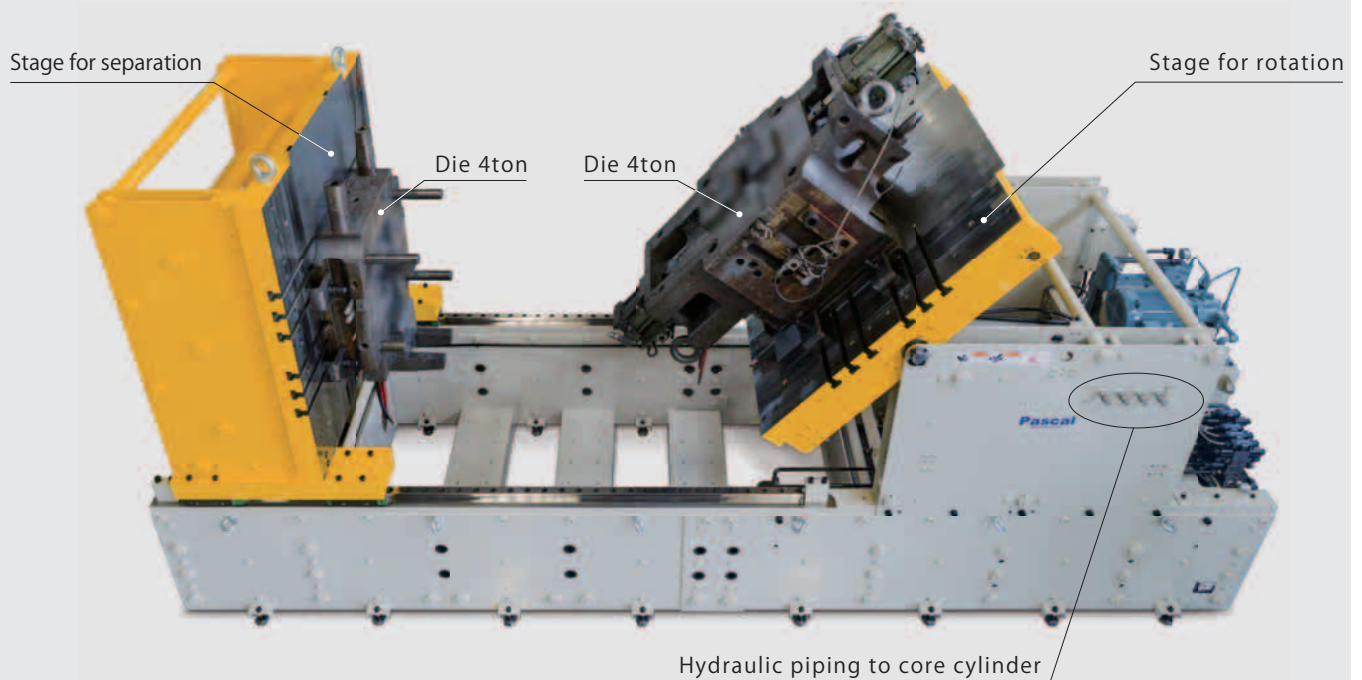


Picture of 20ton mold type

Die Splitter with separation

This device can be used to safely perform mold maintenance outside the machine without reducing the operation rate of the molding machine.

Die weight 8 ton (4 ton per each side)

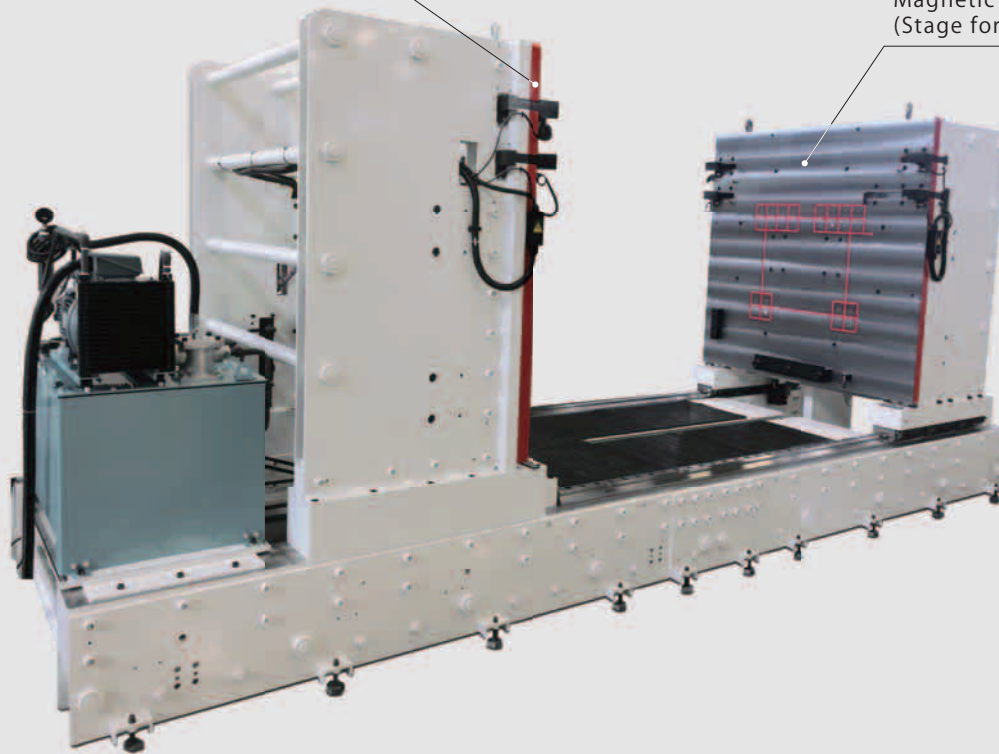


Mold Separator with magnetic platen

Die weight 15 ton (7.5 ton per each side)

Magnetic clamp
(Stage for fixed)

Magnetic clamp
(Stage for movable)



Safety Ladder

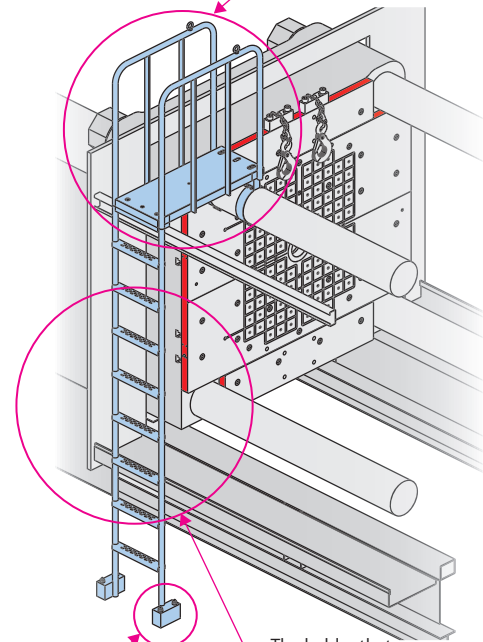
For coupling and uncoupling crane hooks during mold change operation at large injection molding machines
The operator can safely approach the mold with a safety belt climbing up and down the ladder.



Vertical model



Safe working space is guarded by handrails



Anchor bolts are provided to fix the ladder

The ladder that can safely climb up and down

Safety Ladder

For high-place work at large injection molding machinesvertical molding machines

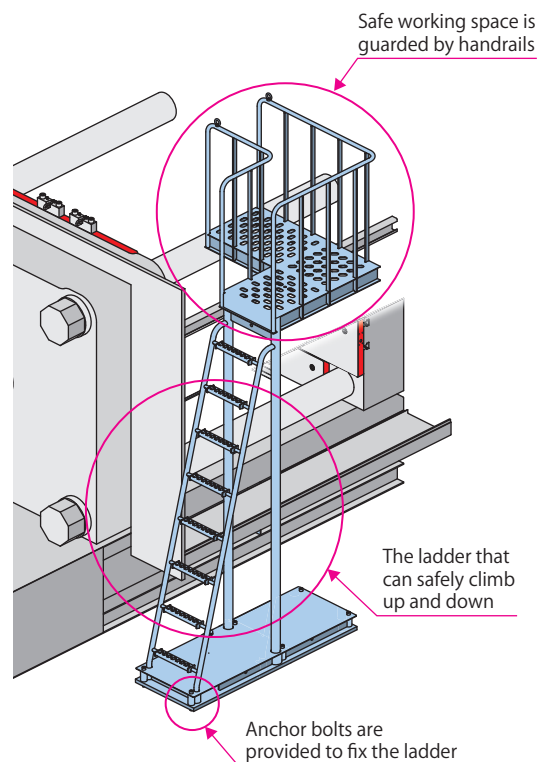
The work space guarded by handrails is secured.



Standard model

Slip-resistant flat steps

For high-place work at vertical molding machines



DOMESTIC LOCATIONS



JAPAN

Head office / R & D center

- Itami, Hyogo

Plant

- Oita
- Yamagata

Sales office

- Osaka, Hyogo
- Kumagaya, Saitama
- Atsugi, Kanagawa
- Nagoya, Aichi
- Yamagata



Oita plant

















Yamagata plant

GLOBAL NETWORK






ASIA

-  Dalian [China]
-  Shanghai [China]
-  Changchun [China]
-  Tianjin [China]
-  Wuhan [China]
-  Chongqing [China]
-  Guangzhou [China]
-  Taichung [Taiwan]
-  Bangkok [Thailand]
-  Changwon [Korea]
-  Deltamas [Indonesia]
-  Kuala Lumpur [Malaysia]
-  Mumbai [India]
-  Melbourne [Australia]













Dalian plant

AMERICA

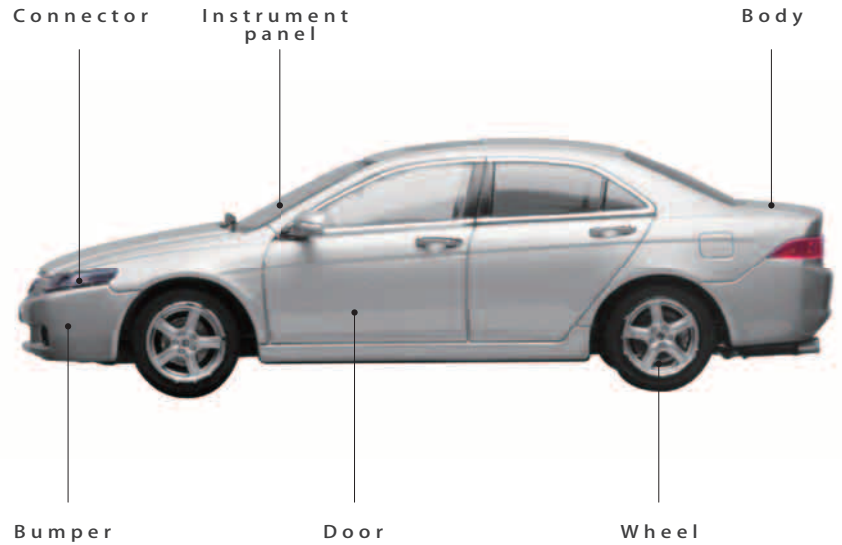
-  Chicago [U.S.A.]
-  Sao Paulo [Brazil]
-  Queretaro, Leon [Mexico]

EUROPE

-  Stuttgart [Germany]
-  Paris [France]
-  Torino [Italy]
-  Barcelona [Spain]
-  Istanbul [Turkey]

-  Plant
-  Subsidiary
-  Sales office
-  Liaison office
-  Agent

Pascal products are supporting



For sheetmetal stamping

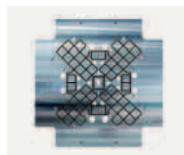


Traveling clamp



Stamping die clamp

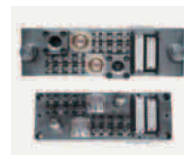
For plastic molding



Mag clamp



Mold die clamping system



Auto coupler

For die and mold

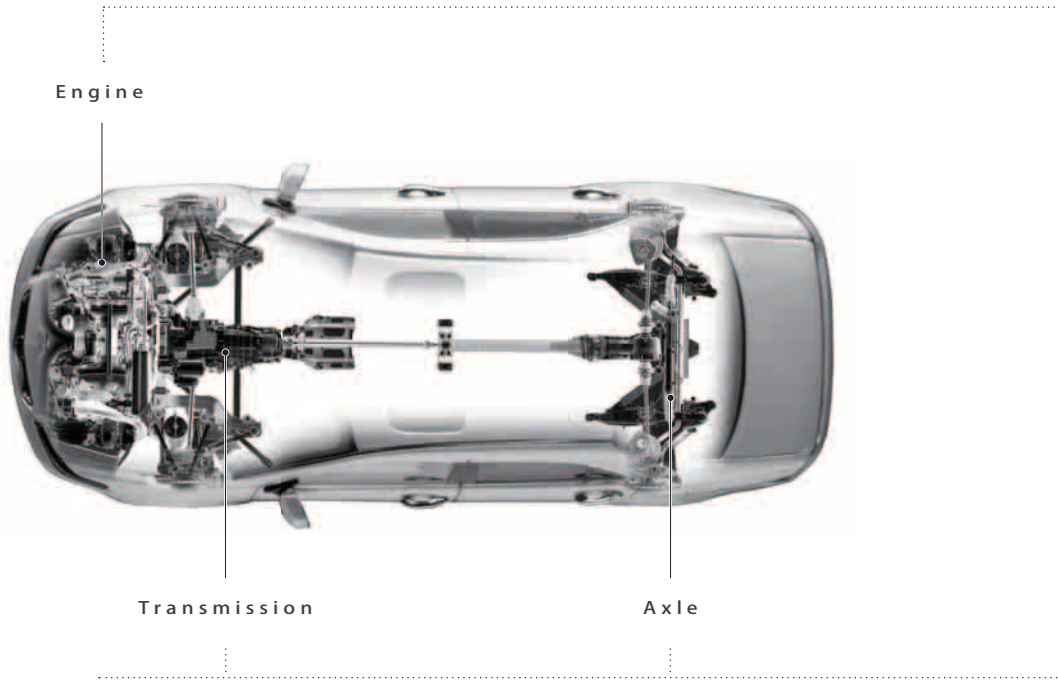
Press machine:
Body, Roof, Door
etc...

Molding machine:
Bumper,
Instrument panel
etc...



N2 gas springs

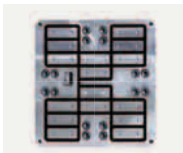
automotive production lines in the world.



For die cast machine



Die-clamping system



C-plate mag clamp

For metal cutting machine line



Work clamp



Pallet clamp



Index table



N2 gas balancer

Pascal



CERTIFICATE OF APPROVAL ISO9001