Pascal

Pascal mold change system

By means of Pascal Mold Change Syetem,

Reducing the risk of accidents at workplace

Eliminating the shortage of skilled workers

Reducing non-productive time

Eliminate the need for overhead crane

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

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 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 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.

Reducing heavey 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.

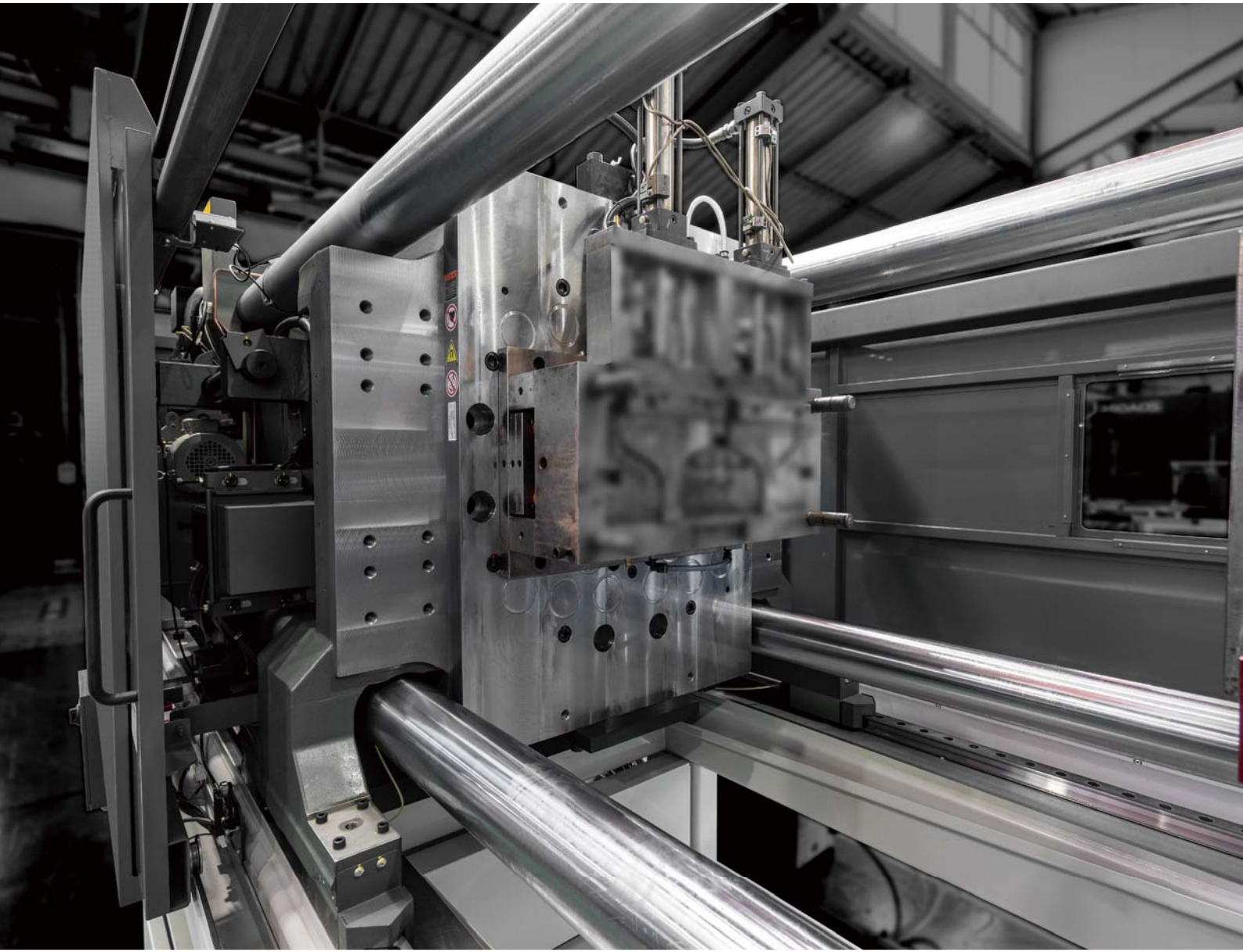
Prohibition of mold rotating work by an overhead crane

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**

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.



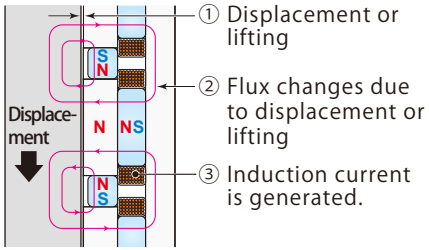
Displacement detection system standard

Simply push the button

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.

When the mold moves



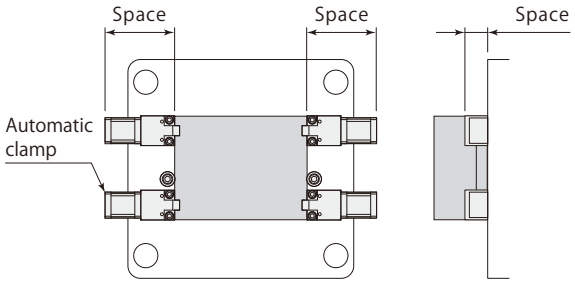
Vertical mold loading

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.

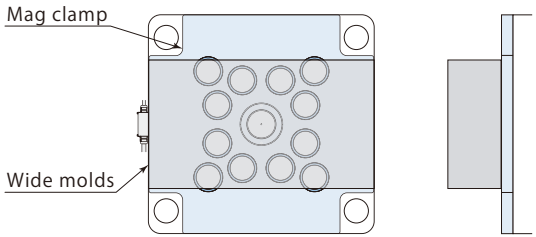
Magnet

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

Automatic clamps require mounting space on the machine platen.



Mag clamp allows greater flexibility in mold design.

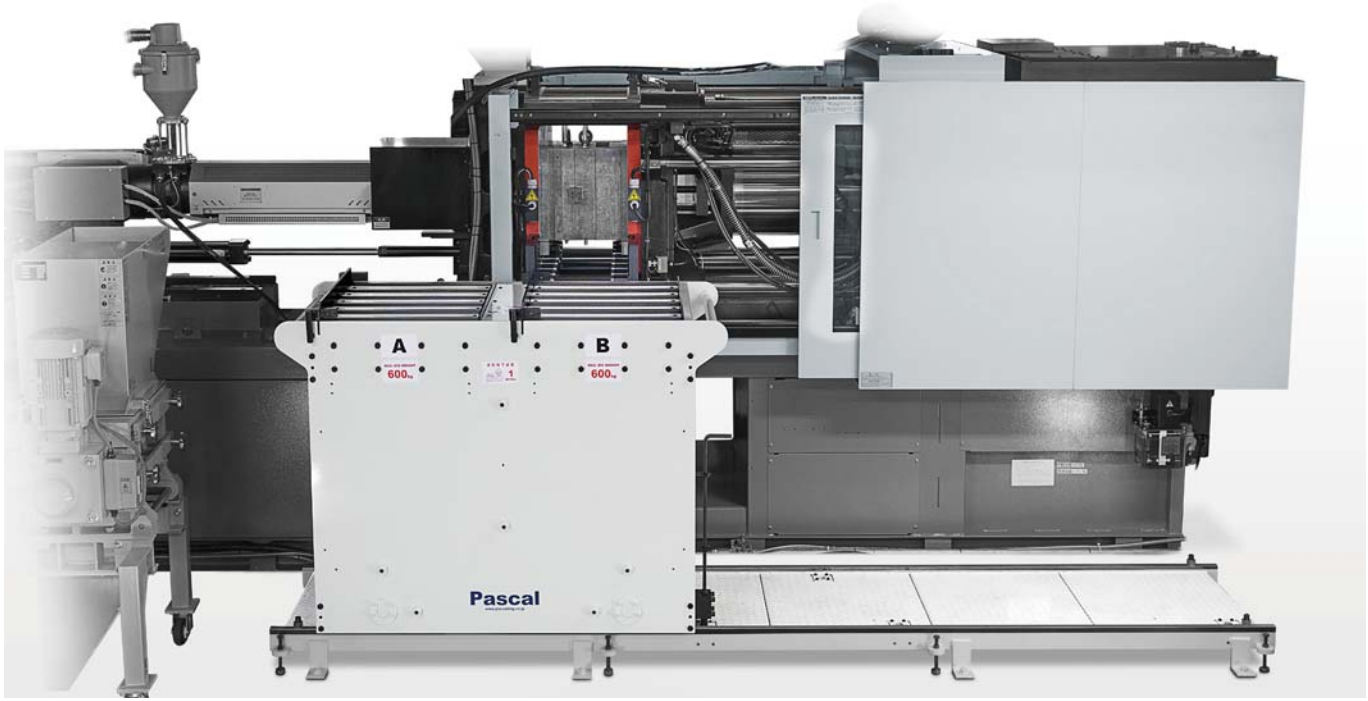


Horizontal mold loading

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

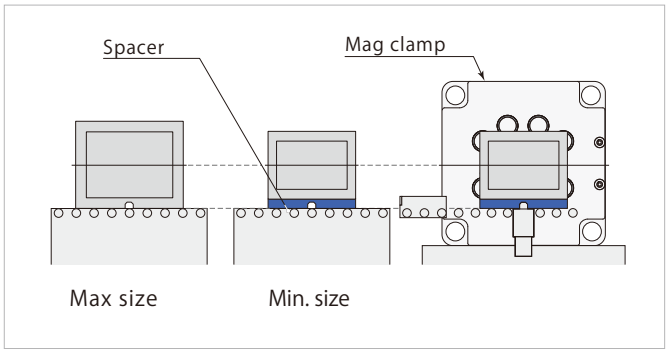
Mag clamps can be used for both vertical and horizontal mold loading

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.

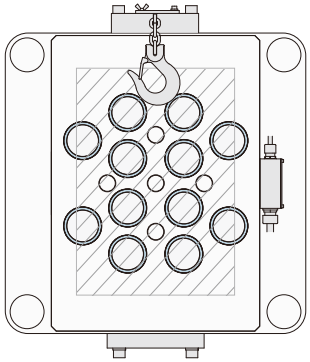
Low-cost model "Slim" type is added in product lineup.

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.

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

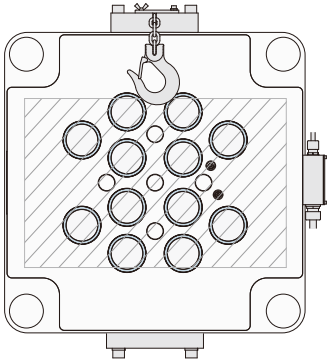
Magnet | 1 BY 1 | 120 ℃ | Mold Displacement Detection System | Slim plate

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	℃	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.

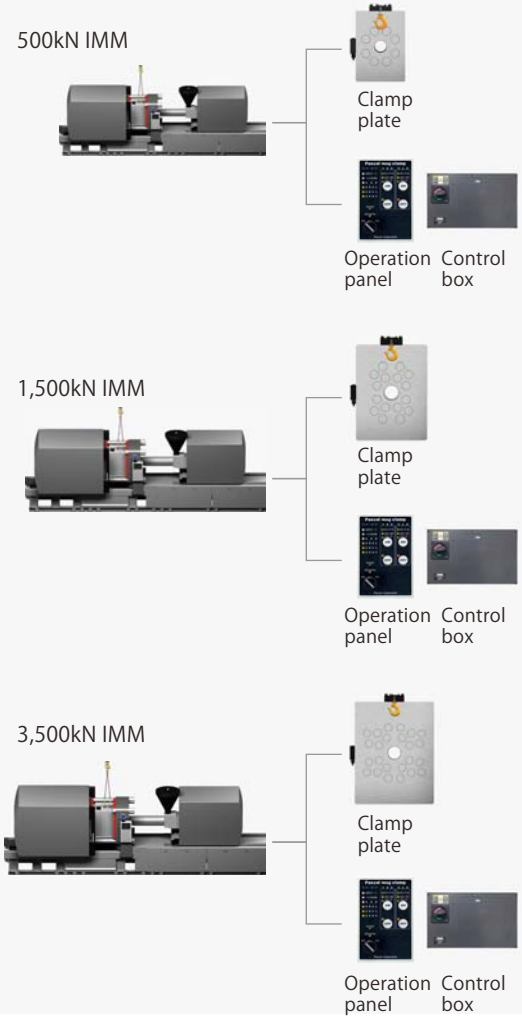
It helps to significantly reduce the initial cost for Mag Clamp

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

Magnet | Multi | 120 ℃ | Proximity Switch | Slim plate | 4,000kN up to

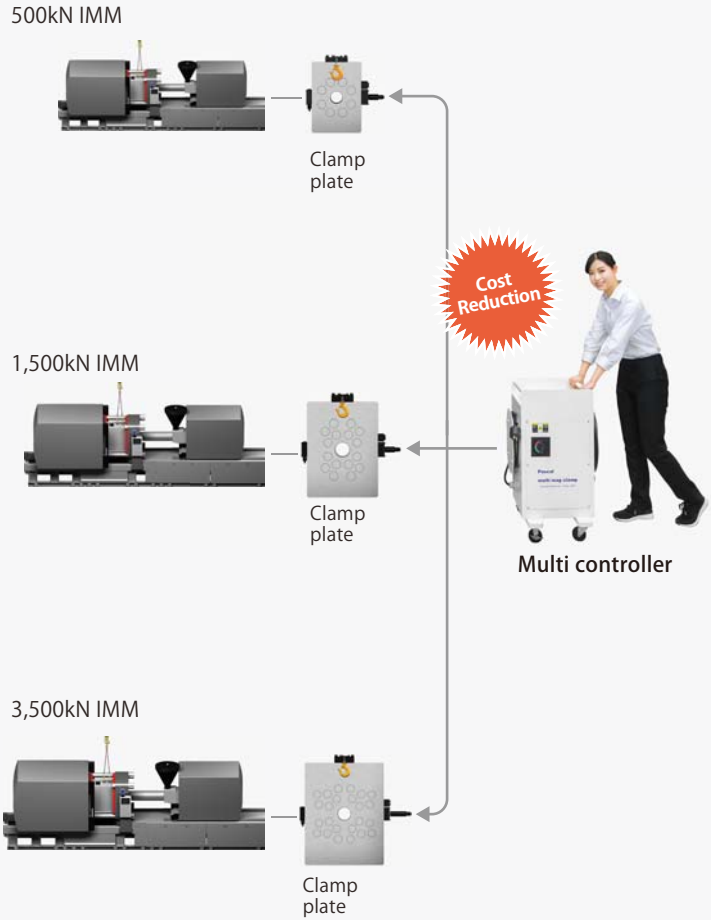
1 BY 1 Mag Clamp

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



Multi Mag system

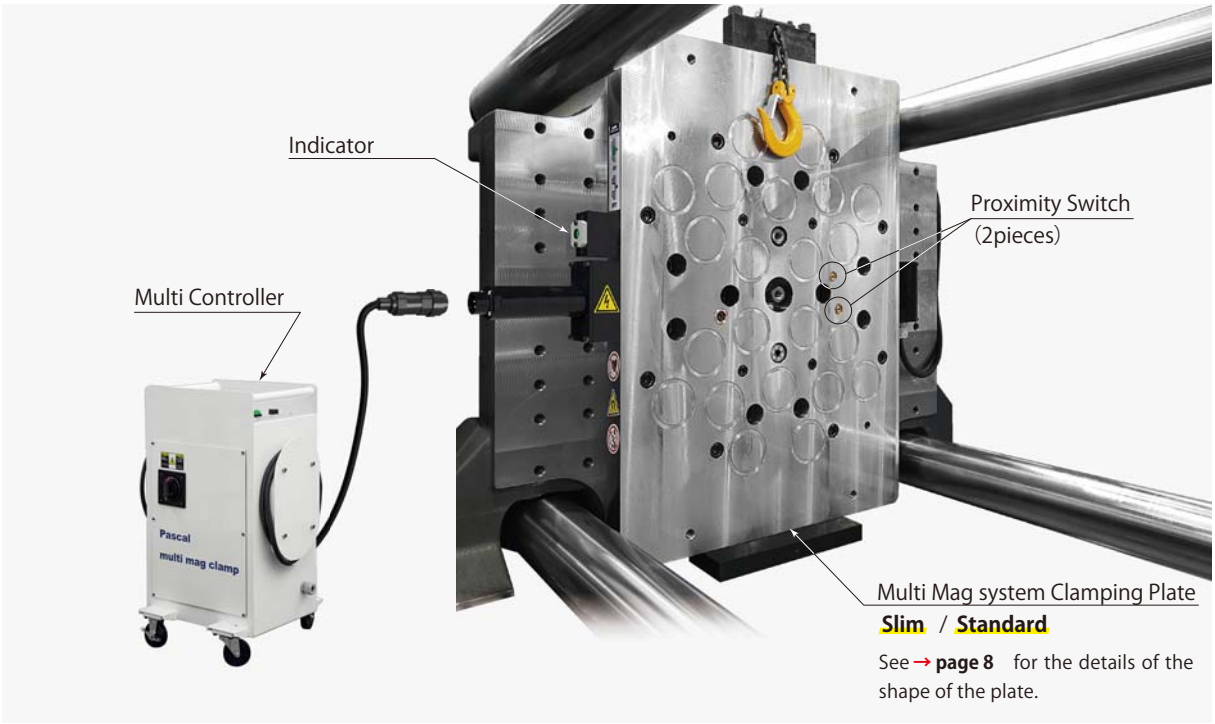
Multi Controller **for multiple Mag Clamps**



Multi Mag Clamp Specifications

Magnet

Multi Mag system System Constitution



See → **page 8** for the details of the shape of the plate.

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**

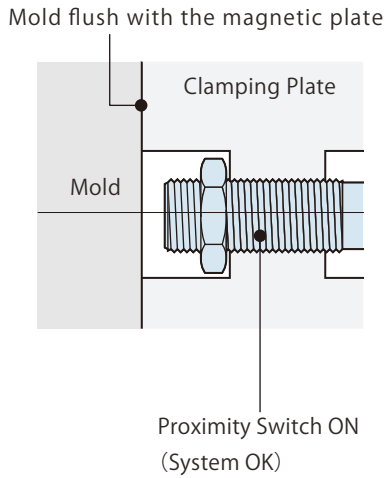
Multi Mag Clamp Specifications

Magnet

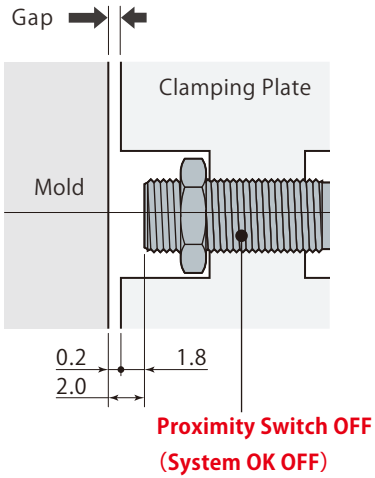
■ Sensor：Proximity Switch（Gap detection）

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

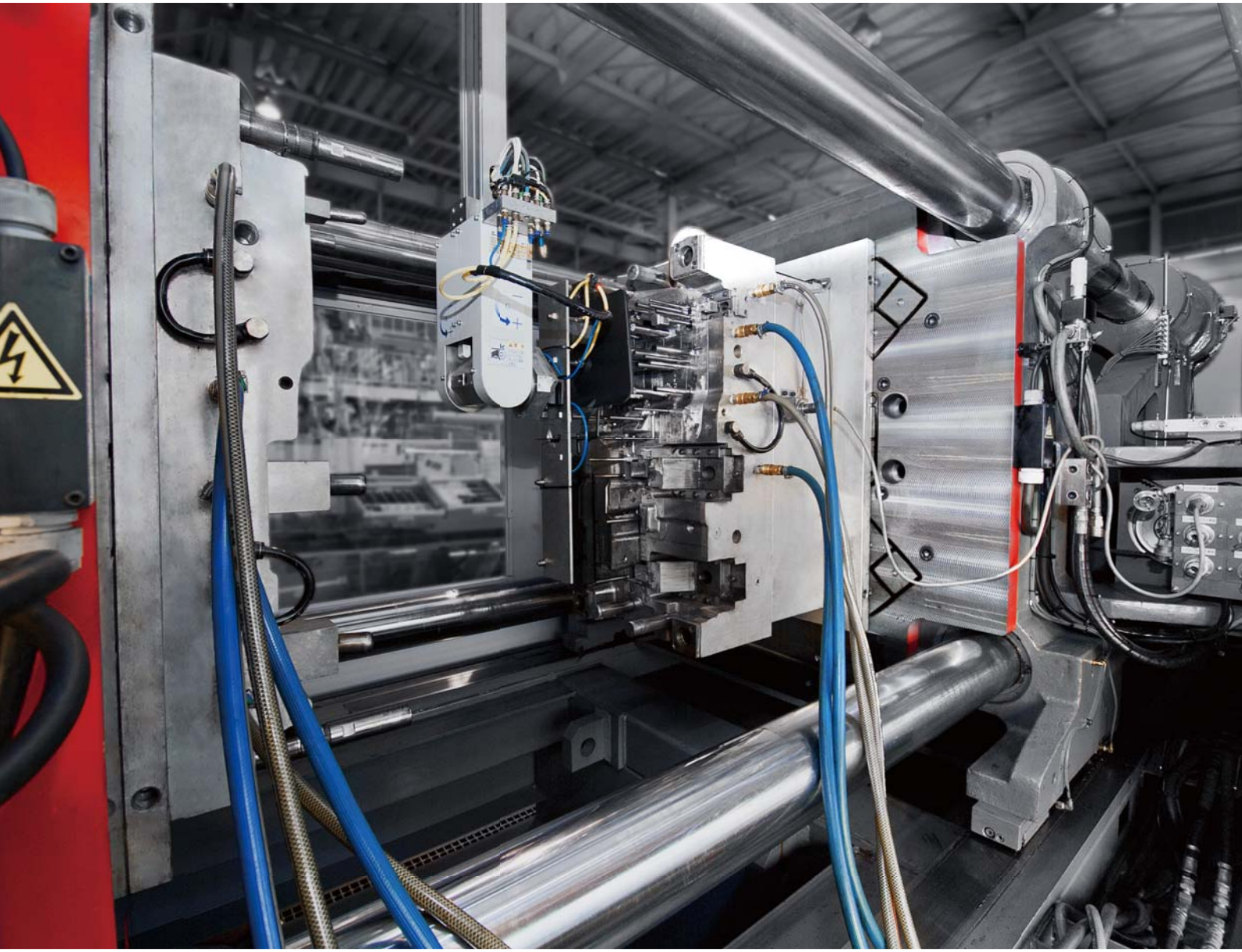
Model No.		MFA_M	MRA_M
Plate		Slim	Standard
Clamp force	kN	7	
Operating temperature	℃	120	
Flux height	mm	約 20（Mold plate material: SS400）	
Plate thickness	mm	50	
Power Voltage		AC200 / 220V	
Way of Control		Multi	
Interlocking		Mold Open/Close (System Error)	
Machine tonnage	kN	800～4,000	500～4,000
Sensor		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 6,500 unit

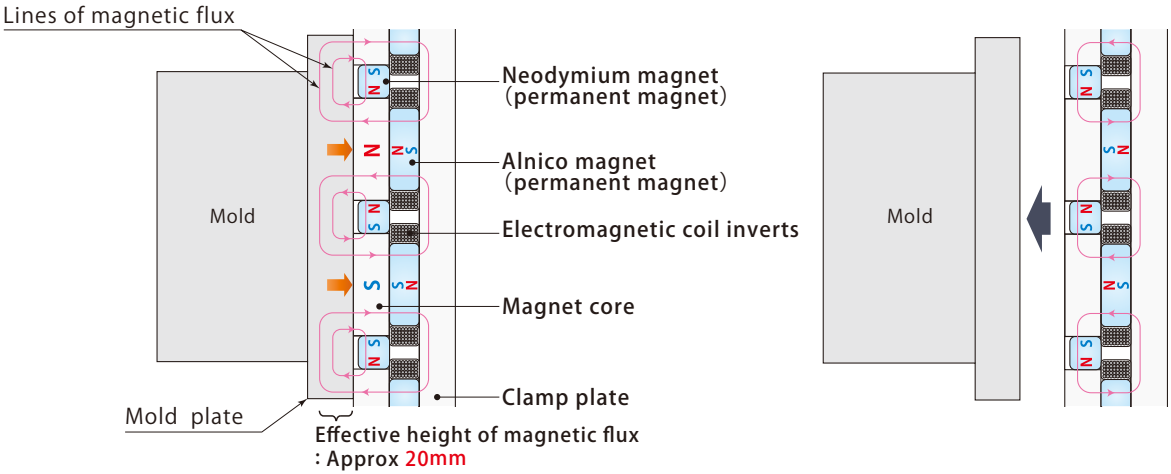
Square core type of Mag clamp is selected for Multi-color/Vertical molding machines, high temperature (120℃ and over) and 35mm thickness of Mag plate.



Square Core Mag Clamp

Magnet | 1 BY 1 | 80℃ /150℃ /180℃ | Mold Displacement Detection System | Thin plate available

Structure and Function



Clamp (Magnetized)

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

Unclamp (Demagnetized)

①Electromagnetic coil is energized in 0.5 sec. ②Polarity of alnico magnet is inverted. ③Magnetic 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 ℃			0～80
Flux height mm			20（Mold plate material: SS400）
Power Voltage			AC200 / 220V ±5%（50/60Hz）
Sensor			Mold Displacement Detecvtion System (Stationary / Moving platen)

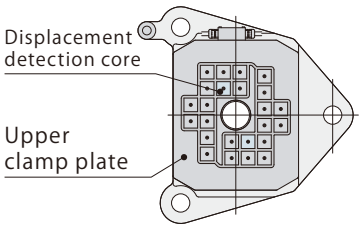
- Operating temperature is the temperature of the surface of the magnetic plate. 0 ～ 150℃ or 0 ～ 180℃ for heat proof type
- Clamp force means the force generated by a magnet core.

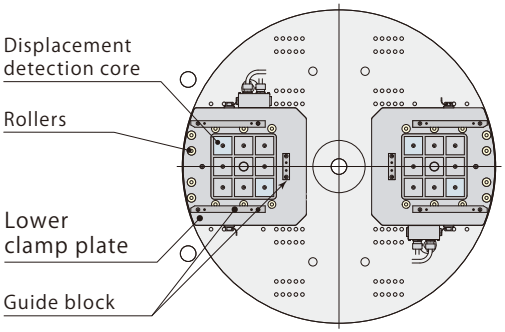
＊：For injection molding machines of 4,500kN or more, the plate thickness is 52mm.

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
Mold changing time **60**min（250ton class）	Mold changing time **15**min（250ton class）
● Limited power exertion. ● Easy to drop tools. ● No visual. ● Install bolts many times. ● Need to move to operation / non-operation side to install / remove bolts.	● Simply use the operation panel to clamp and unclamp the mold.

Mag Clamp System Constitution

Magnet

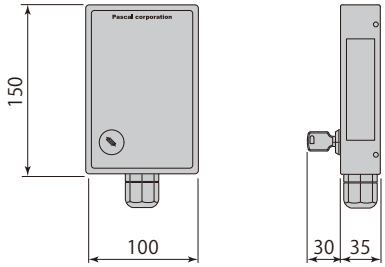
Operation Panel

For vertical loading

model **ESMD-A**

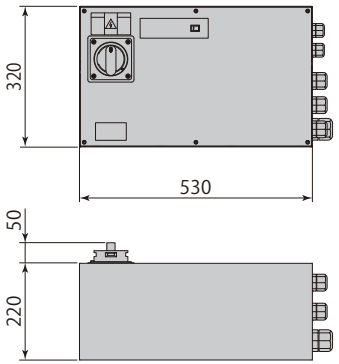
For horizontal loading

model **ESMD-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

Magnet

■ Option

- Non standard voltage arrangement（50/60Hz）
- High temperature
  - ・0 ～ 150℃
  - ・0 ～ 180℃
- 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 cohered
- Indicator
- Mold fall protection hook model MGR（Fixed side・Movable side）
- Die stopper

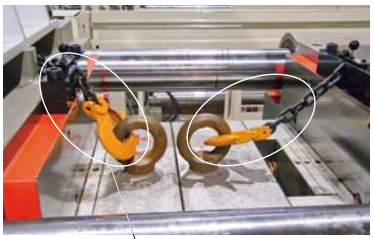
DD Mag Clamp

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

With a easily adjustable chain



Mold fall protection hook

New

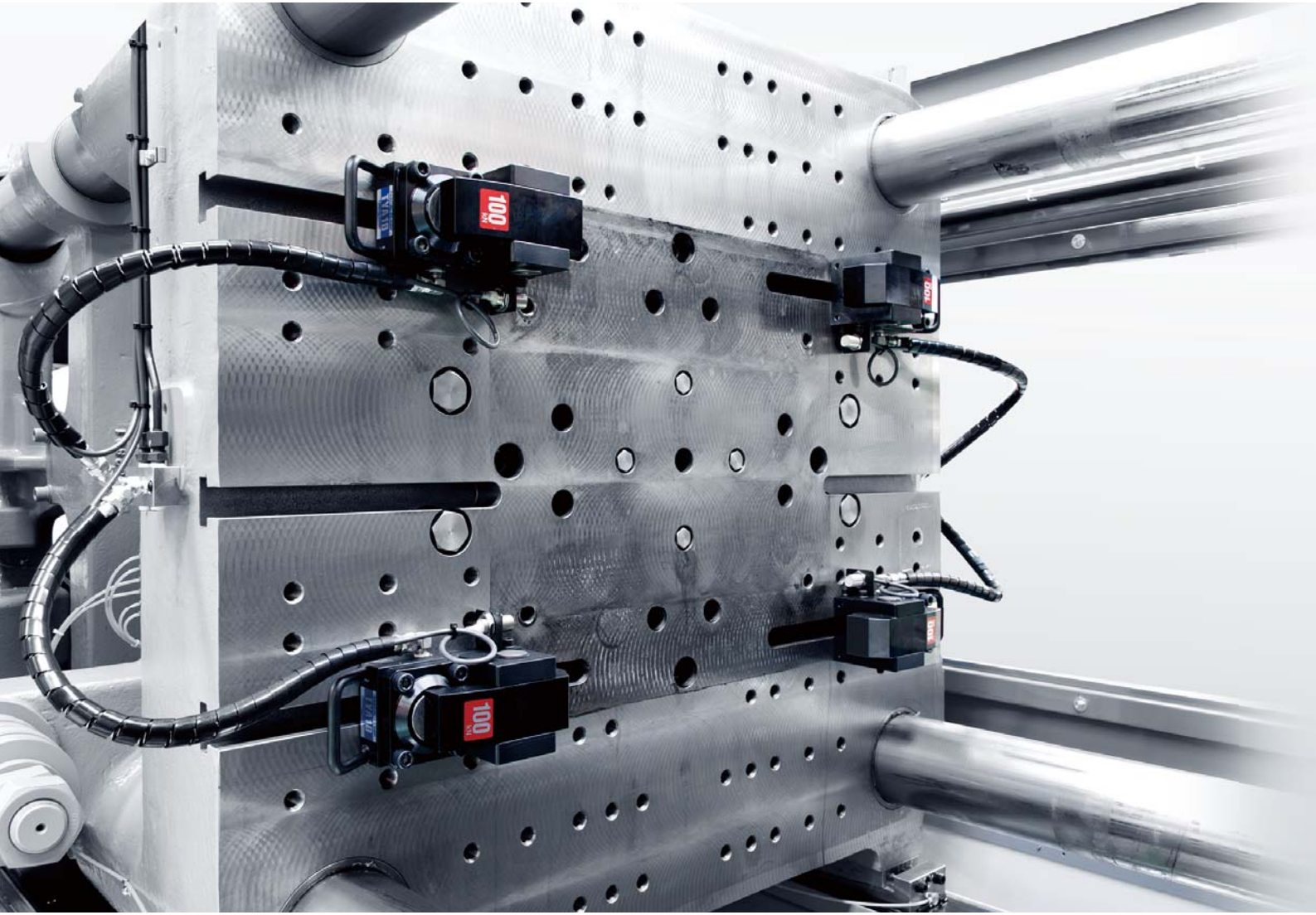
Indicator (Optional) PAT.P.

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

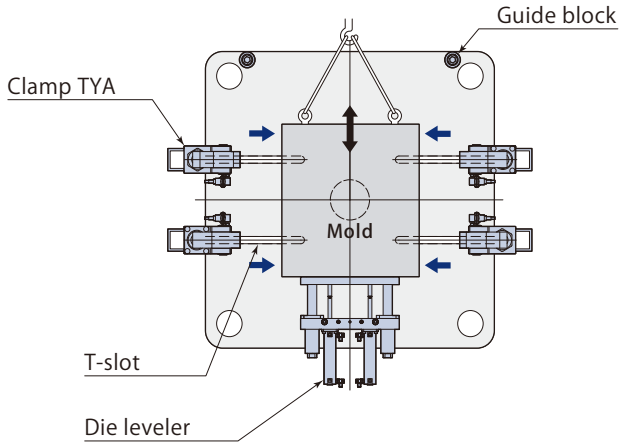


4,500kN（450ton）IMM Vertical loading Slidable clamp TYA

Slidable clamp & Die Leveler

Manual slide clamp

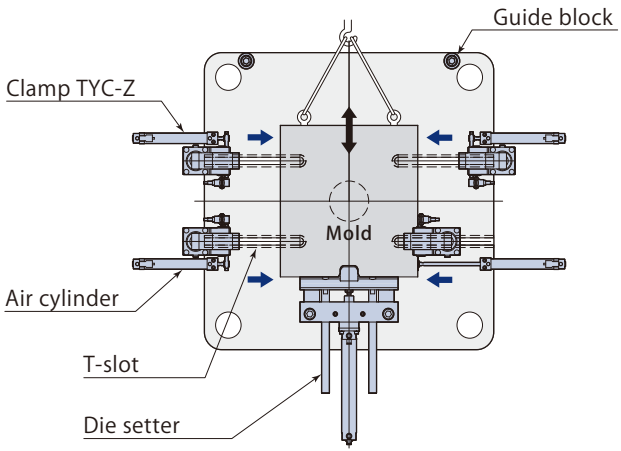
model **TYA** model **TYB** model **TYJ**



Auto Slide Clamp & Die Setter

Auto slide clamp with a pneumatic cylinder

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

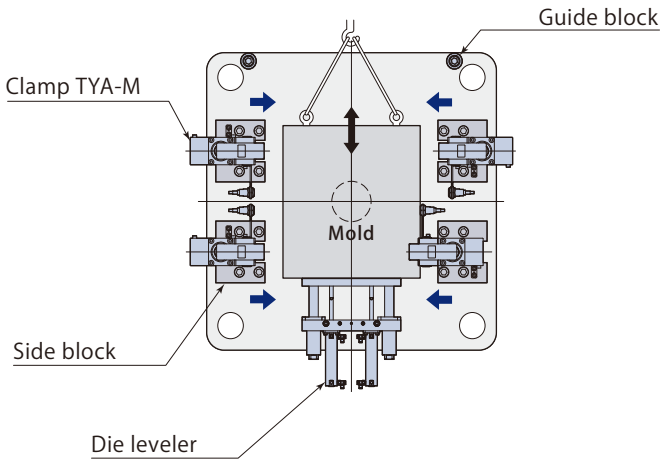


T-slott-less Slide clamp with Die Leveler

T-slot-less clamp and guide block

Slideable clamp without the machine T-slots

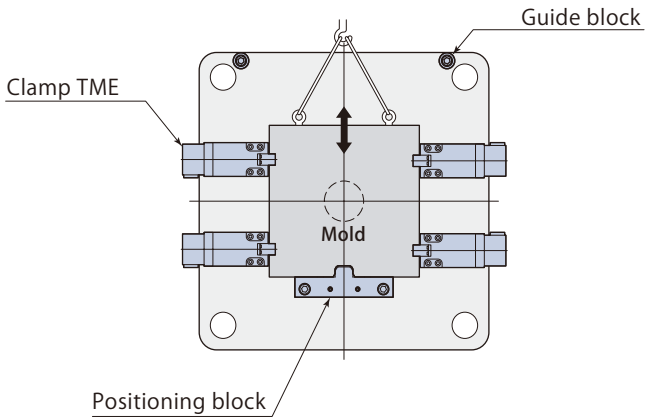
model **TYA-M** model **TYC-M**



Bolted clamp and Positioning block

Bolted clamp

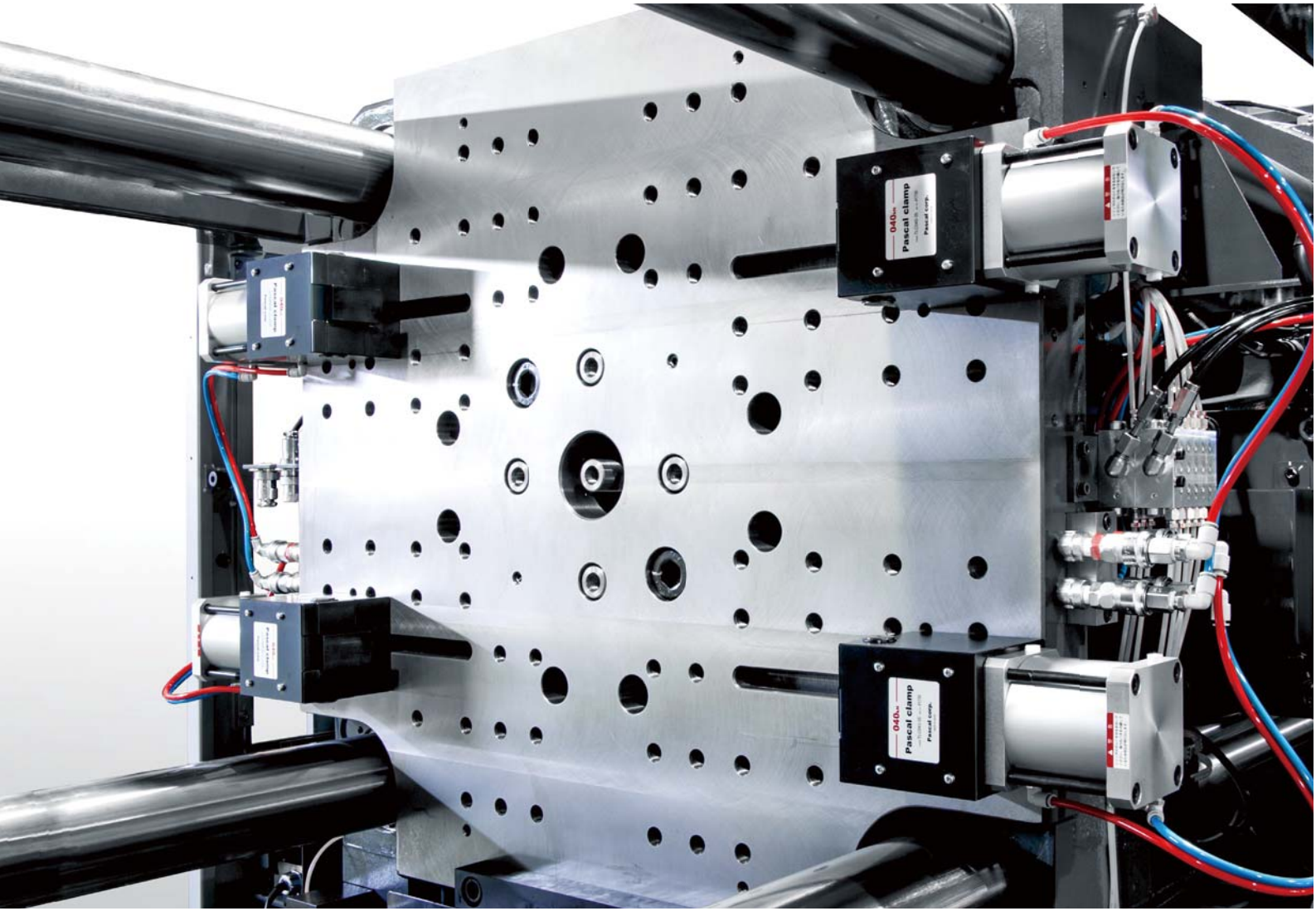
model **TME** model **TKB**



Pneumatic Clamp

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

Air

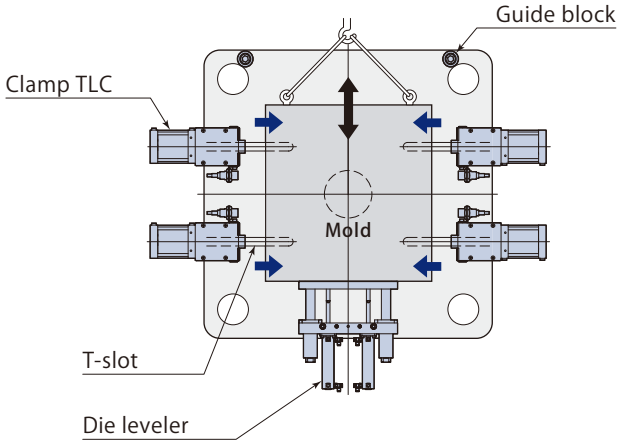


2,200kN (220ton) IMM Vertical loading Slidable clamp TLC

Slidable clamp & Die Leveler

Manual slide clamp

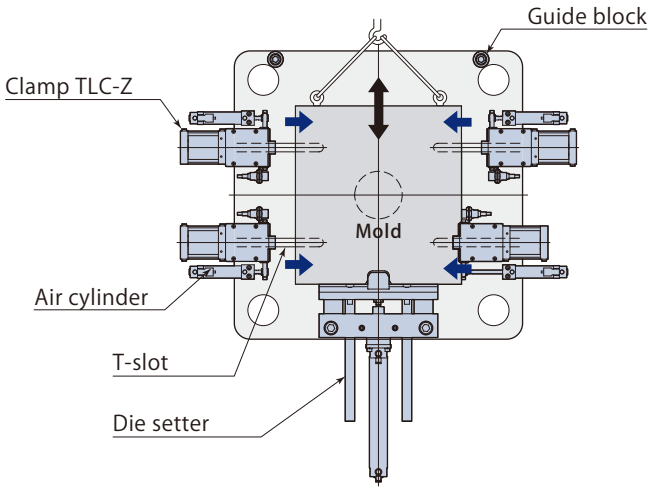
model **TLC**



Auto Slide Clamp & Die Setter

Auto slide clamp with a pneumatic cylinder

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

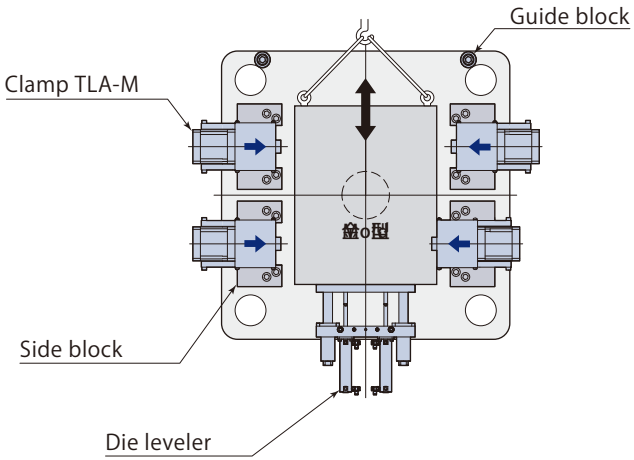


T-slott-less Slide clamp with Die Leveler

T-slot-less clamp and guide block

Slideable clamp without the machine T-slots

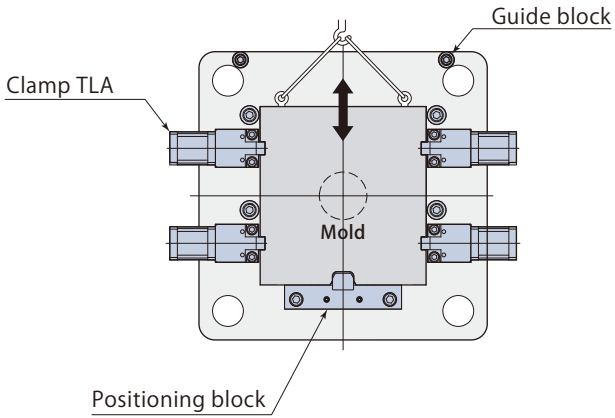
model **TLA-M**



Bolted clamp and Positioning block

Bolted clamp

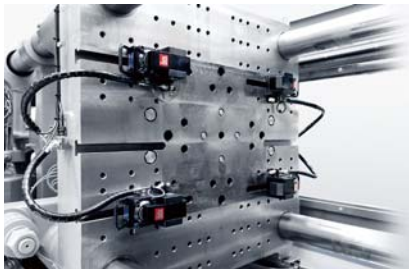
model **TLA**



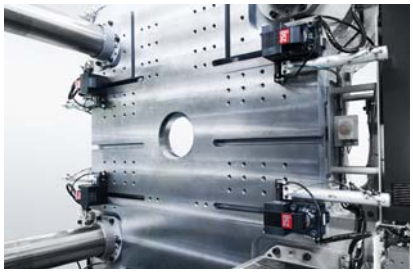
Hydraulic • Pneumatic Clamp Examples

Hydraulic | Air | Long Stroke

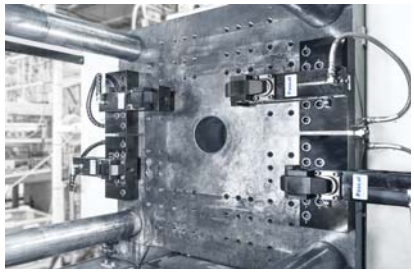
Hyd. Slidable clamp TYA



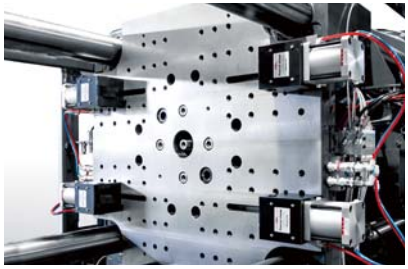
Hyd. Automatic slidable clamp TYC-Z



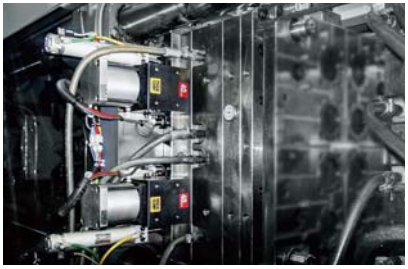
Hyd. Clamp, T-slot- less slidable type TYA-M



Air Slidable clamp TLC



Air Automatic slidable clamp TLC-Z



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

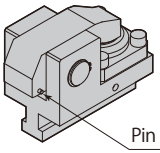
Vertical IMM

Slidable clamp Long stroke type

Caution 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

Pin

The spacer is pulled up at unclamping.

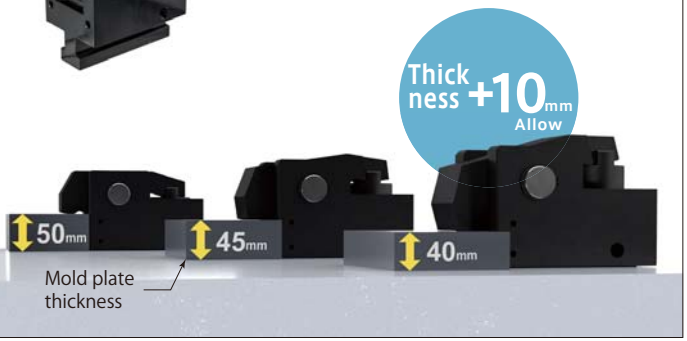
Magnet

Install the spacer tightly on the clamp body.

Lever spacer

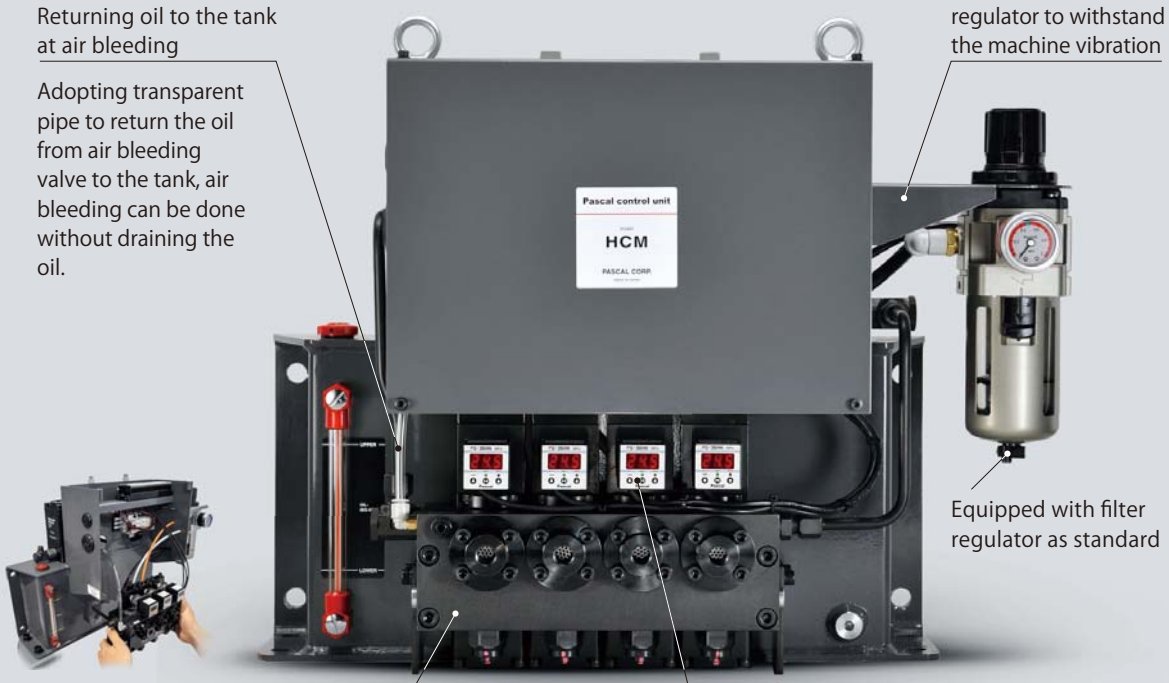
model **TYJ**

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



Control unit HCM

New control unit model HCM for easy maintenance



Returning oil to the tank at air bleeding

Adopting transparent pipe to return the oil from air bleeding valve to the tank, air bleeding can be done without draining the oil.

A rigid bracket for the regulator to withstand the machine vibration

Equipped with filter regulator as standard

1 Block-type Valve unit

Independent circuit valves have been configured as a block valve, improving maintainability.

Digital pressure switch

User-friendly display with 7 segments. It can also show abnormal pressure sign and allows hydraulic control unit to be compact.

Hydraulic • Pneumatic Clamp System Constitution

Hydraulic | A i r

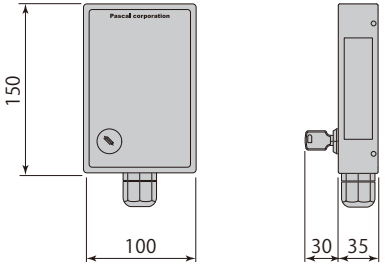
Operation Panel

For vertical loading

model **ESTE-A**

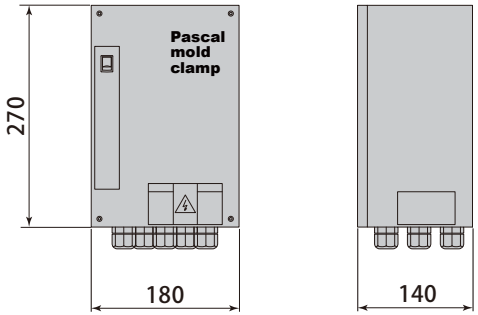
For horizontal loading

model **ESTE-B**



Control Panel

model **ECTL**



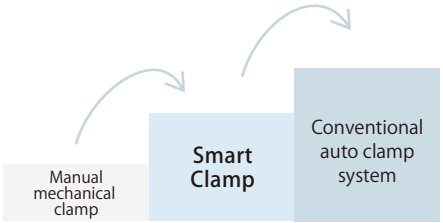
Hydraulic • Pneumatic Clamp System Constitution

Hydraulic | A i r

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 inst allation 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 **ESTE-A** 
Control unit	Control unit (To be installed in the machine control box) 	Control box model **ECTE** 

Applicable system

■ Hydraulic clamp

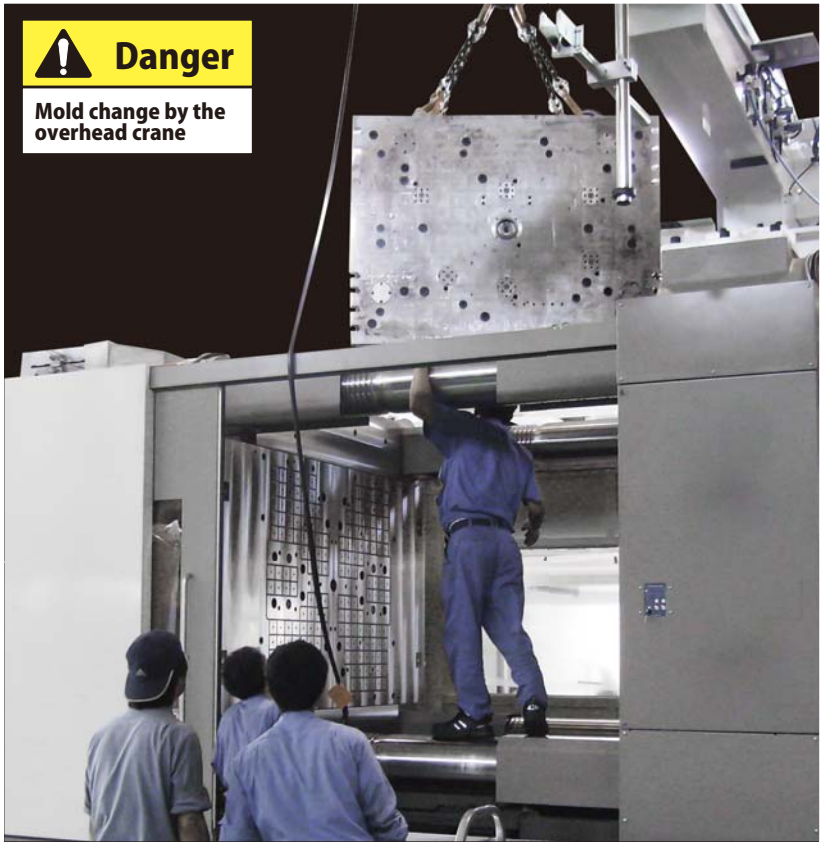
TYA	○
TYC-Z/R	×
TYA-M	○
TME	○
TKB	○

■ 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.



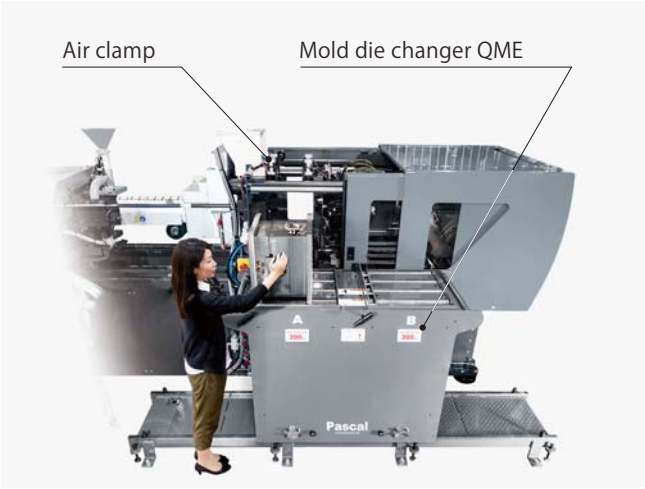
Carelessly coming under the craned mold.

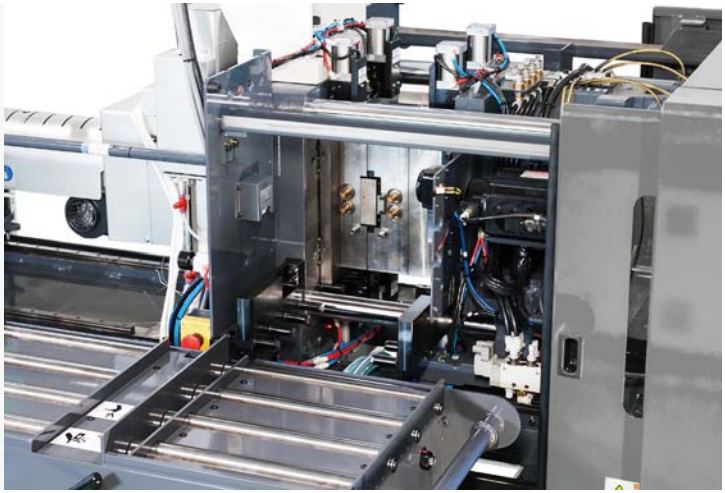
Unhooking the mold stepping on the machine tie bar.

Improving the above work with hazards by horizontal change system

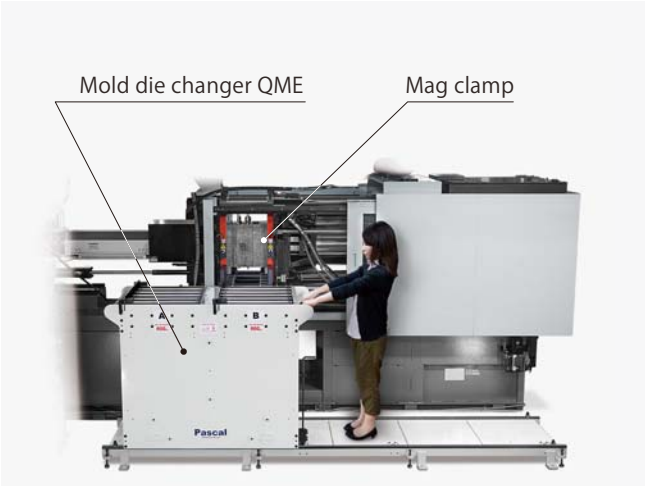
Magnet Mold Changer

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





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

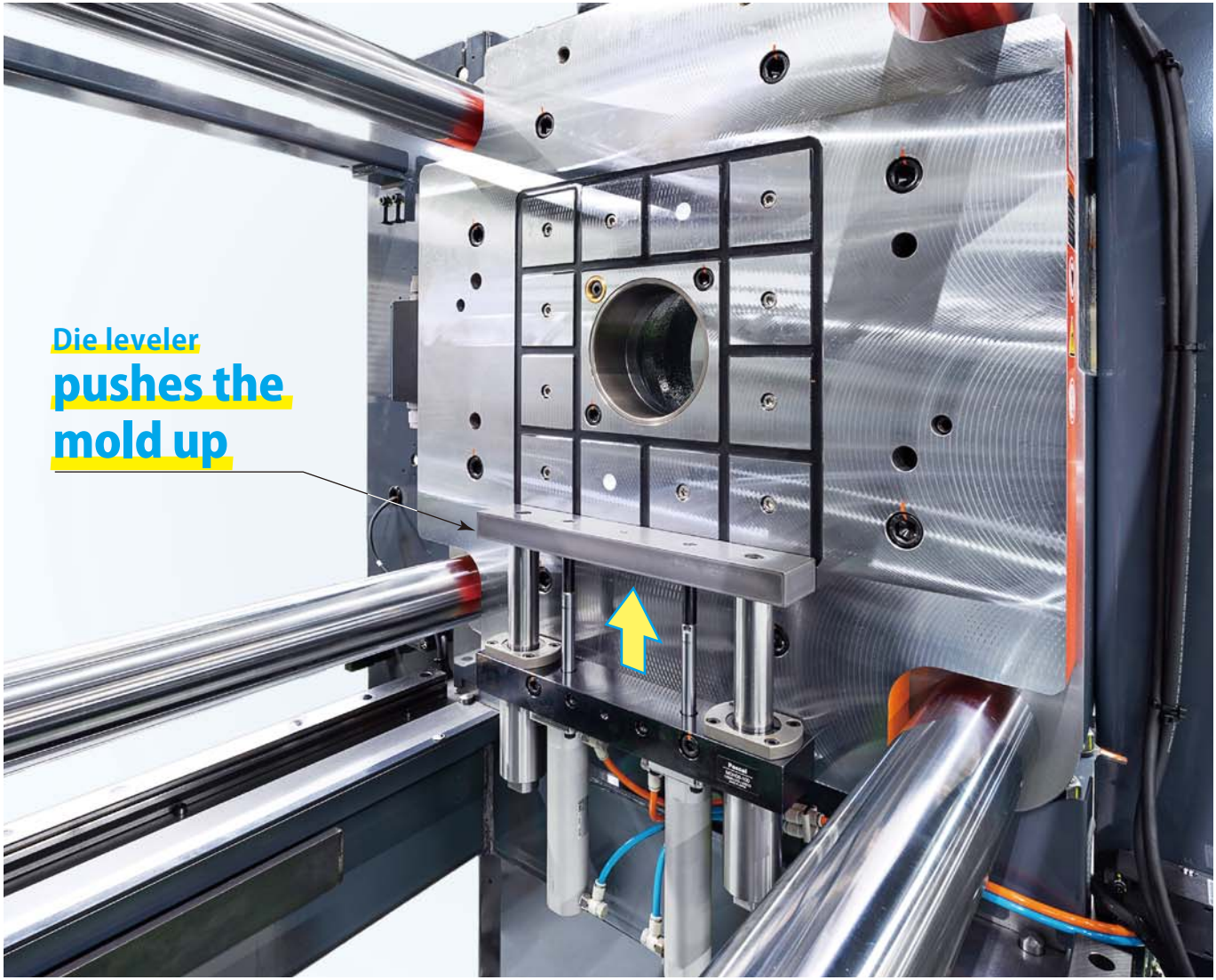


Locate Ring and Die Leveler

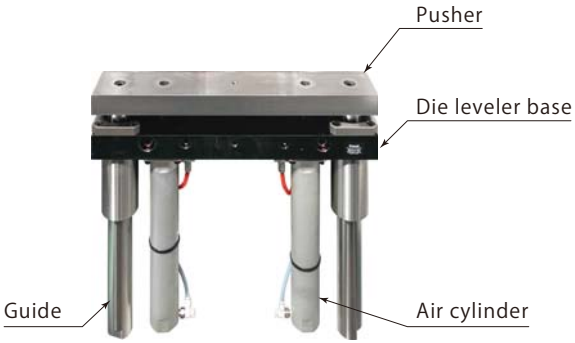
Positioning tool | Leveling | Up to 2.5 ton mold

It can automate the leveling of the mold

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



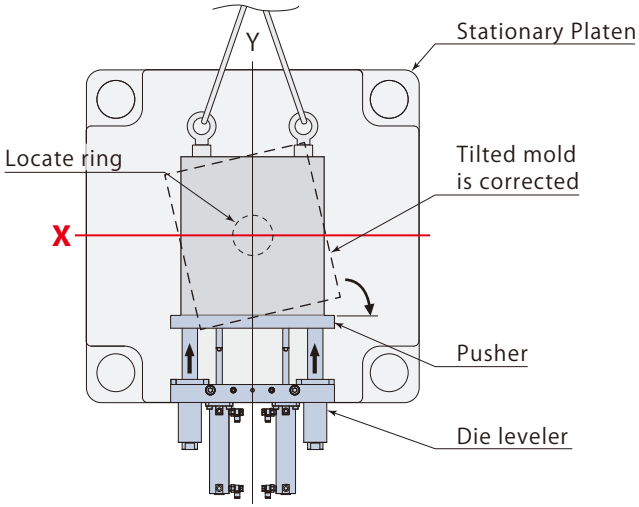
1,000kN (100ton) IMM Vertical loading Die leveler & Locate ring & Mag clamp

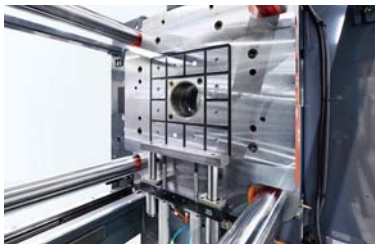


Operation panel

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 correctively leveled (X-axis)





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

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

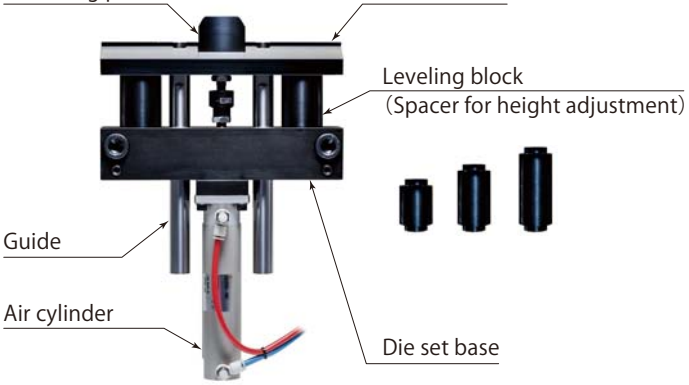
Die Setter

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.

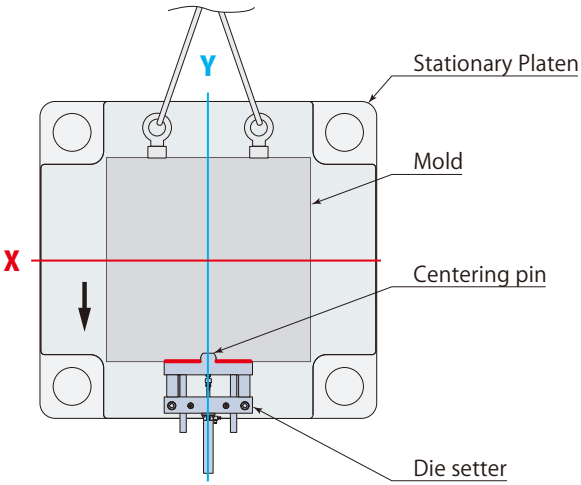
3,500kN (350ton) IMM Vertical loading Die setter & Mag clamp

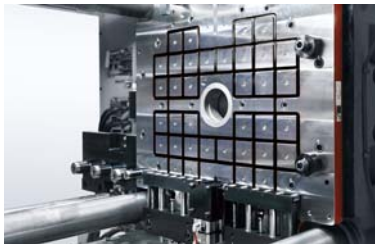


Operation panel

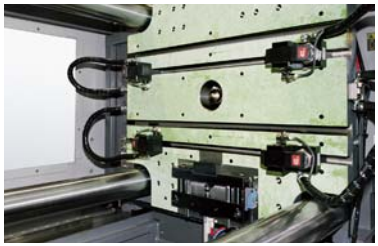
Model No.		MDL01	MDL03	MDL04	MDL06	MDL10	M DL15
Mold Weight	kg	1,000	3,000	4,000	6,000	10,000	15,000

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

Positioning tool | Centering | Up to 2000kN Injection molding machine

For positioning a hoop insert mold

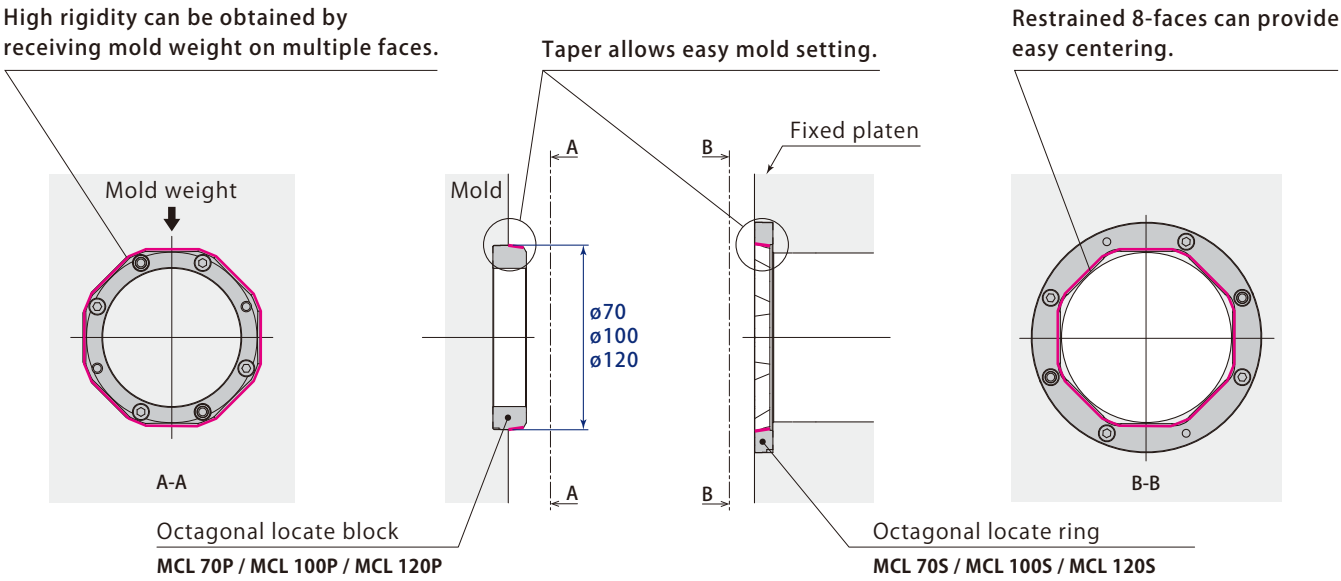
Mold positioning with octagonal (octagonal tapered cone) locate rings eliminates insert point misalignment and robot re-teaching, resulting in significant setup improvements.

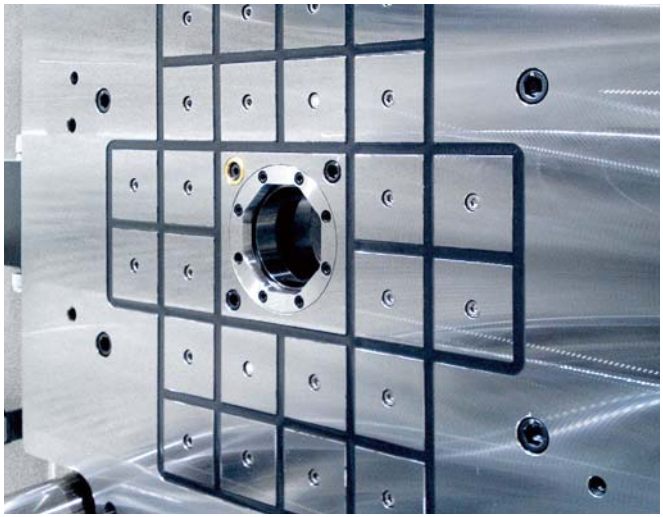
Octagonal locate block
(Locate ring cylindrical)

Mold side

Octagonal locate ring
(Base)

Fixed platen side





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 ejetor rod change is dramatically improved.

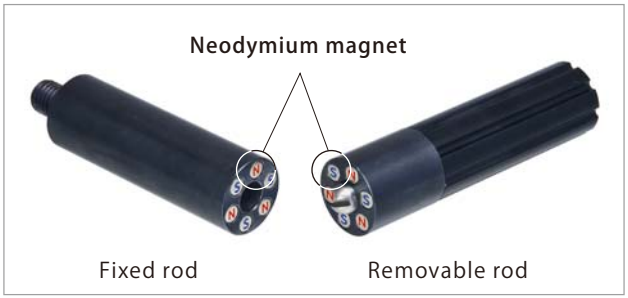
By separating the rod into fixed and detachable sections, one-touch detachment of the detachable rod is possible. This product has been adopted in many cases as a setup improvement product.

■ Before　Time-consuming work　Dangerous work

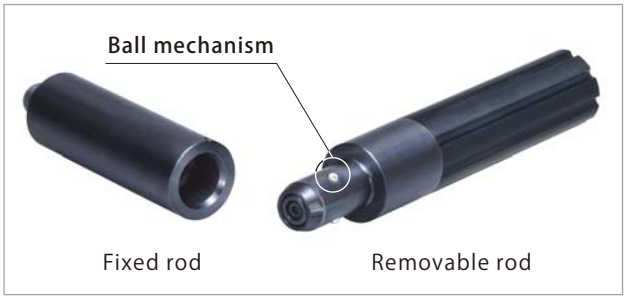
■ After　E a s y　Safe　Tool-less

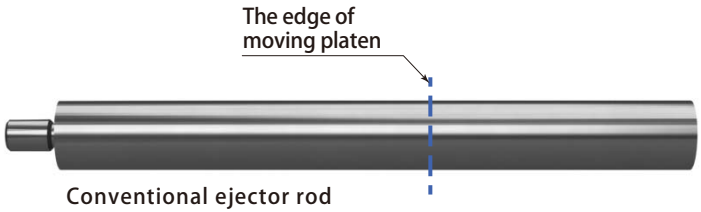
Ejector Rod | Magnet | Ball Lock

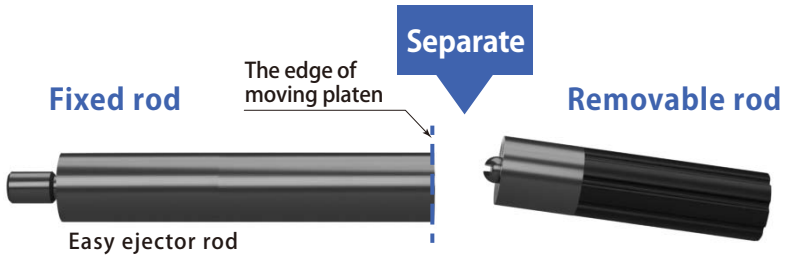
Easy ejector rod



Ball lock ejector rod







Product Line

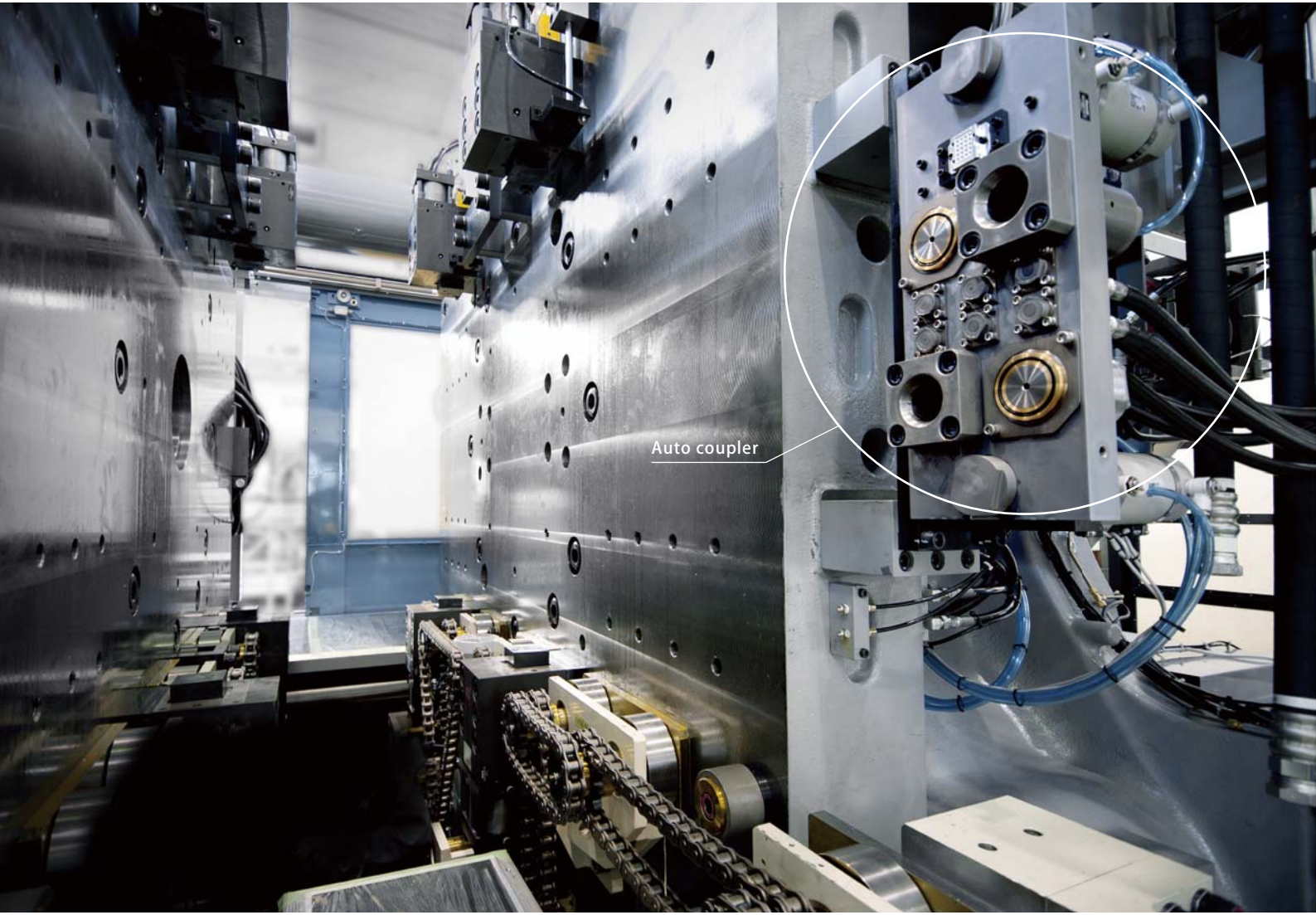
Name of Product		Mag Ejector Rod	Ball-Lock Ejector Rod
Ease to use		◎	○
Machine tonnage		up to 13,000kN	up to 25,000kN
Rod Diameter	mm	ø26, ø40	ø26, ø40
Ejector Stroke		up to 300mm	up to 350mm

Auto Coupling System

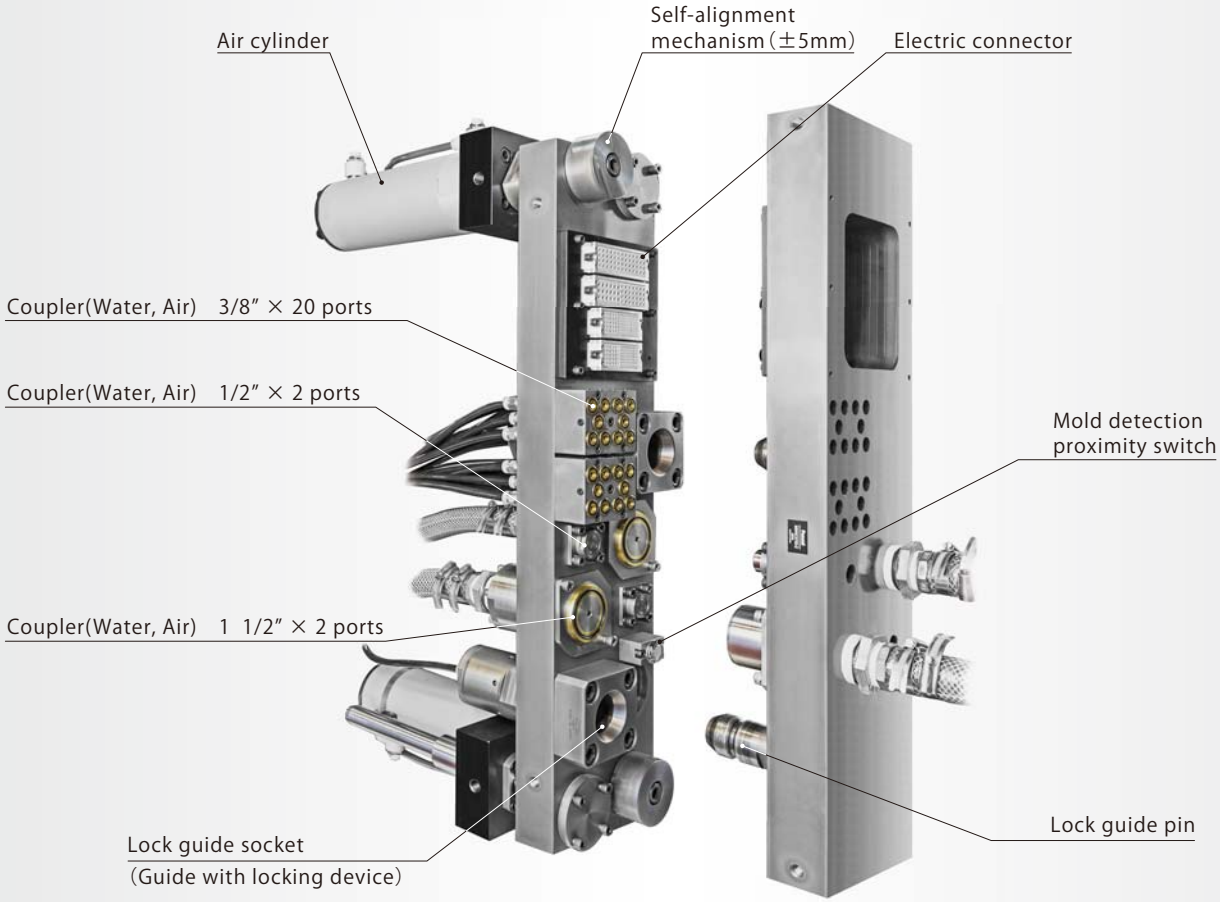
Coupler

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.



3,5000kN（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

Coupler

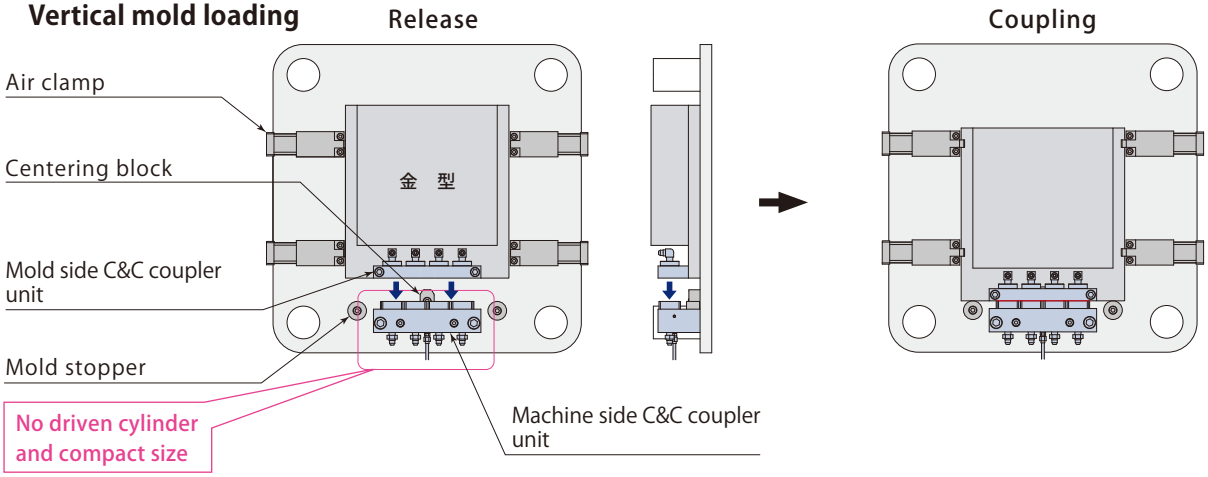
Module	Coupler, Electric connector
Fluid	Hydraulic, Water, Air
Pressure	Max. 1MPa
Connection port	1/4″

Mold loading and connection at the same time

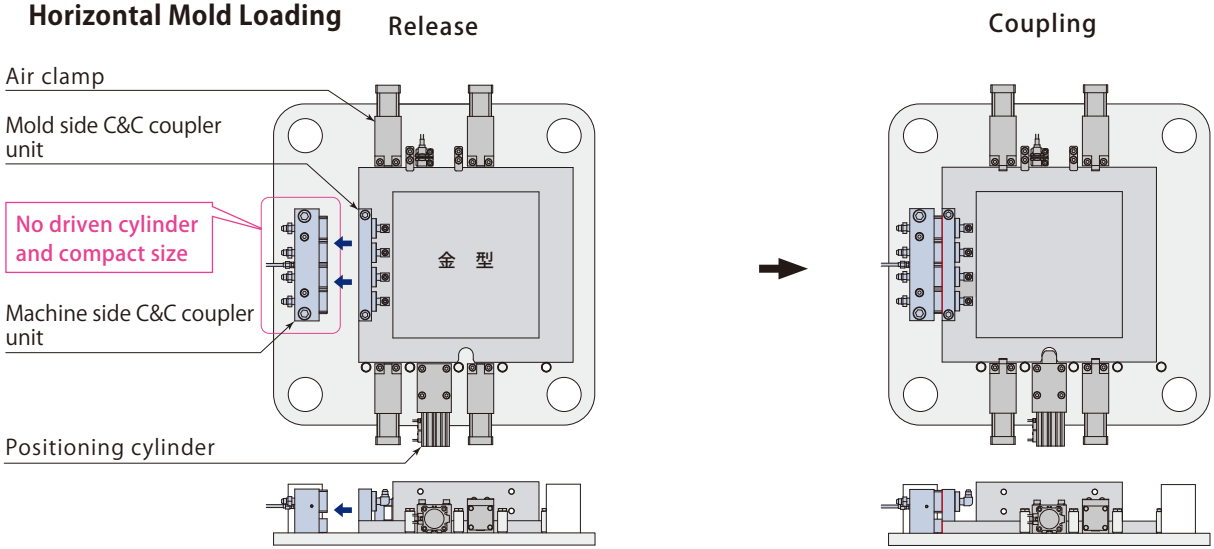
A simple mechanism coupler that can be kept coupling by means of mold clamp.

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

Vertical mold loading



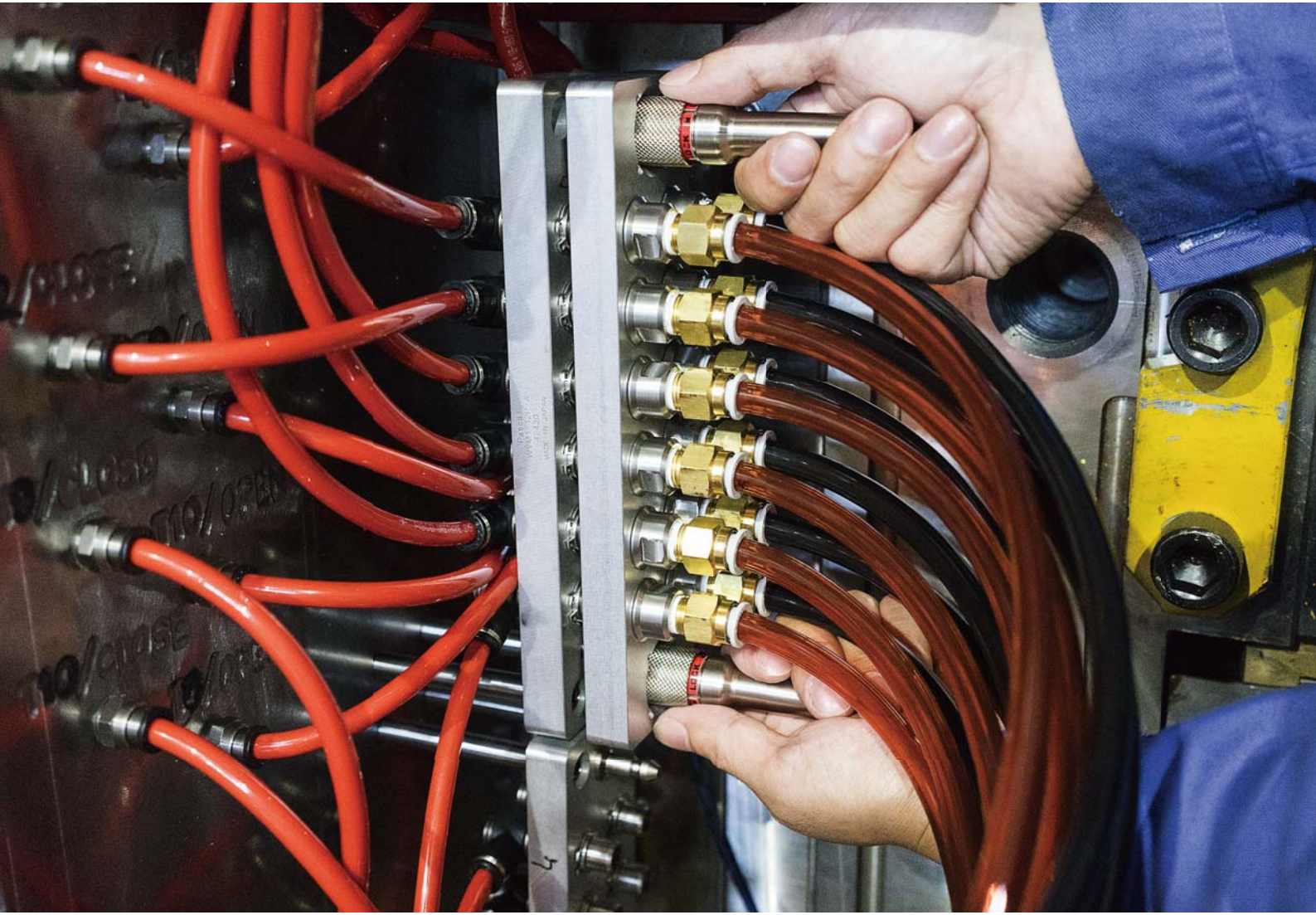
Horizontal Mold Loading



Multi Coupling System

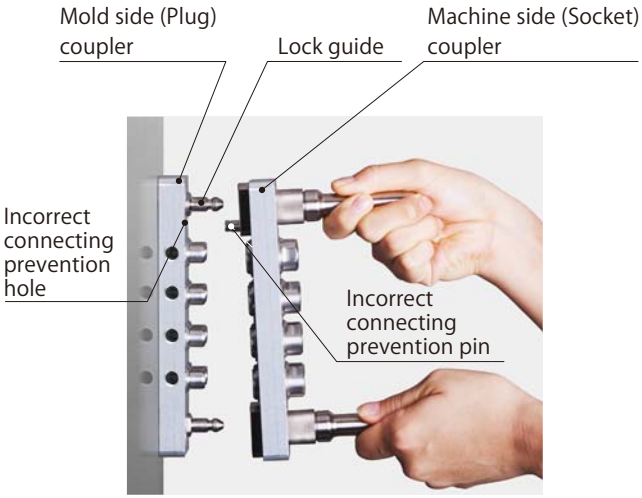
It can easily and securely connect multiple couplers by simply pushing lightly on the gripper, also shortens coupling time and prevents misplaced or forgotten connection.

Coupler

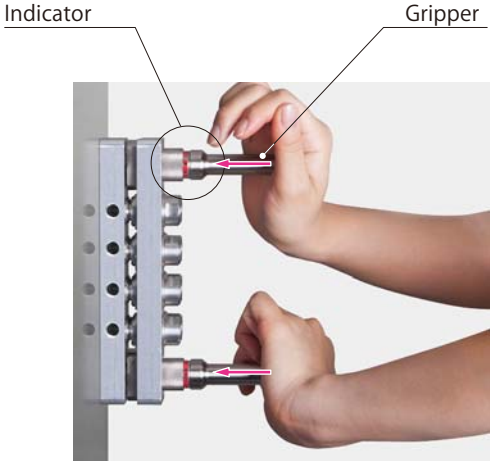


18,000kN（1,800ton）IMM　Multi coupler Open model

Coupling

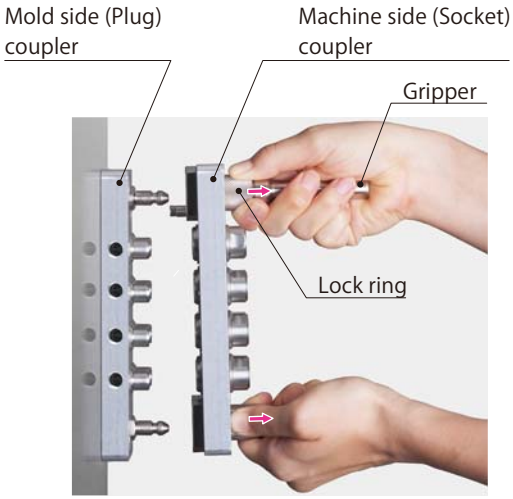


Insert coupler(female) along with a lock guide



Push the gripper lightly and locking complete

Release



Coupling **Release**

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.

Lock ring

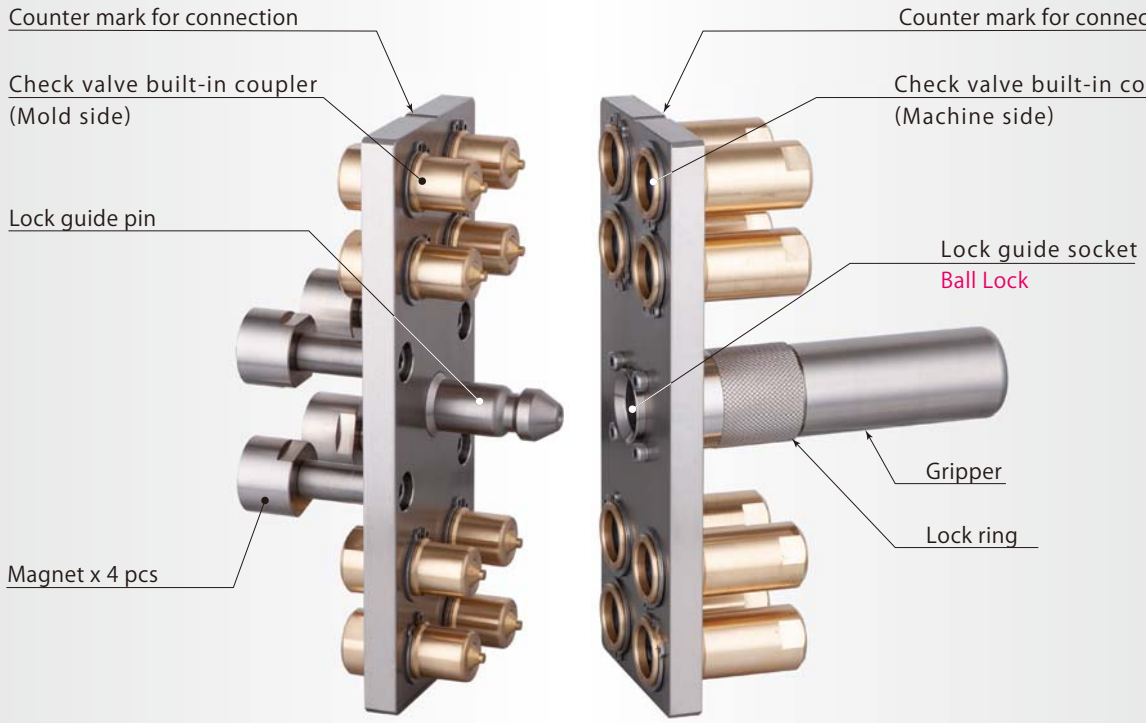
Multi Coupling System Model

Coupler

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

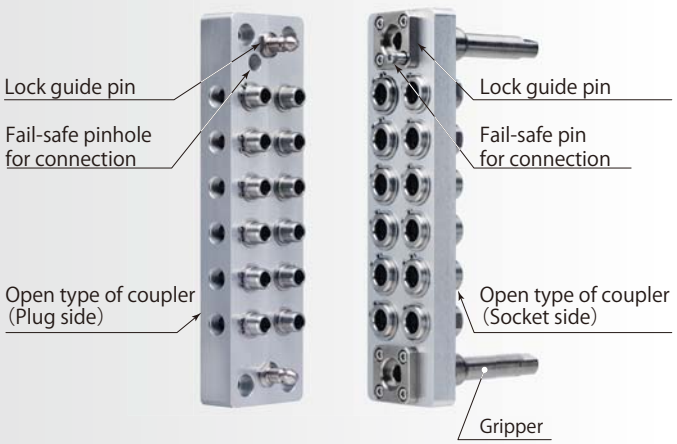
Coupler

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.

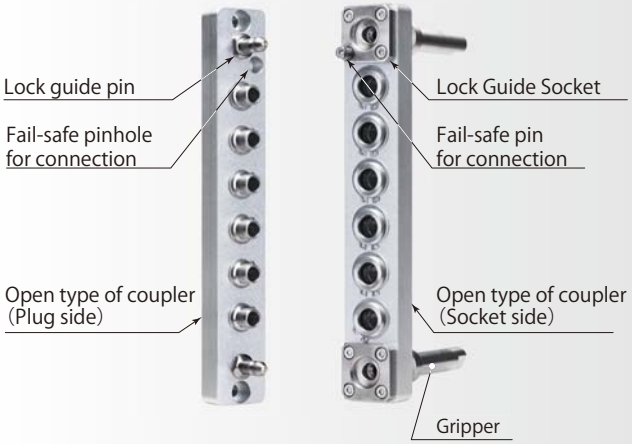
Fluid	Hydraulic, Water, Air
Pressure	Max. 0.8MPa
Connection port	Rc1/4、 Rc3/8
Number of port	6、 8、 12

Double row type



Plug, mold side　　Socket, machine side

Single row type



Plug, mold side　　Socket, machine side

New Valve Stand

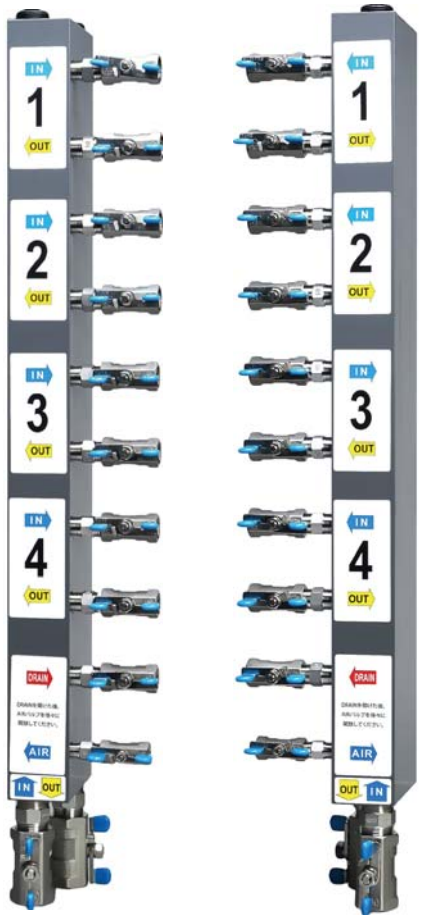
Coupler

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

Coupler

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**

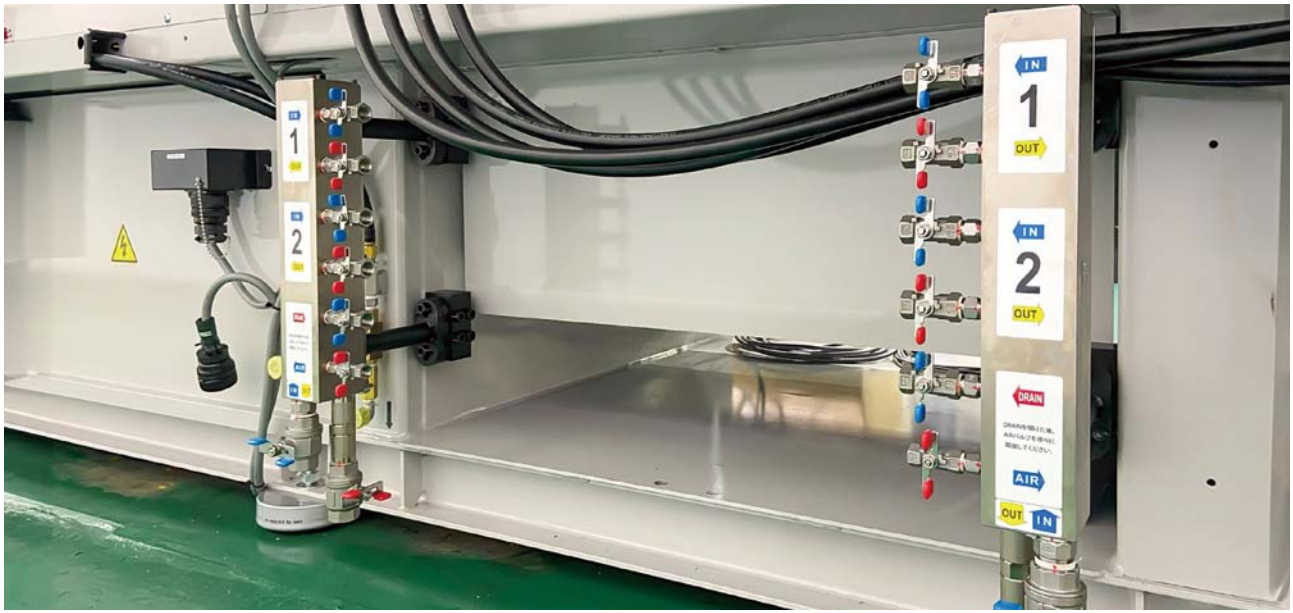
Rear view

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



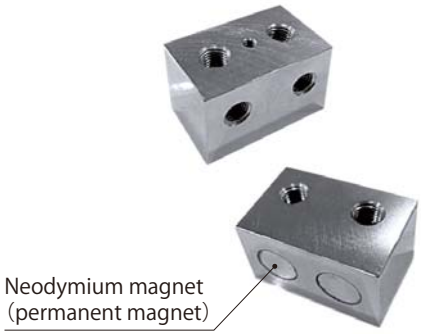
1,800kN（180ton）IMM bed mounting New valve stand horizontal connection model

Magnet Branch

One-touch mounting of manifold using permanent magnets

Coupler

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



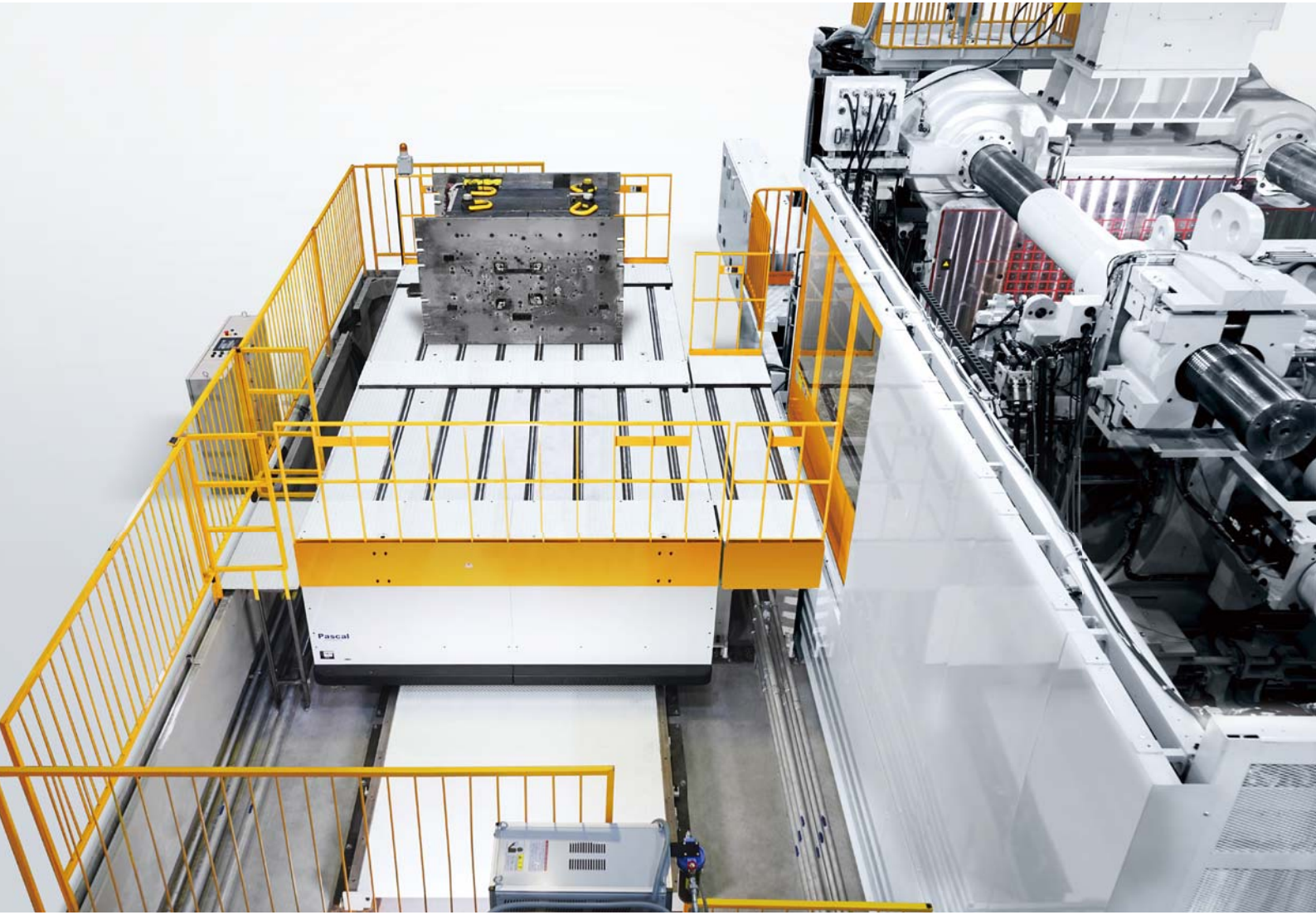
Model	Magnet Branch	
Compatible fluid	Water, air, mineral hydraulic oil	
Number of circuits	2 circuits (6 ports)	
Adsorption force	300 N	
Material	Steel (electroless nickel plating)	
Port size	6×Rc1/4	6×Rc3/8

Mold Die Changer

Mold Changer

To ensure mold change operation to be quicker and safer

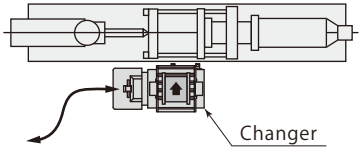
A mold changer is an automatic mold change system that significantly shortens the time required for changing molds compared to the conventional method of changing molds using a forklift or overhead crane.



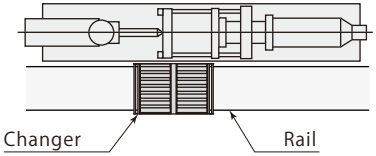
30,000kN（3,000ton） IMM Horizontal loading
Mold changer：Powered, Drive rollers type 2 molds & Mag clamp

Examples for layout

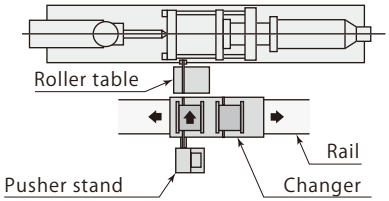
Manual loading **Non track**



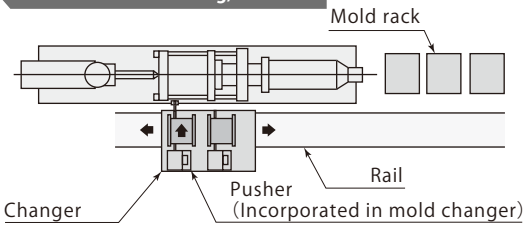
Manual loading **Rail type**



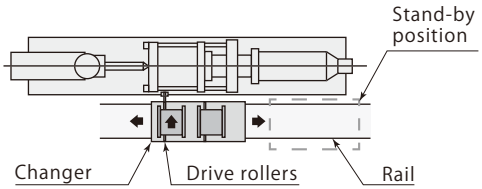
Pusher **1 pitch traveling with roller table, 2molds**



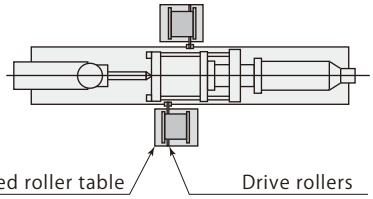
Pusher **Short distance traveling, 2molds**



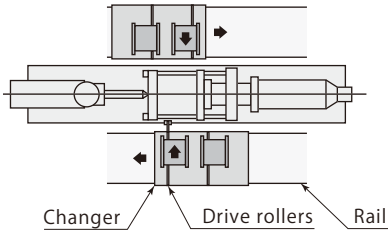
Drive rollers **1 pitch traveling（with standby position）, 2molds**



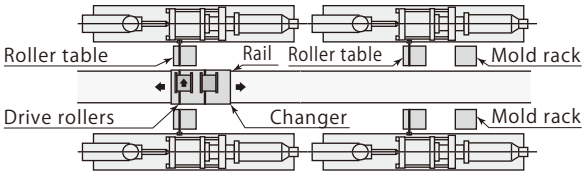
Drive rollers **Fixed roller table, 1mold, Pushing in/out style**



Drive rollers **1 pitch traveling, 2molds Pushing in/out style**



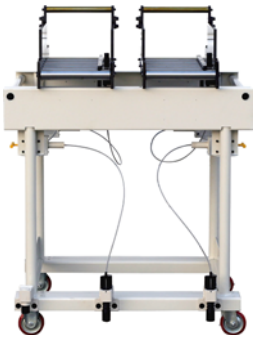
Drive rollers **Long distance traveling, 2molds, Face to face layout**

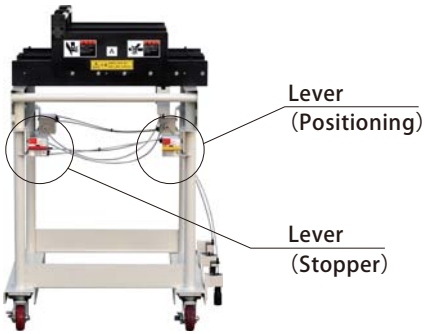


Mold Die Changer Lineup

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)	1300～4,500 kN （130～450 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

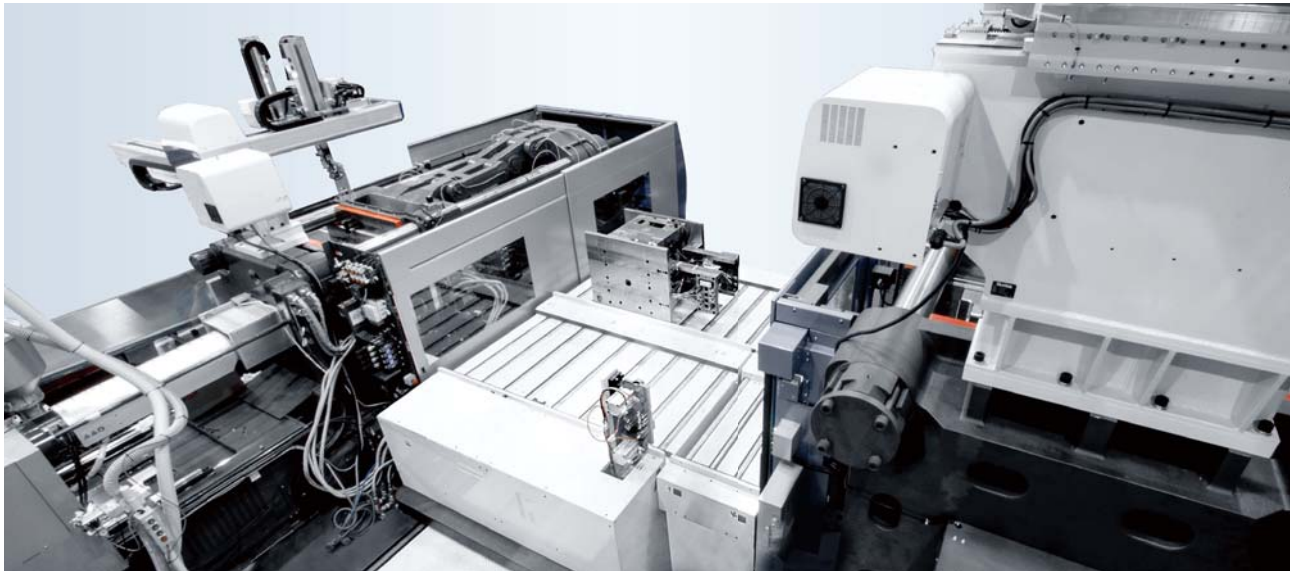
Mold Changer

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

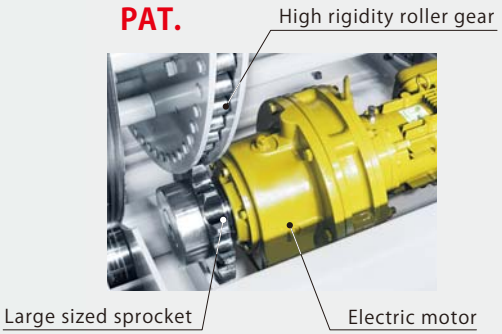
Electric Motor driven

Roller gear driven, Rolling type

The unique rollera 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



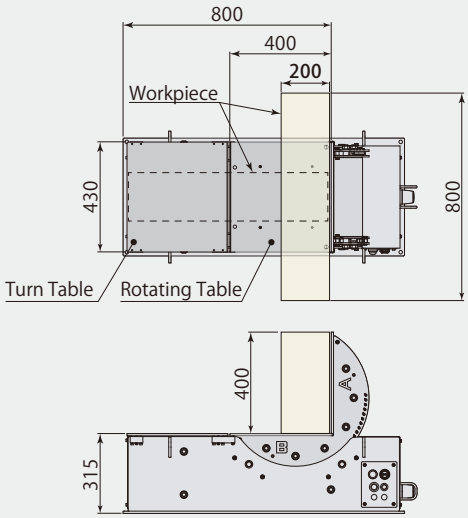
Workpiece Rotator model SMR005

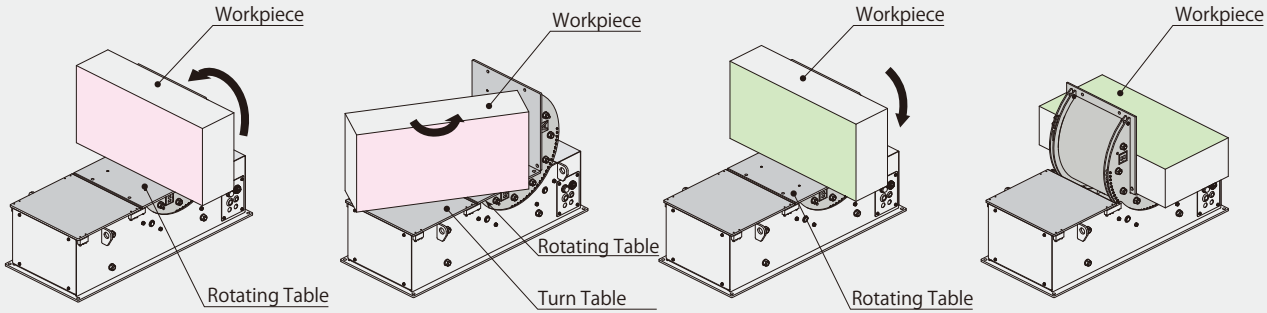
Electric Motor driven

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





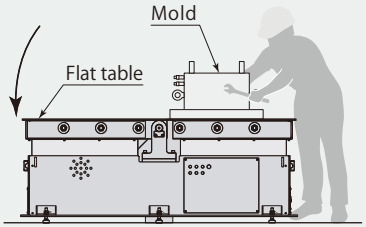
Mold Rotator model SMF-M

Electric Motor driven

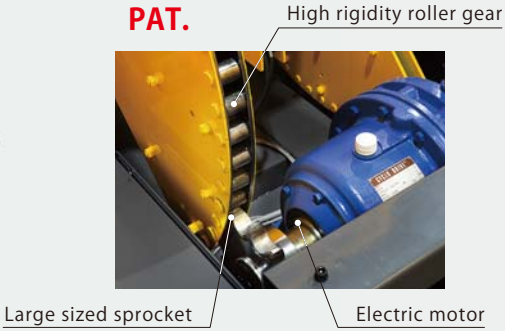
Flat table, roller gear type

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

Mold rotator | Rotatable weight3～5ton | Maintenance Free



PAT.



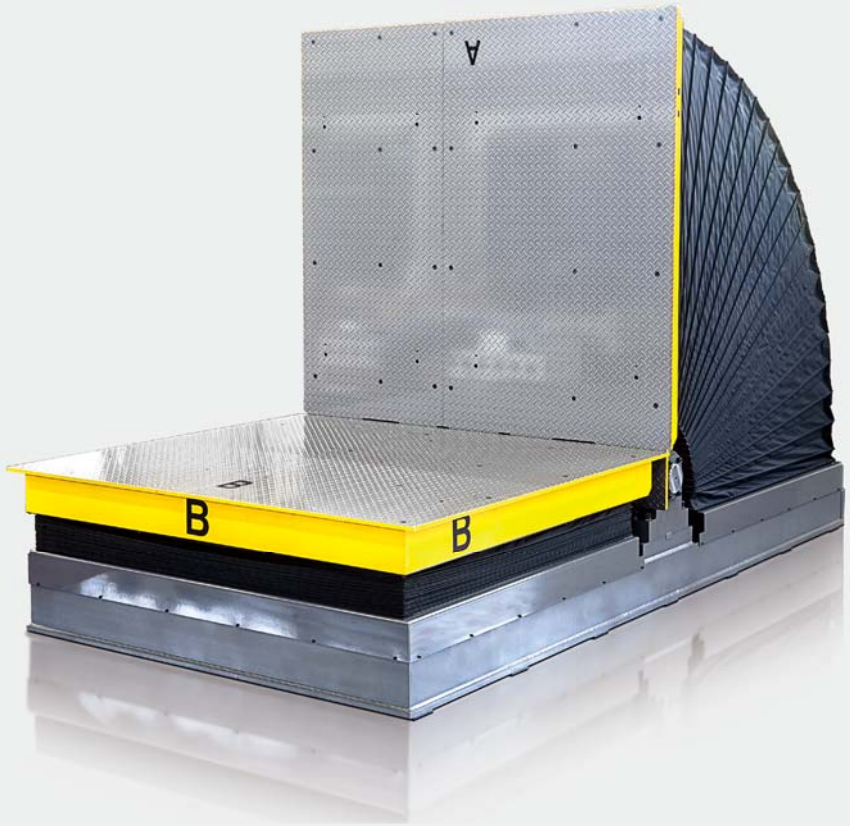
Mold Rotator model SMF-H

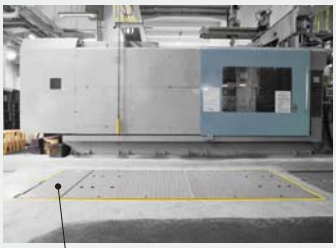
Hydraulic

Flat table, hydraulic cylinder type

The model SMF-H adopts a unique hydraulic cylinder drive sytem 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 weight10 ～ 30ton | Embeddabe in the floor





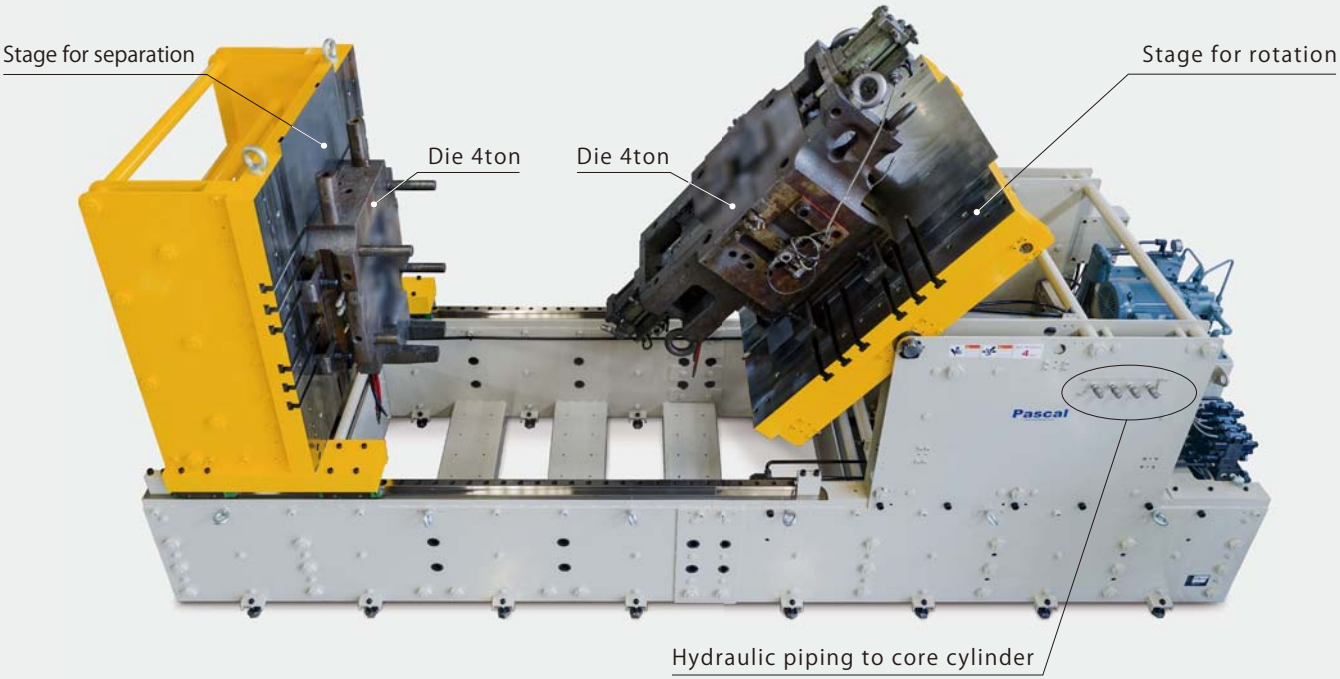
Tabel flattened after embeded

Picture of 20ton mold type

Die Splitter with separation

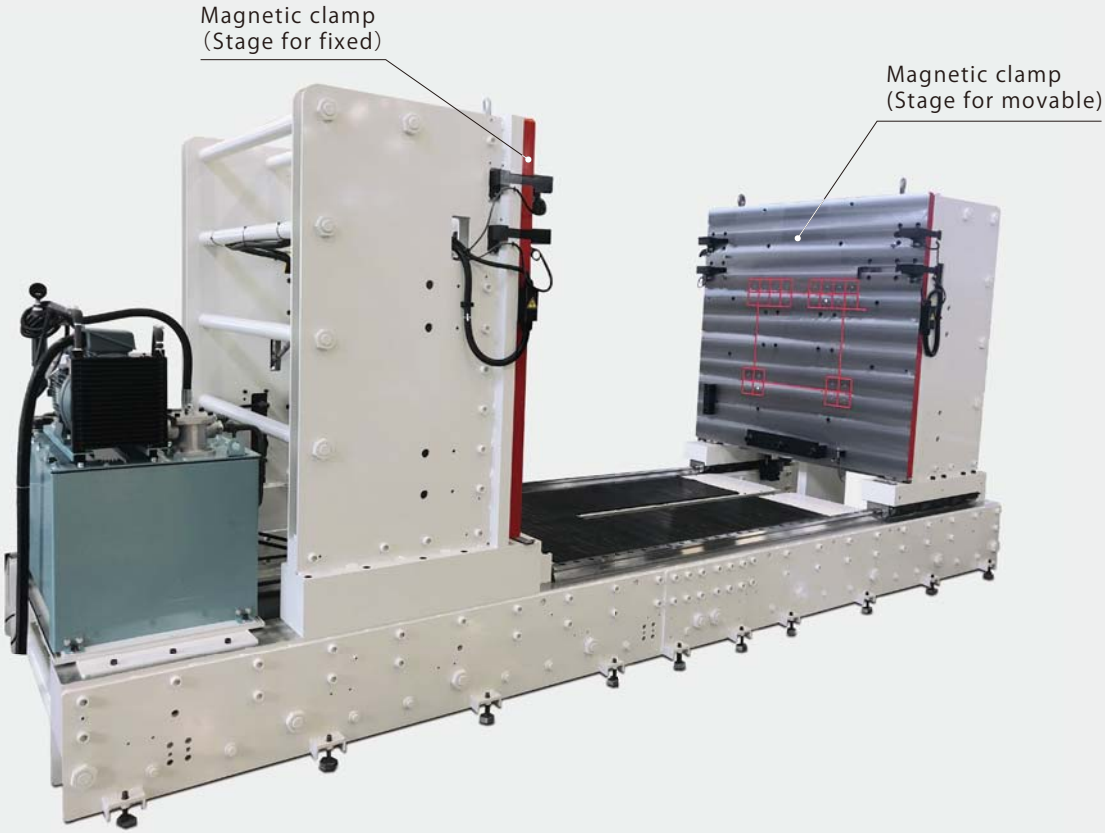
This device can be used to safely perform mold maintenance outside the machine without reducing the operation rate of the molding machine.

Die weight 8 ton (4 ton per each side)



Mold Separator with magnetic platen

Die weight 15 ton (7.5 ton per each side)

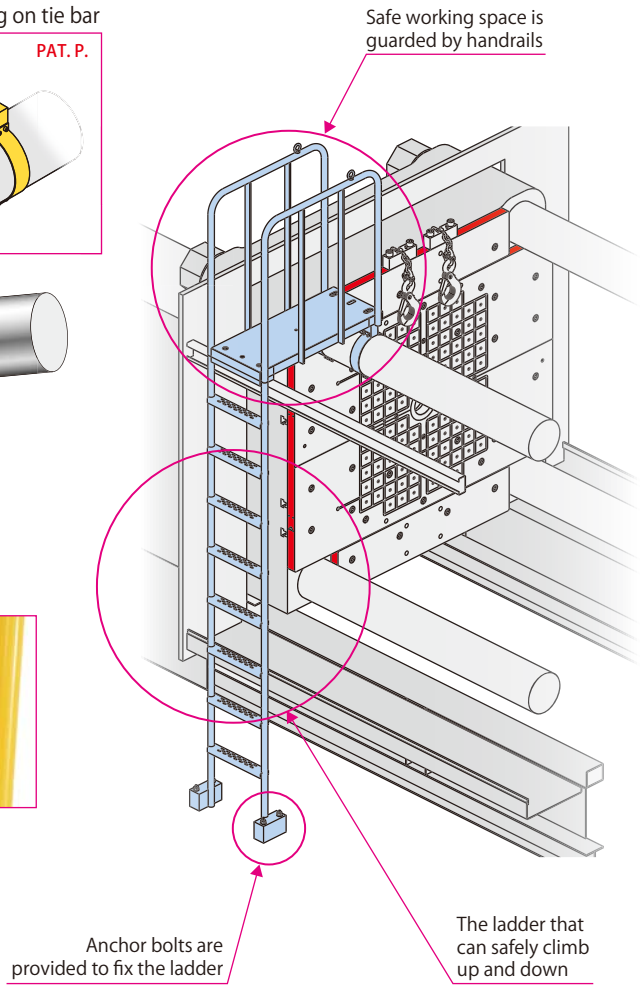


Safety Ladder

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



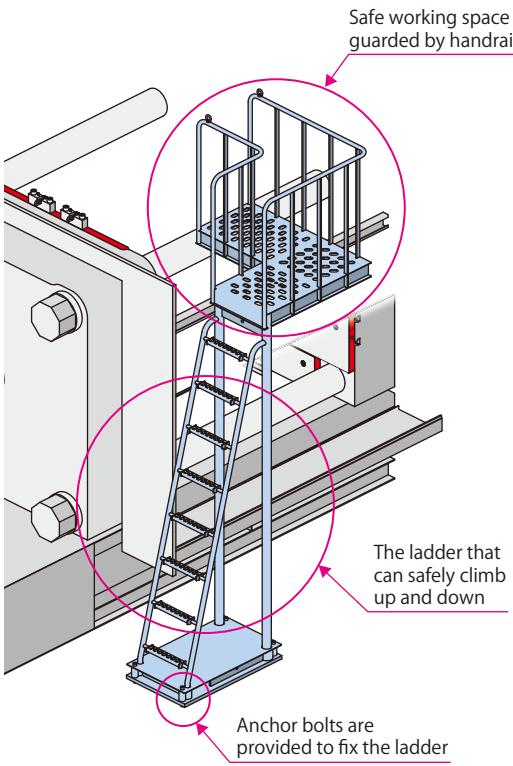
Safety Ladder

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

The work space guarded by handrails is secured.

Standard model

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

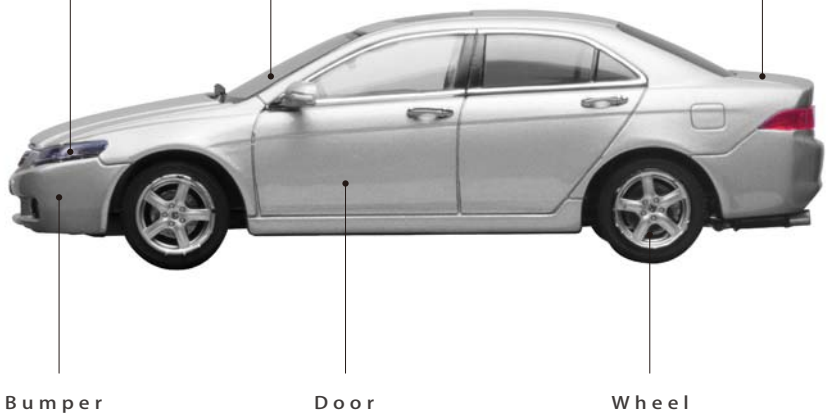
- ● Chicago [U.S.A.]
- ○ Sao Paulo [Brazil]
- ○ Queretaro, Leon [Mexico]

EUROPE

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

● Plant ● Subsidiary ● Sales office
● Liaison office ○ Agent

Pascal products are supporting

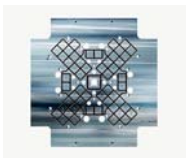


For sheetmetal stamping

Traveling clamp

Stamping die clamp

For plastic molding



Mag clamp

Mold die clamping system

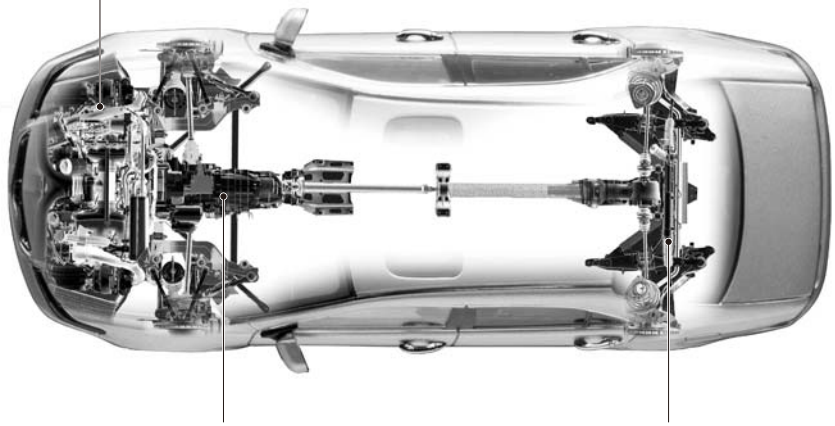
Auto coupler

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

PA-263E-27 2023.12