Pascal
die casting machine system

C-plate mag clamp
die clamping system
pascal pump
hydraulic control unit
auto coupling system
mag clamp for press machine
quick die change system
link clamp & swing clamp
expansion clamp
Pal-fix
pallet clamp
robot tool changer
die handling system
c-plate mag clamp

Installation on 2500 tonf die-casting machine

Installation on 4000 tonf die-casting machine

Max. clamping force : 55 kN

Max. clamping force : 117.6 kN (58.8 kN×2)
When the ejector plate draws back and ejector pin is fixed, a large load might cause damage to the die. However, the C-plate mag clamp can prevent the die from such damage by detaching from the plate if force exceeding clamp force is exerted while the plate is drawing back.

**When ejector plate refracts back : Separation from ejector plate (A, B-plate)**

- **Ejector plate (machine side)**
- **Ejection rod**
  - No need for spare. Mag clamp protects it from damage.
- **Movable platen**
- **Die**
- **Ejector pin**
- **Tilt by uneven load**
- **Debris pile up**
- **Bent**
- **Pin seize**

**When castings are ejected**

- **Ejector plate (machine side)**
- **Ejector rod**
- **Movable platen**
- **Die**
- **Ejector pin**
- **Die cast part**
- **Magnetic flux lines**
- **Clamp**
  - Simple structure for connection

- **Clamp ejector plate instantly with super strong permanent magnet.**
- **No electricity consumed during clamped condition.** Clean & Ecology
die-clamping system

Installation on 2250 tonf die-casting machine

Installation on 350 tonf die-casting machine

Pascal clamp model TYB16
Clamping force: \(156 \text{ kN} \times 8 = 1248 \text{ kN}\)

Pascal clamp (Auto-slide type)
Clamping force: \(61.7 \text{ kN} \times 4 = 246.8 \text{ kN}\)
Assures high durability and reliability even under severe operating condition (Heat, vapor, splash of release agent, etc.).

- Perfect protection against dust or die release agents
- Best solution for heat and corrosion
- Clamp force 4, 6, 10, 16 tonf
  25 tonf type now developing

**Grease Nipple**
For lubrication for clamp lever and shaft (Option)

**Dust cover**
Protect from vapor, release agent’s splash and foreign materials.

**Dust seal**
Fluorocarbon (VITON)

**Long stroke**
Can accommodate big tolerance of clamping height and T-slot dimensions
Stroke: 10~12 mm

**Ram-cylinder**
Ion-Nitriding
Non-breathing ram cylinder is adopted. It can protect the intrusion of dusts or release agents.

**Lever shaft**
Ion-Nitriding

**Piston**
Hard-Chromed

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Pascal clamp model TYB
pascal pump

Compact, high performance air-driven hydraulic pump

model HPX
Hydraulic control unit

High performance hydraulic control unit with digital pressure gauge.

Model HCL
auto coupling system

Installation on 2500 tonf Injection molding machine

Pascal clamp model TK840

Stationary platen side

Movable platen side
For automatic coupling. Connection and disconnection of plural piping and tube

Coupler (die side)

Auto coupling system (die side)

Coupler (machine side)

Auto coupling system (machine side)

Connection port size: 1/4” ~ 2”

Guide pin

Coupler 1/2”

Air cylinder

Cooling water piping

Platen

Die

Auto coupling system (die side)

IN ▲▼ OUT

Auto coupling system (machine side)
For Die clamp of Trimming press

Clamp dies instantly with super strong permanent magnet (Neodymium magnet).
quick die-change system

For Die-change of Trimming press

Pascal clamp **TXA**

- Clamping force: **9.8~245 kN**

Pascal clamp **TYA**

- Clamping force: **9.8~780 kN**
For Work-clamping on deburring process

**Compact body**

The cylinder body has been downsized in height by 26%～31% in comparison to our previous model while remaining interchangeable in mounting. Your existing clamp arms can also be used.

**Improved link support structure**

Enhanced link support structure improves accuracy of the height between mounting surface of flange and link pin to minimize fluctuation of clamp height. This eliminates offset of work-piece by slant clamping and tool interference caused by unleveled clamp arm.

**Direct-mount speed controller**

For manifold-mounting, a speed controller (option) can be mounted directly. You can adjust each clamp individually for easy control of sequence/synchronized actions.

**Model CLX**

Air 1MPa
swing clamp

For Work-clamping on deburring process

**Compact body**

The cylinder body has been downsized in height by 32%~35% in comparison to our previous model while remaining interchangeable in mounting. Your existing clamp arms can also be used.

**Smooth swing action with durability**

Three-ball support mechanism with radial arch cam grooves lowers contact surface pressure and ensures smooth and stable high-speed swing action with durability.

**Direct-mount speed controller**

For manifold-mounting, a speed controller (option) can be mounted directly. You can adjust each clamp individually for easy control of sequence/synchronized actions.

model **CTX**

air 1MPa
For deburring process, clamp at the bottom of workpiece

The expansion S clamp holds firmly the clamping hole at the bottom of workpiece and clamps it firmly down to the seating surface by utilizing taper rod and tapered surface of gripper. Clamp force is transmitted directly to seating surface and holds workpiece in place firmly without any distortion or deflection, making high grade and stable machining possible.
air operated
expansion clamp

Ideal for workpiece transfer, cleaning with robot

- Catch and clamp the holes on workpiece
- Downsizing transfer unit

Compact transfer unit

Transfer

Screw hole
Workpiece hole

Expansion clamp
model CGX

Cleaning machine
Positioning & clamping of workholding fixture for deburring

Reasonable price, High-accuracy, High-rigidity and Easy positioning

- Taper cone with dual surface contact
- Repeatability: 3 μm

X·Y Axes positioning
- Tapered surface

Z Axis positioning
- Seating surface

Locate ring
- Model CPR-N

Locate base
- Model CPR-A

It is possible to position accurately due to the taper portion deformed elastically.
**pallet clamp**

**Highly rigid pallet clamp and repeated positioning accuracy of 3 μm with dual surface contact**

Dual surface contact on tapered surface and seating surface ensures solid and stable clamping against loads from high rpm or heavy-duty cutting. Solution for high machining accuracy along with maximum productivity.

Implementation of Pal system makes it possible to perform setting of workpiece on fixtures of machine table accurately and significantly reduces setup time that was previously necessary for alignment.
PASCAL auto tool changer enhances the multi-functions of robot, shortens the set-up time and supports the high-mix low-volume production.

- Changing of deburring tool
- Taking out parts out of die-casting machine
- Loading and unloading workpieces to machine tools

Portable weight: 20, 40, 60, 100, 150, 200 kg
die-handling system

Rotation of dies and casting parts weighing 1 - 50 tons

Rolling type model SMR

Flat type model SMF