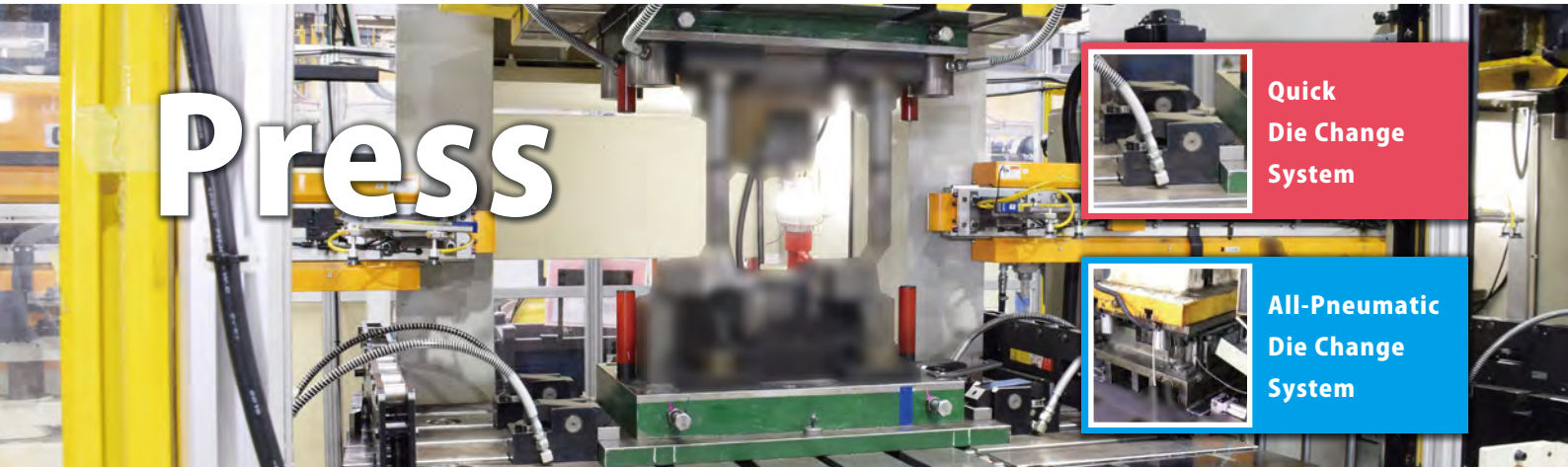
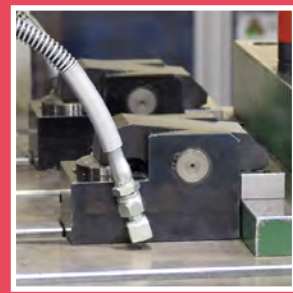


KOSMEK

Press Machine Related Products



QUICK DIE CHANGE SYSTEMS



1 ▶ P.05
Hydraulic Die Clamp



▶ P.04
High-Power Pneumatic Die Clamp



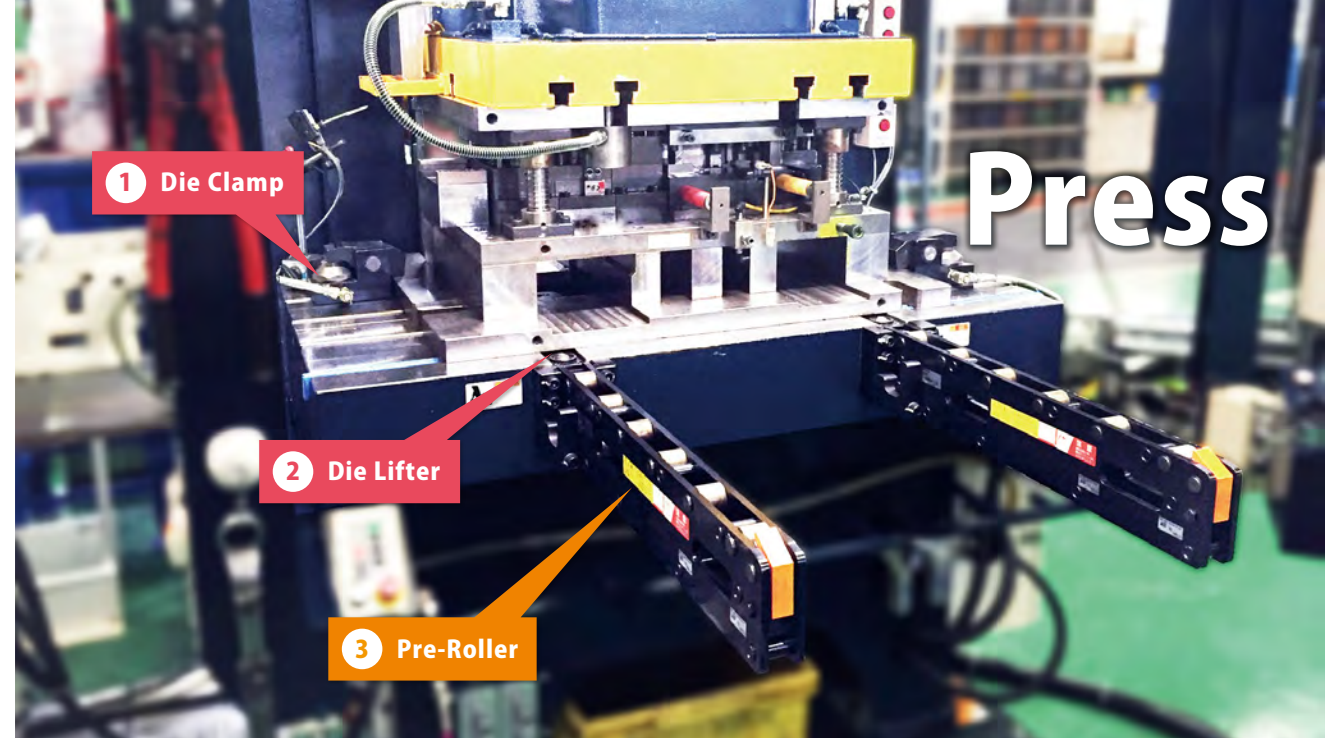
2 ▶ P.12
Hydraulic Die Lifter



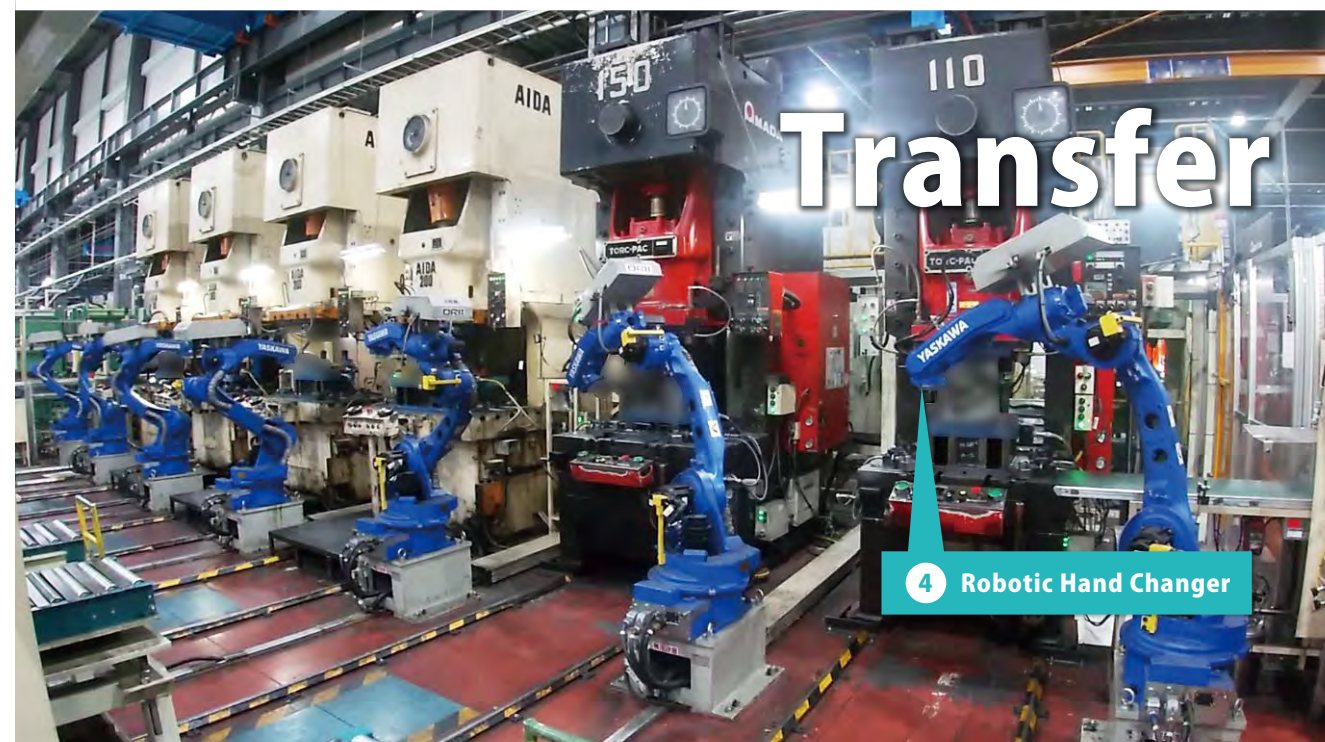
▶ P.03
Pneumatic Ball Die Lifter



3 ▶ P.13
Pre-Roller



Press



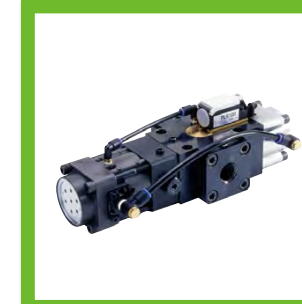
Transfer

4 Robotic Hand Changer



Welding

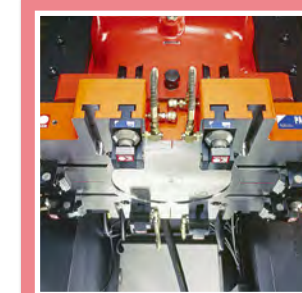
5 Welding Clamp



▶ P.15
Overload Protector



▶ P.17
Press Load Monitor



▶ P.19
Printed Circuit Board Knockout Unit



▶ P.23
Robotic Hand Changer

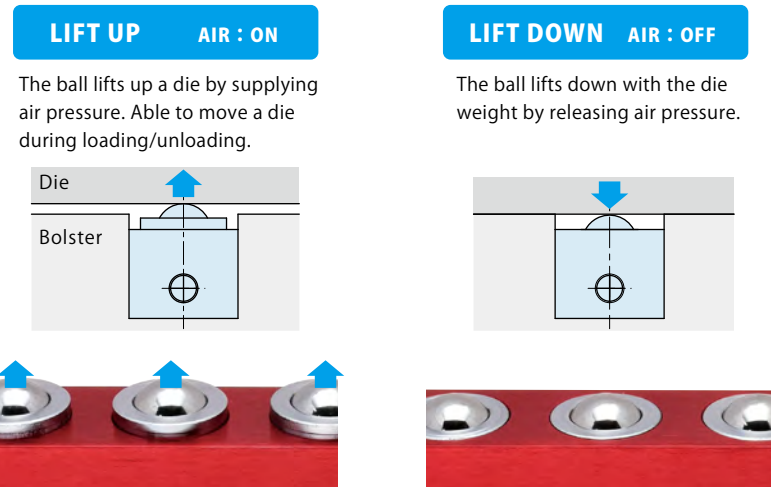


▶ P.29
Welding Clamp

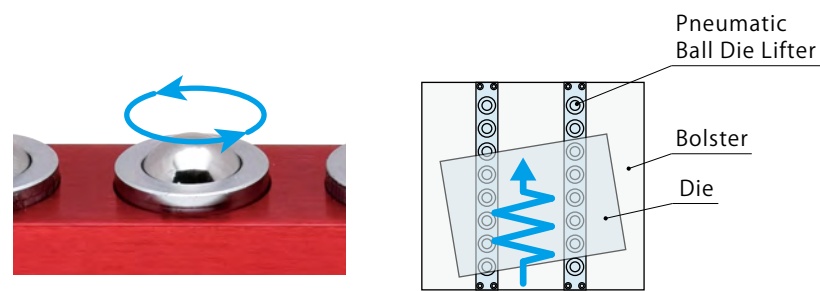
Pneumatic Ball Die Lifter

NEW Newly added to the lineup. Best suitable for die lifter.

**Lift and Move
a Die with
Light Force**



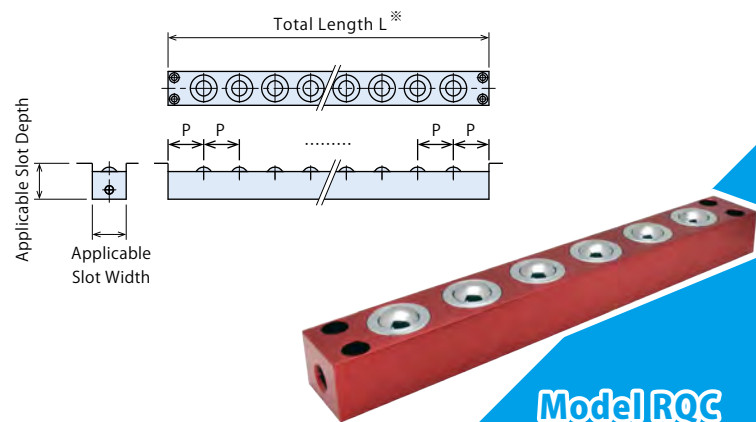
**The Ball
Moves 360°
Flexibly**



Specifications

| Model No. | RQC0300 | RQC0400 | RQC0510 |
|--|-----------------|--------------|--------------|
| Applicable Slot Width | mm 30 | 40 | 51 |
| Applicable Slot Depth | mm 27 | 38 | 40 |
| Full Stroke | mm 3 | 4 | 4 |
| Lift-up Stroke | mm 2 | 2 | 2 |
| Operating Pressure Range | MPa 0.4 ~ 0.8 | | |
| Lifting Force (at 0.5MPa) (per Cylinder) | N 216 | 382 | 676 |
| Distance P | mm 30 | 40 | 50 |
| Total Length L [※] | 60~1200 | 80~1200 | 100~1200 |
| Number of Options | mm (39 options) | (29 options) | (23 options) |

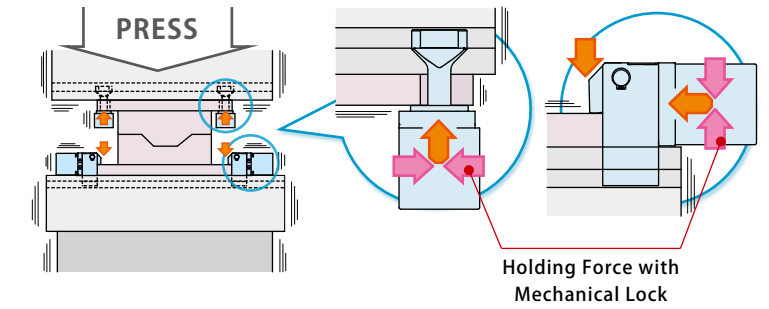
※ Total Length L can be selected in incremental of Distance P.



High-Power Pneumatic Die Clamp

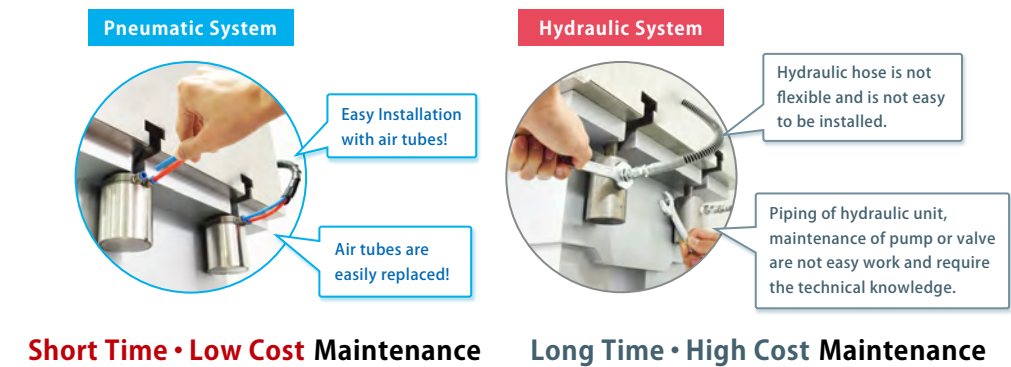
Powerfully hold a die with air pressure + mechanical lock.

**Hybrid system using
air pressure and
a mechanical lock**



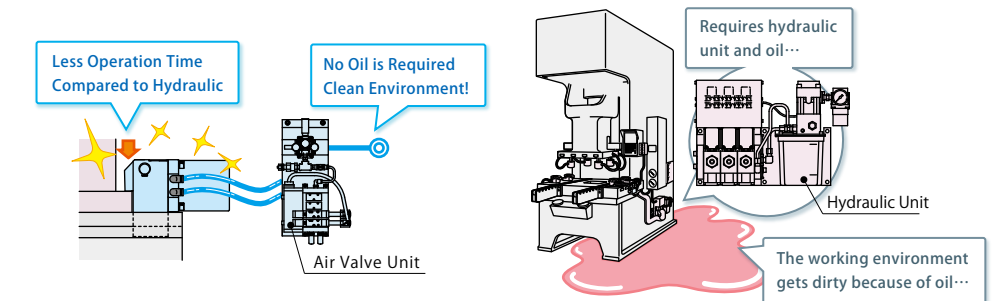
**Improved
Maintainability**

Drastically reduces the running cost as valves and other control devices are available on the market and easily replaced in case of trouble.



**Energy Saving •
Time Reduction**

Keeps Your Factory Clean.
Also, since clamping action is faster than hydraulic, the die change time is drastically reduced.



Specifications

- Holding Force (Air Pressure at 0.4 ~ 0.8 MPa) : 10 kN / 25 kN / 40 kN / 63 kN
- Tightening Force (Air Pressure at 0.8 MPa) : 2.5 kN / 6.3 kN / 10 kN / 15.8 kN
- Operating Air Pressure : 0.4 ~ 0.8 MPa • Operating Temperature : 0 ~ 70°C (High Temp. 0 ~ 120°C)



**Die
Change
KAIZEN**

**Die Change with
Clean • Energy Saving**

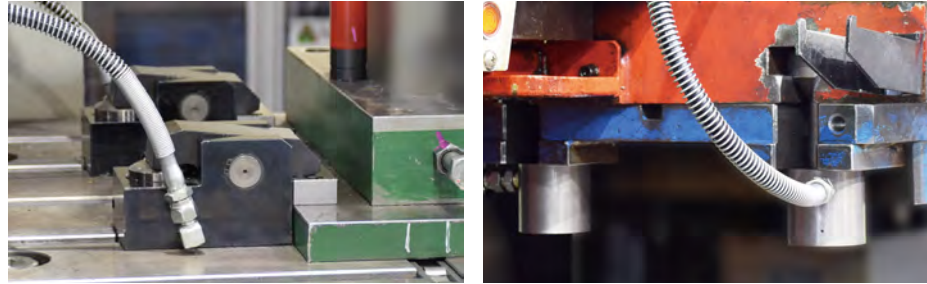
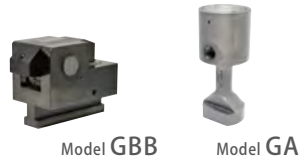
**All-Pneumatic System
• Low Running Cost**



Hydraulic Die Clamp Series

Best-Selling Series with a Wide Variety of Selections

T-Slot Manual-Slide



T-Slot Automatic-Slide



Block-Fixed

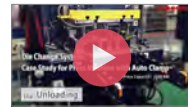


Swing Clamp Rod



Application Example Video

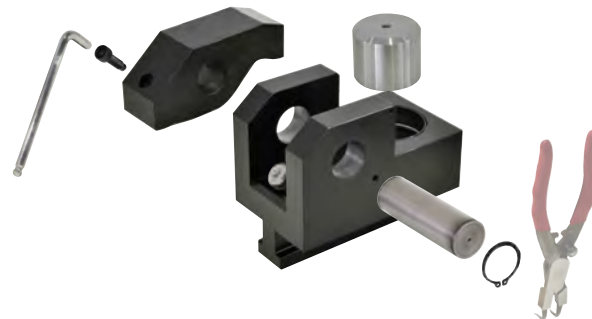
Best-Selling Hydraulic Die Change System
Application example videos available on our website.



http://www.kosmek.co.jp/php_file/video_products.php?id=019&lang=2

Disassembly and Assembly Possible with Only Standard Tools

GBB model has the structure which is simple and easy to maintain.
No special tools or skilled labor are required for maintenance.
Since anyone can assemble and disassemble the clamp,
only a seal kit is needed to perform on-site maintenance.



Long Stroke Models

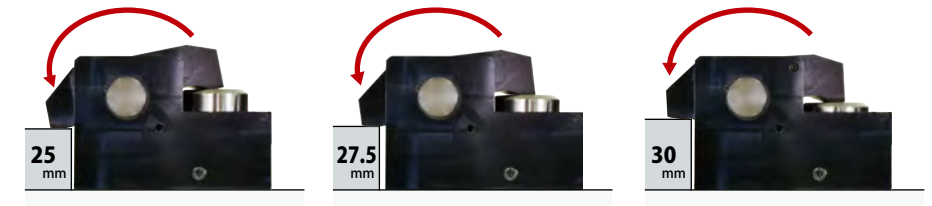
Allows for Variation in Die Clamping Thicknesses

The die change system with longer stroke clamps enables to use non-standardized dies.

GBC Long Stroke Lever Clamp

No U-Cuts Required

(Allowable Variation 5mm : 0100 ~ 0400 models)
(Allowable Variation 10mm : 0630 ~ 1000 models)



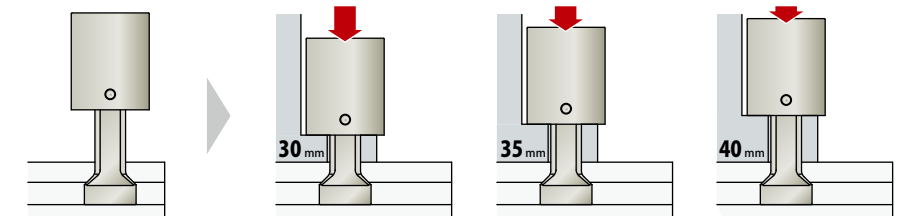
Specifications

| Model No. | GBC0100 | GBC0160 | GBC0250 | GBC0400 | GBC0630 | GBC1000 |
|------------------------------------|---|---------|---------|---------|---------|---------|
| Clamping Force | kN 10 | 16 | 25 | 40 | 63 | 100 |
| Operating Pressure | MPa 25 | | | | | |
| Withstanding Pressure | MPa 37 | | | | | |
| Full Stroke | mm 8 | 9 | 10 | 12 | 15 | 15.5 |
| Clamp Stroke | mm 0.5 | 1 | 1.5 | 3.5 | 1 | 1.5 |
| Extra Stroke | mm 7.5 | 8 | 8.5 | 8.5 | 14 | 14 |
| Die Clamping Thickness Variation | mm 5 | 5 | 5 | 5 | 10 | 10 |
| Cylinder Capacity (at Full Stroke) | cm ³ 4 | 6 | 10 | 19 | 38 | 63 |
| Operating Temperature | °C 0 ~ 70 (V: High temperature option is available for 0 ~ 120°C) | | | | | |
| Use Frequency | 20 cycles or less / Day | | | | | |
| Usable Fluid | General Hydraulic Oil Equivalent to ISO-VG-32 | | | | | |

GA-S Long Stroke Piston Clamp

Clamps at U-Cut of Die Shoe

(GA-S1 : Stroke 12.5 mm)
(GA-S2 : Stroke 20 mm)



Specifications

| Model No. | GA0100 | | GA0160 | | GA0250 | | GA0400 | | GA0630 | | GA1000 | |
|------------------------------------|---|-----|--------|-----|--------|-----|--------|-----|--------|-----|--------|-----|
| | -S1 | -S2 | -S1 | -S2 | -S1 | -S2 | -S1 | -S2 | -S1 | -S2 | -S1 | -S2 |
| Clamping Force | kN 10 | | | | | | | | | | | |
| Operating Pressure | MPa 16 | | | | | | | | | | | |
| Withstanding Pressure | MPa 25 | | | | | | | | | | | |
| Full Stroke | mm 12.5 | 20 | 12.5 | 20 | 12.5 | 20 | 12.5 | 20 | 12.5 | 20 | 12.5 | 20 |
| Clamp Stroke | mm 9.5 | 17 | 9.5 | 17 | 9.5 | 17 | 9.5 | 17 | 9.5 | 17 | 9.5 | 17 |
| Extra Stroke | mm 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Cylinder Capacity (at Full Stroke) | cm ³ 5.1 | 8 | 8.8 | 14 | 13 | 20 | 20 | 33 | 33 | 52 | 49 | 79 |
| Operating Temperature | °C 0 ~ 70 (V: High temperature option is available for 0 ~ 120°C) | | | | | | | | | | | |
| Use Frequency | 20 cycles or less / Day | | | | | | | | | | | |
| Usable Fluid | General Hydraulic Oil Equivalent to ISO-VG-32 | | | | | | | | | | | |

※ Offering other sizes up to clamping force 250kN.

Interlock with Press Machine

for Safe Operation

Die Change
KAIZEN

Reduce the Die

Change Time

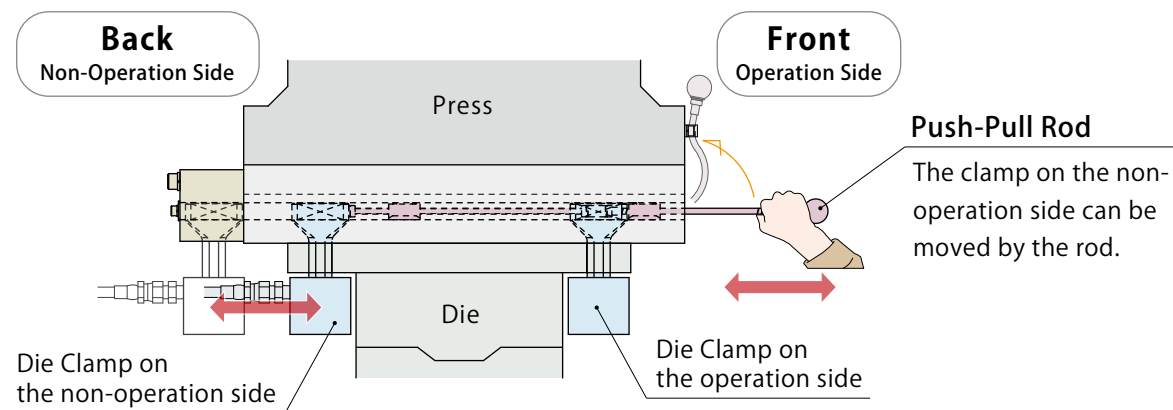


Slide Rod Die Clamp for Easy Setup

Having a problem when moving die clamps?

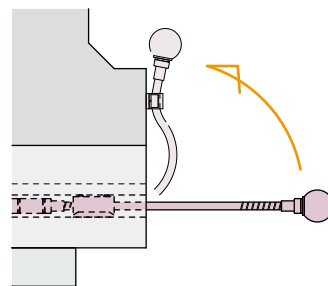
Solved by Slide Rod Die Clamp!

Slide Rod model enables to move the clamp on the non-operation side from the operation side.



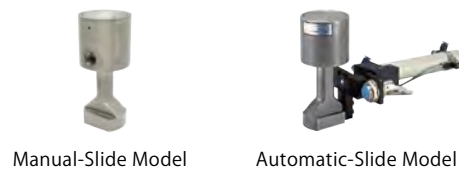
Storable

The push-pull rod is rigid when it is straightened. It can be bended and stored when not in use.



Low Cost

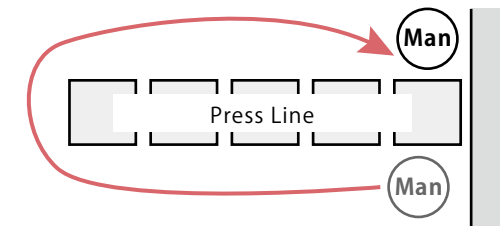
Less expensive compared to the automatic-slide model.



Able to Solve the Following Problems

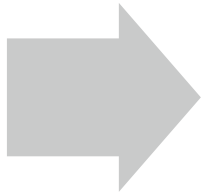
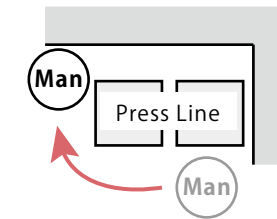
Traveling Distance

After loading a die, it is required to go around to the non-operation side when setting a clamp to a die. In case of a tandem line, traveling to the backside takes a lot of time.



Operating Space

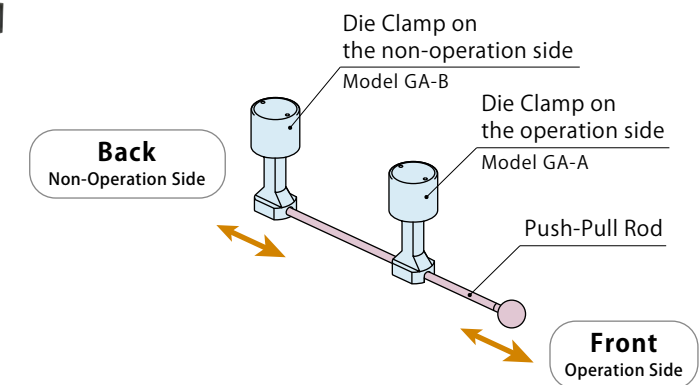
In case the operating space on the backside is not enough, it is dangerous to operate in a narrow space...



Reduce the traveling distance, tiredness and setup time.
Improve the safety (No need to work in a narrow space).
Reduce the die change time.

Lineup

| | | | |
|--|-------|---|-------|
| GA-A/B Piston Clamp (Clamps at U-Cut of Die Shoe) | | GBB-A/B Lever Clamp (No U-Cuts Required) | |
| | | | |
| Model GA-A | GBB-A | Model GA-B | GBB-B |
| Rod Slide (for U-Cut) For Operation Side | | Rod Slide (for Tap) For Non-Operation Side | |

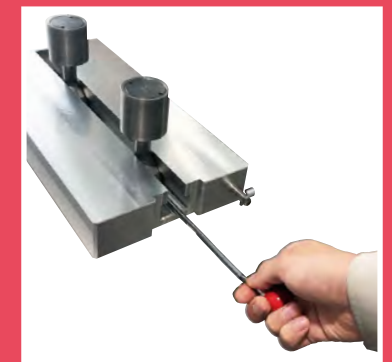


※ Please contact us for applicable clamping force.

**Die Change
KAIZEN**

Shorter Traveling
Tiredness and

Distance reduces
Setup Time



Swing Rod Clamp for Upper Die

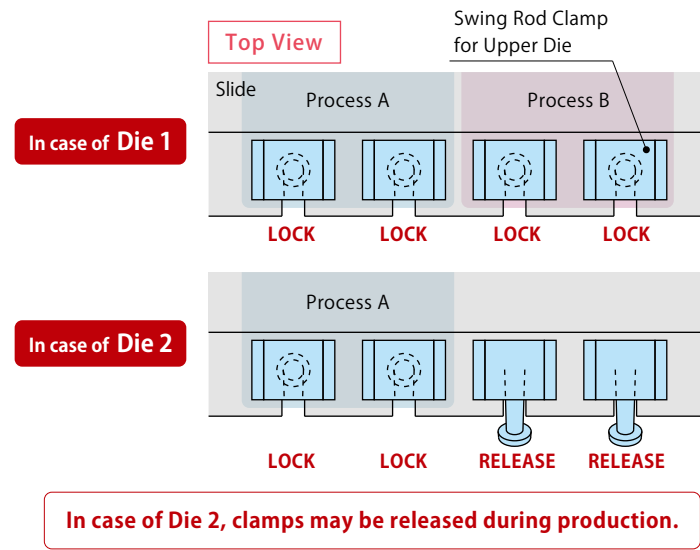
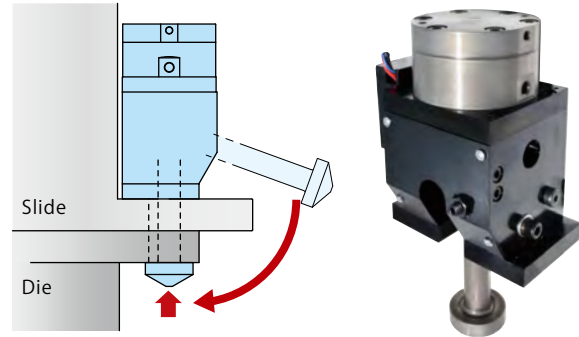
The swing rod retracts during die change.

Special Product

Swing Rod Clamp for Upper Die to Withstand Vibration of Press Machine

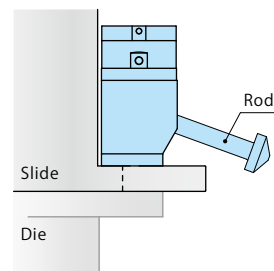
Withstands vibration even at released state

Sometimes a transfer press machine is operated with some clamps released depending on the number of processes. Kosmek Swing Rod Clamp is able to withstand the vibration of the press machine even at released state.



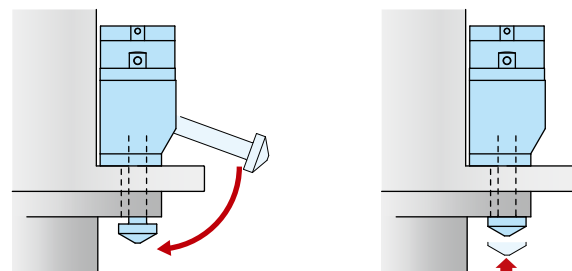
Action Description

RELEASE Release Pressure : ON
Lock Pressure : OFF



The rod is retracted during die change.

LOCK Release Pressure : OFF
Lock Pressure : ON



The rod swings 70° from the released state.

After swing, the rod is pulled up to clamp the die.

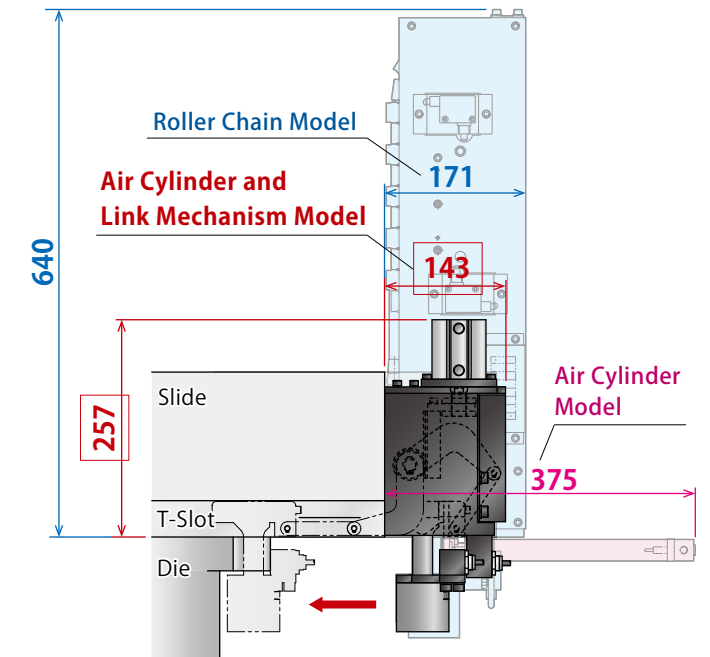
Link type Automatic-Slide Clamp

Compact Automatic-Slide Clamp

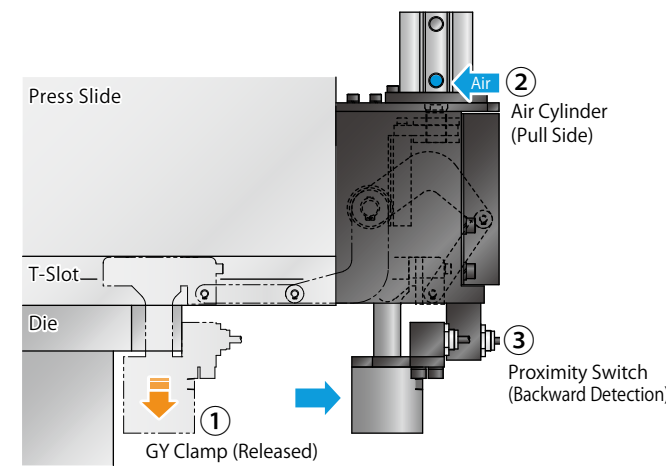
Special Product

Protrusion from press slide is less than half of Air Cylinder Model or Roller Chain Model

Automatic-slide die clamp is compact due to its link mechanism, and avoids interference around the press machine.

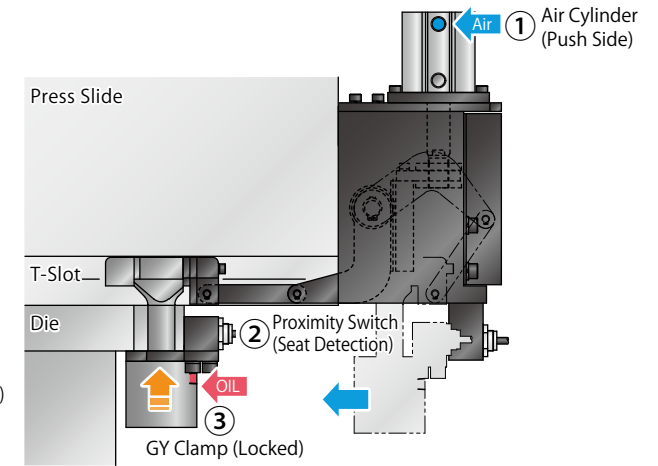


RELEASE



- ① Release hydraulic pressure ⇒ Clamp is released by built-in spring force.
- ② Supply air to the pull side ⇒ Clamp is moved backward.
- ③ Proximity switch detects that the clamp moved backward.

LOCK



- ① Supply air to the push side. ⇒ The clamp moves forward until it touches the die.
- ② Proximity switch detects the seating of the die.
- ③ Supply hydraulic pressure. ⇒ The clamp locks the die (U-Cut).

Die Change KAIZEN

Withstands Vibration of Press Machine Swing Clamp

of Press Machine for Upper Die



Hydraulic Unit with Large Flow Pump

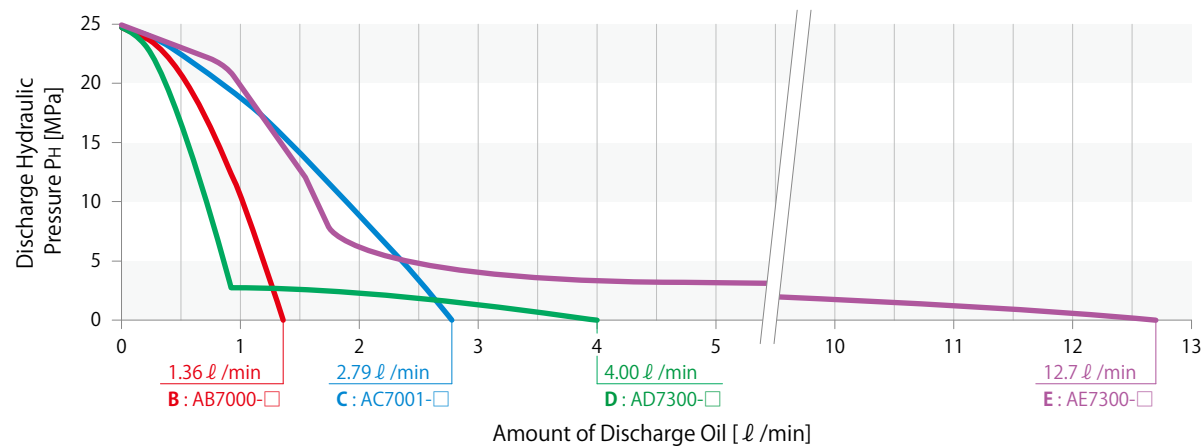
Large flow pump to increase operating speed of hydraulic clamps.

Newly-Developed Large-Flow Pump to Reduce 50%* of Operation Time!

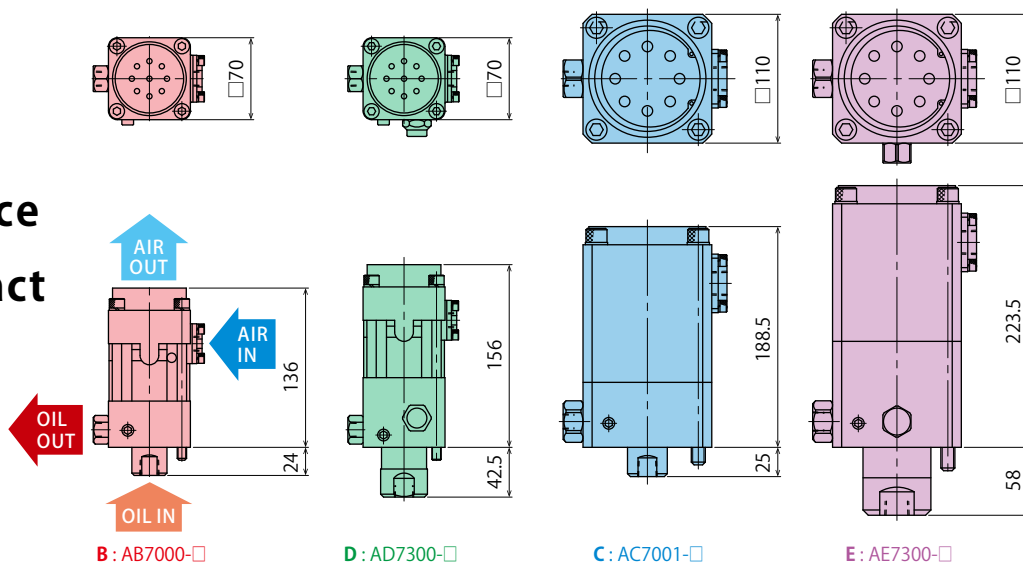
* It varies depending on conditions of piping path and others.



Pump Performance Curve

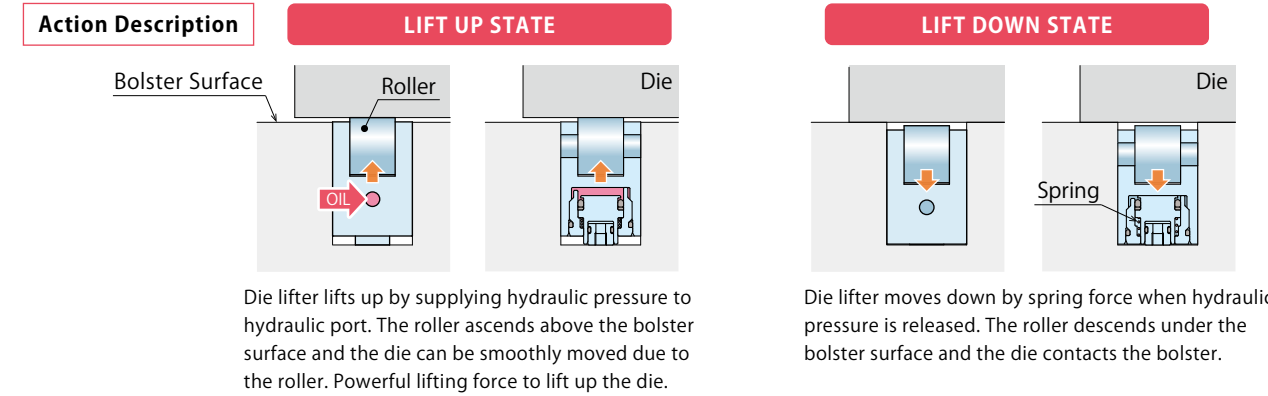


High Performance and Compact



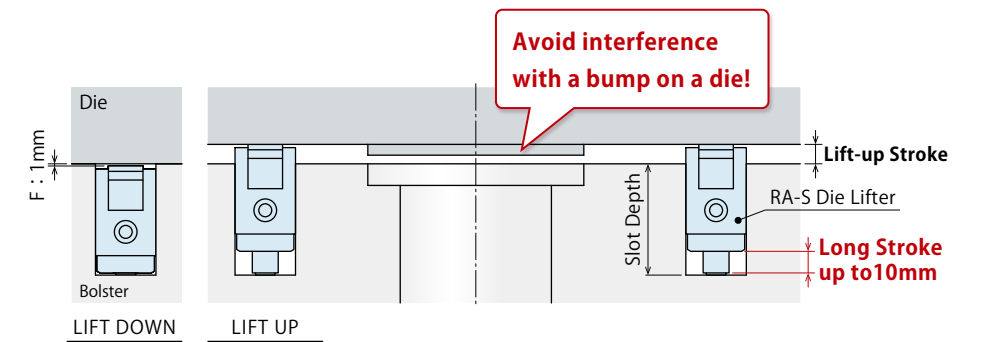
Hydraulic Die Lifter

Easy to move a die to the bolster with rollers on the die lifter.



Long Stroke Model

Smooth loading/unloading is possible with Long-Stroke Die Lifter even when requiring extra clearance due to fit part or bumps between a bolster and a die.



RA-S Long Stroke Die Lifter



Specifications

| Model No. | RA0280 | | RA0500 | | RA0800 | |
|--|--|---------------------------------|--------------------------------------|---------------------------------|--------------------------------------|---------------------------------|
| | -S1 | -S2 | -S1 | -S2 | -S1 | -S2 |
| Applicable Slot Width | 28 ^{+0.25} _{+0.05} | | 50 ^{+0.25} _{+0.05} | | 80 ^{+0.25} _{+0.05} | |
| Applicable Slot Depth (In case F = 1 mm) | 46.5 ^{+0.5} ₀ | 52 ^{+0.5} ₀ | 58 ^{+0.5} ₀ | 65 ^{+0.5} ₀ | 85 ^{+0.5} ₀ | 91 ^{+0.5} ₀ |
| Lift-Up Stroke (In case F = 1 mm) | 4 | 9 | 4 | 9 | 5 | 9 |
| Full Stroke | 5 | 10 | 5 | 10 | 6 | 10 |
| Allowable Die | Die Material SS400 | | 200 | | 500 | |
| Weight per Roller | Die Material S45C · FC250 | | 350 | | 800 | |
| Lifting Force (per Cylinder) | 5 | | 11.3 | | 25 | |
| Cylinder Capacity (per Cylinder) | 1 | 2 | 2.3 | 4.6 | 6.1 | 10.2 |
| Hydraulic Port | Rc1/8 | | Rc1/4 | | | |
| Operating Hydraulic Pressure | 25 | | | | | |
| Operating Temperature | 0 ~ 70 (V : High Temperature 0 ~ 120 °C) | | | | | |
| Use Frequency | 20 Cycles or less / day | | | | | |

* Please contact us for the long stroke model of RA0180 and RA0220.

Die Change
KAIZEN

Large Flow Air-Hydraulic
Drastic Reduction of

Combination Pump for
Operating Time

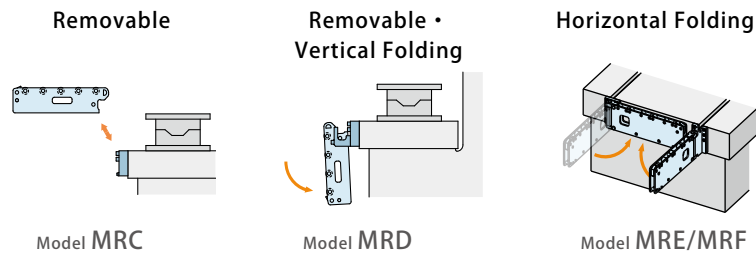


Pre-Roller

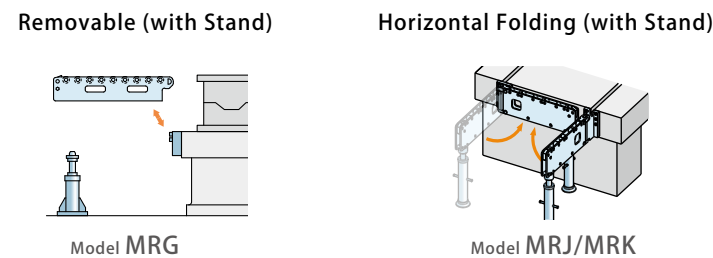
Broad Line-up of Pre-Rollers



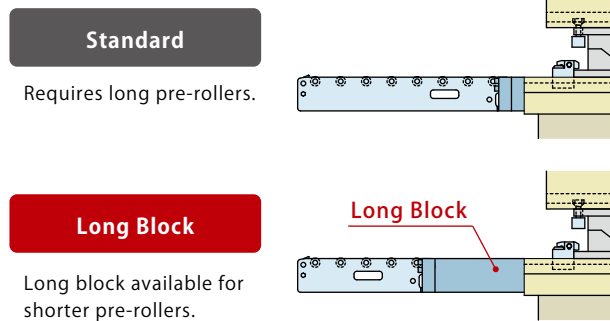
A Variety of Storing Methods!



Stand Available for Longer Pre-Rollers!



Applicable to a Long Block Used to Install/Remove Pre-Rollers More Easily and to Avoid Interference



KOSMEK offers a broad line-up of Pre-Rollers.

| Die Travel Length | 200 | 250 | 315 | 355 | 400 | 450 | 500 | 560 | 630 | 710 | 800 | 850 | 900 | 950 | 1000 | 1250 | 1600 | 2000 |
|-------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|
| Model MRC | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| Model MRD | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| Model MRE/MRF | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| Model MRG | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Model MRJ/MRK | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● |

Longer Pre-Roller

Die Travel Length up to 2m



Die Change KAIZEN with Longer Pre-Rollers : For Press Machine with Soundproofing Enclosure

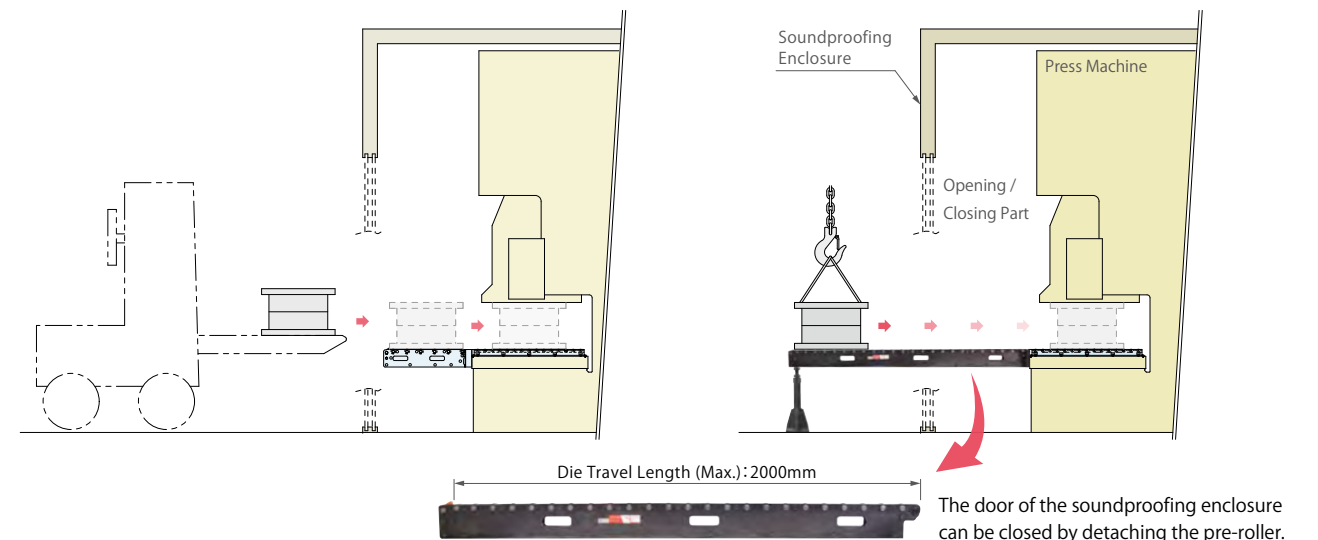
KOSMEK offers Pre-Rollers with die travel length up to 2m as a standard lineup. With the use of soundproofing enclosure, operating range of a crane is limited. However, the longer pre-rollers enable the crane to transfer the die outside the soundproofing enclosure.

In case of Short Pre-Roller

Using a forklift to load/unload a die : This is inefficient because the forklift must enter into the soundproofing enclosure to load/unload the die.

In case of Longer Pre-Roller

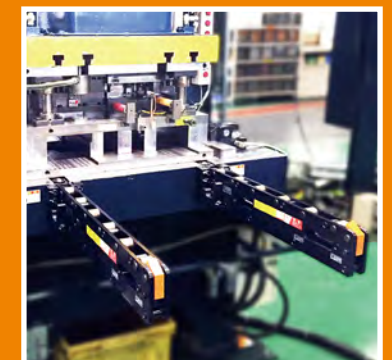
With a factory crane, it is able to set a die onto the pre-roller from the outside of the soundproofing enclosure. After setting the die to the press machine, the pre-roller can be removed, leading to space-saving and a more effective factory.



Die Change KAIZEN

Customer Satisfaction A Broad Lineup +

Improved! Custom-Made



Overload Protector

For Unbalanced Loads with 2-point and 4-point Presses

Multi-Load Model

- Model PV (Pneumatic)
- Model PW (Spring)

Standard Model

- Model PH (Pneumatic)
- Model PL (Spring)



What is an Overload Protector ?

Overload protector detects sudden increases of hydraulic pressure in the overload cylinder within the press slide, releasing hydraulic oil instantly in order to protect the press machine and sends an emergency stop signal to the press machine.

Compact and Light

A Wide Variety

Available for various size presses from small presses (200 kN) to large presses (20000 kN).

High Stability

Accuracy of a press machine is maintained by applying pre-load and minimizing compressive strain in hydraulic oil of overload cylinder during normal operation.

Malfunction Prevention

Pressure regulating valve prevents malfunction caused by the rising temperature of hydraulic oil during press operation.

High Accuracy

Even if the amount of overload increases, the operating accuracy of overload protector remains within 10% and repeatability is better than $\pm 3\%$.

Shock Tolerance

Shock tolerance of the switch is more than 70G.

Simple Setting

Pressure setting of overload is simple and accurate.

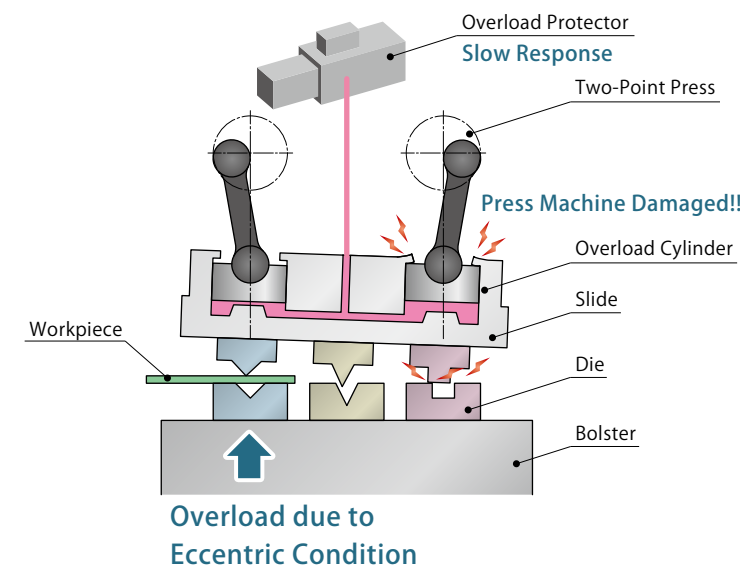
Easy to Recover

After removing a cause of an overload, hydraulic pressure will be charged in the overload cylinder by supplying air pressure and the overload protector starts again.

Task

Standard overload protector has slow response when a two-point press has an overload.

Previously

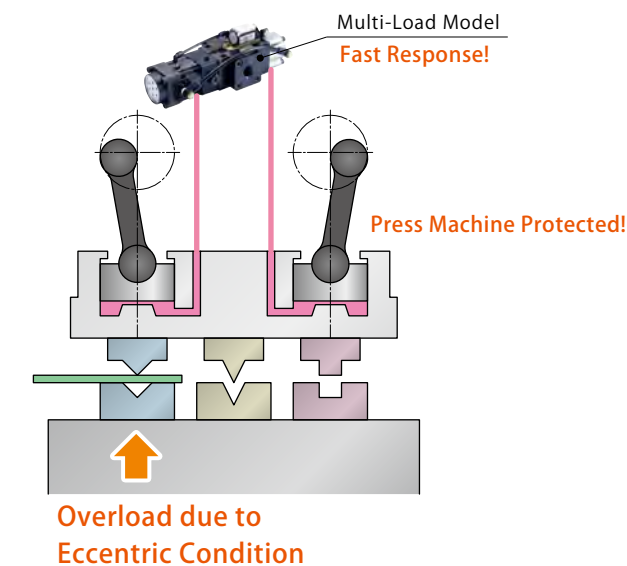


Problem

Under overload in an eccentric condition, the overload protector does not start working until hydraulic pressure of the overload cylinders on both sides increases.

Slow Response,
Unable to Prevent Eccentric Load

KOSMEK Multi-Load Model



Solution

Under overload in an eccentric condition, the overload protector activates when hydraulic pressure on one side increases, and releases the cylinders on both sides.

Fast Response,
Able to Prevent Eccentric Load

※ Please contact us for the details about specifications and external dimensions.



Quick Response
 Prevents Breakage
 to Overload



Press Load Monitor for Better Quality

Having a trouble with quality control of pressed products?

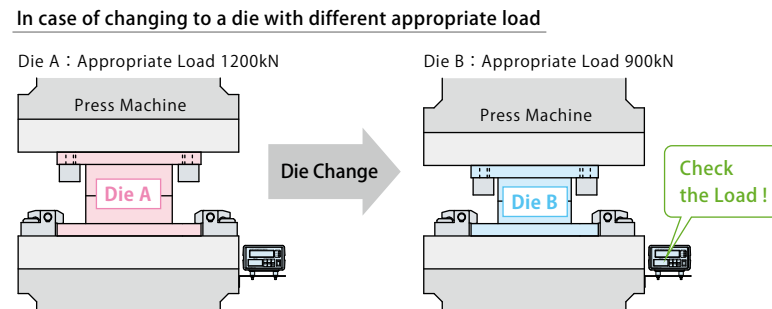
Press Load Digital Display!

Displays the press load digitally based on the pressure change of the overload cylinder.



Easy to Check Load after Die Change!

Able to check the load when press testing after die change. This enables setup time reduction and quick start of production with appropriate load.

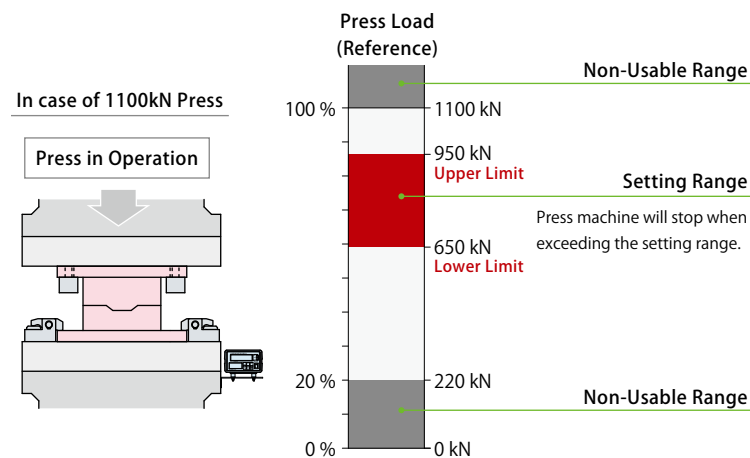


Quality Control by Monitoring Changes!

Upper and lower load limits can be set freely. An emergency signal will be sent to the press machine immediately and stop the machine when exceeding the limits.

Also, when the setting range has a margin of load, it is able to stop the machine before the overload protector is activated.

※ Measuring range is 20 ~ 100% of the press rated load.



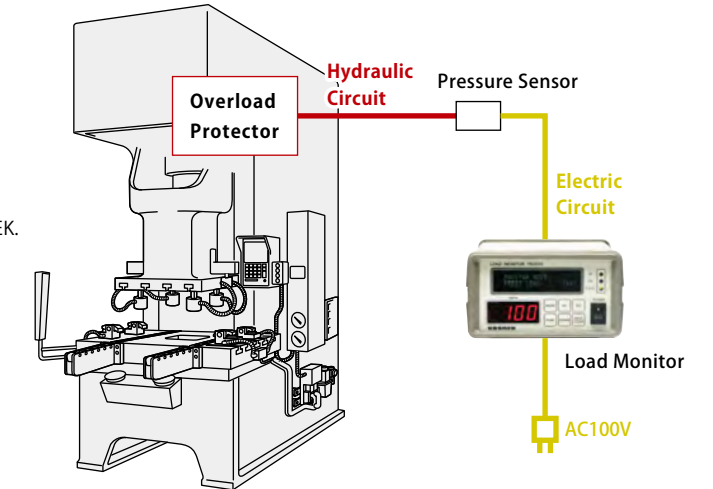
Easy Installation!

Product Installation by KOSMEK!

Easy installation with the following two steps conducted by KOSMEK. Installation is possible for existing machines as well.

- ① Branch a hydraulic circuit for overload protector and install a pressure sensor connected to the load monitor.
- ② Calibrate the data of the load monitor and the pressure sensor. (Only at first installation)

※ Please prepare an installation port of the pressure sensor to the hydraulic circuit of the overload protector.



Comparison between Strain Gauge and Load Monitor

| | Strain Gauge | Load Monitor |
|------------------------|---|---|
| Cost Comparison | • High Cost | • Comparably Low Cost |
| Spec Comparison | <ul style="list-style-type: none"> • Direct Measuring Method • Check deformation of a frame. • Able to select an option "with Strain Gauge" when ordering a new press machine. (Installed by press machine maker.) | <ul style="list-style-type: none"> • Indirect Measuring Method • Check the change in hydraulic pressure (within overload). • 10% variation in machine capacity ex.) 200 ton × 10% = 20 ton variation |

Problems during Press Operation

- Workpiece with different thickness loaded...
- Piled-up workpieces loaded...
- Scratch on a die...

Solved by Load Monitor!

Load changes in case of an error.

Monitoring Errors Possible!!

Appropriate Press Load Improves Quality!
Longer Operating Life of Die!
Load Limit Setting to Prevent Die Breakage!

Quality
KAIZEN

Monitoring of Changes in
Accuracy Control

Press Load Enables
of Products



Printed Circuit Board Knockout Unit

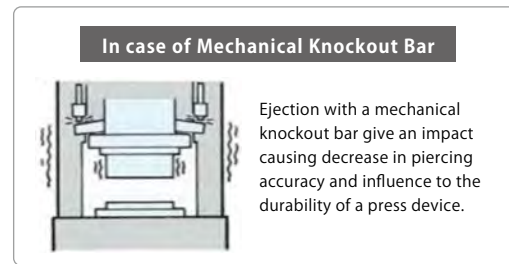
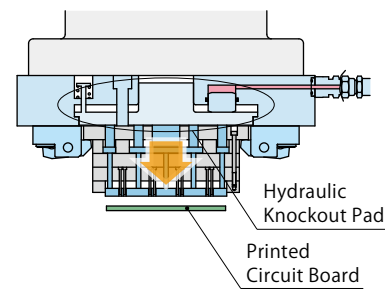
Having a problem with punching droops and burrs of printed circuit board pin hole?

KOSMEK Piercing System

KOPIS is the Solution!

Smooth Ejection with Hydraulic Knockout Pad!

Hydraulic knockout pad enables soft and smooth ejection in a vertical direction that is impossible for a mechanical model.



Ultra-Thin Plate to Make the Most Use of Die Height!

- Separating hydraulic cylinder from the knockout pad enables an ultra-thin plate.
- Hydraulic piston strokes vertically so that oil leakage is rare.
- Strong to eccentric load allowing for designing wide pads.
- Ultra-thin plate enables to make the most use of die height.



KOPIS is a standard sales product.

Able to **request a repair** when needed.



Custom-Made Example

Simplified Fine Blanking

Knockout pad with longer stroke can be used for metal stamping as simplified fine blanking!

Installation Example

| | |
|-------------------------------|---------------|
| Press Capacity | : 3000 kN |
| Workpiece External Dimensions | : 140×50×6 mm |
| Material | : S5400 |
| Holder Force | : 100kN |
| Knockout Force | : 300kN |
| Knockout Pad Stroke | : 9mm |



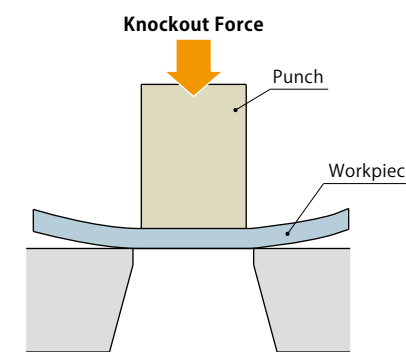
KOPIS can pierce thick metal plates with high accuracy. We have designed custom-made KOPIS for thicker workpieces. Please contact us for further information.

Application Example

High-accuracy stamping of soft material such as aluminum and brass is possible!
Combining with a servo press allows for higher accuracy.

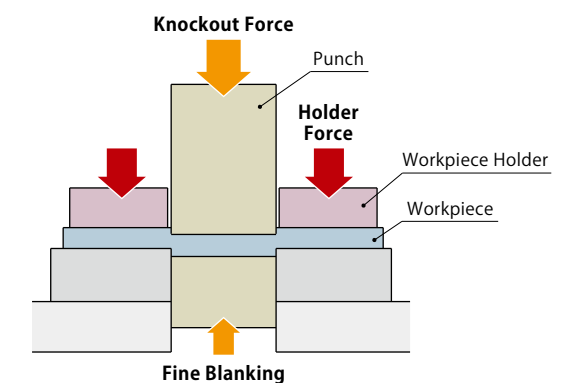
Standard Stamping Press

The workpiece is deformed due to knockout...



Fine Blanking

High-accuracy fine blanking is possible by holding the workpiece.



Quality
KAIZEN

Even and Powerful
Prevents Droops

Knockout Force
and Burrs



Fluid Supply to Moving Bolster

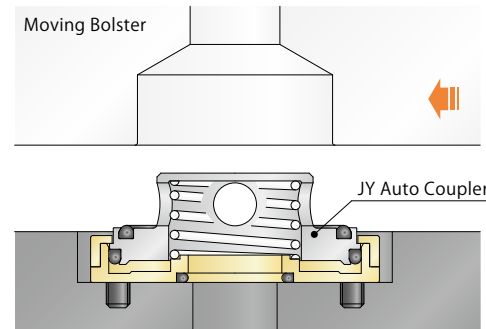
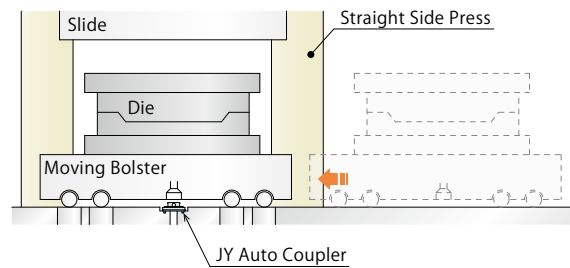
Automation of Fluid Circuit Connection

Special Product

Automatic Coupler Connection to Supply Fluid to the Moving Bolster

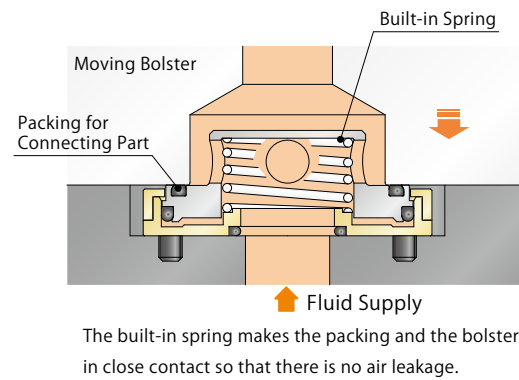
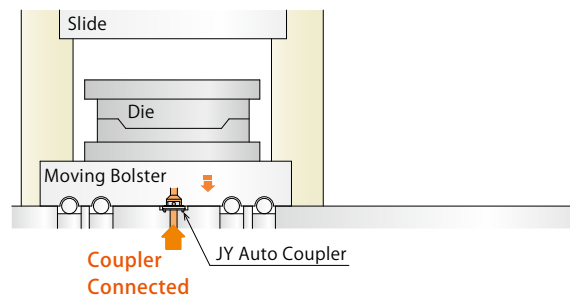
Disconnected State

Load the moving bolster to the straight side press.



Connected State

After seating of the moving bolster, the auto coupler is connected and fluid can be supplied.



Specifications

| Model No. | JY | | |
|-----------------------|-----------------|--------------------|-------------|
| Operating Pressure | MPa | max.1 | |
| Withstanding Pressure | MPa | 1.5 | |
| Minimum Passage Area | mm ² | 380 | |
| Allowable Offset | mm | ±1 | |
| Allowable Angle Error | | 0.3° | |
| Operating Temperature | °C | 0 ~70 | |
| Usable Fluid | | Air | |
| Reaction Force | kN | Operating Pressure | |
| | | 1 MPa | 3.35 |
| | | 0.7 MPa | 2.36 |
| | | P MPa | 3.29×P+0.06 |

Notes :

1. Do not connect or disconnect the auto coupler under pressure.
2. Do not connect the auto coupler when contaminants are adhered on each connecting surface.

※ The above is just one example of our custom-made products. External dimensions are determined according to the arrangement of each press machine. We also offer auto couplers for other fluids. Please contact us for further information.



Model JY

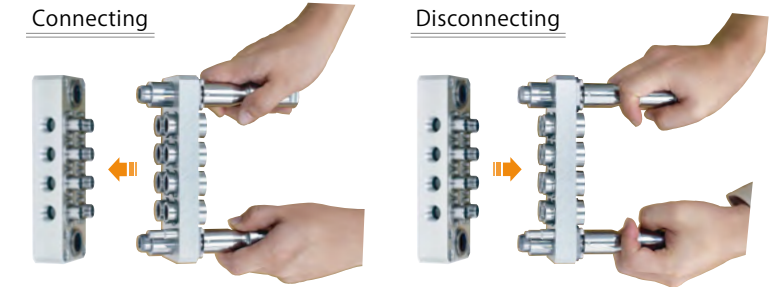
Multi Coupler

Connect and Disconnect Multiple Couplers at Once

What is Multi Coupler ?

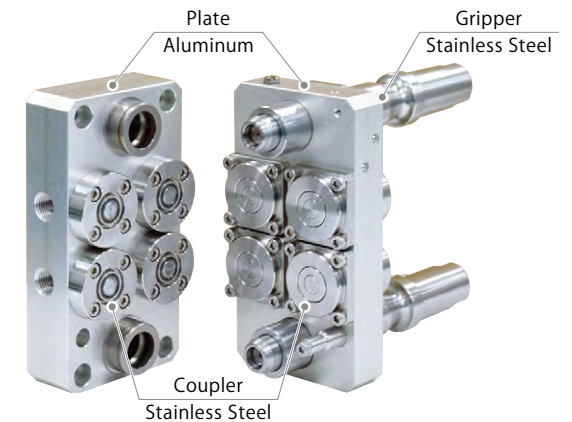
A Device to Connect Multiple Couplers in a Single Operation

Pilot air can be connected constantly because the coupler connecting valve is opened/closed as JMC : with check valve is connected/disconnected. Check valve for opening/closing coupler connecting valve is not required.



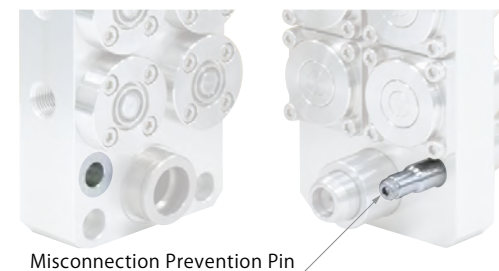
Anti-Corrosion Material

Using stainless steel for the coupler and the gripper, and aluminum for the plate allows for anti-corrosion. Highly durable to air and process water.

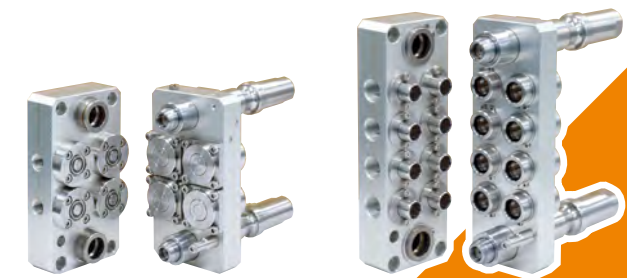


Misconnection Prevention

Misconnection Prevention Pin prevents connection failure.



Misconnection Prevention Pin



Model JMC
(with Check Valve)

Model JMD
(without Check Valve)

Product Description Video

Product description video is available on our website.

http://www.kosmek.co.jp/php_file/video_products.php?id=042&lang=2

**Die Change
KAIZEN**

Customer Satisfaction
Automate Fluid

Improved!
Circuit Connection

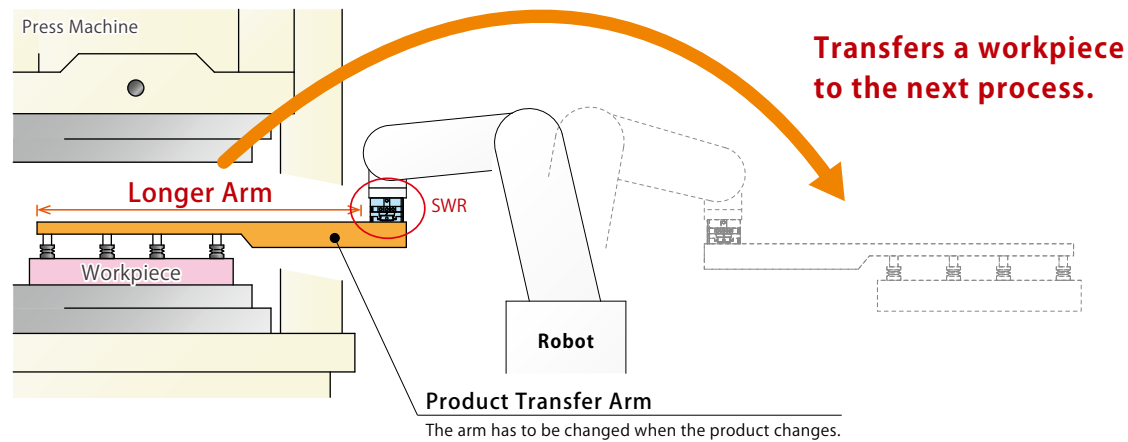


Robotic Hand Changer

The World's Only Hand Changer with No Backlash

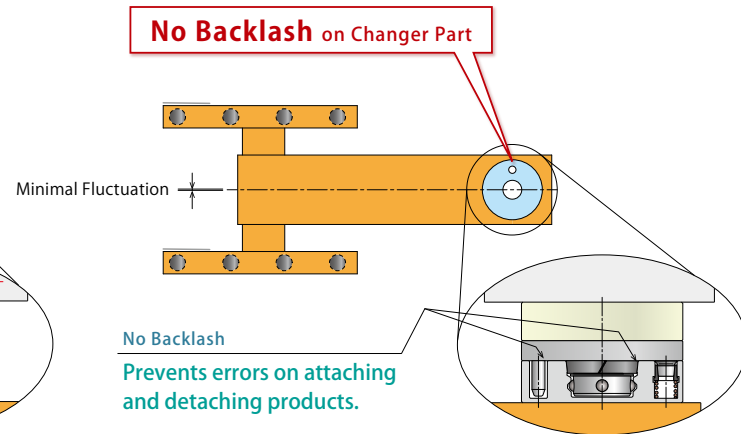
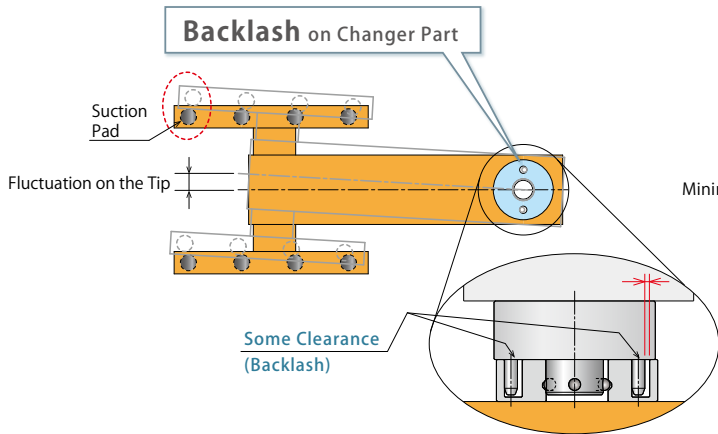
Transfer Arm Change with High Accuracy

Zero-Backlash Robotic Hand Changer prevents fluctuation on the arm tip and maintains high accuracy even when transferring a longer arm.



Standard Tool Changer

KOSMEK Robotic Hand Changer



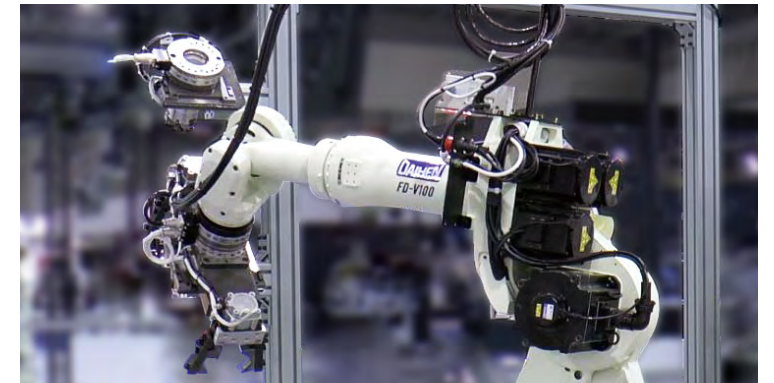
Hand Change for Gantry Loader

Transfer hand needs to be changed after die change. With 3 μm repeatability of Robotic Hand Changer, its approaching point does not shift after hand change. This reduces setup time because position adjustment is not required.



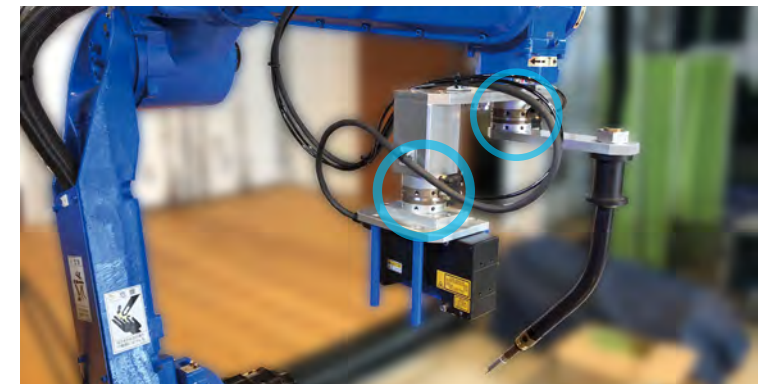
Transfer Hand Change for Welding Workpieces

The robot itself changes transfer hands to transfer different workpieces. For robot standardization.



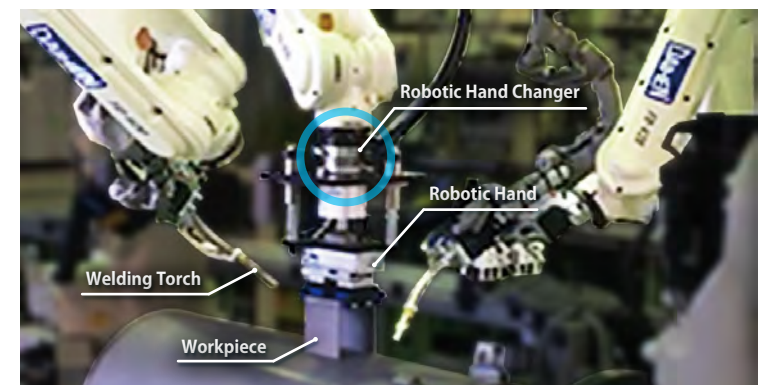
Changing of Welding Torch and Welding Vision Camera

Robotic Hand Changer is used for changing welding torch and welding vision camera.



Clamping of Welding Workpiece

Robotic Hand Changer is used for changing robotic hands that hold a welding workpiece. KOSMEK non-backlash changer enables stable product quality and appearance of arc welding.



Transfer
KAIZEN

Zero-Backlash Transfer Arm Change

Hand Changer with High Accuracy



KOSMEK Exclusive Non-Backlash Mechanism

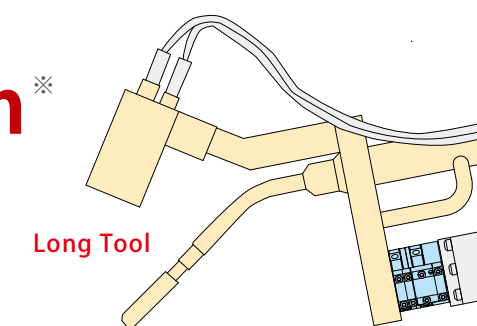


Secures the Aimed Position

Repeatability when Connected : **3 μm**※

Even with a long tool or hand, fluctuation of the edge is extremely small. It secures high-accuracy processing even after tool change.

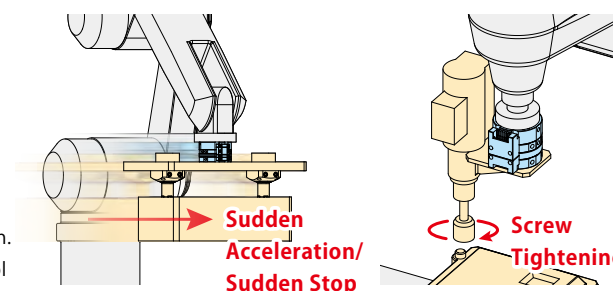
※ Repeatability is 5 μm for SWR0010 (0.5kg ~ 1kg payload model).



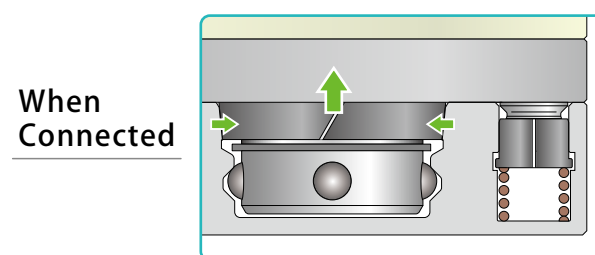
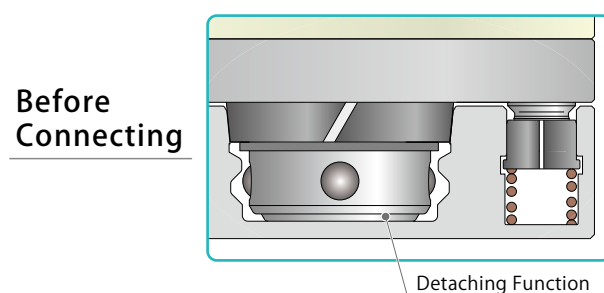
24-Hour Continuous Operation is Possible with Uncomparably High

Rigidity and Durability

Strong to "bend" and "torsion" with high rigidity obtained by non-backlash function. Also, high strength material is used in all the contact part of the master and the tool so that it ensures high durability and 3 μm repeatability even after 1 million cycles.



Action Description



Detaching Function

Standard Tool Changer

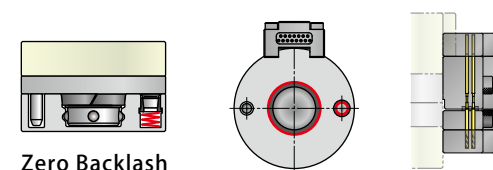
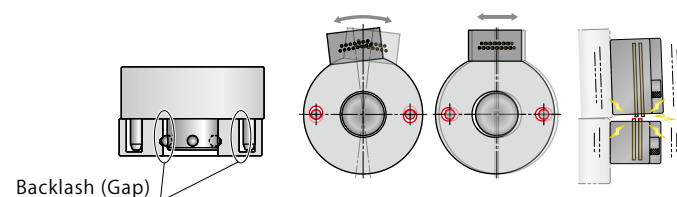
KOSMEK Robotic Hand Changer

Backlash of a Tool Changer Causes Electrode Errors

Noise and Continuity Failure due to Friction of Contact Probe

Dual Contact to Connect with Zero Backlash

Kosmek hand changer with no backlash prevents electrode errors. ⇒ No noise occurs.



Continuity Failure of Electrode

No Continuity Failure of Electrode

Frequent Moment Stop

Sharp Decline of Moment Stop

A Broad Lineup of Robotic Hand Changers



from 0.5kg Payload → to 360kg Payload

| | | | | | | | | | |
|---------------------|------------|----------|----------|-----------|------------|------------|------------|-------------|--------------|
| Applicable Payload | 0.5 ~ 1 kg | 1 ~ 3 kg | 3 ~ 7 kg | 7 ~ 12 kg | 12 ~ 25 kg | 25 ~ 50 kg | 50 ~ 75 kg | 75 ~ 120 kg | 120 ~ 360 kg |
| Recommended Payload | 0.5kg | 3kg | 7kg | 12kg | 25kg | 50kg | 75kg | 120kg | 230kg |
| Model No. | SWR0010 | SWR0030 | SWR0070 | SWR0120 | SWR0250 | SWR0500 | SWR0750 | SWR1200 | SWR2300 |

A Variety of Electrode/Air Joint Options



Transfer
KAIZEN

The World's
Changer with

Only
No Backlash

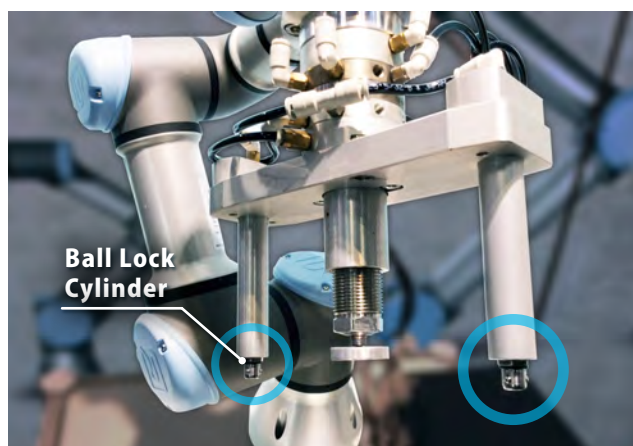
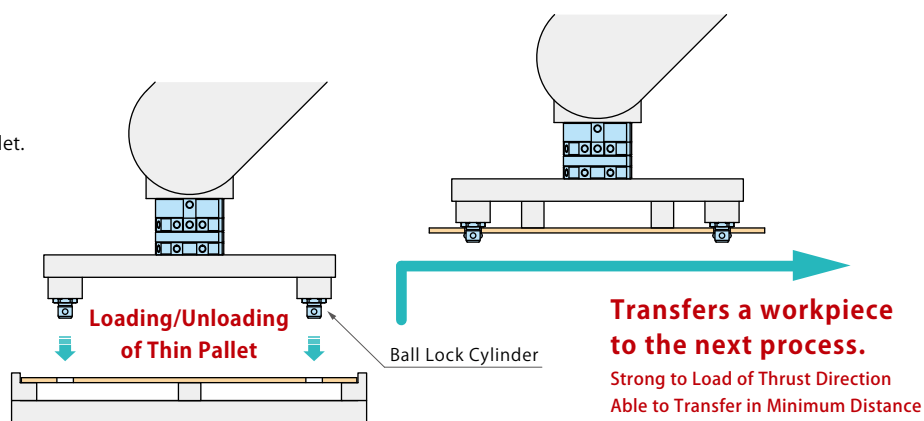


Light & Compact Robotic Hands

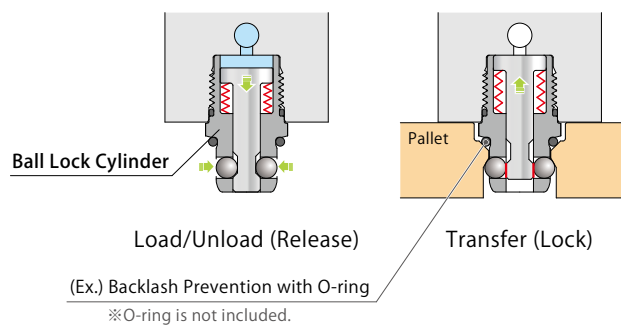
KOSMEK Exclusive Internal Chuck Series

Ball Lock Cylinder

The automatic cylinder holds and transfers a pallet.
The steel balls prevent a pallet fall.
(Spring Lock / Air Release)
Pull-out Load Capacity (Holding Force) : 50N / 70N / 100N

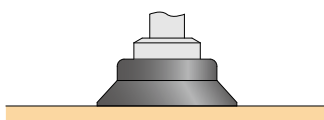


Action Description



Suction Pad

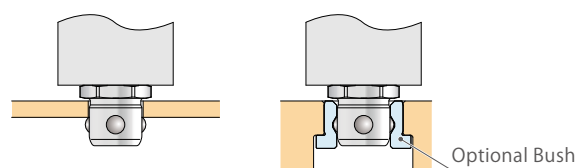
Limited Speed
Low Suction Force



Suction Pad has critical weight limits and speed limits due to low suction force. Also, the suction force is affected by the roughness of surface and is decreased due to deterioration and friction.

Ball Lock Cylinder

Powerful • Light • Compact with Mechanical Lock
Single Circuit for Positive Pressure Only



Requires Hole Machining
Optional bush simplifies hole machining.

Internal Chuck Series (Air Lock / Air Release)

Locating Pin Clamp

Clamp and locate a workpiece hole from above.

Workpiece Hole Diameter :
φ 10 ~ φ 20 (9 sizes)
Locating Repeatability : 50 μm



FA Pneumatic Hole Clamp

The gripper expands and pulls a workpiece in.

Workpiece Hole Diameter :
φ 6 ~ φ 14 (in 0.5mm increments)
Locating Repeatability : 30 μm



High-Power Pneumatic Hole Clamp

Used in a machining device. The gripper expands and pulls a workpiece in.

Workpiece Hole Diameter :
φ 6 ~ φ 13 (in 0.5mm increments)
Repeatability : N/A



Large Expansion Locating Pin

High-accuracy locating pin with large expansion stroke.

Workpiece Hole Diameter :
φ 9 ~ φ 15 (in 1mm increments)
Locating Repeatability : 10 μm



Expansion Locating Pin enables high-accuracy locating.

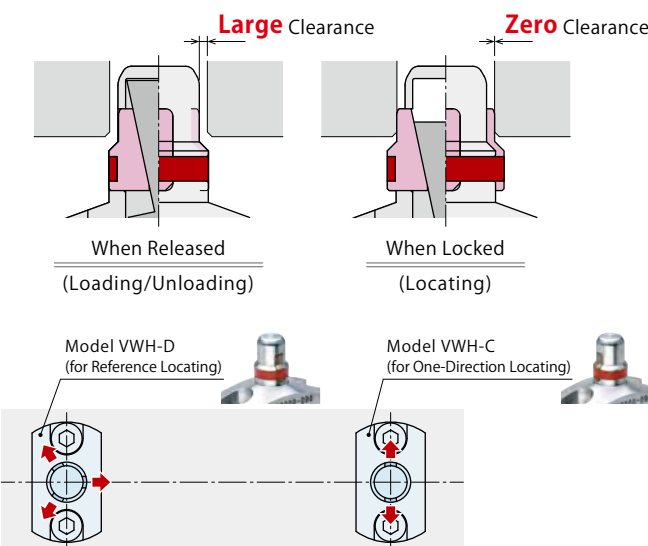
Both smooth loading/unloading and high-accuracy locating possible. KOSMEK expansion locating pin allows for stable automation by absorbing variations of reference hole diameter and hole distance and locating with high accuracy.

Locating Repeatability : 10 μm

High-Accuracy model with Locating Repeatability : 3 μm is also available.



Expansion Stroke : 1.1mm



External Chuck Series (Air Lock / Air Release)

High-Power Parallel Hand



Compact Parallel Hand



Compact Parallel Hand



Three-Jaw Chuck



Two-Jaw Chuck



Parallel Hand with Auto-Grip Changer



Transfer
KAIZEN

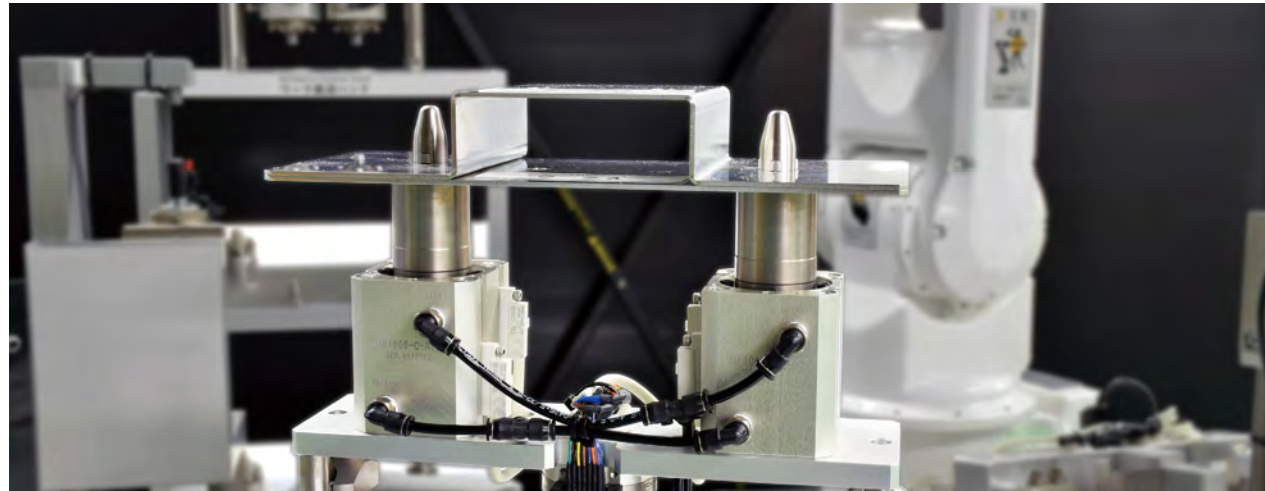
KOSMEK Exclusive Much Faster and

Internal Chucks for More Secure Transfer

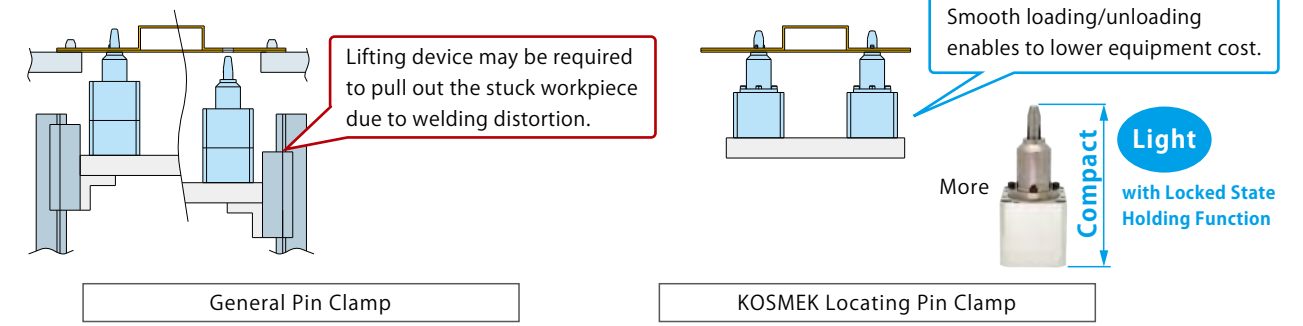


Welding Locating Pin Clamp

Locates and clamps simultaneously using workpiece holes.



Lower Fixture Cost



Action Description



Workpiece Loading/Unloading
 Gripper is retracted. Workpiece can be smoothly installed due to an adequate space between the workpiece hole and pin.



① Locating Action
 Gripper expands to locate the workpiece.



② Locking Action
 Gripper pulls in the workpiece after locating, and clamping part pulls the workpiece onto the seating surface for locking.

Strong to Spatter
 Non-clearance prevents spatter from entering.

High-Accuracy Locating Locating Repeatability

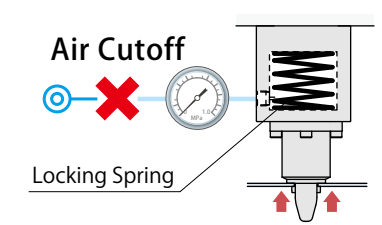
0.05mm

Light • Compact



Safety Function

Built-in locking spring maintains locked state and prevents a workpiece fall even when air pressure is cut off.



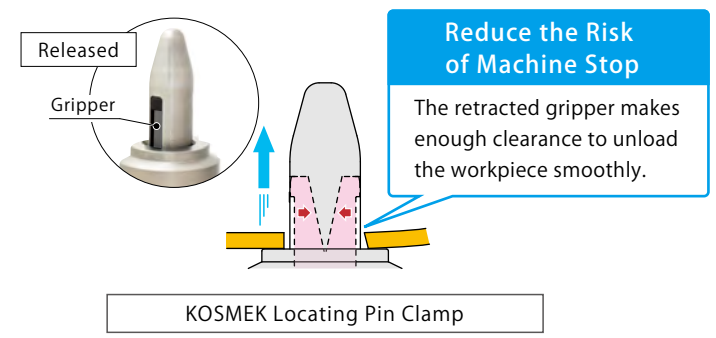
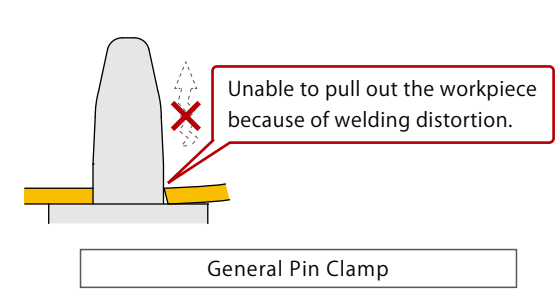
Remains Locked

Product Description Video

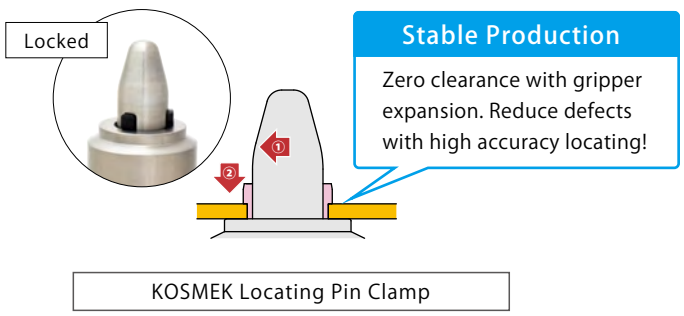
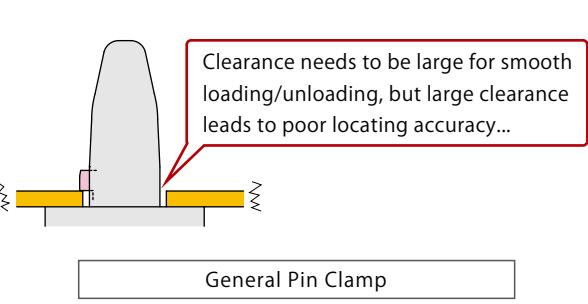
Product description video is available on our website.

http://www.kosmek.co.jp/php_file/video_products.php?id=025&lang=2

Work Efficiency



Stable Clamping



Model SWP



For Sheet Metal
Locates + Clamps

Workpiece
with High Accuracy

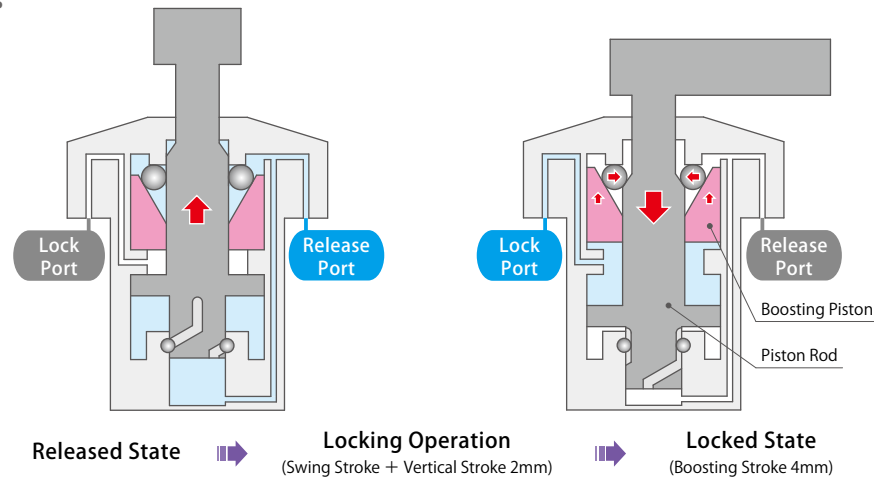


Welding High-Power Pneumatic Clamp

High-Power Pneumatic Clamp is a hybrid system using air pressure and a mechanical lock.

Welding without Hydraulic Use

No hydraulic pressure is required for the welding fixture system with high-power pneumatic clamps exerting equivalent force to hydraulic clamps.



Triple Protective Structure for Anti-Contamination

Special Rod Surface Finishing

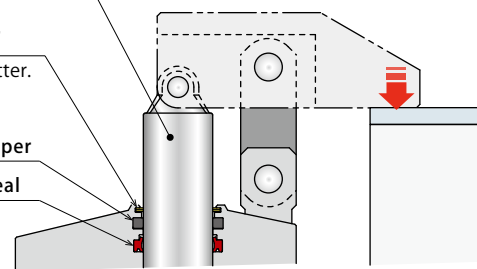
Spatter-Resistant coating protects body surface from weld spatter.

Coil Scraper

Removes weld spatter.

Soft Wiper

Dust Seal

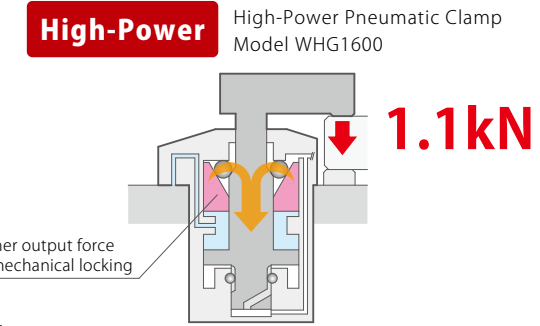
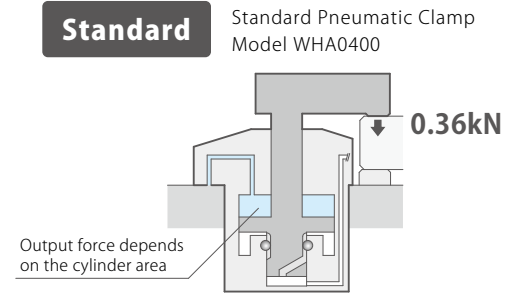
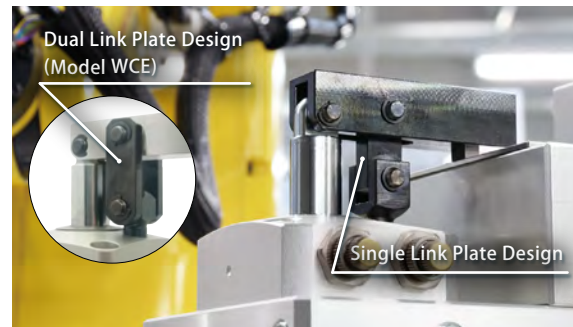


Spatter-Resistant Structure

Compared to dual link plate design (model WCE), the link mechanism of Welding Clamp is designed to be spatter resistant with single link plate.

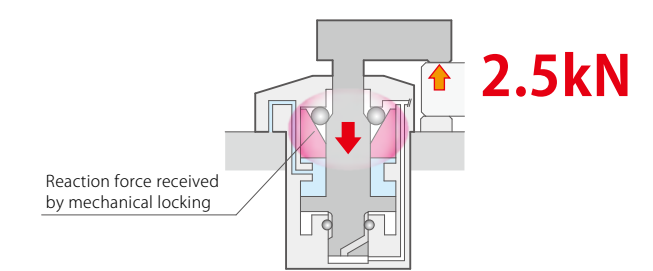
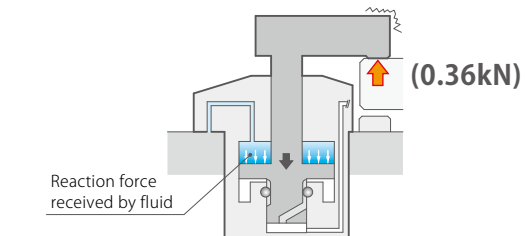
High Durability Case Study

The rod operates without failure even after exposed to spatter for a long time.



Powerful Clamping Force with Mechanical Lock

With mechanical lock and air pressure, it exerts approximately 3 times higher clamping force than the same size comparison cylinder.



Holding Force with Wedge Mechanism

Holding force is not the pressing force but the withstanding force to the reaction force. The powerful holding force enables high-load machining and high-accuracy machining.

※ Comparison of Cylinders with Piston Diameter φ40 (Air Pressure 0.4MPa, Lever Length 60mm)

Holding Force as Equal to Hydraulic Clamp

※ Machining results by our own.

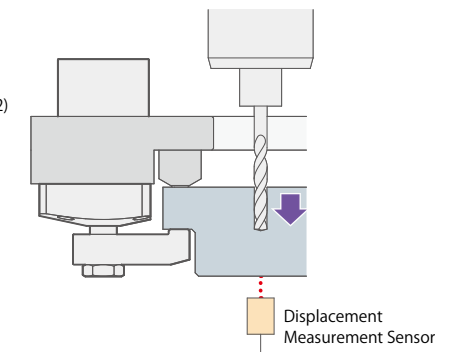
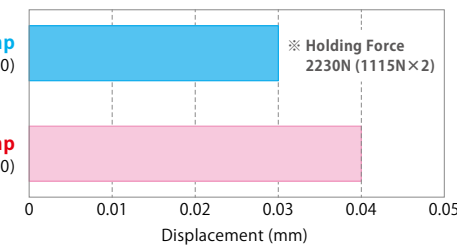
Displacement

【Machining Condition】

| | | | |
|----------------------|---------|----------------|---------------|
| Drill Diameter | 8.5 mm | Cutting Speed | 25 m/min |
| Main Axis Revolution | 936 rpm | Feed Speed | 0.100mm/rev |
| Workpiece Material | S45C | Clamping Force | 860N (430N×2) |

High-Power Pneumatic Clamp (Model WHG1000)

Hydraulic Clamp (Model LHA0360)



Lineup

High-Power Welding Swing Clamp

Model WHG



High-Power Welding Link Clamp

Model WCG



Application Example Video

Application example video of welding products is available on our website.



http://www.kosmek.co.jp/php_file/video_products.php?id=034&lang=2



High-Power Pneumatic Welding without

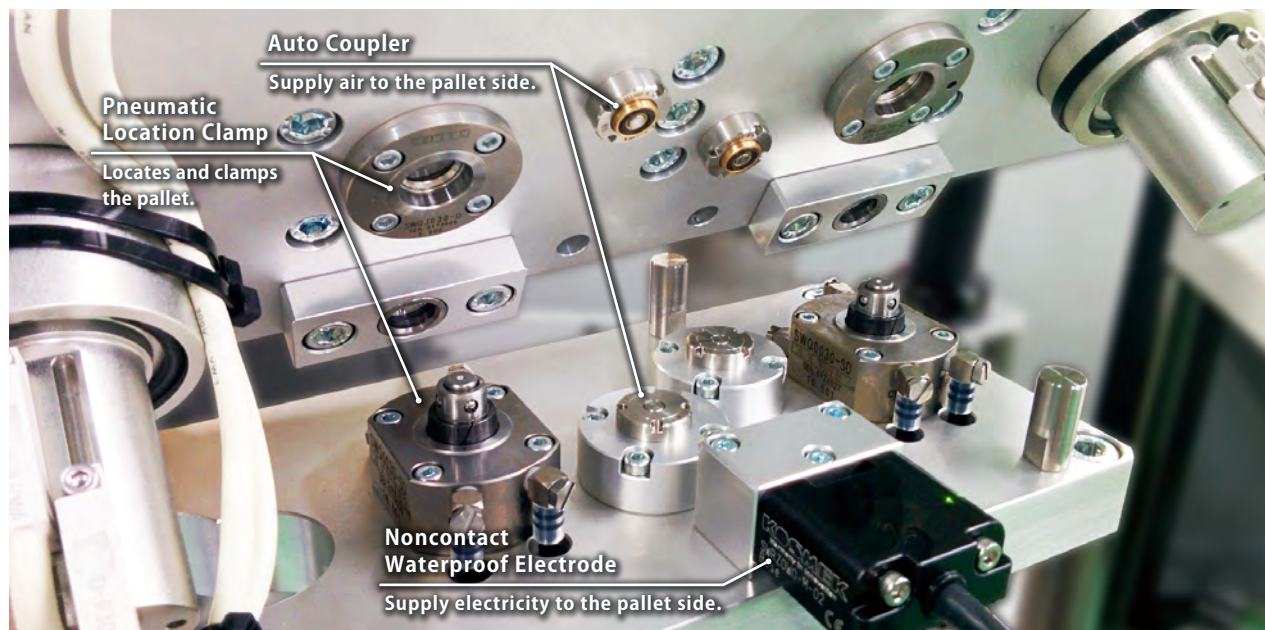
Clamp Enables Hydraulic Use



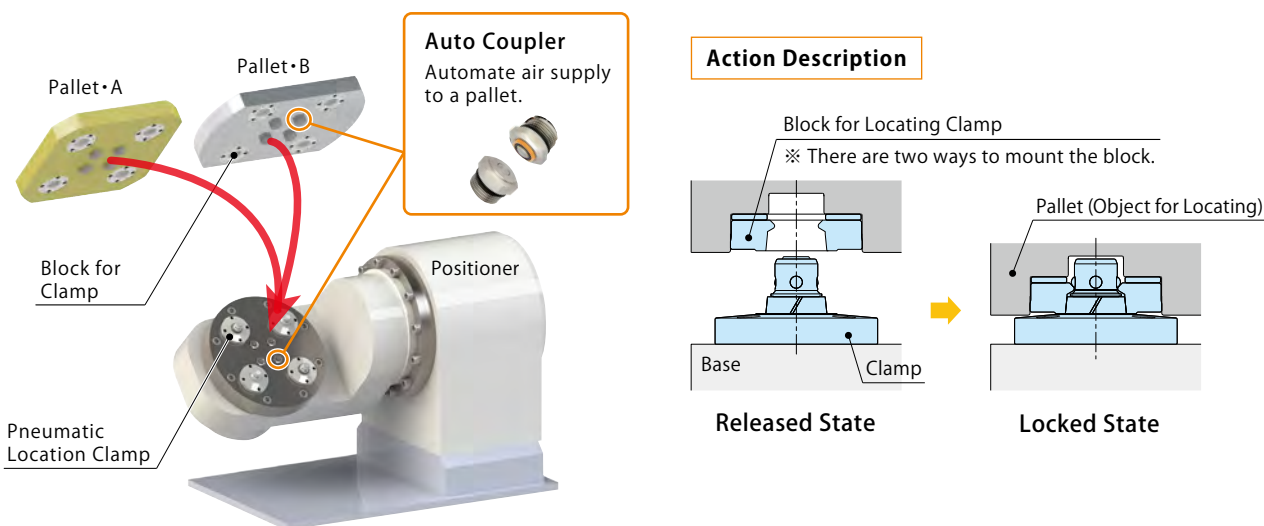
Pneumatic Location Clamp

Simultaneously locates and clamps the fixture on the positioner.

Locating Repeatability 3 μm



Fixture Setup on the Positioner



Pneumatic Location Clamp Series

| | | | |
|---|---|--|---|
| <p>Compact Pneumatic Location Clamp</p> <p>Compact model Suitable for setup change of small pallets and light fixtures.</p> <p>Model SWQ</p> | <p>Pneumatic Location Clamp</p> <p>With Contaminant Prevention Prevents cutting fluid and coolant of machine tools.</p> <p>Model SWT</p> | <p>High-Power Pneumatic Pallet Clamp</p> <p>High-Power model Clamping force equivalent to hydraulic clamp.</p> <p>Model WVS</p> | <p>Screw Locator</p> <p>Manual model Fixed with a bolt.</p> <p>Model VXF</p> |
|---|---|--|---|

Air Blow and Seating Check

Contaminants are removed by air blow. Seating surface is provided with the air hole, seating check is possible with a gap sensor.

Self Lock (Safety) Function
(Holding Force at 0MPa air pressure)

Maintains clamped state.

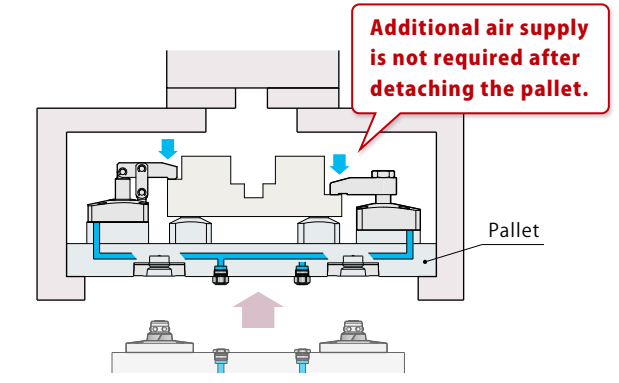
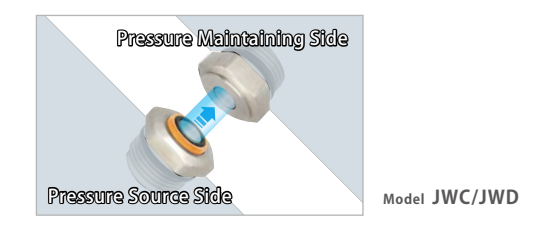
Even when air supply is cut off at locked state due to blackout, it will stay locked by self-locking spring.
※ More than the minimum operating air pressure is required for locating.

Screw Locator is also suitable for locating of compact dies.

Leakless Coupler

Air Pressure Maintained even after Detaching Fixture

Auto coupler automates air supply to a pallet on a positioner. Leakless coupler enables air clamp to remain air pressure on the pallet side by detaching under pressure.



Product Description Video

Product description video is available on our website.

http://www.kosmek.co.jp/php_file/video_products.php?id=050&lang=2

Setup
KAIZEN

For Welding Fixture
Reduce Setup Time

and Pallet Change
to Improve Productivity



Company Profile



KOSMEK LTD. Head Office

| | |
|-----------------|--|
| Company Name | KOSMEK LTD. |
| Established | May 1986 |
| Capital | ¥99,000,000 |
| President | Tsutomu Shirakawa |
| Employee Count | 270 |
| Group Company | KOSMEK LTD. KOSMEK ENGINEERING LTD. KOSMEK (USA) LTD. KOSMEK EUROPE GmbH KOSMEK (CHINA) LTD. KOSMEK LTD. - INDIA |
| Business Fields | Design, production and sales of precision products, and hydraulic and pneumatic equipment |
| Customers | Manufacturers of automobiles, industrial machinery, semiconductors and electric appliances |
| Banks | Resona bank, Tokyo-Mitsubishi bank, Ikeda bank |

Sales Offices

Sales Offices across the World

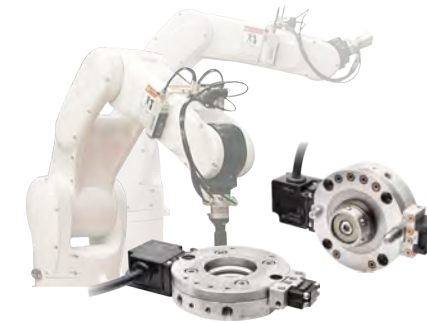
| | |
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| JAPAN HEAD OFFICE Overseas Sales | TEL. +81-78-991-5162 FAX. +81-78-991-8787 KOSMEK LTD. 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241 〒651-2241 兵庫県神戸市西区室谷2丁目1番5号 |
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| MEXICO REPRESENTATIVE OFFICE KOSMEK USA Mexico Office | TEL. +52-442-161-2347 Av. Santa Fe #103 int 59 Col. Santa Fe Juriquilla C.P. 76230 Queretaro, Qro Mexico |
| EUROPE SUBSIDIARY KOSMEK EUROPE GmbH | TEL. +43-463-287587 FAX. +43-463-287587-20 Schleppplatz 2 9020 Klagenfurt am Wörthersee Austria |
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| PHILIPPINES (Philippines Exclusive Distributor) G.E.T. Inc, Phil. | TEL. +63-2-310-7286 FAX. +63-2-310-7286 Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427 |
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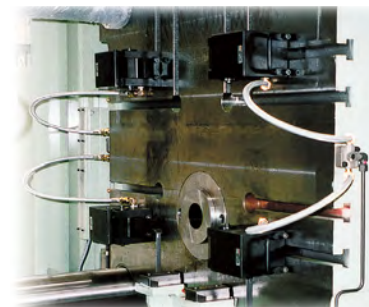
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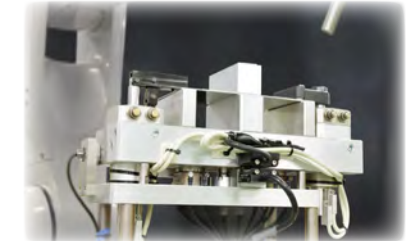
For Diecast Machines

Complete Catalog

For further information of products, please
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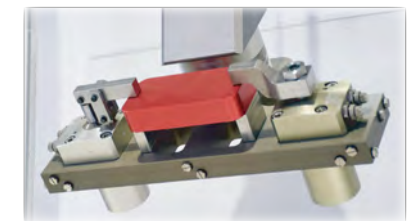
Scan the QR code for
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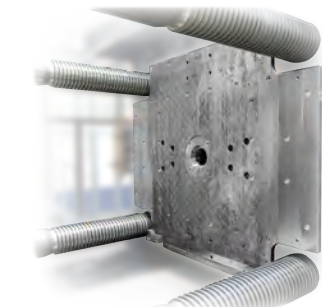
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- Specifications in this Leaflet are Subject to Change without Notice.



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