

Pascal

Press machine system





Pascal pump X63

Clamping

Clamp the workpiece

Clamp the die

Clamp the tool

Changing

Change the workpiece

Change the die

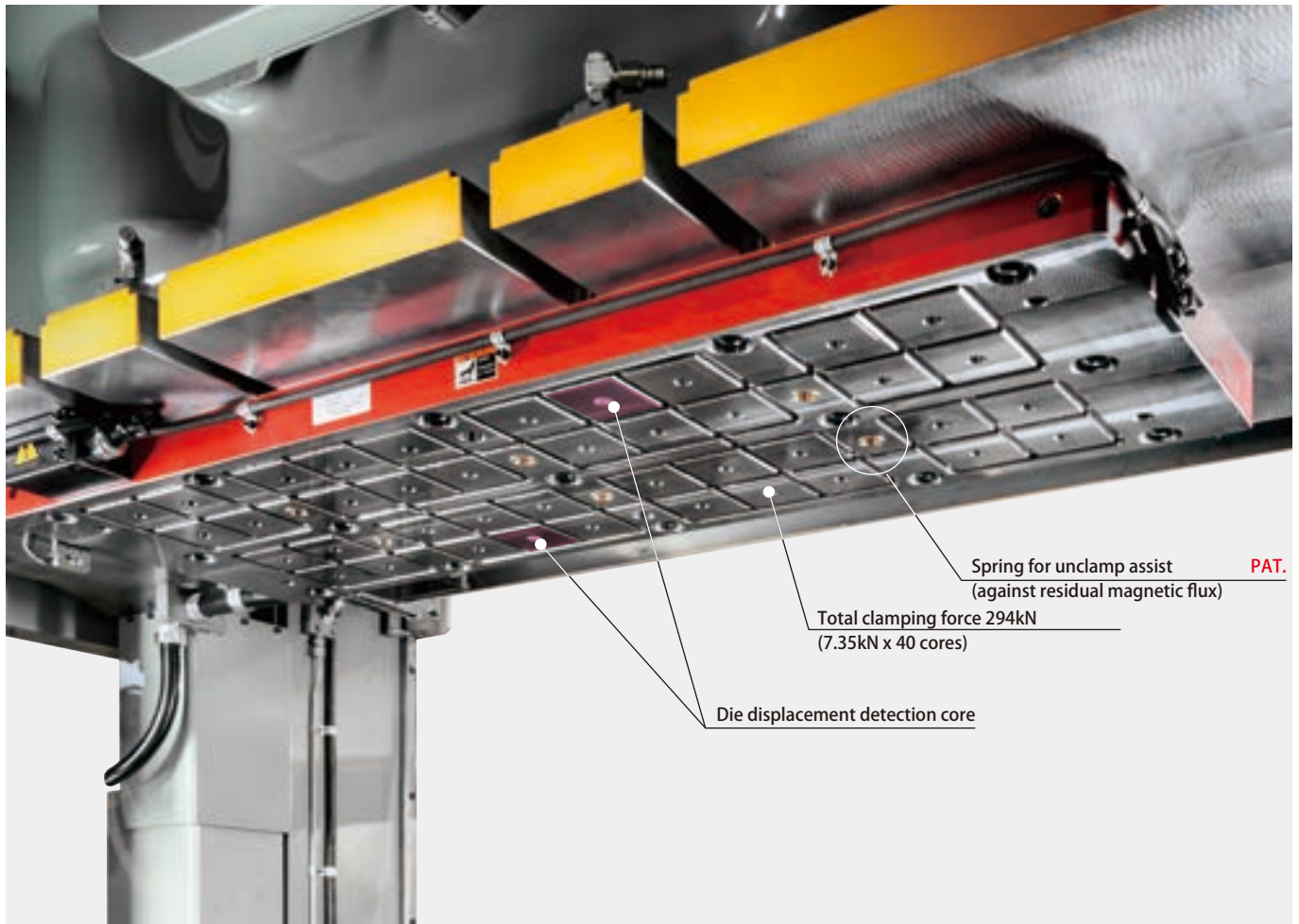
Change the tool

Control

Control them

Press mag clamp MGP

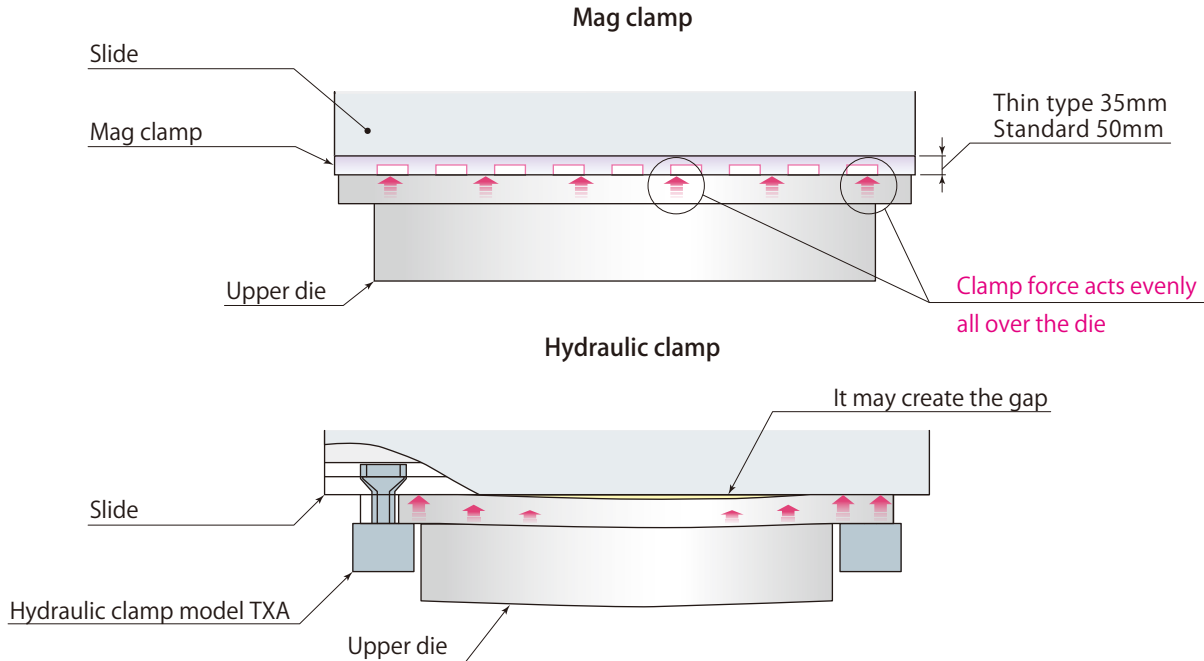
Clamping the center of the die helps to extend the dies lifetime



Practical example of 2,000kN High speed press

Clamping force can be evenly applied to all over the die plate

The die is stably absorbed all over the face by the magnetic force and there is no force dispersion when clamping the die. It can restrain the gap between the machine and the die also enables the quality of the parts to improve.



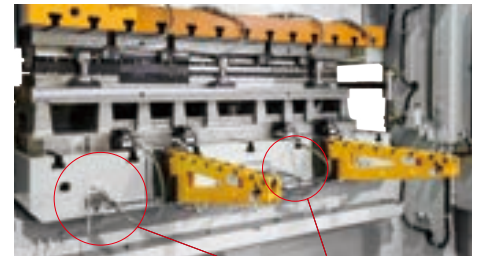
No hydraulic unit, no piping
& Maintenance free

Mag clamp does not need hydraulic source also it has high durability since there is no driving mechanism. It can be used with maintenance-free.

Hydraulic source
Not required



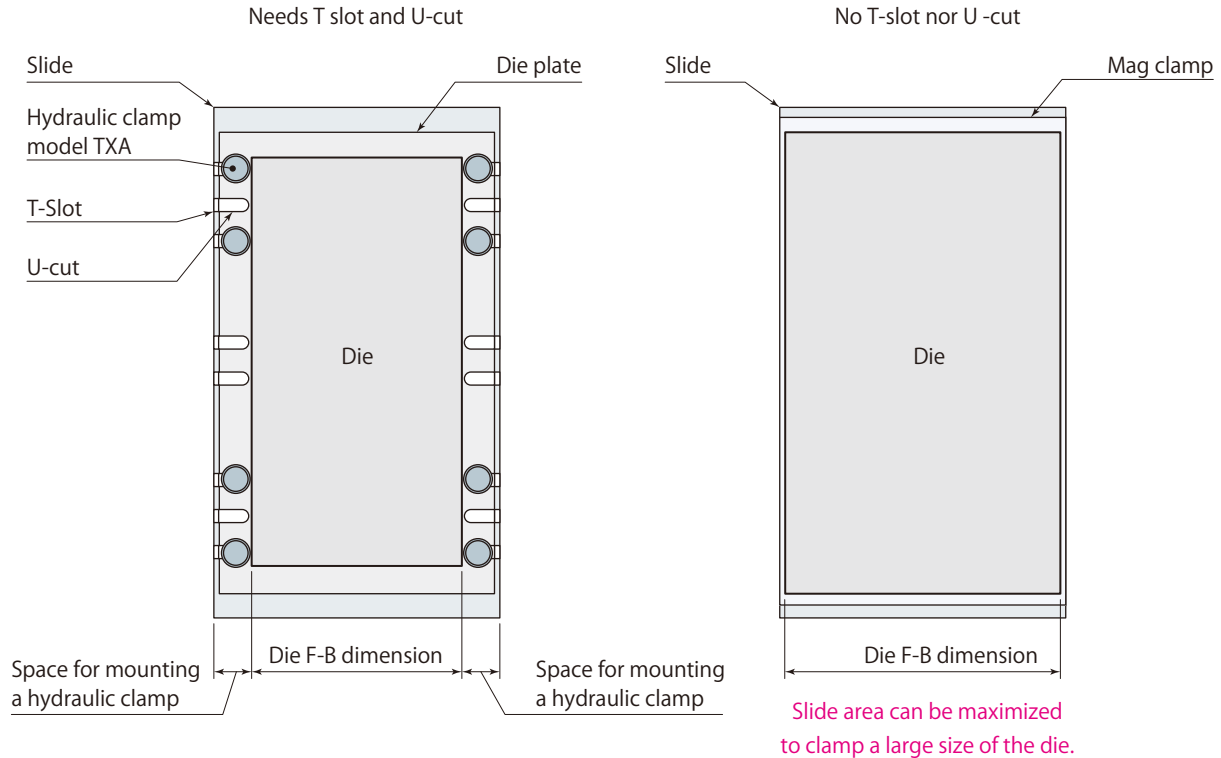
Hydraulic piping
Not required



Piping

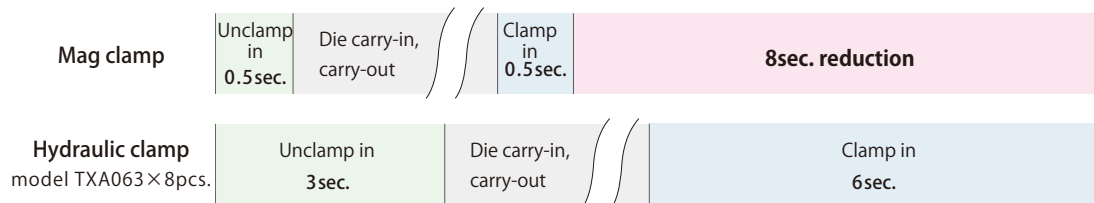
Suitable for the machine which cannot secure the space for a hydraulic clamp

The press mag clamp absorbs and fixes the mold by the magnetic force generated from the plate and there is no space required for mounting the clamp and therefore the slide or bolster surface can be used to the maximum. Also there is no need to standardize the mold size and no need for T-slots on the machine nor U-cuts for the die.

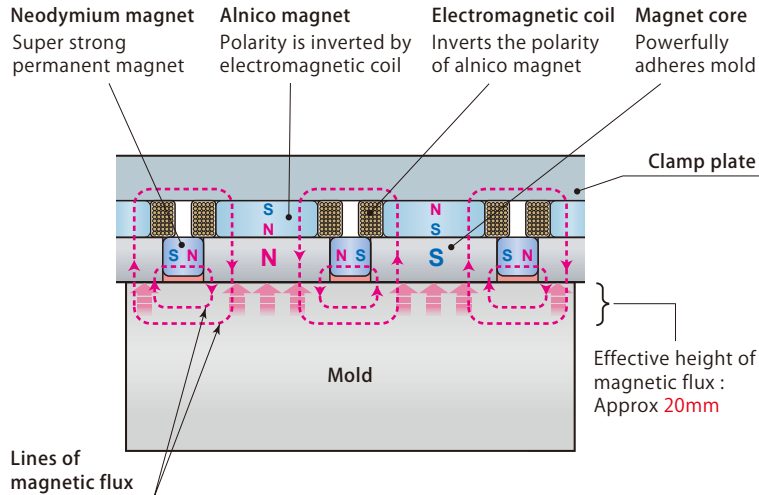


Clamp in 0.5 sec.

Clamp/Unclamp instantly by simply depressing the button

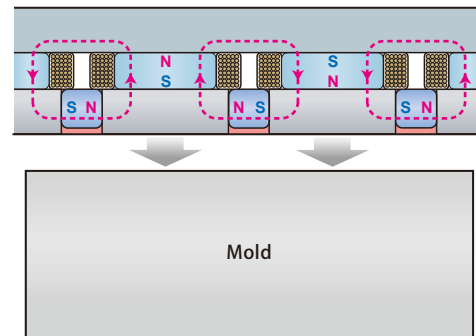


Clamp (Magnetized)



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

Unclamp (Demagnetize)



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



2,000kN (200tonf) High velocity press machine
Press mag clamp



800kN (80tonf) Press Press mag clamp

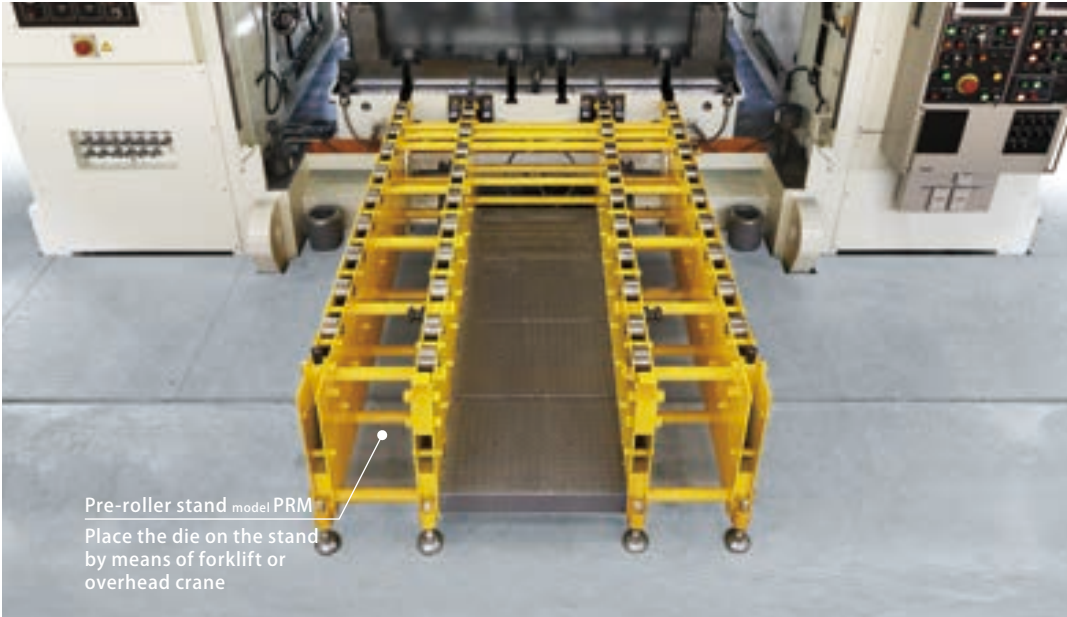


4,000kN (400tonf) Transfer press
Press mag clamp & TXA

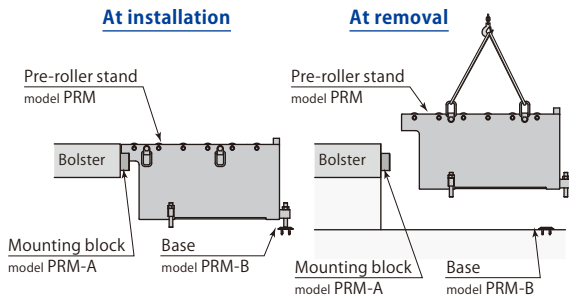
Pre-roller stand PAT. P

model **PRM**

With excellent rigidity better than existing Pre-roller and less displacement against the load, smoother and safer die change is achievable.



20,000kN(2,000tonf) press machine Die 8ton 4-rows model



6,000kN(600tonf) press machine 2-rows model

PRM1 Roller frames 2-rows model

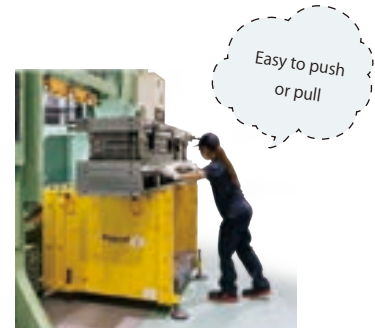
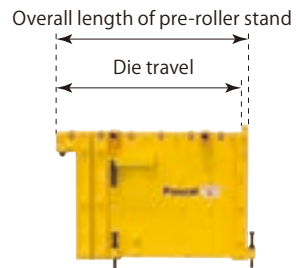
Model		PRM1-1250	PRM1-1600	PRM1-2000
Roller frame pitch	mm	600 ~ 1600	600 ~ 1600	600 ~ 1600
Die travel	mm	1250	1600	2000
Overall length of pre-roller stand	mm	1300	1650	2050
Mass * 1	kg	430	520	680
Max. allowable load	kN(ton)	80 (8)	80 (8)	80 (8)
Quantity of rollers		12	16	20
Bolster height	mm	500~1300	500~1300	500~1300

* 1 : Roller frame pitch for 1000mm. The mass of the bolster mounting block is not included.

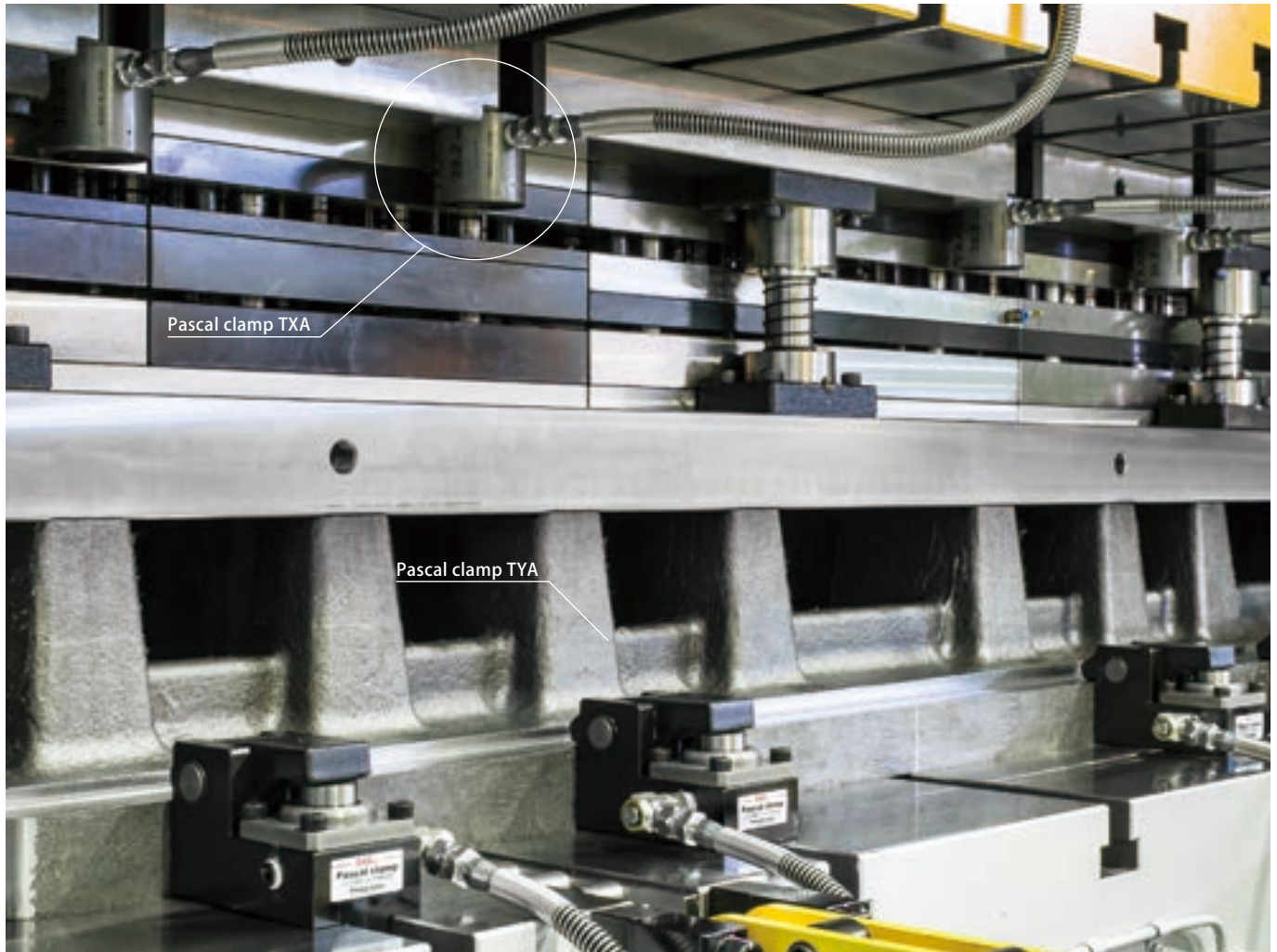
PRM2 Roller frames 4-rows model

Model		PRM2-1250	PRM2-1600	PRM2-2000
Roller frame pitch	mm	600 ~ 1600	600 ~ 1600	600 ~ 1600
Die travel	mm	1250	1600	2000
Overall length of pre-roller stand	mm	1300	1650	2050
Mass * 1	kg	640	770	940
Max. allowable load	kN(ton)	80 (8)	80 (8)	80 (8)
Quantity of rollers		24	32	40
Bolster height	mm	500~1300	500~1300	500~1300

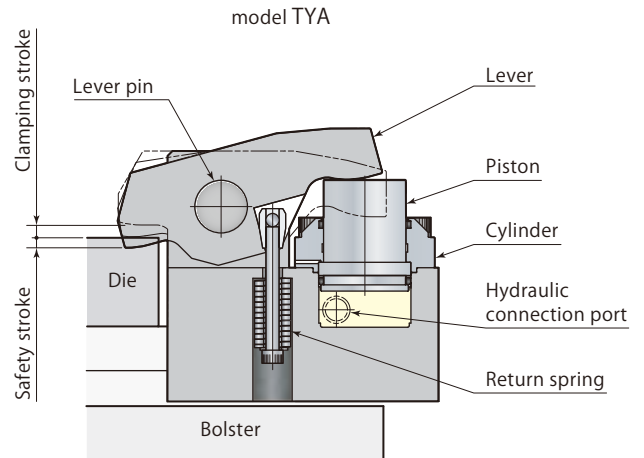
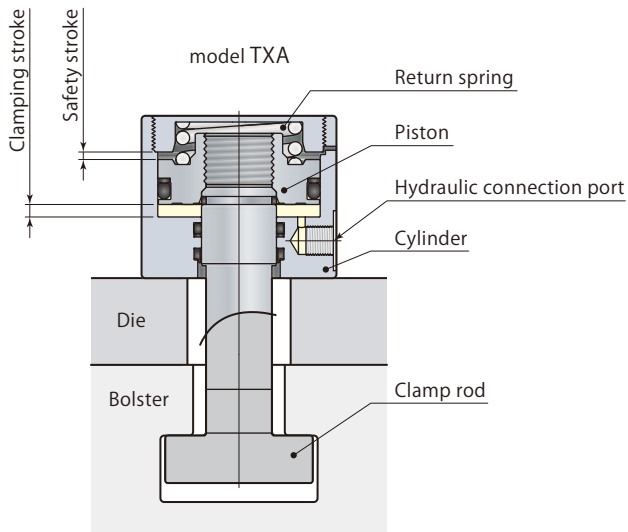
* 2 : Roller frame pitch for 1000mm,1400mm,Bolster height 700mm. The mass of the bolster mounting block is not included.



Stamping die clamping system



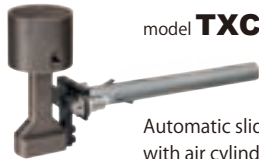
4,000kN(400tonf) Press Pascal clamp TXA & TYA



model **TXA**
Manual slide, piston type of clamp.
It is suitable for the die with a U-cut.



model **TYA**
Manual slide type of clamp with lever. It is suitable for the die without U-cut.



model **TXC**
Automatic slidable clamp with air cylinder.
(TXA + Automatic slidable function)

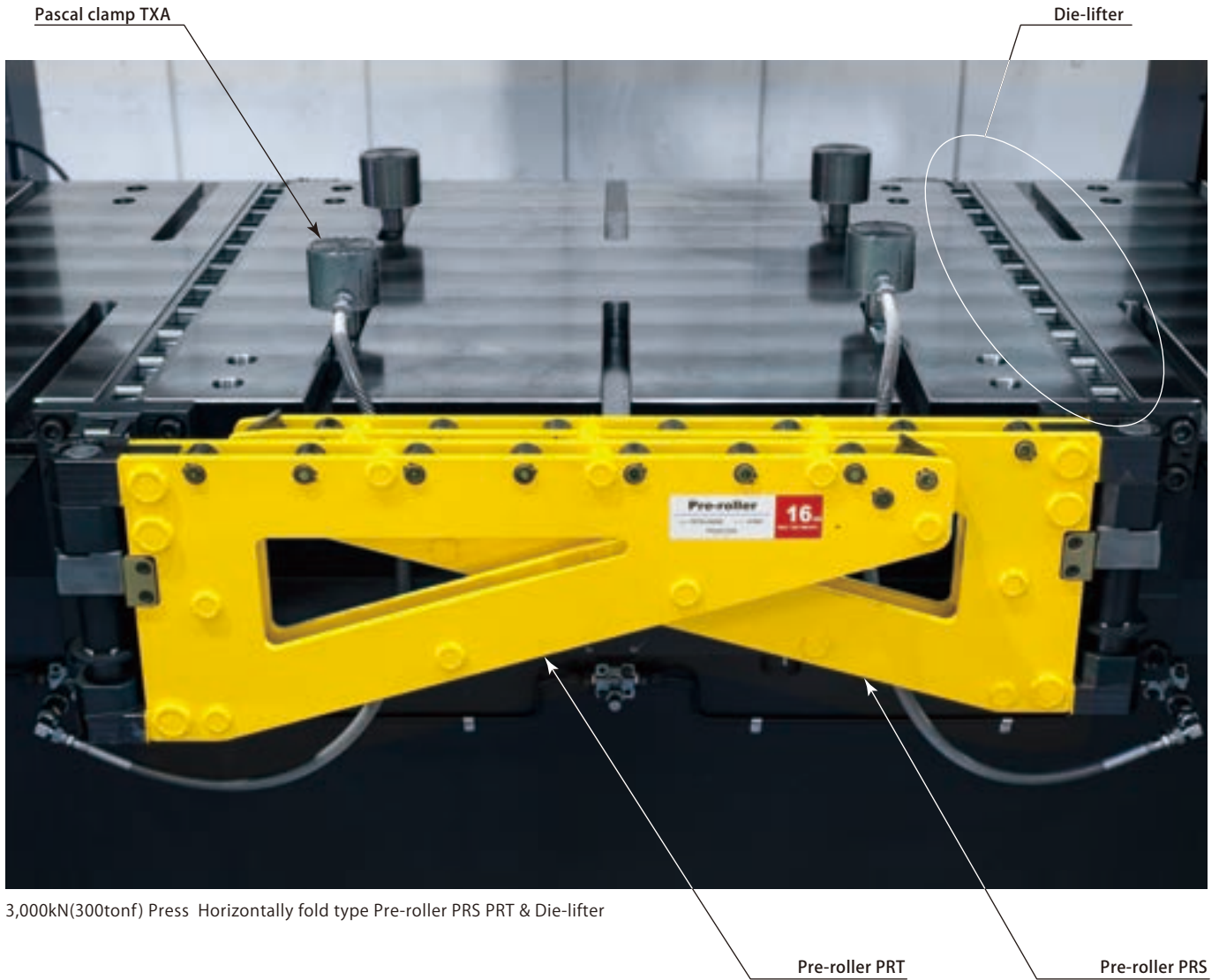


model **TYC**
Automatic slidable clamp with air cylinder.
(TYA + Automatic slidable function)

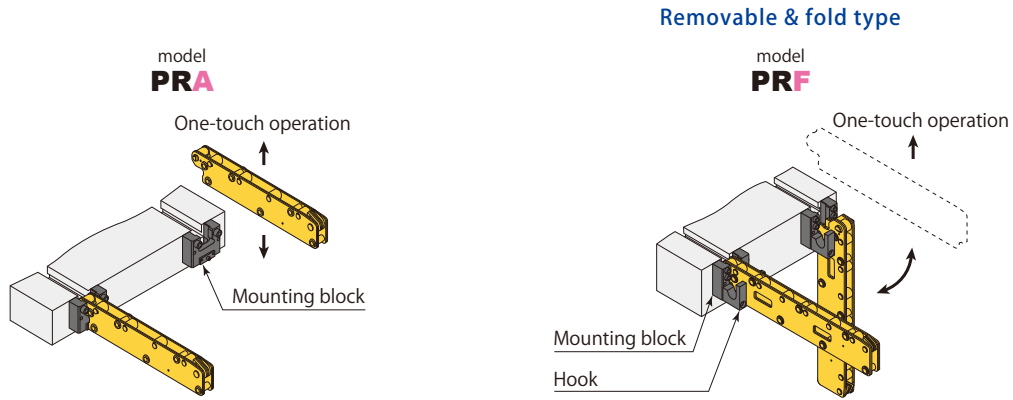


model **TXE**
Automatic slidable clamp which utilizes the entire lower surface.

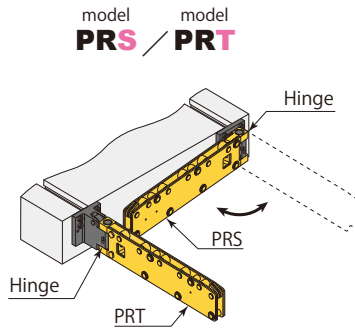
Pre-roller & Die-lifter



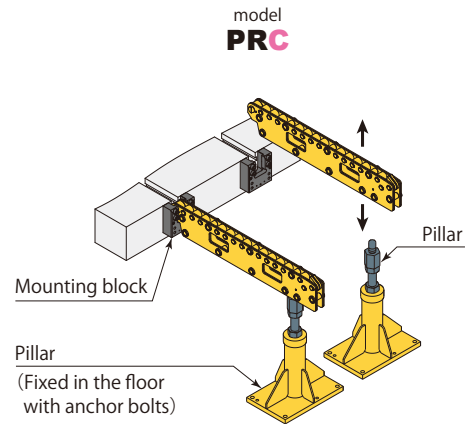
Pre-roller model **PR** (Extension arm rollers)



Horizontally fold type



Heavy load type



Die-lifter model **DLF**



With DLF series, heavy dies are lifted by hydraulic force. The rollers enable operator to move the die easily and smoothly.

Die-roller model **DRA**



A spring lifting roller that does not need hydraulic source. The compact design allows an easy installation just to slot it in the machine T-slots.

Delivery record
120,000
units

Pascal traveling clamp

A die clamping system which has changed considerably the stamping style in the world.



30,000kN(3,000tonf) Transfer press Traveling clamp



34,000kN(3,400tonf) Transfer press

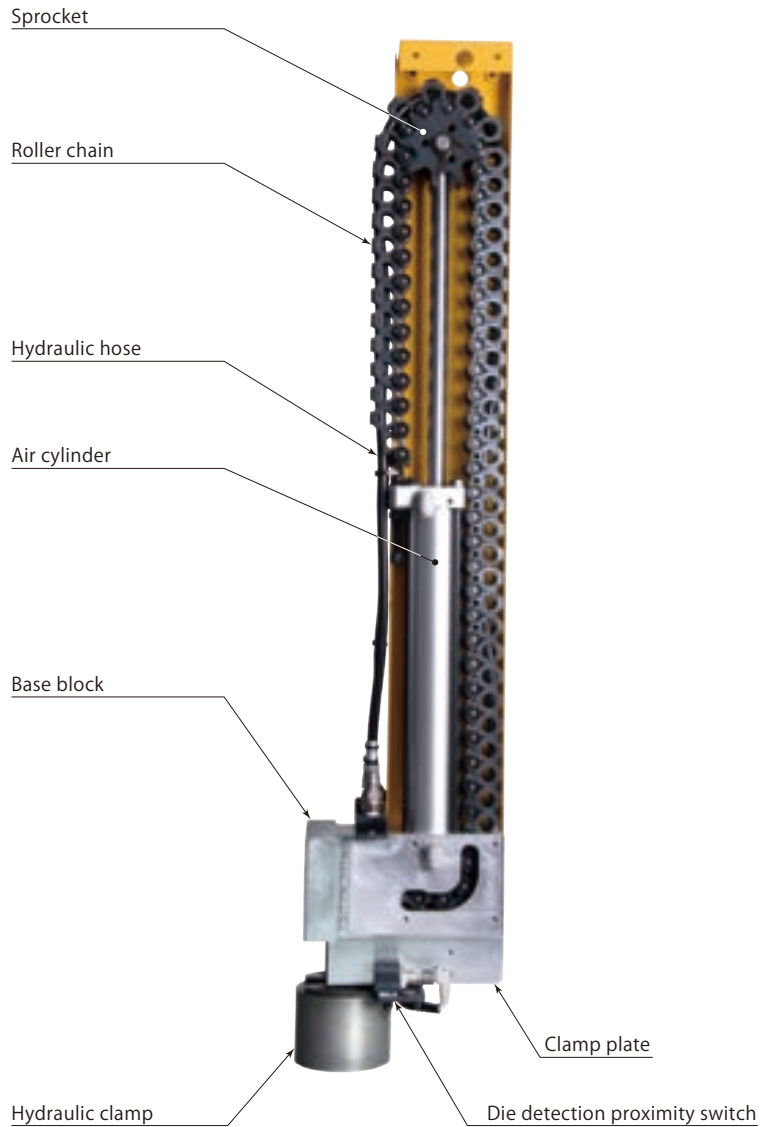


23,000kN(2,300tonf) Transfer press



6,000kN(600tonf) Transfer press

Pascal traveling clamp model TRA



Pascal pump X63

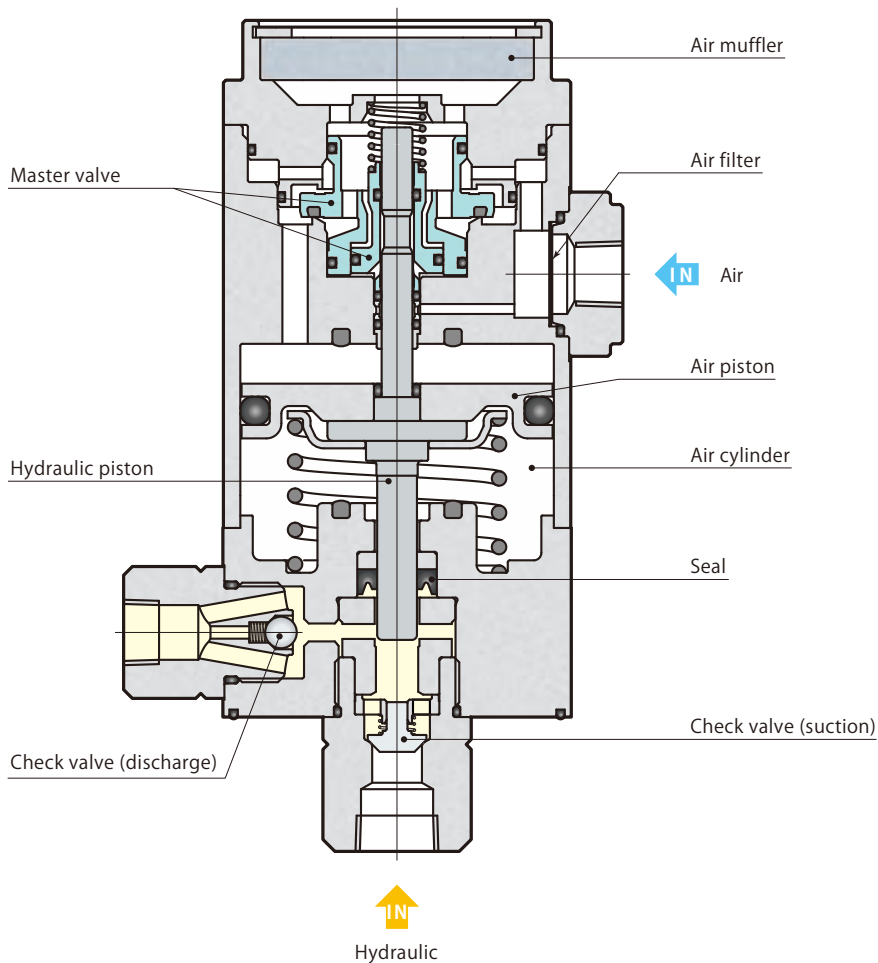
New series of Pascal pump model X63
which pursues more reliability.



Air-driven, Compact, High performance hydraulic pump

High cycle, reliable reciprocation of air and hydraulic piston ensures a repetitive suction and discharge oil process. As discharge pressure hikes up to the circuit set pressure, reciprocation goes slow eventually. Pascal pump stops at the time the discharge pressure reaches the set pressure then keeps balancing air and oil discharge pressure. At the balanced condition, Pascal pump never consumes air and there is no power loss or oil temperature rise unlike an ordinary electric motor pump.

In the event of pressure drop (oil leakage) in the circuit, the pump immediately reacts to start pumping for recovering the pressure loss. When leaking oil, the pump restarts pumping and the sound of pumping is like an alarm for leakage to call operator for servicing.



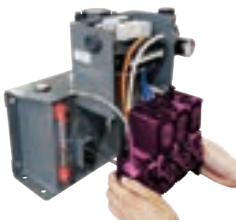
Pascal control unit HCS

A new, easy-to-maintain hydraulic control unit

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.

Adoption of steel tank which is strong against impact and heat

Visible oil level gauge with red ball



1 block-type valve unit

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



Equipped with filter regulator as standard

Only one piping from the pump to the valve for easier servicing of the pump.

The pipe can be installed or removed easily when exchanging the pump and valve.

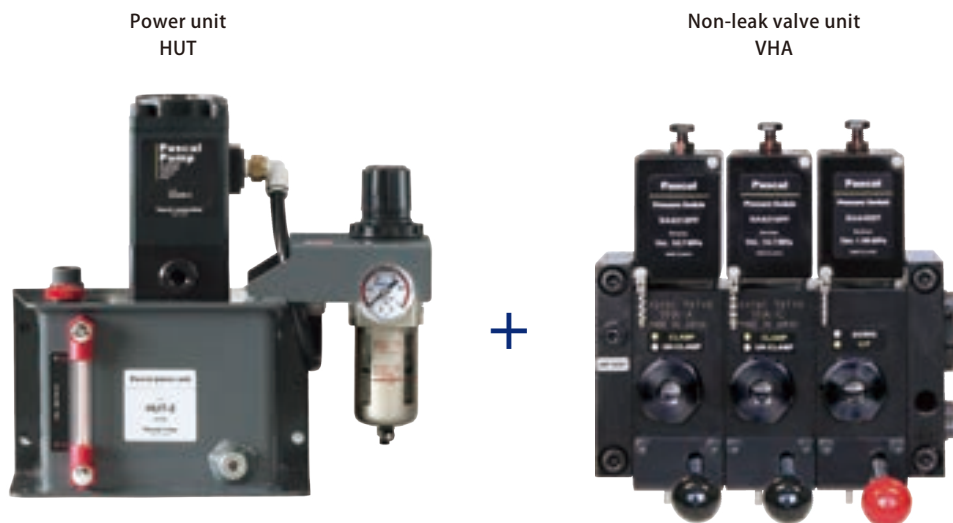
The check valve inside the oil tank.

The valve can block the oil flow out of the tank even if the valve unit is demounted when servicing.

Manual operated

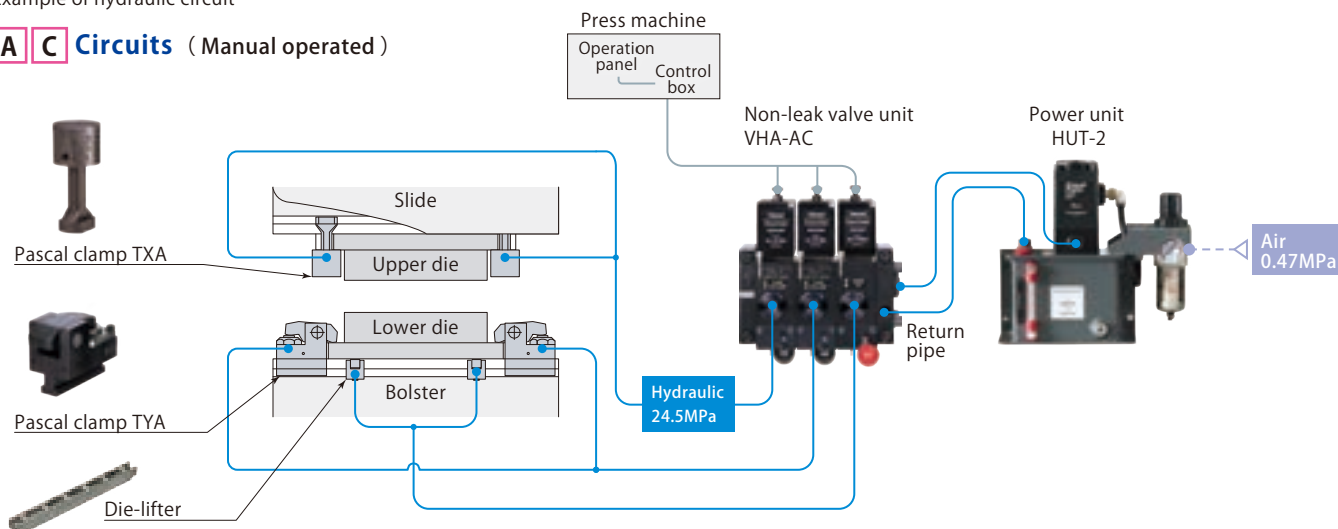
Pascal control system

Power unit **HUT** & Non-leak valve unit **VHA**



Example of hydraulic circuit

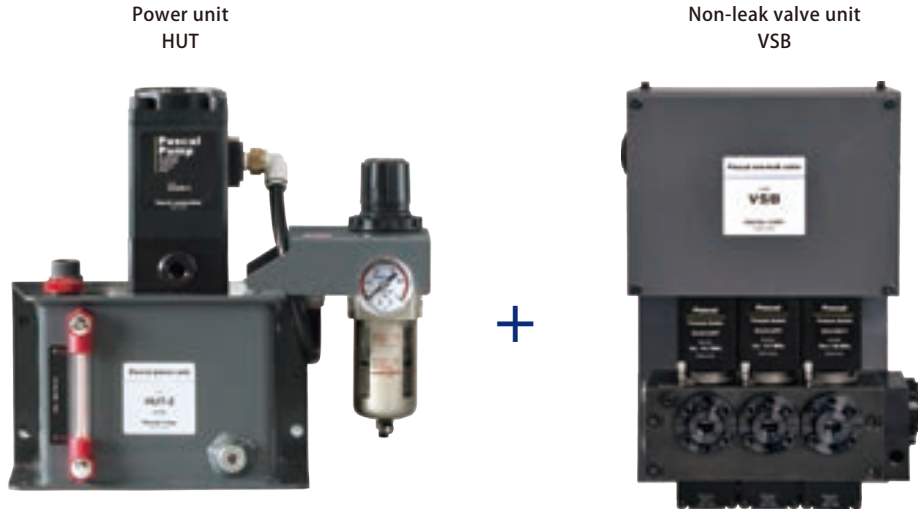
A C Circuits (Manual operated)



Solenoid operated

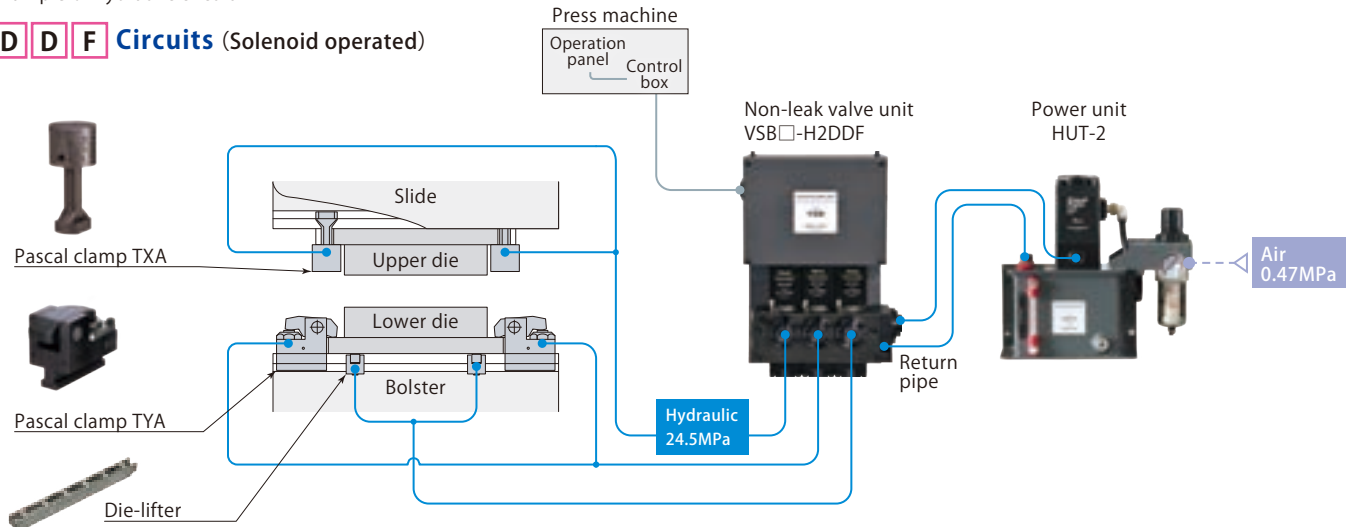
Pascal control system

Power unit **HUT** & Non-leak valve unit **VSB**



Example of hydraulic circuit

D D F Circuits (Solenoid operated)

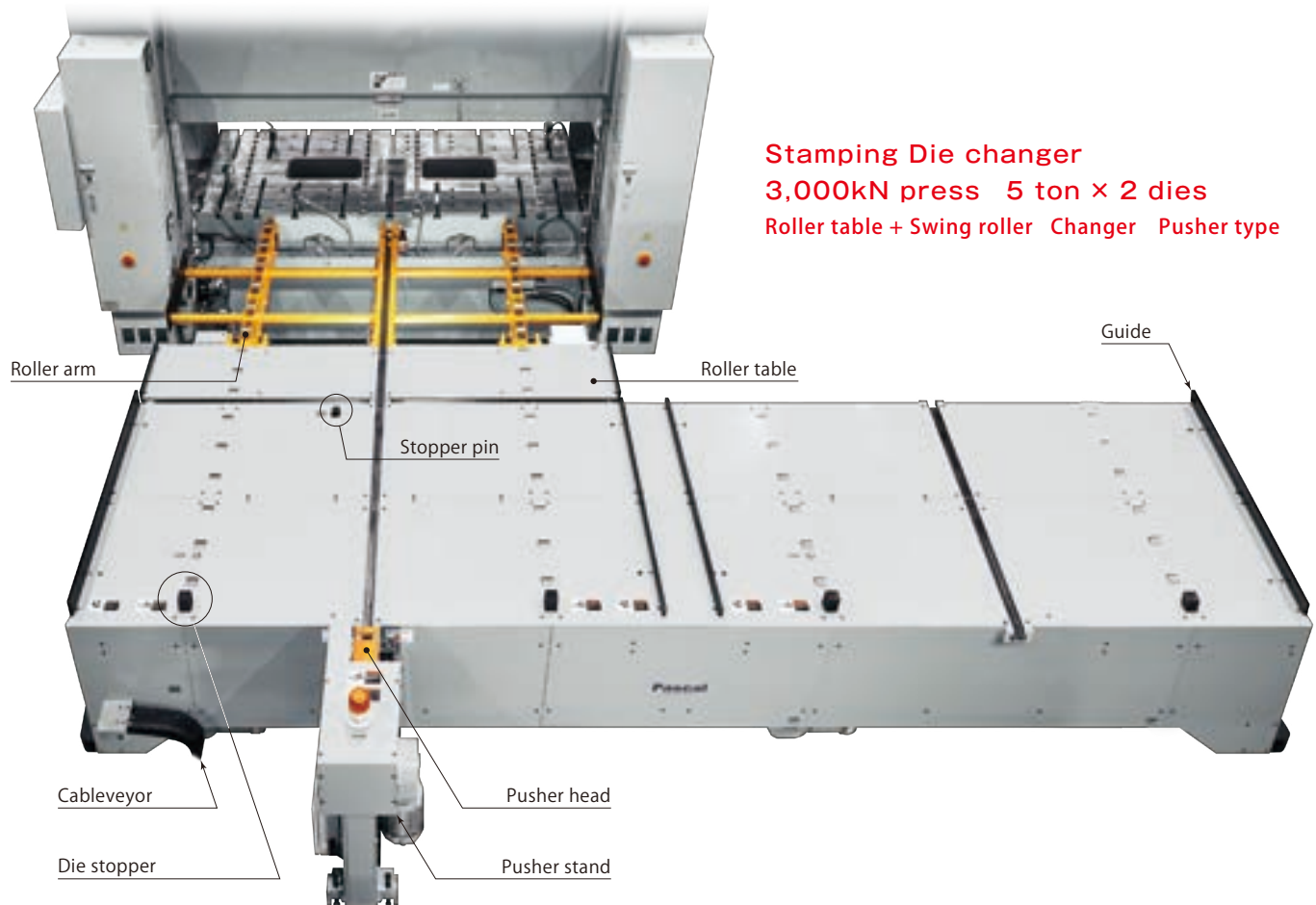


1,000
unit sales

For space
and
cost saving

The Proposal instead of moving bolster

Stamping Die changer
3,000kN press 5 ton × 2 dies
Roller table + Swing roller Changer Pusher type



Stamping Die changer
3,000kN press 4 ton × 2 dies
Roller table Changer Pusher type

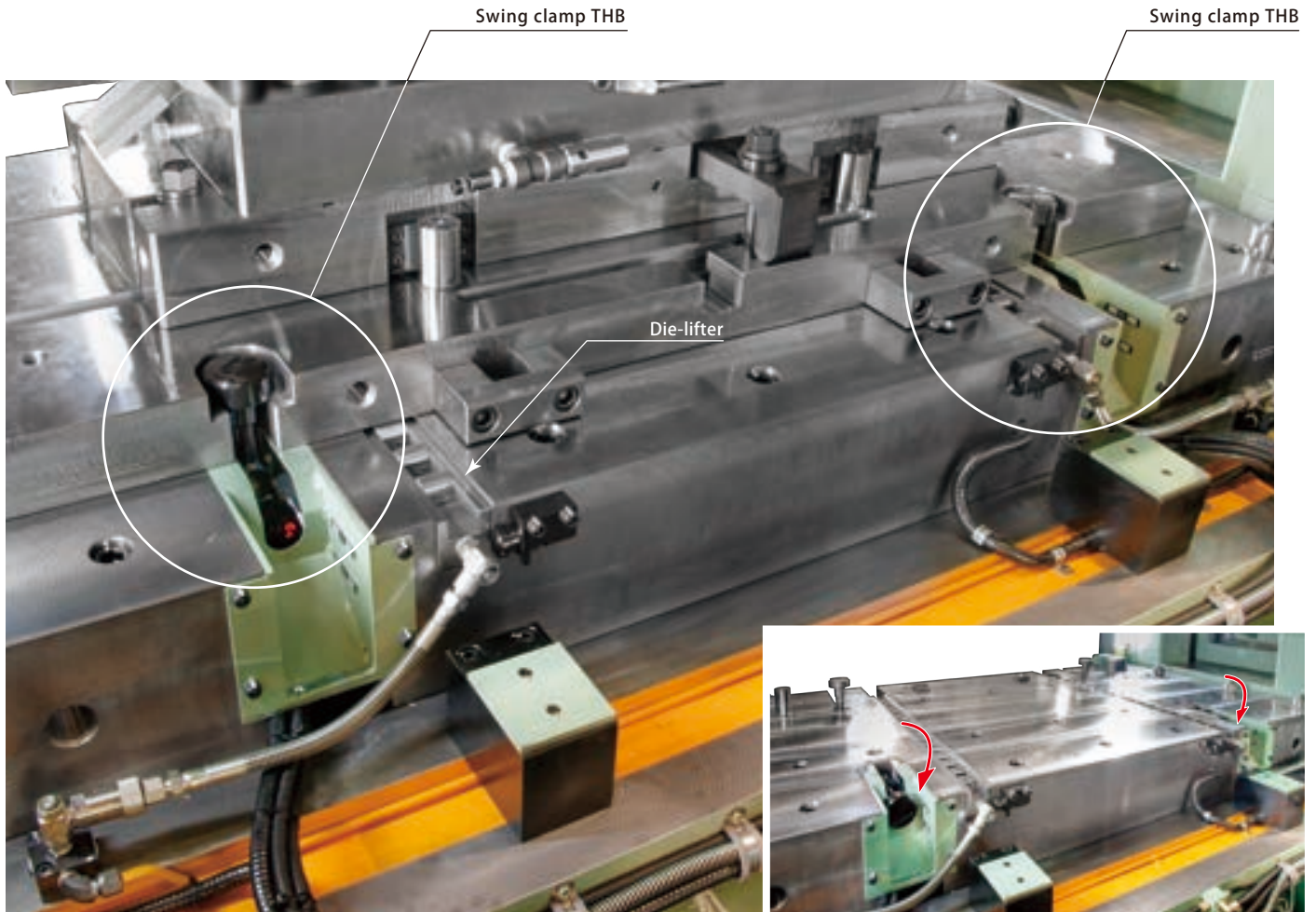


Die stage
6,300kN press 10 ton × 1 dies
Die stage+Swing roller Pusher type



Swing clamp THB

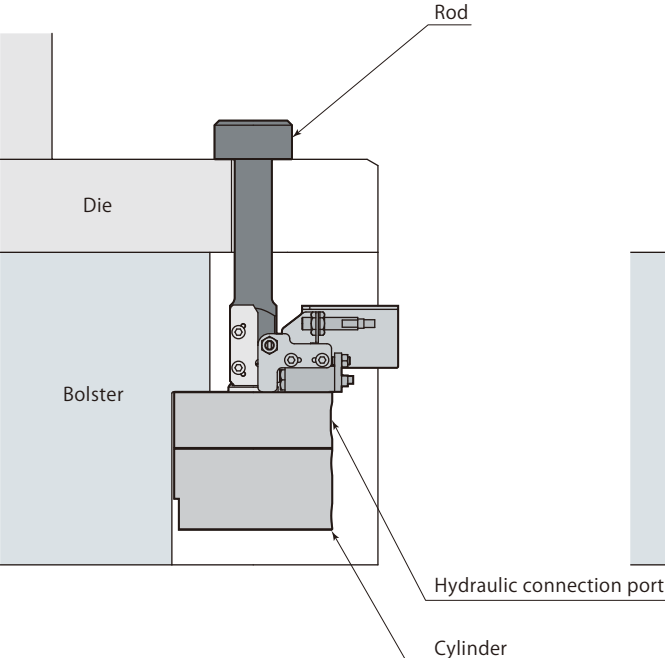
A specially designed swing clamp that is suitable for the application with a die changer



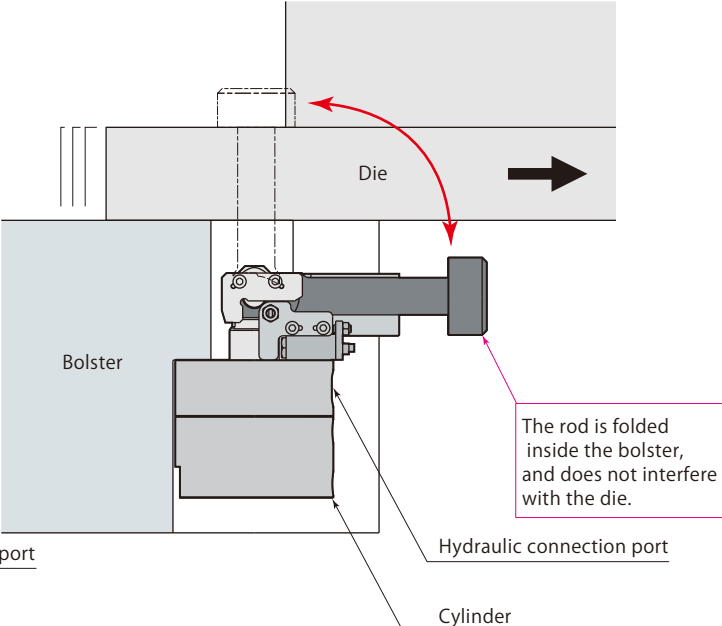
2,000kN(200tonf) Press Swing clamp THB & Die-lifter (Clamp position)

(Unclamp position)

Clamp position



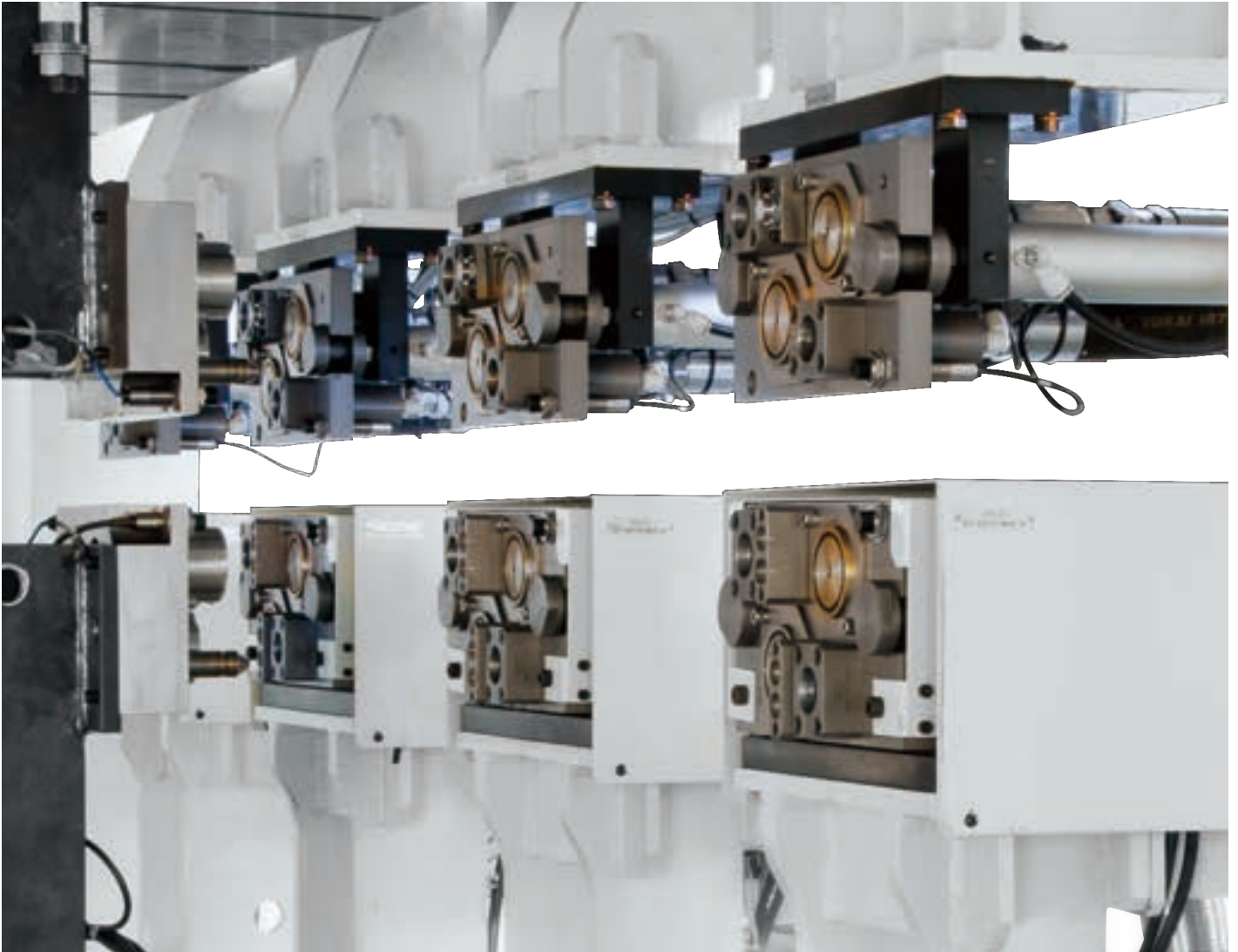
Unclamp position (at Die changing)



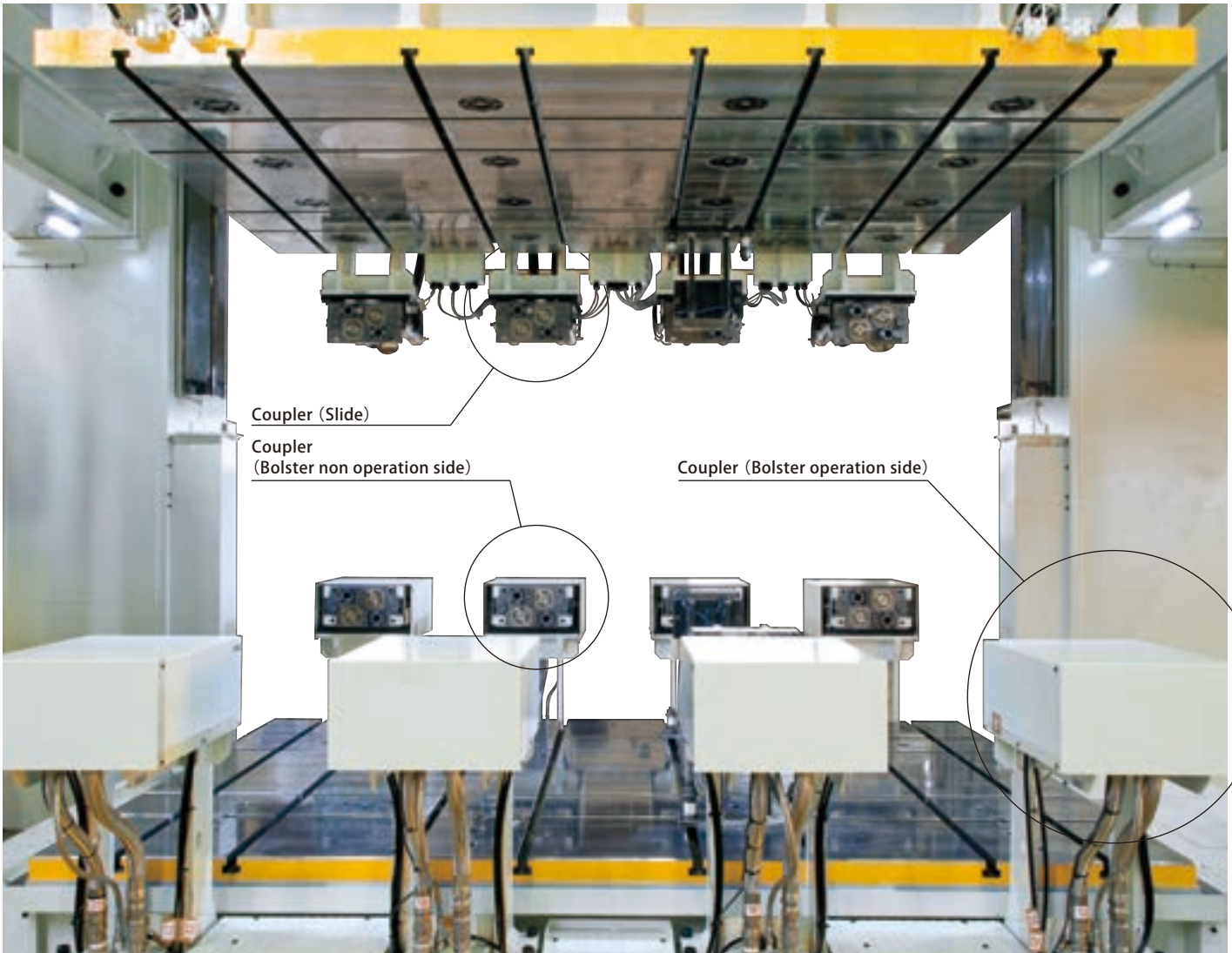
Pascal coupling system

Pascal coupling system for the hot press and hydroforming press

Fluid	Hydraulic, Water, Air / Connector						
Piping size	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"

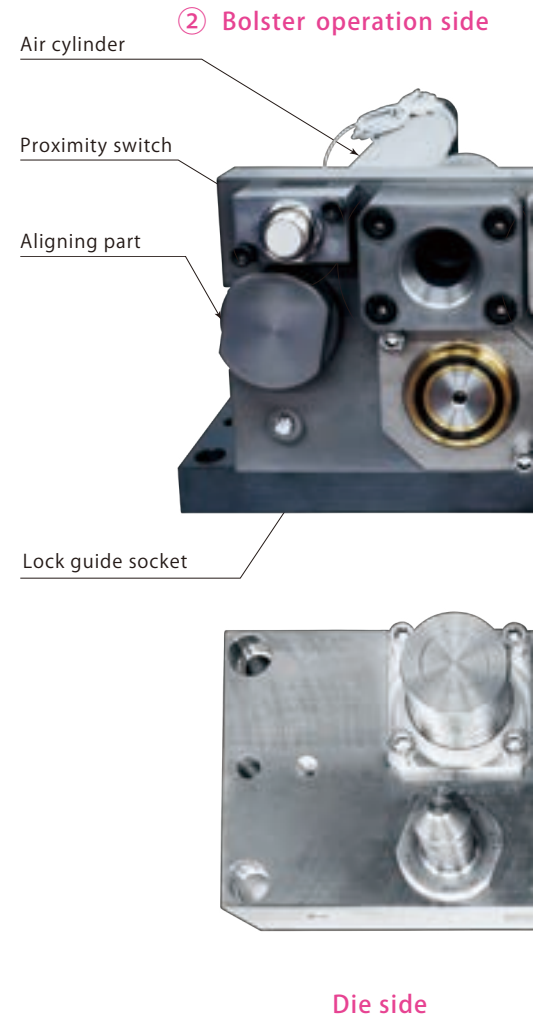
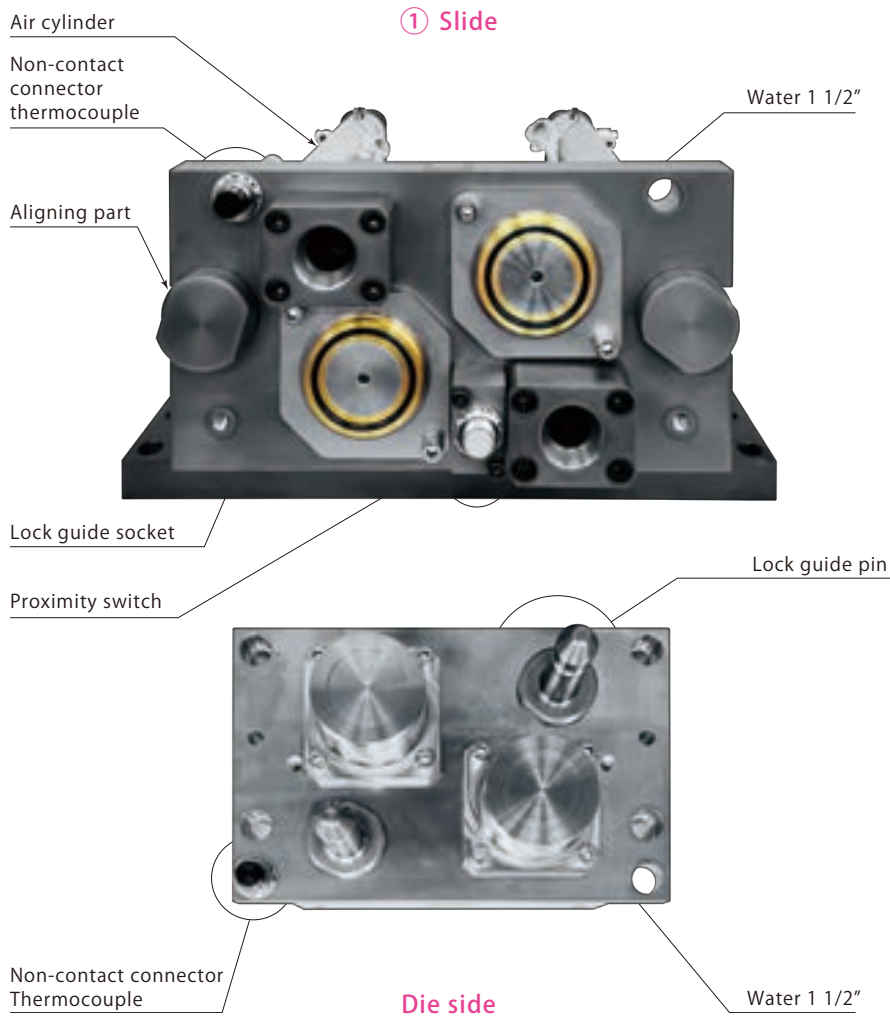


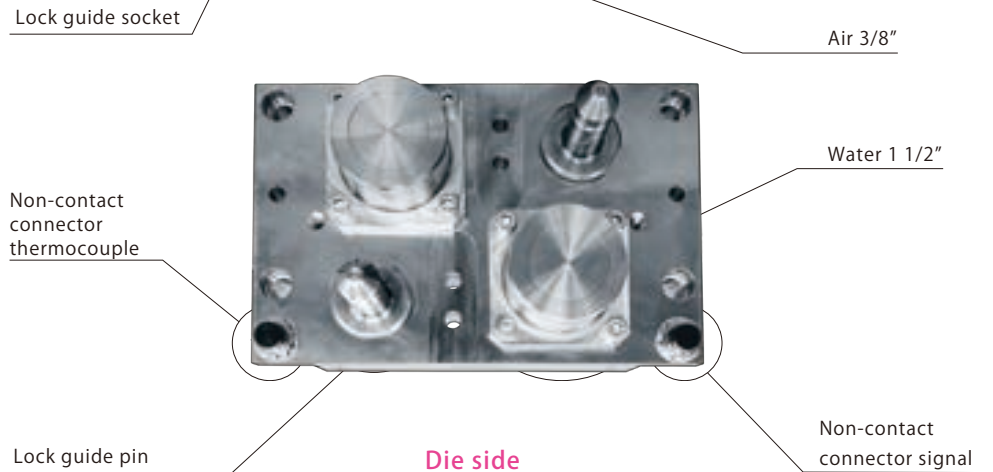
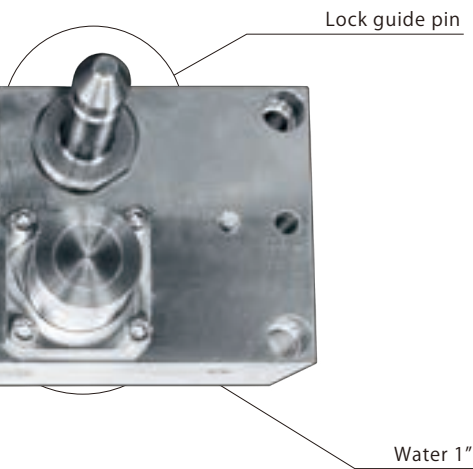
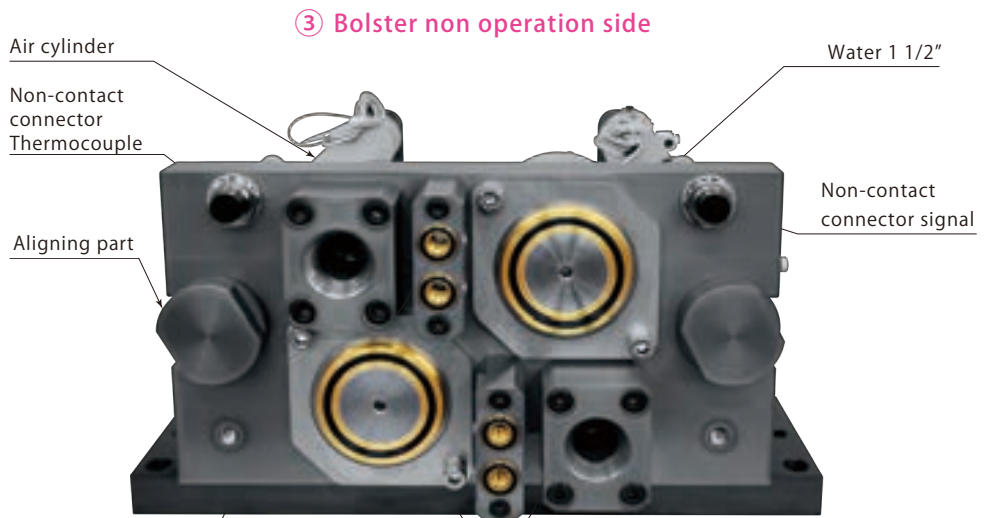
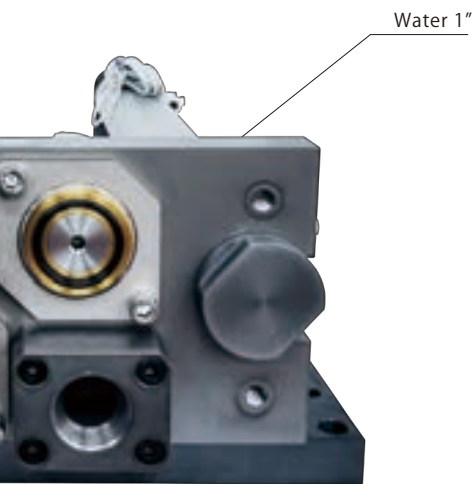
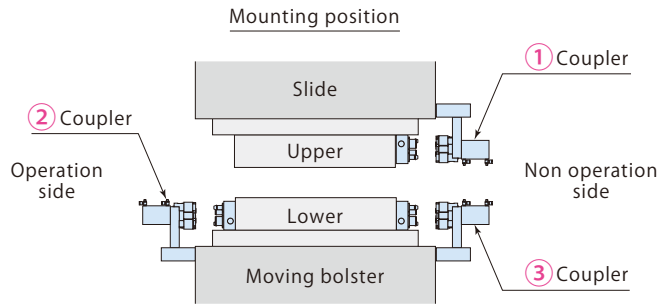
12,000kN(1,200tonf) Hot press Coupling System



12,000kN(1,200tonf) Hot press Coupling System

12,000kN(1,200tonf) Hot press coupling system example



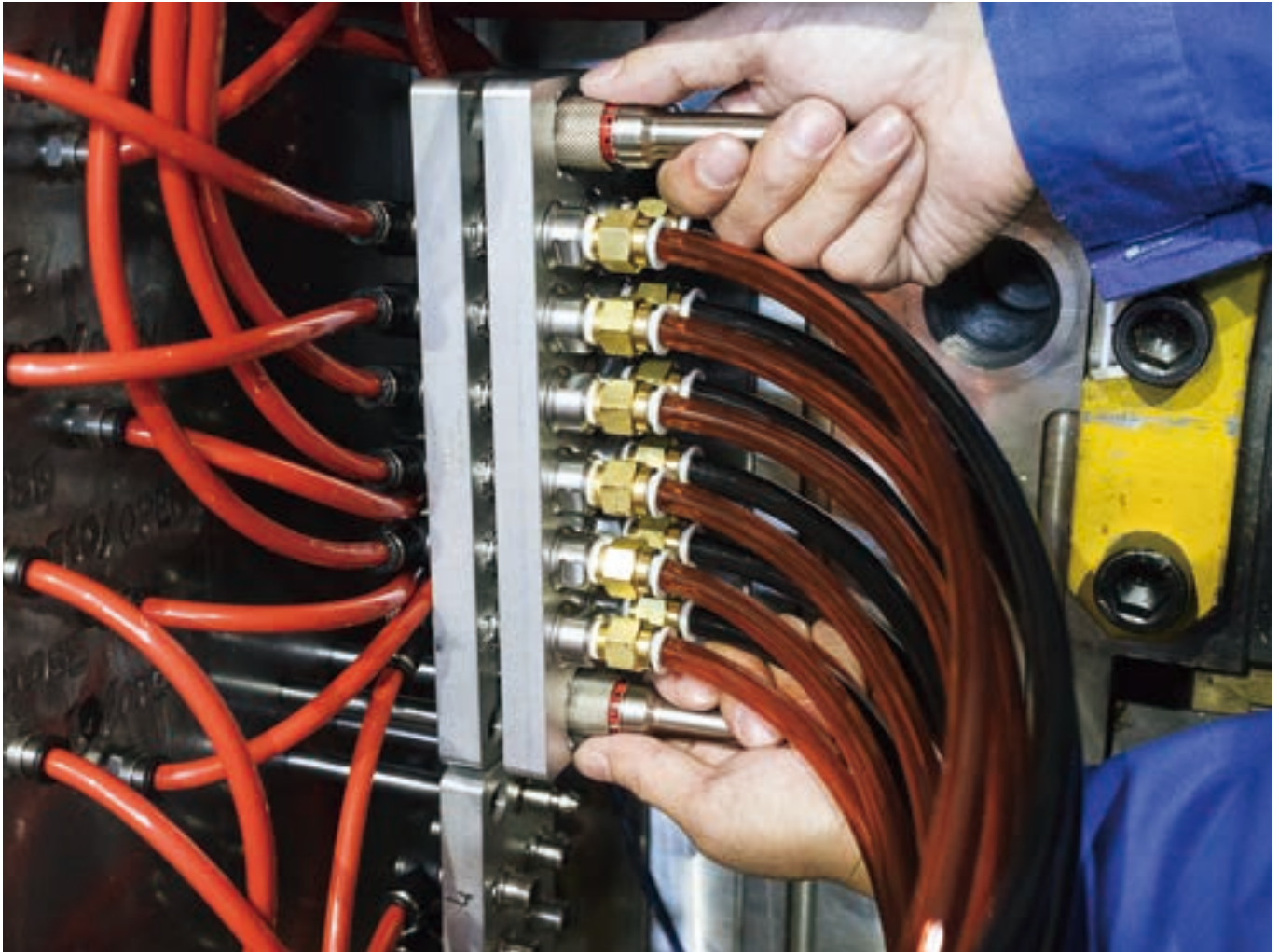


new

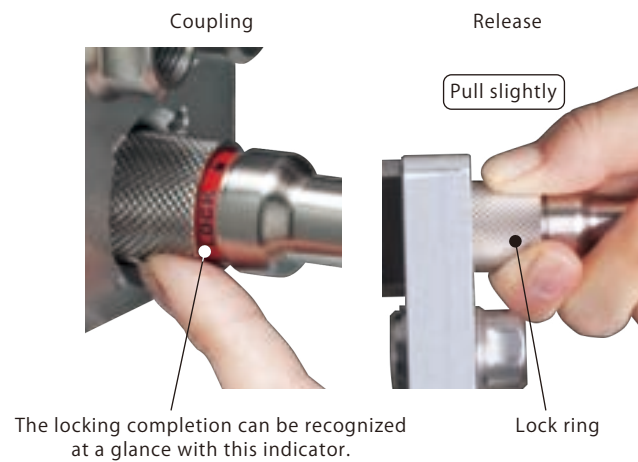
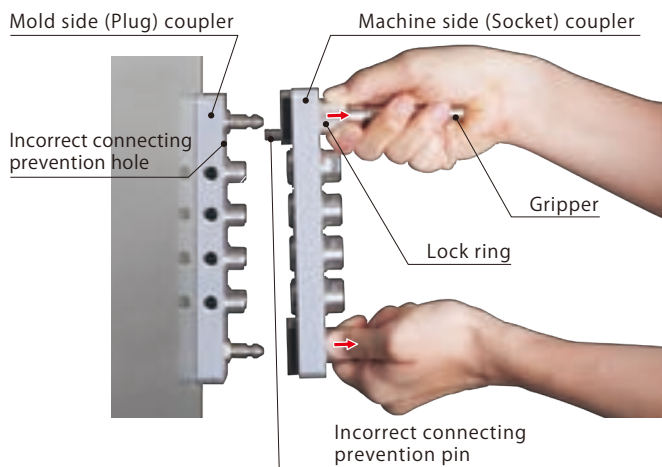
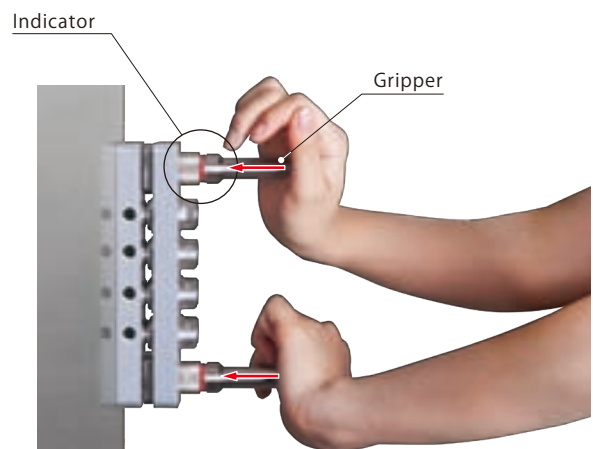
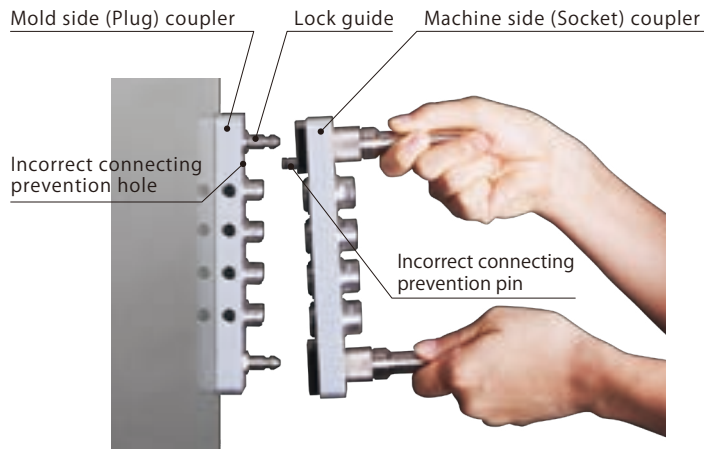
Manual

Multi coupler

Multiple couplers are connectable easily and securely by pushing the gripper slightly.
It prevents misplace of couplers and can shorten the coupling time.

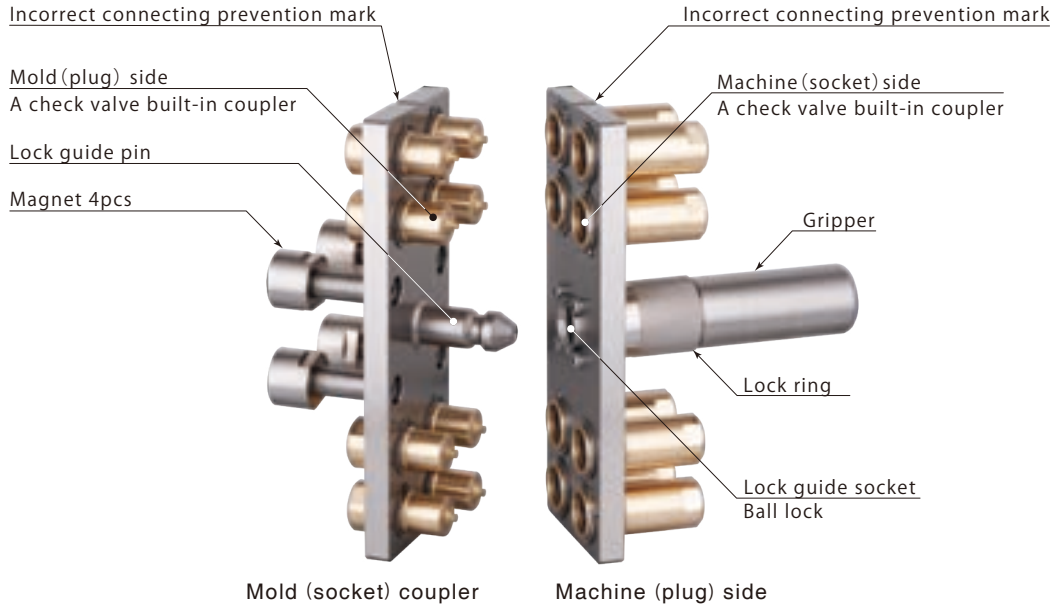


18,000kN (1800ton) IMM Multi coupler Open model



Check valve model

A manual coupler which check valve is operable by a pilot pressure.



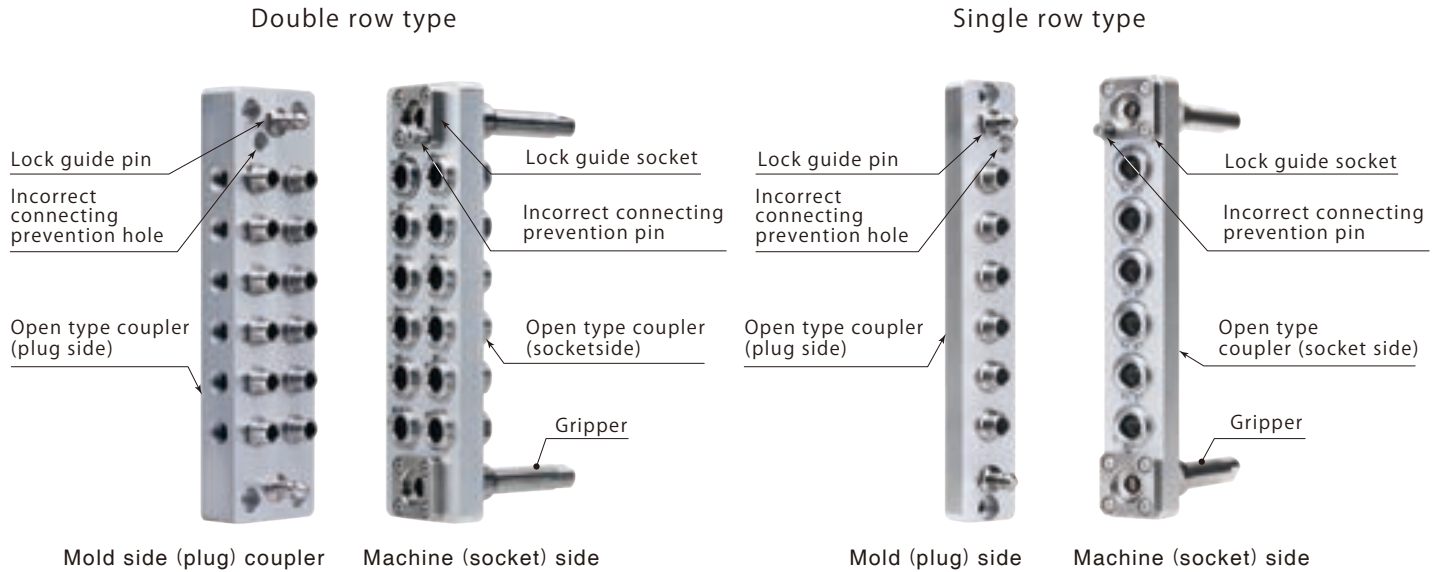
Fluid	Hydraulic, Water, Air
Pressure	Max. 0.8MPa
Connection port	Rc1/4 Rc3/8
Number of port	6、 8、 12



8,500kN(850ton) IMM

Open (Check valve-less) model

An open type of coupler has no check valve, and the pressure loss is small.
Malfunction caused by foreign substances being caught into the coupler does not occur.



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



Mold side



6,000kN(600ton) IMM

mini N2 gas springs

Compact and durable N2 mini gas spring



4,000kN (400tonf) Progressive press upper
Mini N2 gas spring adopted example



Mini N2 gas spring



4,000kN (400tonf) Progressive press lower
Mini N2 gas spring adopted example

New proposal of N₂ gas spring in place of coil springs

Pascal N₂ gas spring contains a stronger force rather than an ordinary coil spring and exhibits excellent characteristics and durability on the application that requires a large load and stroke.

	Initial deflection	Initial force	Stroke	Durability	Maintenance	Space-saving
Gas springs	○ (Not required)	○	○	○	○ (Easy)	○
Coil springs	× (Required)	×	×	×	× (It takes effort)	×

Mini N₂ gas spring

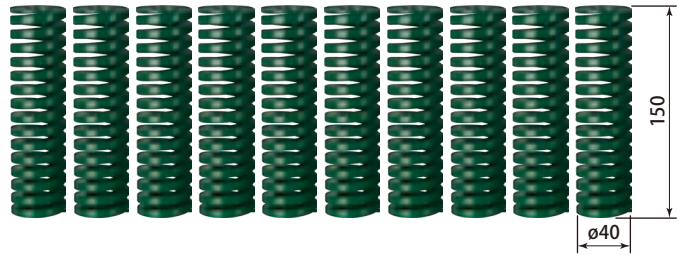
DSD38-20 × 1 unit



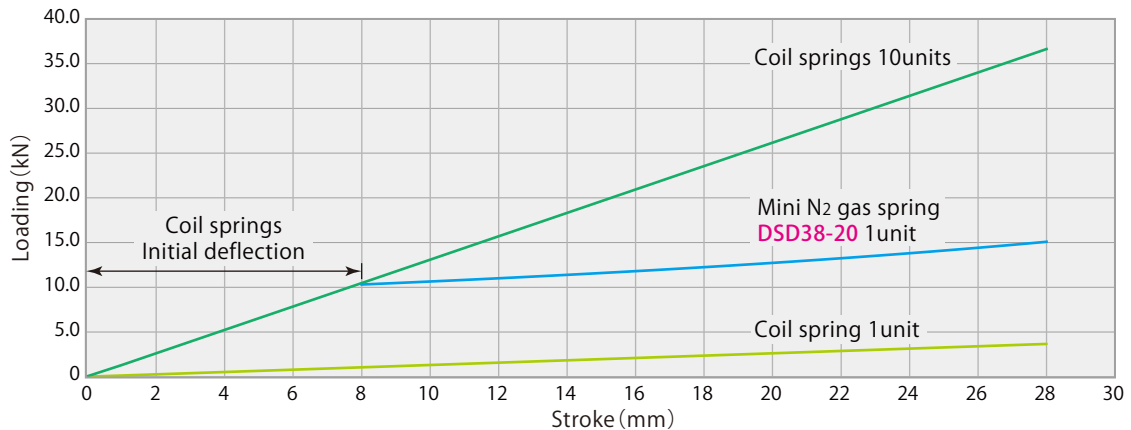
VS

Coil springs

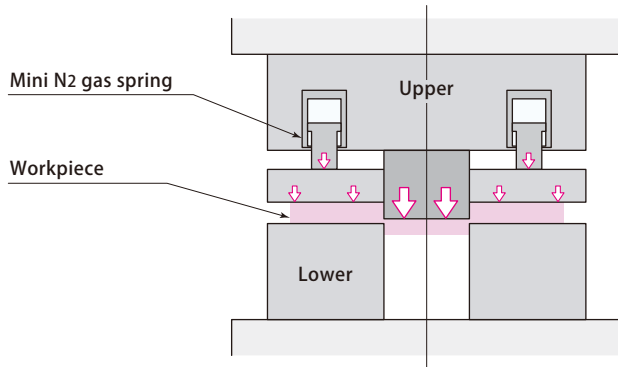
ø40 × 150 × 10 units



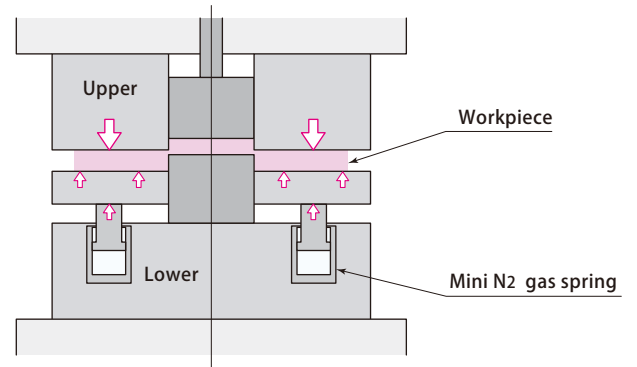
Load comparison between model DSD and coil spring



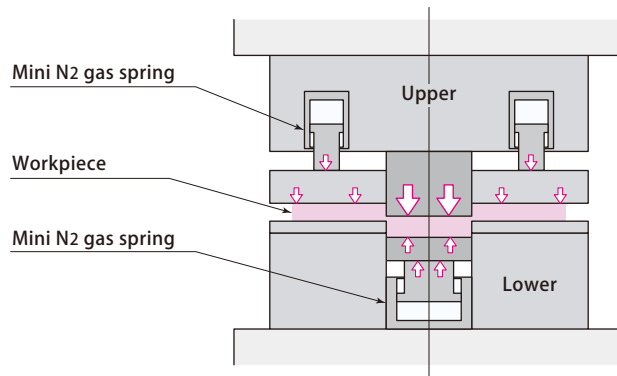
Mini N2 gas spring in the upper die



Mini N2 gas spring in the lower die



Mini N2 gas spring in the upper and lower die

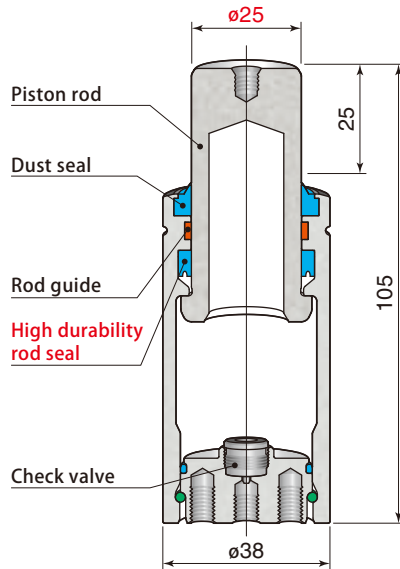


Model	DSD			DSA					DSC		
Cylinder diameter mm	ø32	ø38	ø50	ø19	ø25	ø32	ø38	ø50	ø32	ø38	ø50
Initial force kN	6.6	10.3	20.2	1.06	2.38	5.34	7.98	16.9	3.82	7.98	14.8
Stroke mm	10 ~ 80			10 ~ 50					10 ~ 50		

model **DSD**

Large diameter rod
High initial force

Rod seal, sleeve-less construction

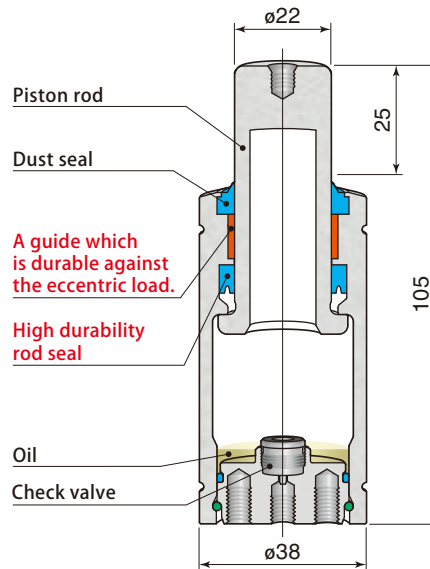


model **DSD38-25**

model **DSA**

High durability against side-load

Rod seal, sleeve-less construction

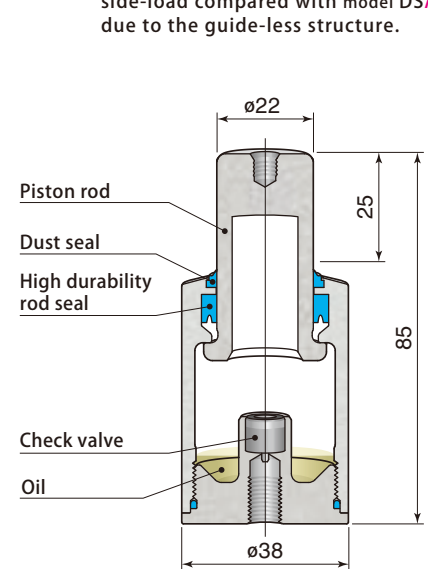


model **DSA38-25**

model **DSC**

Compact body

Rod seal, sleeve-less construction

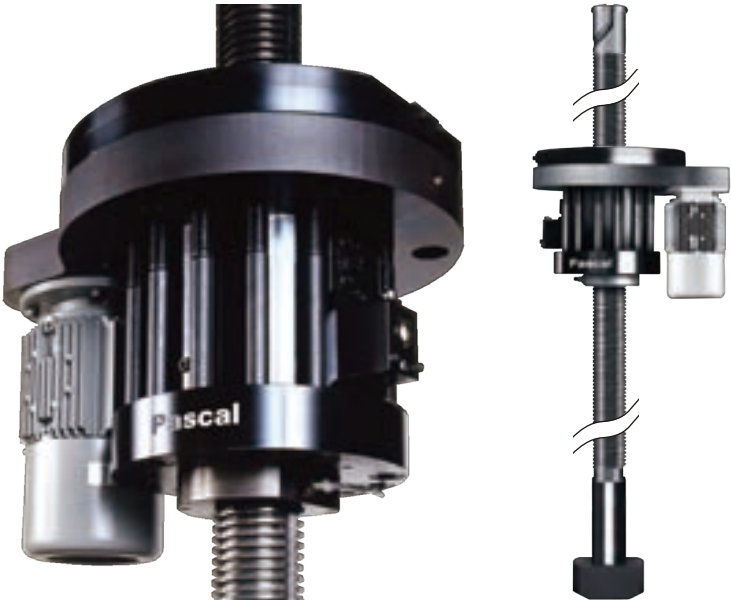


model **DSC38-25**

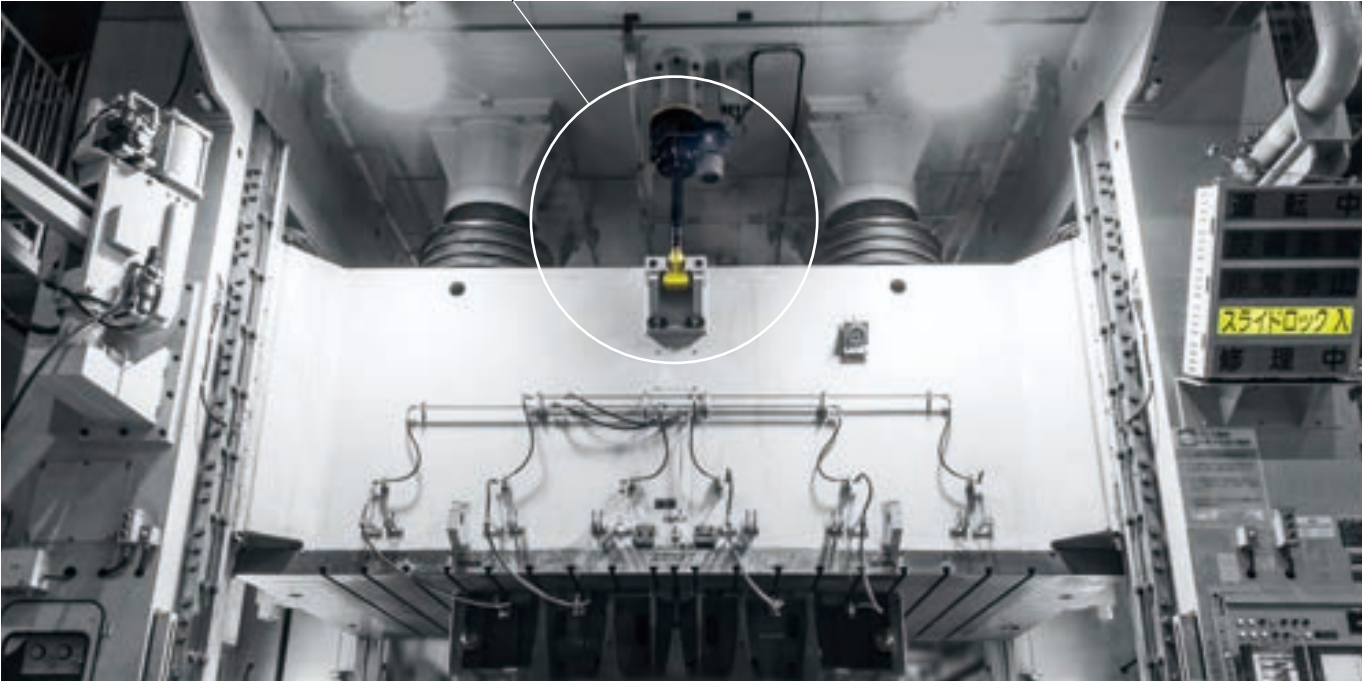
Initial force	10.3 kN (1051 kgf)	7.98 kN (814 kgf)	7.98 kN (814 kgf)
Max. side-load	0.52/100 mm (Allowable eccentric angle 0.3°)	0.52/100 mm (Allowable eccentric angle 0.3°)	—

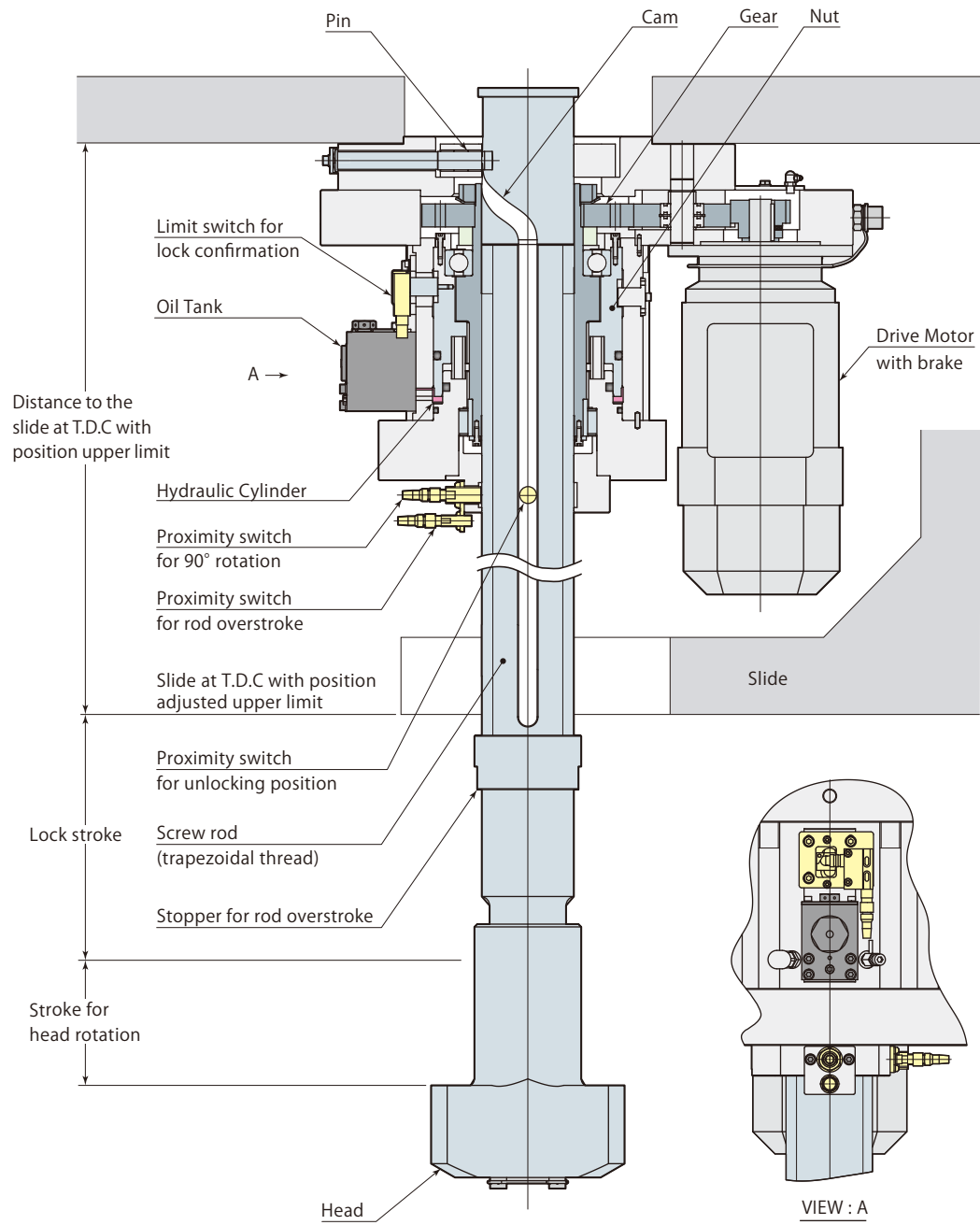
Slide lock PAT.

The electric slide-fall protection system which eliminates the risk of physical injury accident or damages on the dies.



Slide lock

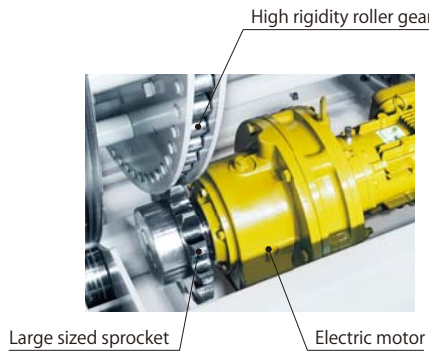




Coil rotator

Roller gear driven type model **SMR-V** (With V block)

Model SMR rotates the table with high rigidity roller gear and large sized sprocket, which enables excellent in durability and safety by introducing roller gear driven type (PAT.).

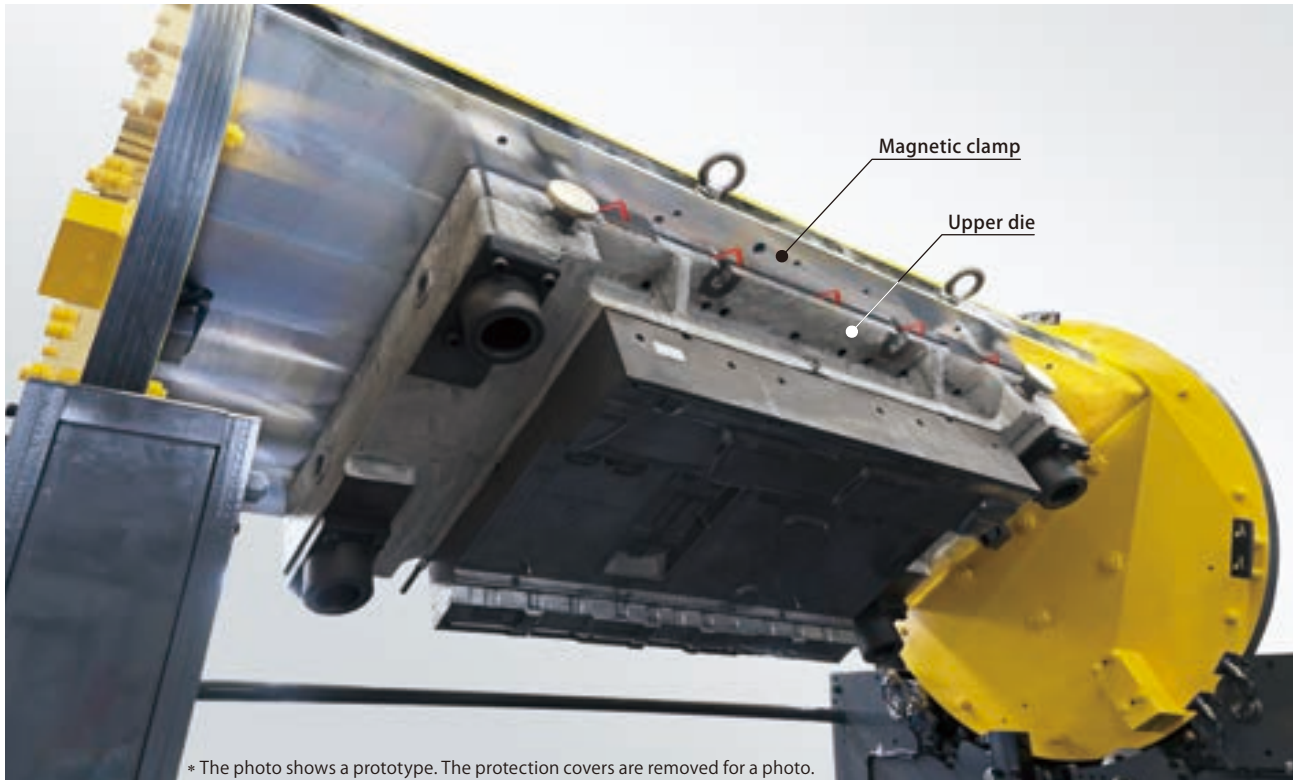


		Roller gear driven (electric motor) type SMR-V
Max. rotation weight	ton	3, 5, 10, 15

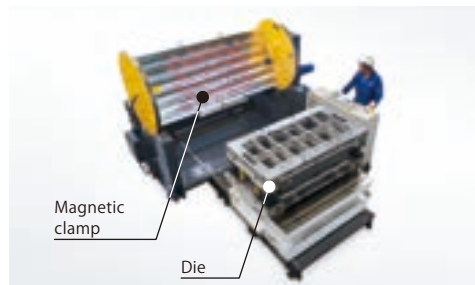
180° die rotator for upper die

model **SMP** PAT.P

To avoid fatal accidents caused by a damage or removal of sling wire.



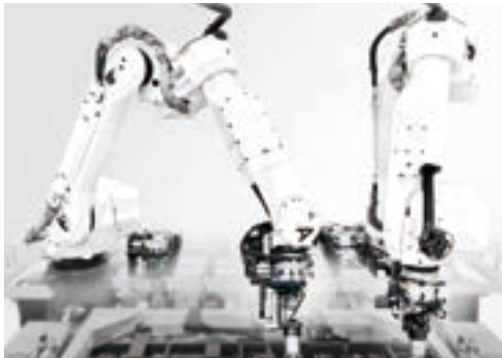
180° die rotator for upper die



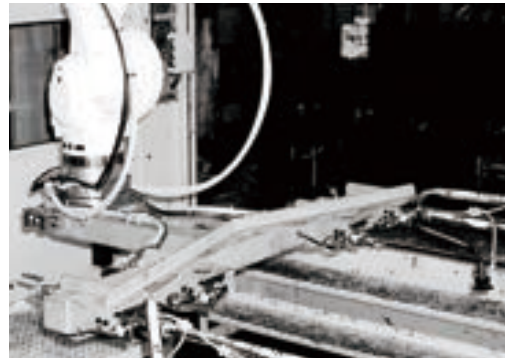
robot tool changer

Max payload **5 10 20 40 80 160 230** kg

model **RHA / RHB**



In the welding line



For sheet metal stamping

DOMESTIC LOCATIONS



JAPAN

Head office / R & D center

- Itami, Hyogo

Plant

- Oita
- Yamagata

Sales office

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

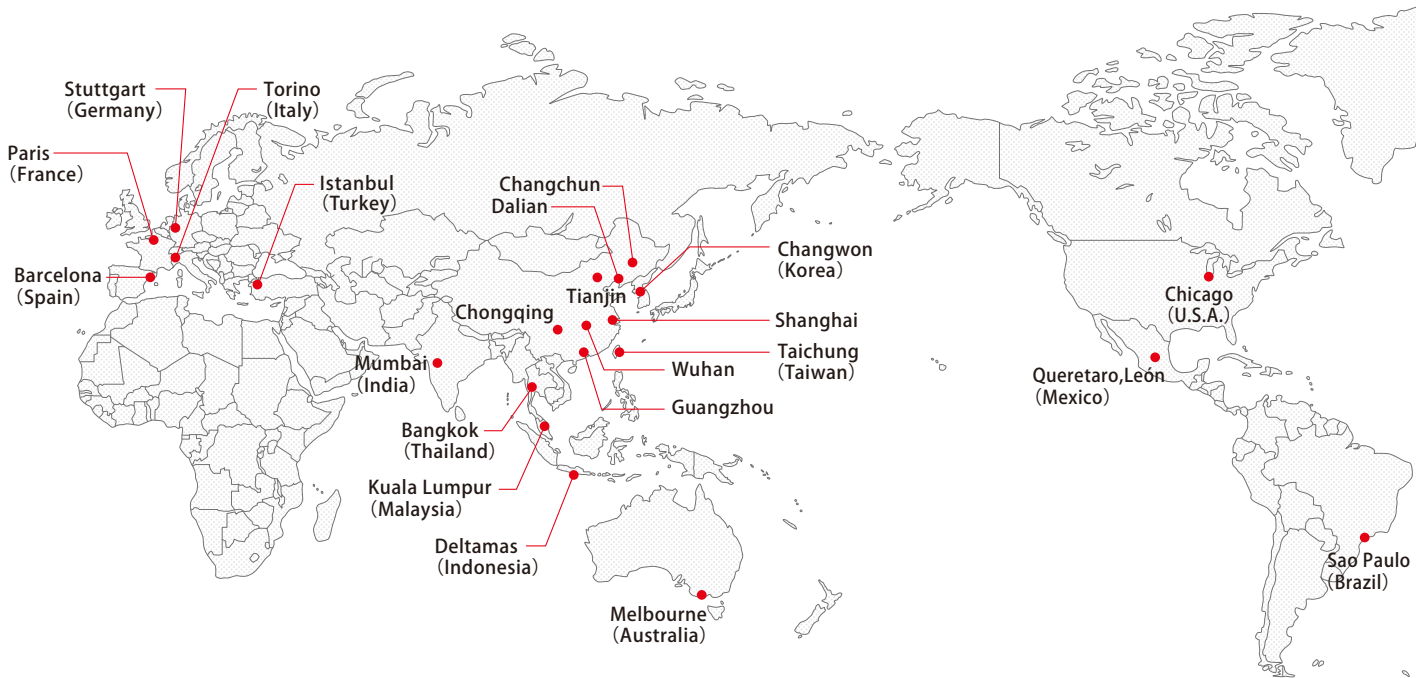


Oita plant



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

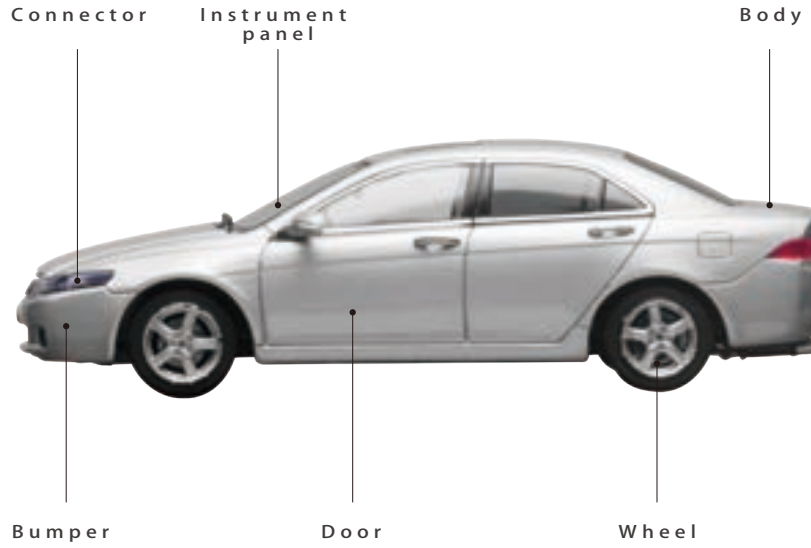
- Chicago [U.S.A.]
- Sao Paulo [Brazil]
- Queretaro, Leon [Mexico]

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

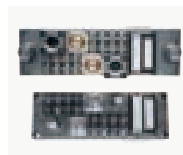
For plastic molding



Mag clamp



Mold die clamping system



Auto coupler

For die and mold

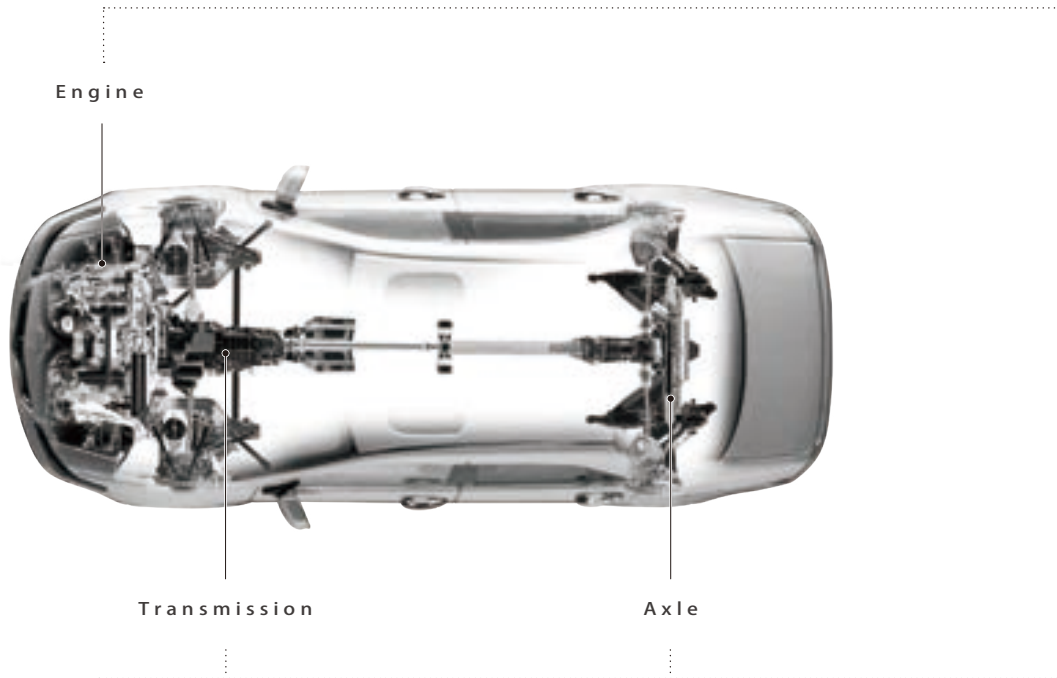
Press machine:
Body, Roof, Door
etc...

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