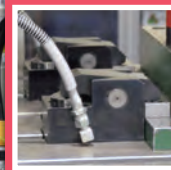


# KOSMEK

## Press Machine Related Products

### Press



Quick  
Die Change  
System

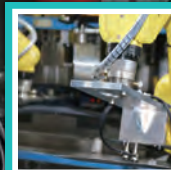


All-Pneumatic  
Die Change  
System

### Transfer



Press Load  
Monitor

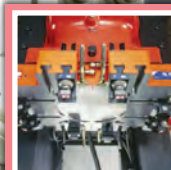


Robotic  
Hand Changer

### Welding



Welding  
Clamp



Printed  
Circuit Board  
Knockout Unit



# QUICK DIE CHANGE SYSTEMS



**1**


► P.05

**Hydraulic Die Clamp**



► P.04

**High-Power Pneumatic Die Clamp**



**2**

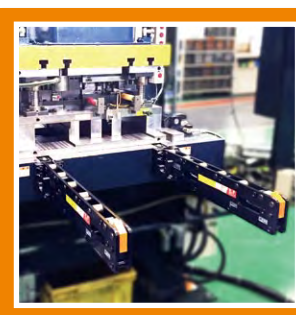
► P.12

**Hydraulic Die Lifter**



► P.03

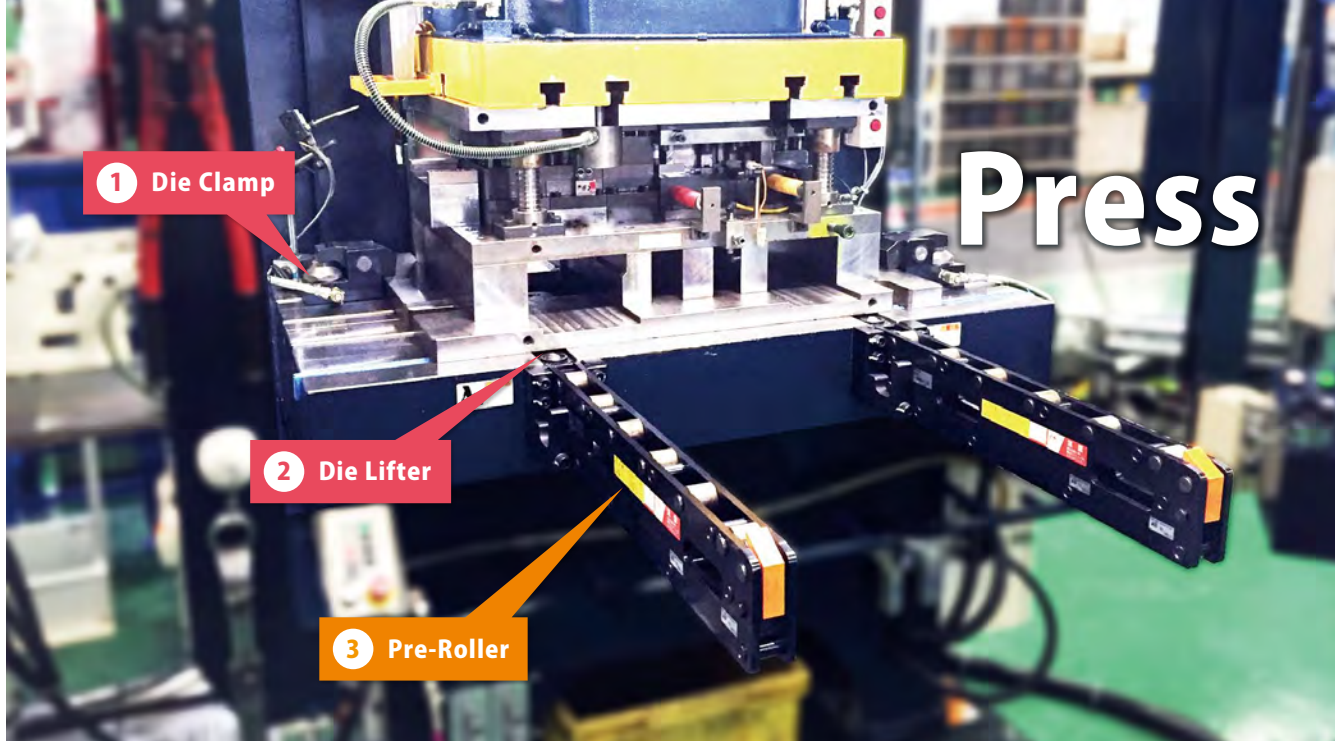
**Pneumatic Free Roller Lifter**



**3**

► P.13

**Pre-Roller**

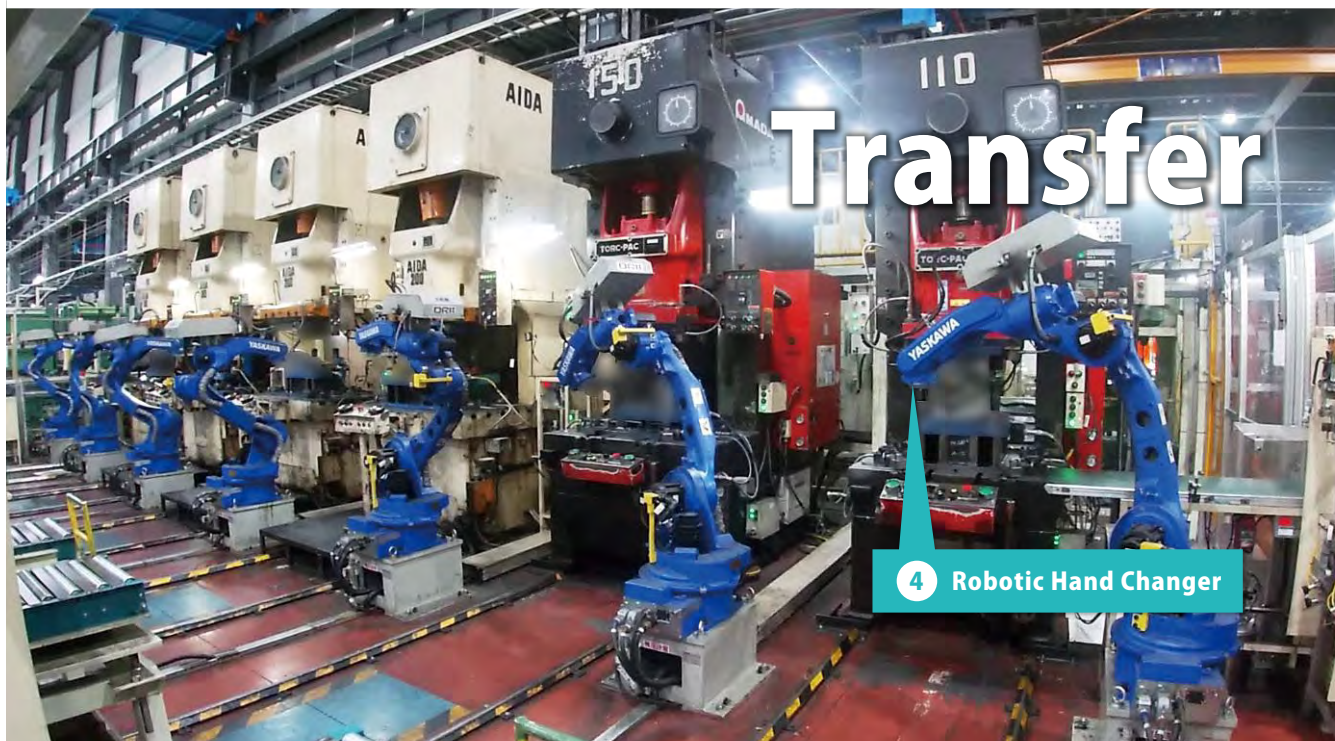


**1 Die Clamp**

**2 Die Lifter**

**3 Pre-Roller**

**Press**



**4 Robotic Hand Changer**

**Transfer**



**5 Welding Clamp**

**Welding**




► P.15

**Overload Protector**




► P.17

**Press Load Monitor**



► P.19

**Printed Circuit Board Knockout Unit**



**4**

► P.23

**Robotic Hand Changer**



**5**

► P.29

**Welding Clamp**

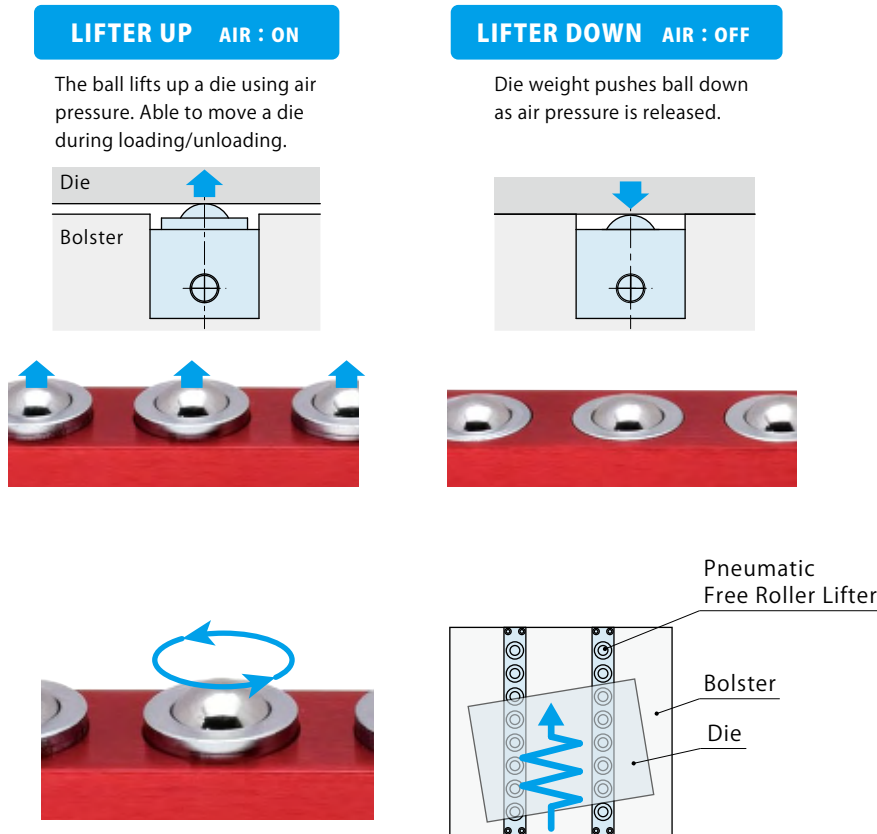


# Pneumatic Free Roller Lifter

**NEW** Newly added to the lineup.

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

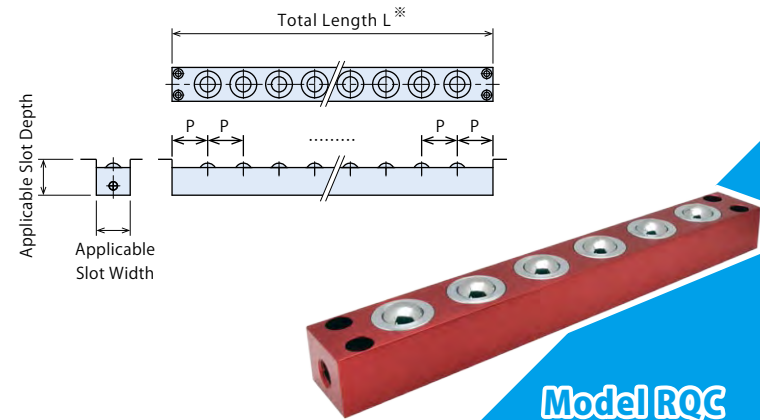
**The Ball  
Moves 360°  
Flexibly**



## 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 (39 options)	80~1200 (29 options)	100~1200 (23 options)
Number of Options	mm		

\* Total Length L can be selected in increments 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**

**Easier  
Maintenance**

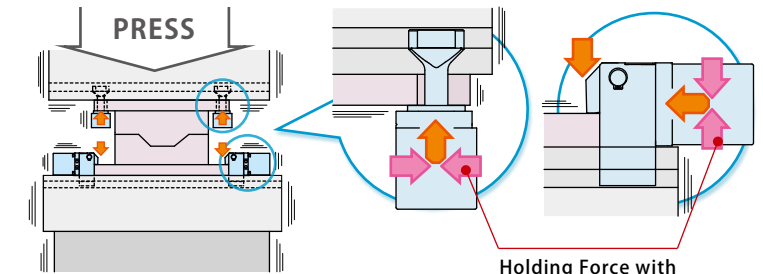
Drastically reduces the running cost as valves and other control devices are available on the market and easily replaced in case of trouble.

**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)

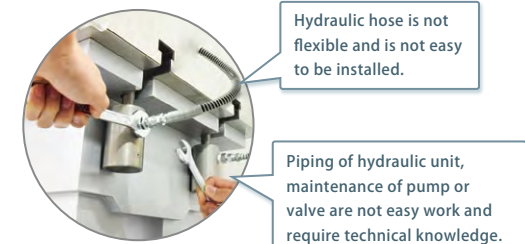


## Pneumatic System

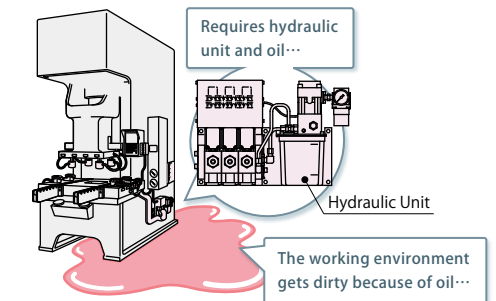
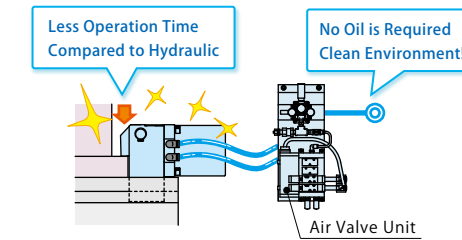


**Short Time • Low Cost Maintenance**

## Hydraulic System



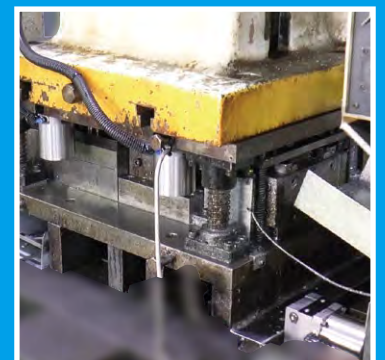
**Long Time • High Cost Maintenance**



**Die  
Change  
KAIZEN**

**Die Change with  
Clean • Energy Saving**

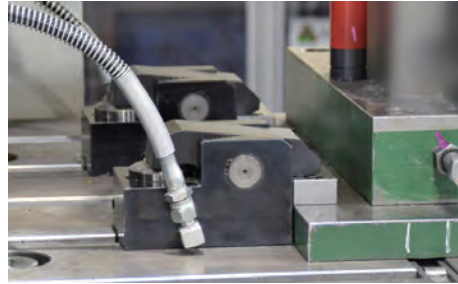
**All-Pneumatic System  
• Low Running Cost**



# Hydraulic Die Clamp Series

Best-Selling Series with a Wide Variety of Options

T-Slot Manual-Slide



T-Slot Automatic-Slide



Block-Fixed



Swing Clamp Rod



Application Example Video

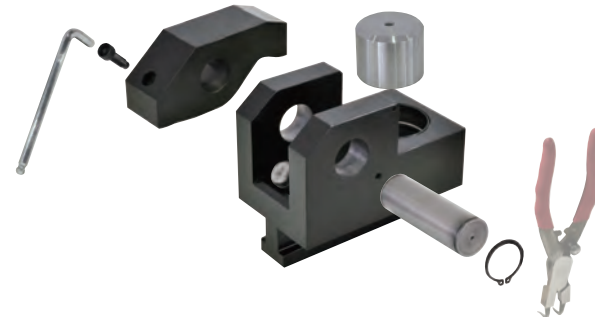
Best-Selling Hydraulic Die Change System  
Application example videos available on our website.



[http://www.kosmek.co.jp/php\\_file/video\\_products.php?id=019&lang=2](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

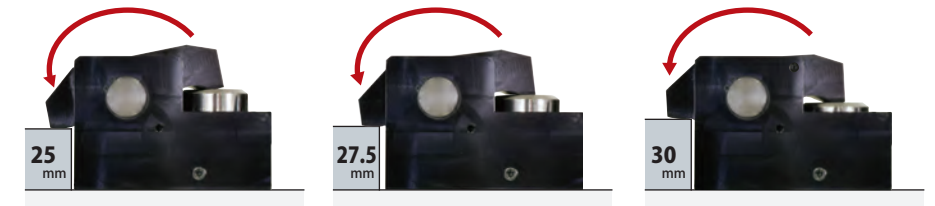
Allows for Variation in Die Clamping Thicknesses

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

## GBC Long Stroke Lever Clamp

No U-Cuts Required

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



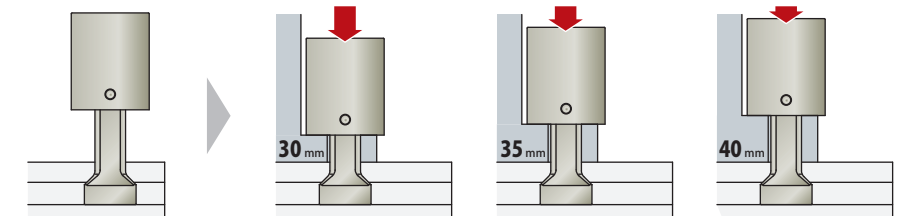
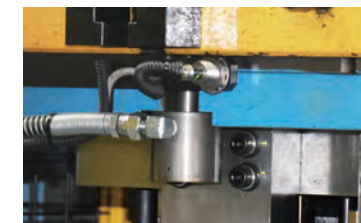
Specifications

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 <sup>3</sup> 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

( 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	16	25	40	63	100
Operating Pressure	MPa 25					
Withstanding Pressure	MPa 37					
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 <sup>3</sup> 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.

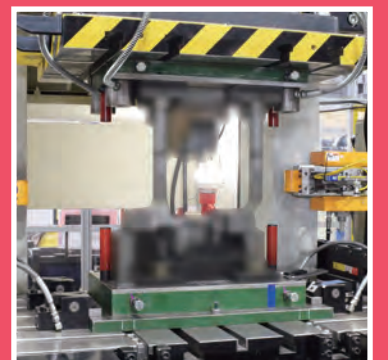
Interlock with Press Machine

for Safe Operation

Die  
Change  
KAIZEN

# Reduce the Die

# Change Time



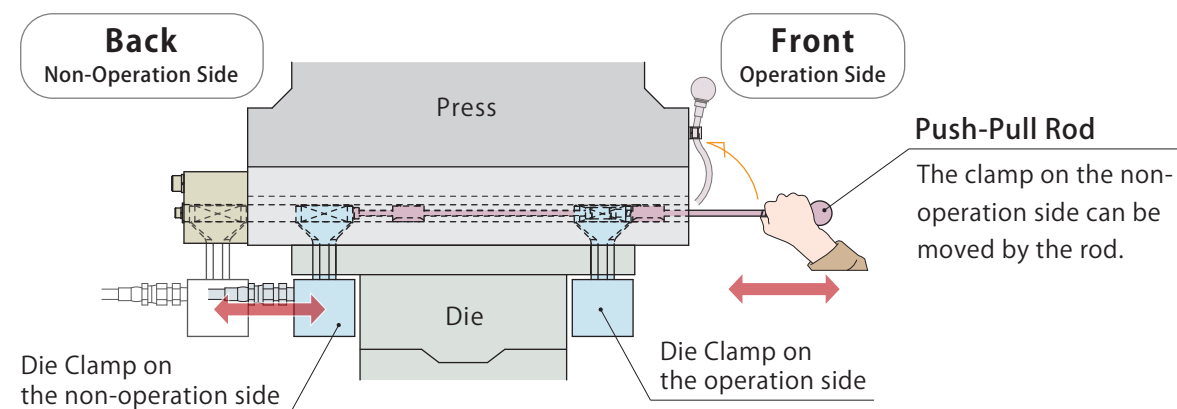


# Slide Rod Die Clamp for Easy Setup

Having a problem when moving die clamps?

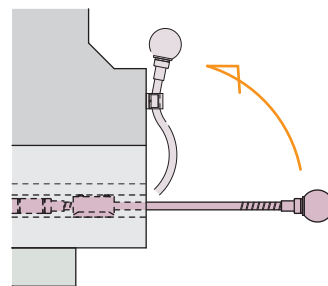
## Solved by Slide Rod Die Clamp!

Slide Rod model enables movement of the clamp on the non-operation side from the operation side.



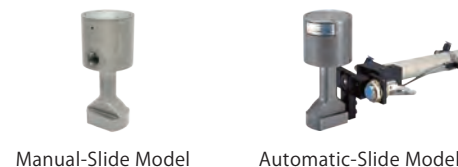
## Storable

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



## Low Cost

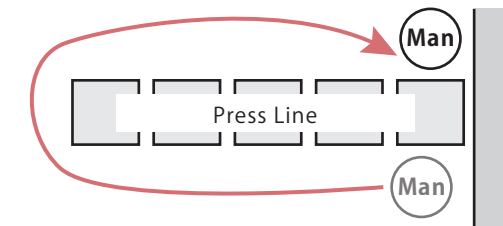
Less expensive compared to the automatic-slide model.



## Able to Solve the Following Problems

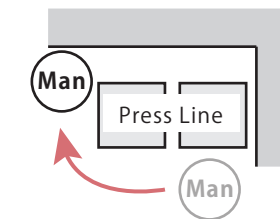
### Traveling Distance

After loading a die, it is necessary 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...

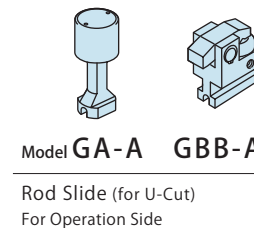


**Reduce the traveling distance, tiredness and setup time.**  
**Improve the safety (No need to work in a narrow space).**  
**Reduce the die change time.**

### Lineup

#### GA-A/B

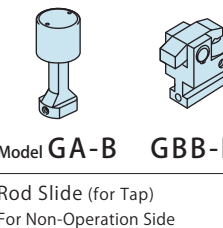
Piston Clamp  
(Clamps at U-Cut of Die)



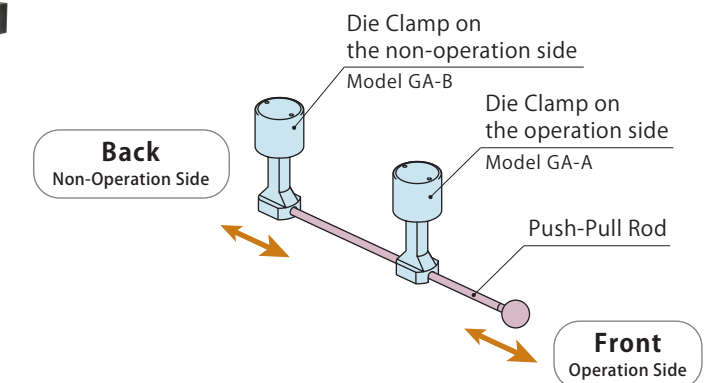
Model GA-A GBB-A  
Rod Slide (for U-Cut)  
For Operation Side

#### GBB-A/B

Lever Clamp  
(No U-Cuts Required)



Model GA-B GBB-B  
Rod Slide (for Tap)  
For Non-Operation Side

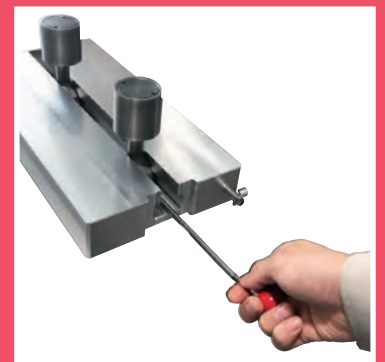


※ Please contact us for applicable clamping force.

Die  
Change  
KAIZEN

Shorter Traveling  
**Tiredness and**

Distance reduces  
**Setup Time**





# Swing Rod Clamp for Upper Die

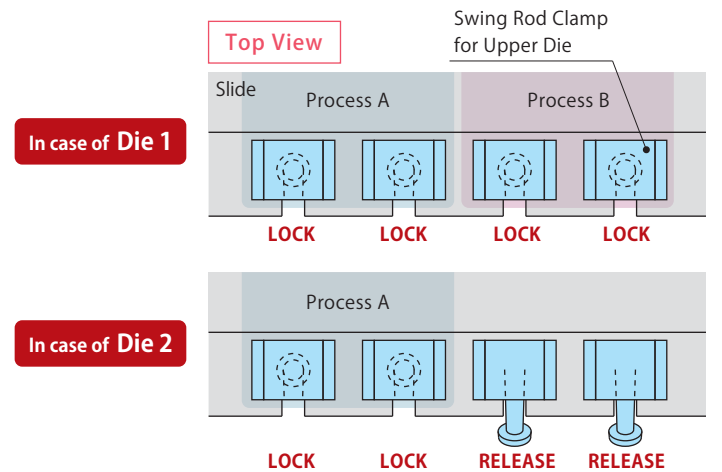
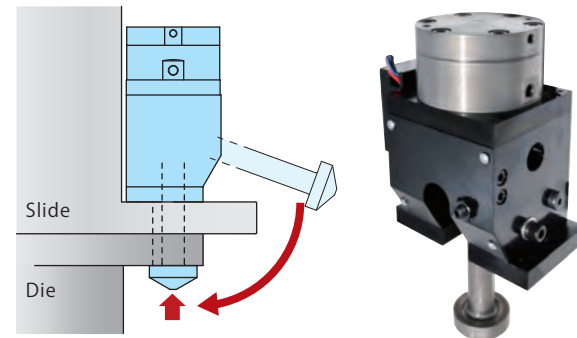
The swing rod retracts during die change.

Special Product

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

Withstands vibration  
even at released state

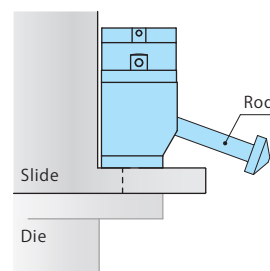
Sometimes a transfer press machine is operated with some clamps released depending on the number of processes. Kosmek Swing Rod Clamp is able to withstand the vibration of the press machine even in a released state.



In case of Die 2, clamps can be at released state during production.

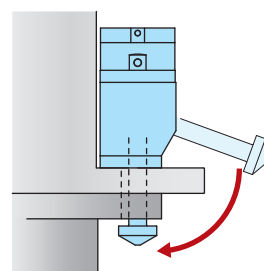
Action Description

RELEASE Release Pressure : ON  
Lock Pressure : OFF

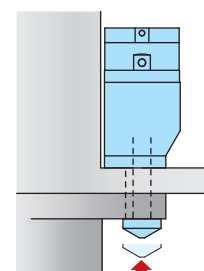


The rod is retracted during die change.

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.

Die  
Change  
KAIZEN

Withstands Vibration  
Swing Clamp

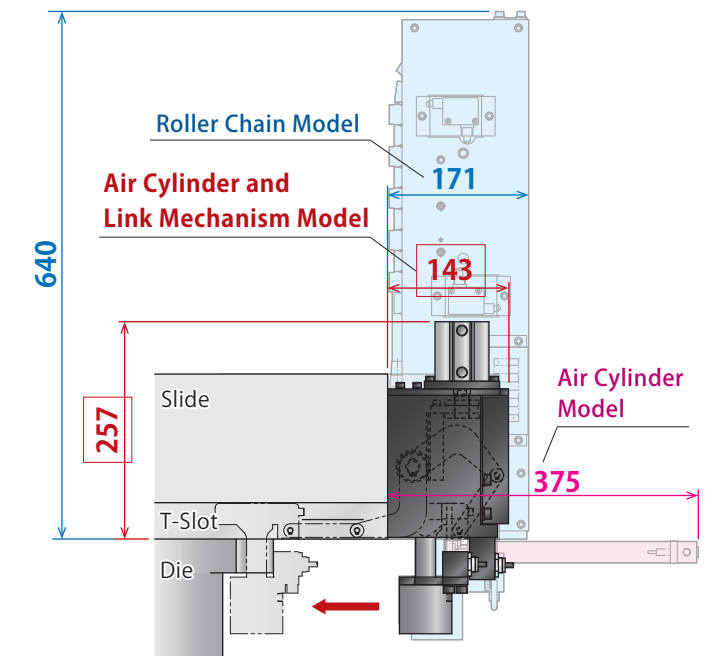
# Link type Automatic-Slide Clamp

Compact Automatic-Slide Clamp

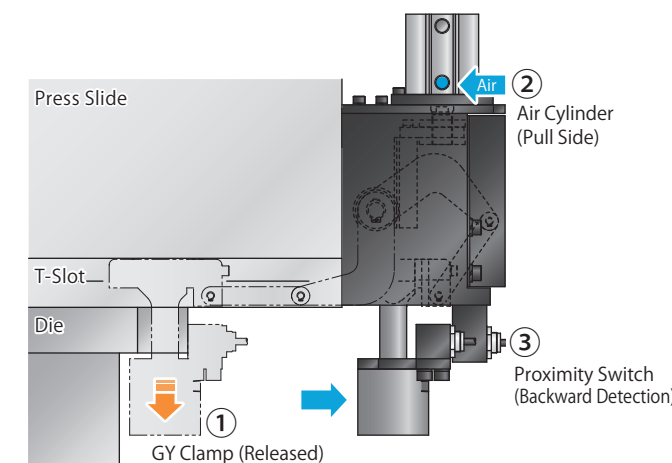
Special Product

Projection 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.

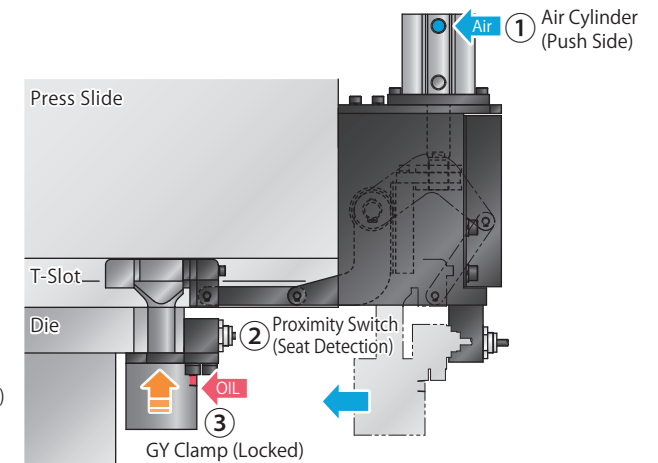


RELEASE



- 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).

of Press Machine  
for Upper Die





# Hydraulic Unit with Large Flow Pump

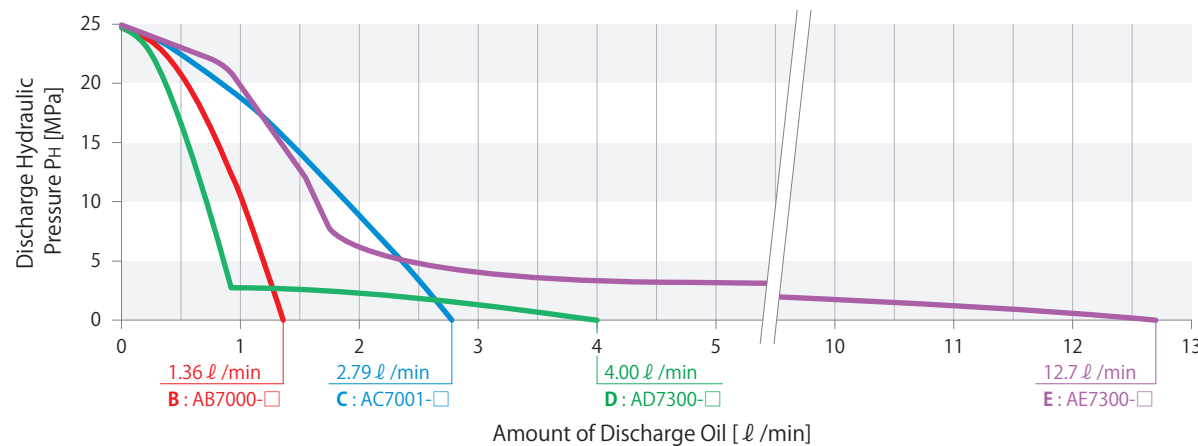
Large flow pump to increase operating speed of hydraulic clamps.

## Newly-Developed Large-Flow Pump to Reduce Operation Time by 50%※!

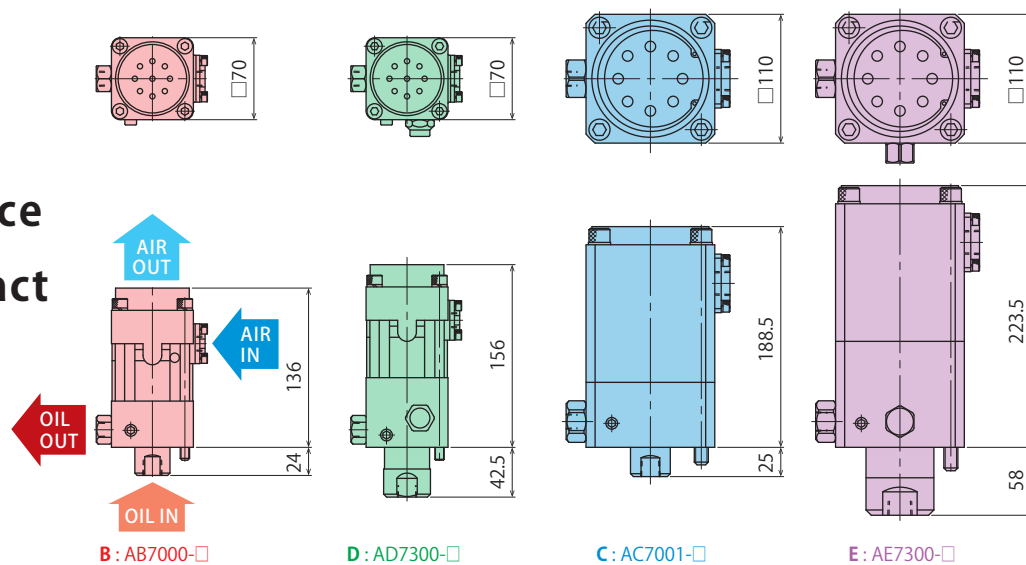
※ It varies depending on conditions of piping path and others.



Pump Performance Curve



High Performance and Compact



# Hydraulic Die Lifter

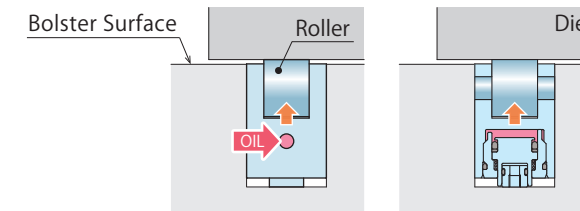
Easy to move a die to the bolster with rollers on the die lifter.



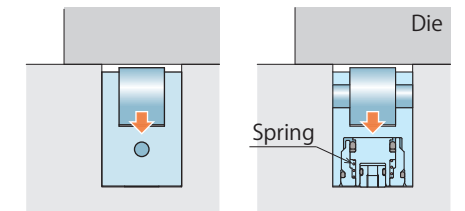
Action Description

LIFTER UP STATE

LIFTER DOWN STATE



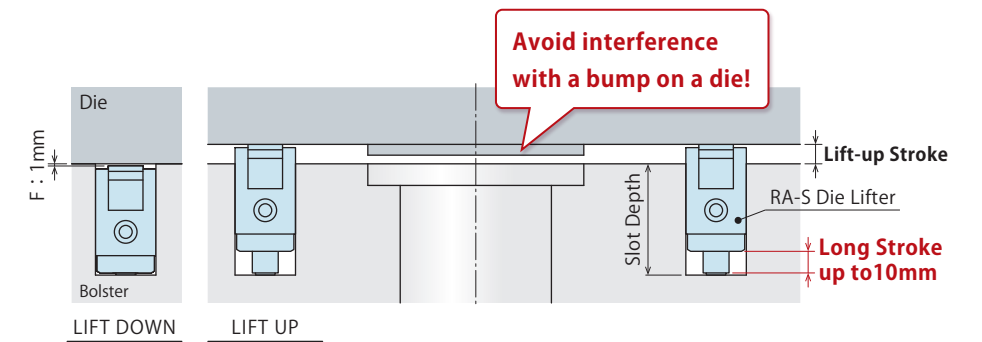
Die lifter lifts up by supplying hydraulic pressure to hydraulic port. The roller ascends above the bolster surface and the die can be smoothly moved due to the roller. Powerful lifting force to lift up the die.



Die lifter moves down by spring force when hydraulic pressure is released. The roller descends under the bolster surface and the die contacts the bolster.

## 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

Lift-up Stroke : up to 10mm



Specifications

Model No.	RA0280		RA0500		RA0800	
	-S1	-S2	-S1	-S2	-S1	-S2
Applicable Slot Width	28 <sup>+0.25</sup> <sub>0</sub>	52 <sup>+0.25</sup> <sub>0</sub>	50 <sup>+0.25</sup> <sub>0</sub>	65 <sup>+0.25</sup> <sub>0</sub>	80 <sup>+0.25</sup> <sub>0</sub>	91 <sup>+0.25</sup> <sub>0</sub>
Applicable Slot Depth (In case F = 1 mm)	46.5 <sup>+0.5</sup> <sub>0</sub>	52 <sup>+0.5</sup> <sub>0</sub>	58 <sup>+0.5</sup> <sub>0</sub>	65 <sup>+0.5</sup> <sub>0</sub>	85 <sup>+0.5</sup> <sub>0</sub>	91 <sup>+0.5</sup> <sub>0</sub>
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 S5400		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



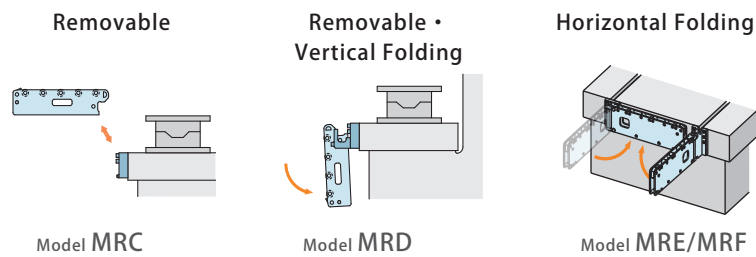


# Pre-Roller

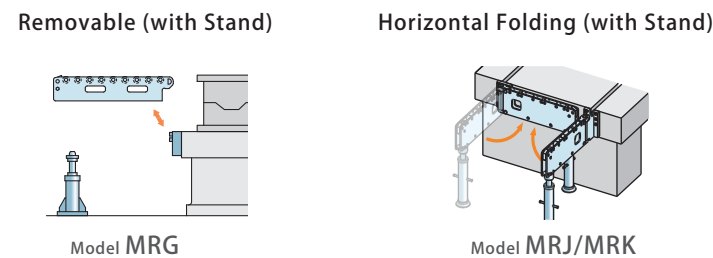
Broad Line-up of Pre-Rollers



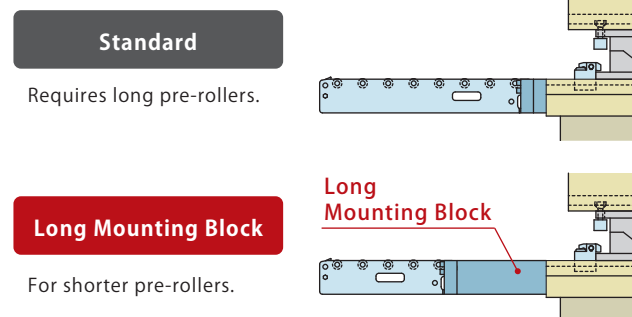
**A Variety of Storing Methods!**



**Stand Available for Longer Pre-Rollers!**



**Long Mounting 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											●	●	●	●	●	●		

(mm)

# Longer Pre-Roller

Die Travel Length up to 2m



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

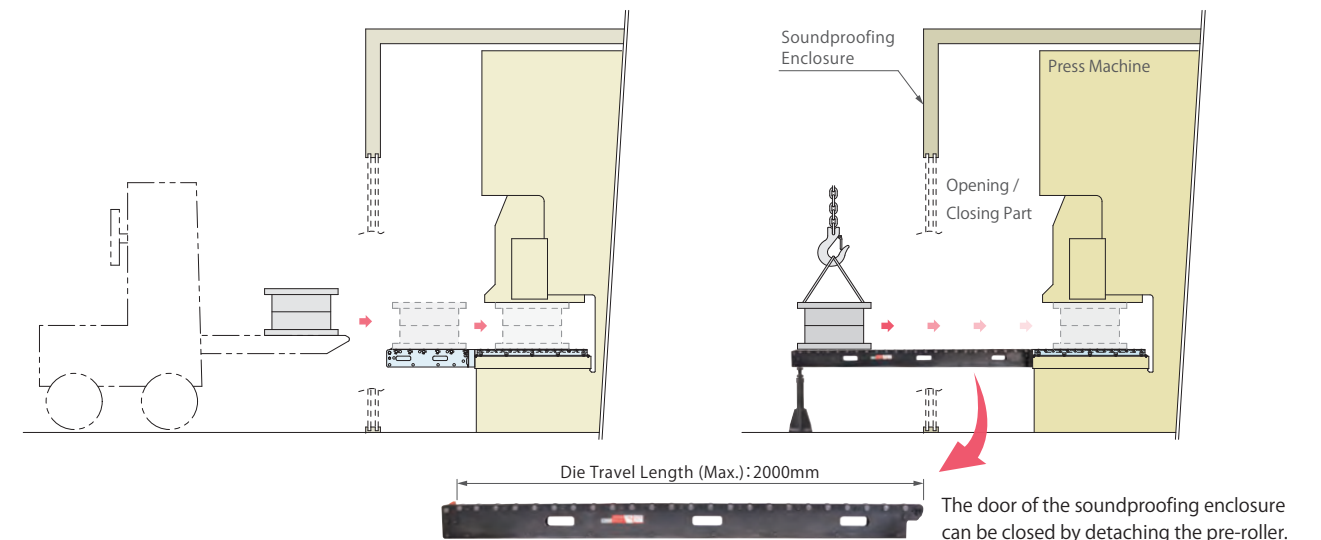
KOSMEK offers Pre-Rollers with die travel length up to 2m as a standard lineup. With the use of soundproofing enclosure, operating range of a crane is limited. However, the longer pre-rollers enable the crane to transfer the die outside the soundproofing enclosure.

## 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.

## Longer Pre-Roller

With a factory crane, it is possible 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.

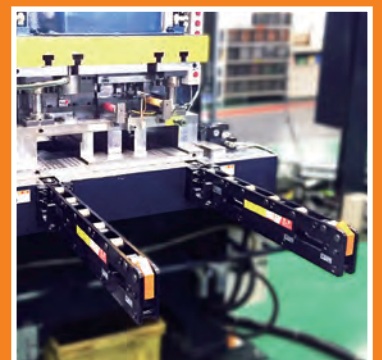


The door of the soundproofing enclosure can be closed by detaching the pre-roller.

**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 sending 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.

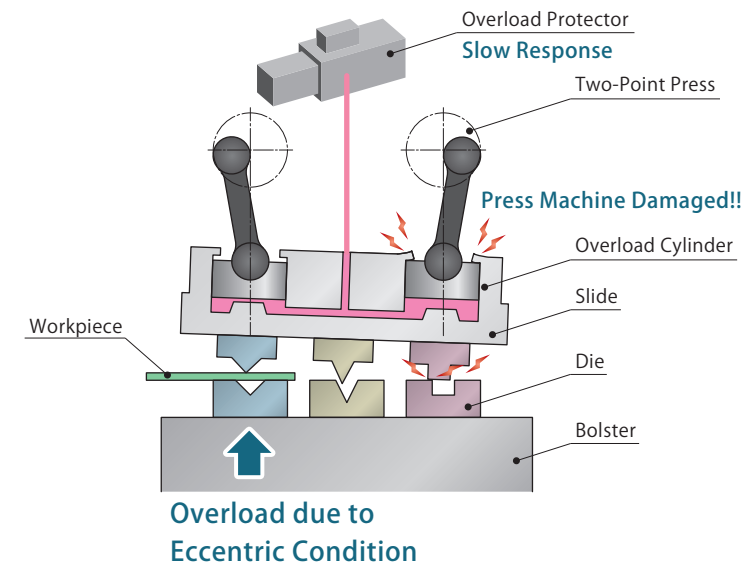
### Easy to Recover

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

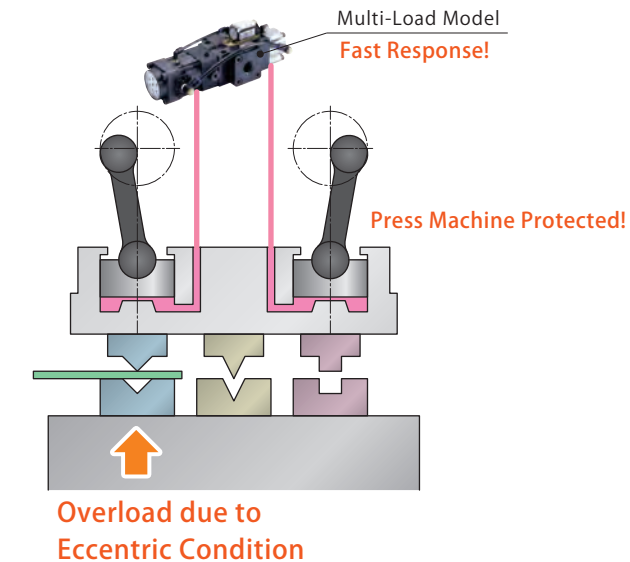


## Problem

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.

Quality  
KAIZEN

Prevent Breakage of  
**Quick Response**

Dies and Machines  
**to Overload**



# Press Load Monitor for Better Quality

Having trouble with quality control of pressed products?

## Press Load Digital Display!

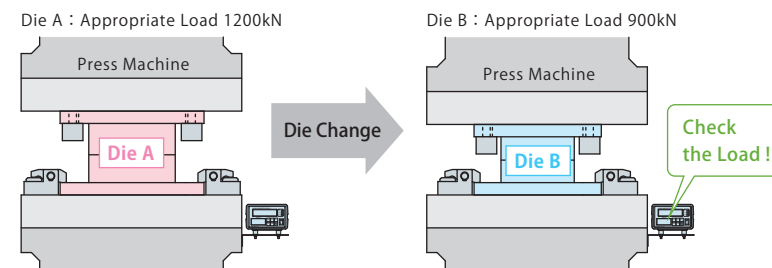
Displays the press load digitally based on the pressure change of the overload cylinder.



## 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.

In case of changing to a die with different appropriate load

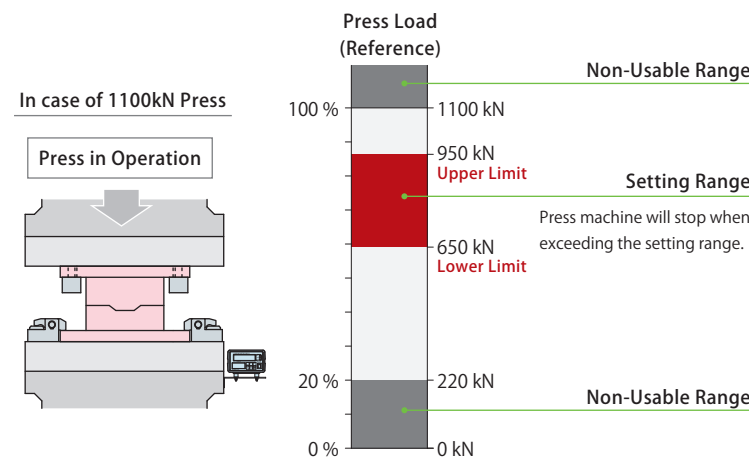


## Quality Control by Monitoring Changes!

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.



### 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!**



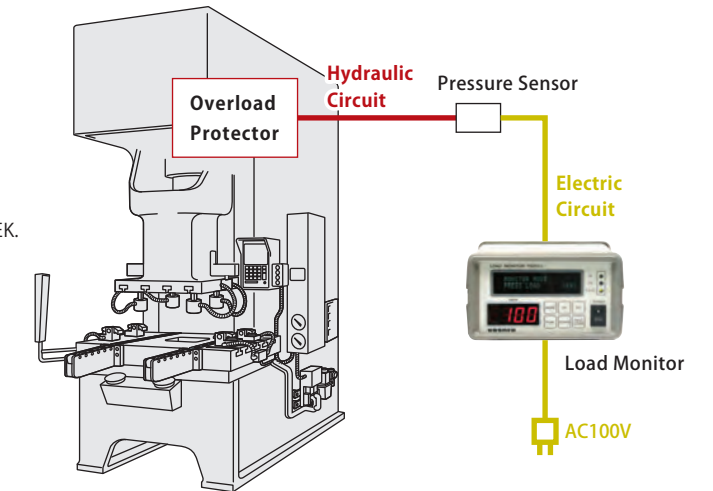
## Easy Installation!

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

Quality  
KAIZEN

Monitoring of Changes in  
**Accuracy Control**

Press Load Enables  
**of Products**





# Printed Circuit Board Knockout Unit

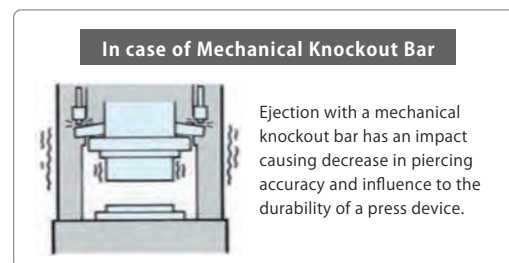
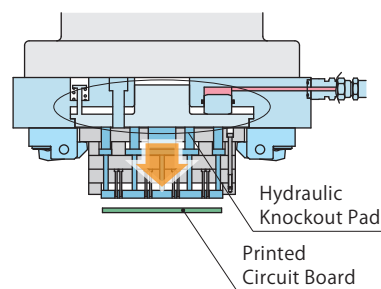
Having a problem with punching droops and burrs of printed circuit board pin hole?

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 allows the design of wide pads.
- Ultra-thin plate allows 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.

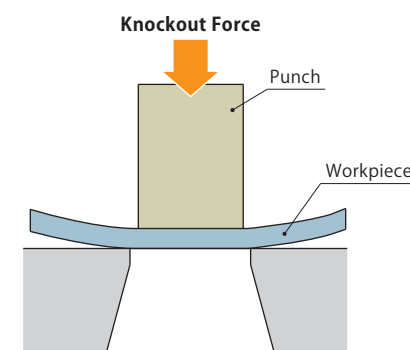
#### Application Example

High-accuracy stamping of soft material such as aluminum and brass is possible!

Combining with a servo press allows for higher accuracy.

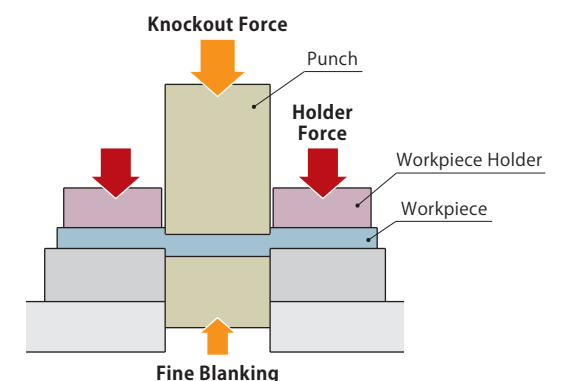
#### Standard Stamping Press

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

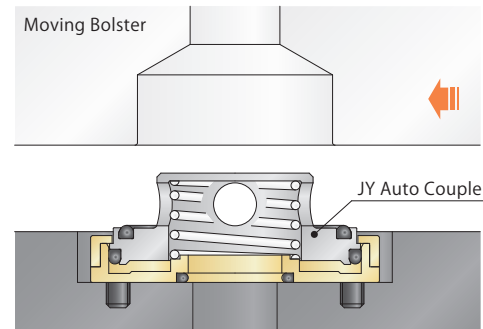
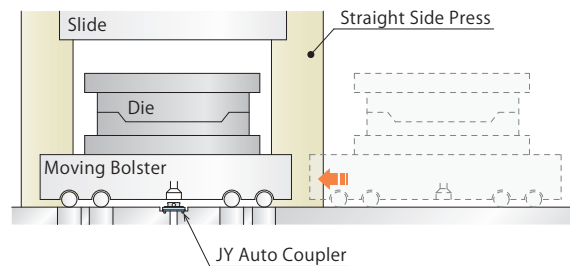
Automation of Fluid Circuit Connection

**Special Product**

## Automatic Coupler Connection to Supply Fluid to the Moving Bolster

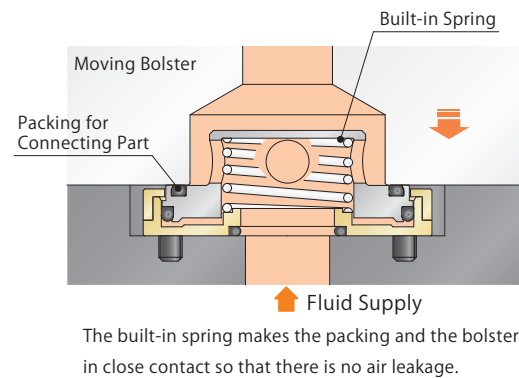
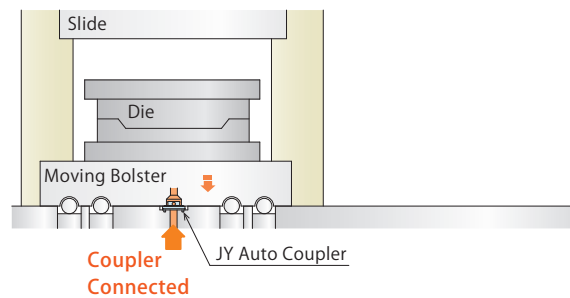
### Disconnected State

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 <sup>2</sup>	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
		0.7 MPa
	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 to the 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**

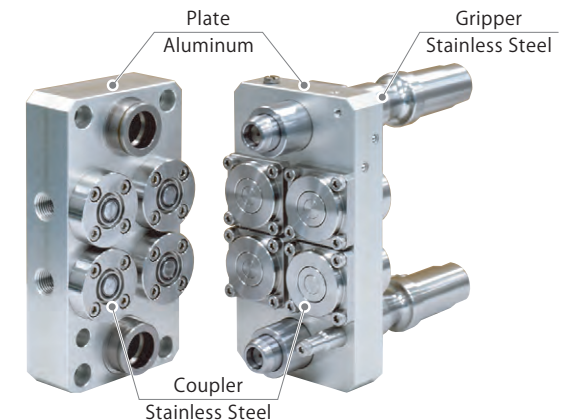
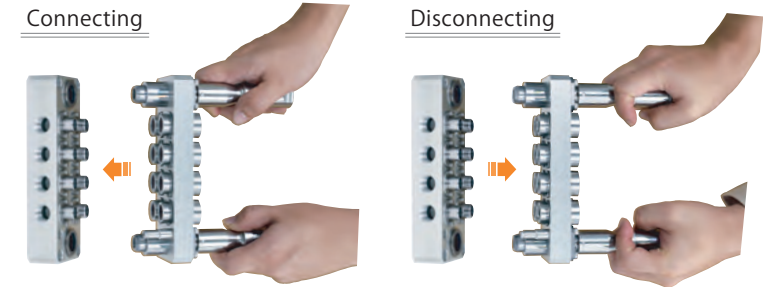
# Multi Coupler

Connect and Disconnect Multiple Couplers at Once

## What is a Multi Coupler ?

### A Device to Connect Multiple Couplers in a Single Operation

Pilot air can be continuously connected because the coupler connecting valve opens and closes with the connection and disconnection of Multi Coupler JMC (with check valve). No switching valve for opening/closing coupler connecting valve is required.

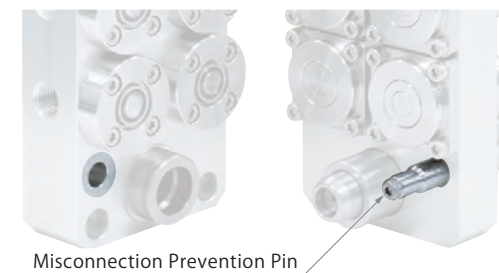


### Anti-Corrosion Material

Stainless steel coupler and gripper, and aluminum plate allow for anti-corrosion. Highly resistant to air and process water.

### Misconnection Prevention

Misconnection Prevention Pin prevents connection failure.



**Model JMC**  
(with Check Valve)

**Model JMD**  
(without Check Valve)

**Die Change  
KAIZEN**

**Customer Satisfaction**  
**Automate Fluid**

**Improved!**  
**Circuit Connection**



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

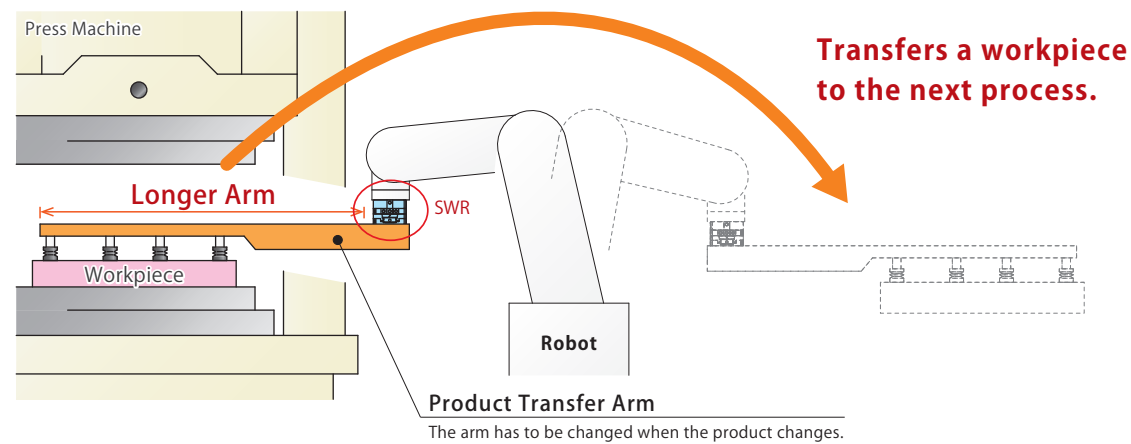


# Robotic Hand Changer

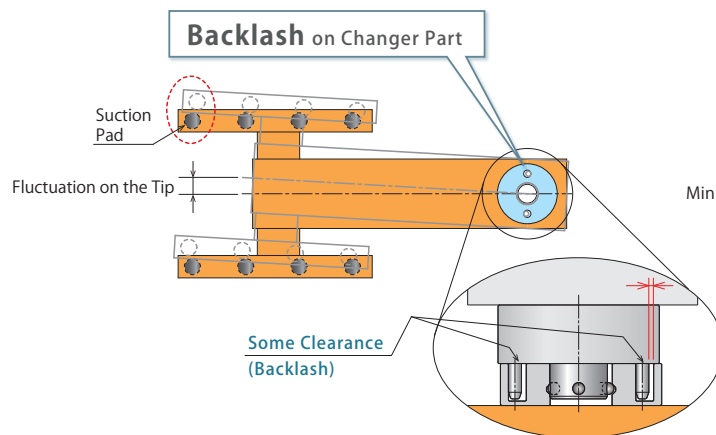
The World's Only Hand Changer with No Backlash

## Transfer Arm Change with High Accuracy

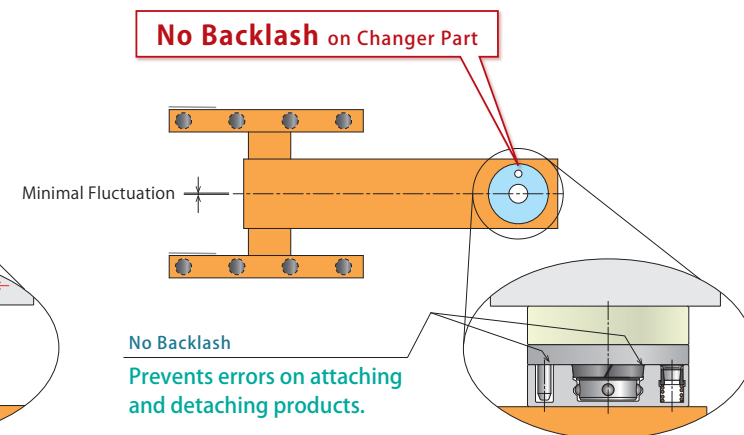
Zero-Backlash Robotic Hand Changer prevents fluctuation on the arm tip and maintains high accuracy even when transferring a longer arm.



### Standard Tool Changer



### KOSMEK Robotic Hand Changer



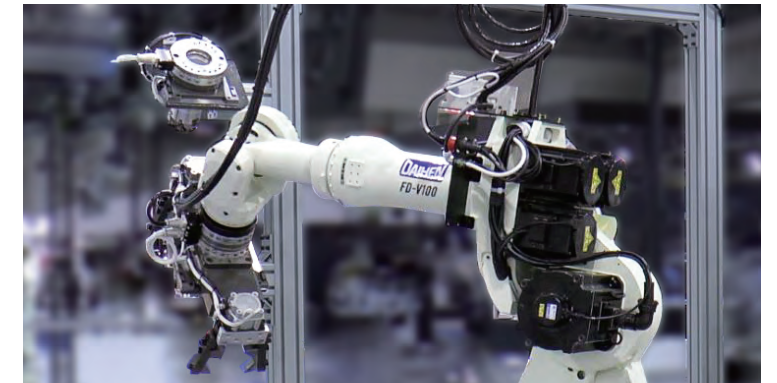
## Hand Change for Gantry Loader

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



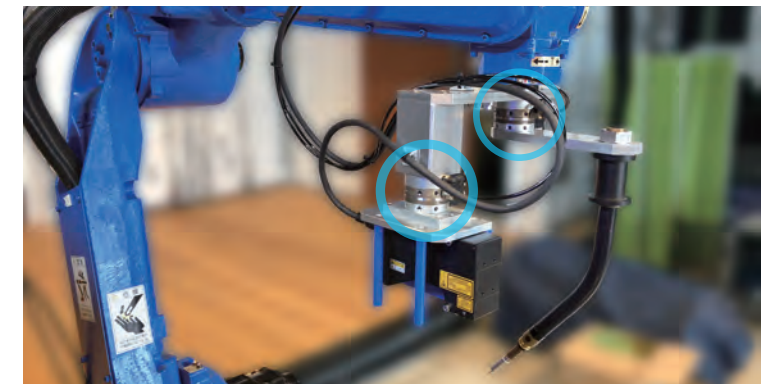
## Transfer Hand Change for Welding Workpieces

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



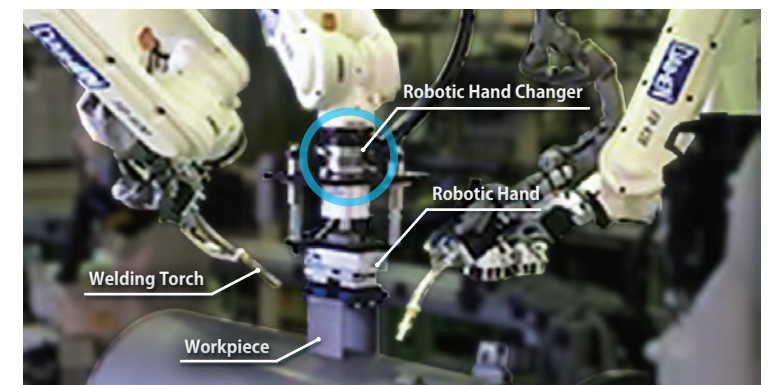
## Changing of Welding Torch and Welding Vision Camera

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

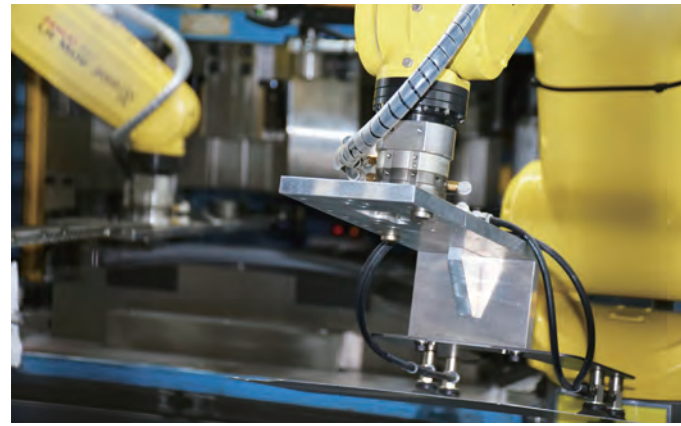
# Zero-Backlash Transfer Arm Change

# Hand Changer with High Accuracy





## KOSMEK Exclusive Non-Backlash Mechanism

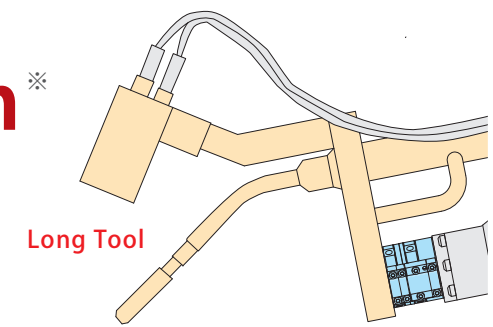


## Secures the Aimed Position

Repeatability when Connected :  **$3\mu\text{m}$** ※

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  $5\mu\text{m}$  for SWR0010 (0.5kg ~ 1kg payload model).

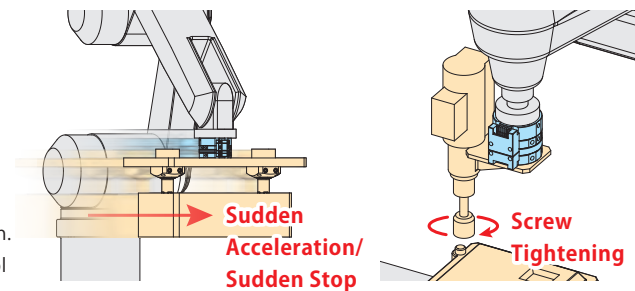


## 24-Hour Continuous Operation is Possible with

## 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  $3\mu\text{m}$  repeatability even after 1 million cycles.



## A Broad Lineup of Robotic Hand Changers



from 0.5kg Payload → to 360kg Payload

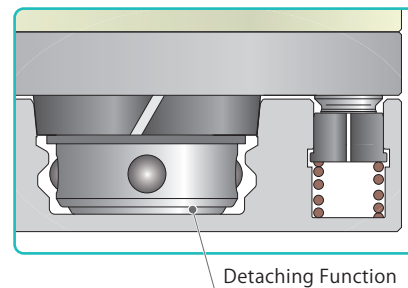
Applicable Payload	0.5 ~ 1 kg	1 ~ 3 kg	3 ~ 7 kg	7 ~ 12 kg	12 ~ 25 kg	25 ~ 50 kg	50 ~ 75 kg	75 ~ 120 kg	120 ~ 360 kg
Recommended Payload	0.5kg	3kg	7kg	12kg	25kg	50kg	75kg	120kg	230kg
Model No.	SWR0010	SWR0030	SWR0070	SWR0120	SWR0250	SWR0500	SWR0750	SWR1200	SWR2300

## A Variety of Electrode/Air Joint Options

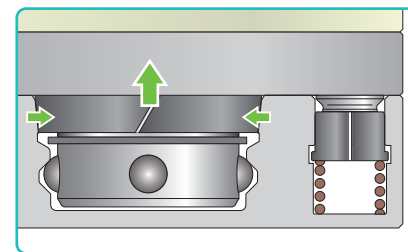


### Action Description

Before Connecting



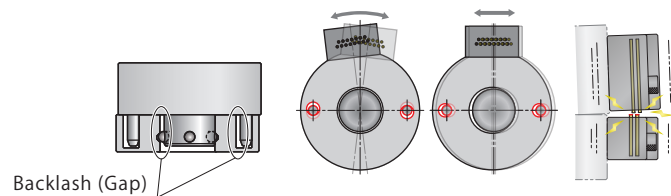
When Connected



### Standard Tool Changer

### Backlash of a Tool Changer Causes Electrode Errors

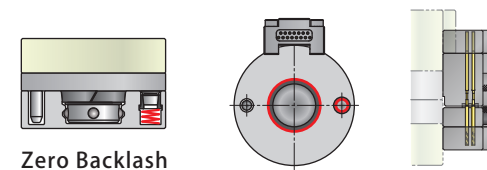
Noise and Continuity Failure due to Friction of Contact Probe



### KOSMEK Robotic Hand Changer

### Dual Contact to Connect with Zero Backlash

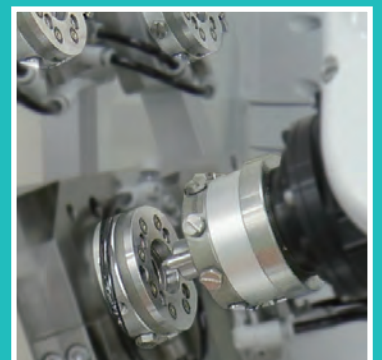
Kosmek hand changer with no backlash prevents electrode errors. ⇒ No noise occurs.



Transfer  
KAIZEN

The World's  
**Zero-Backlash**

Only  
**Tool Changer**



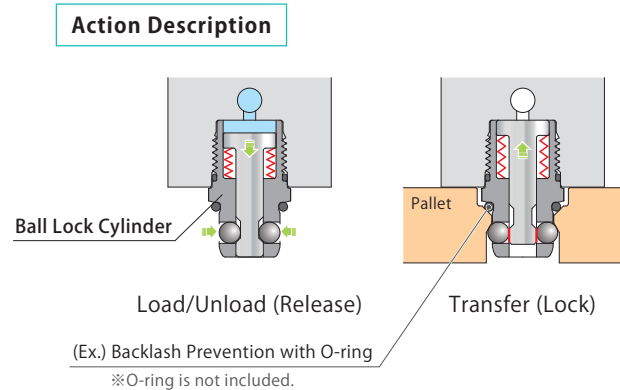
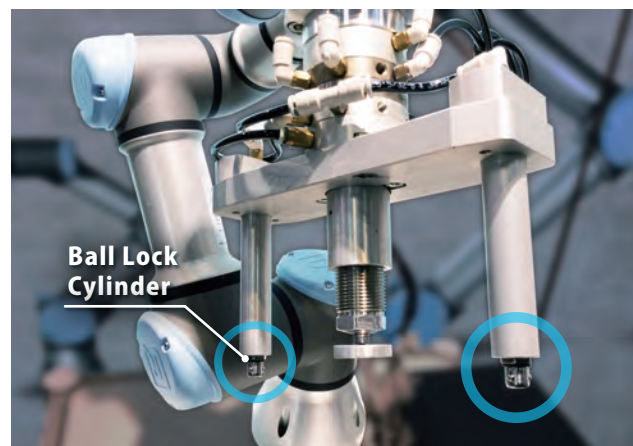
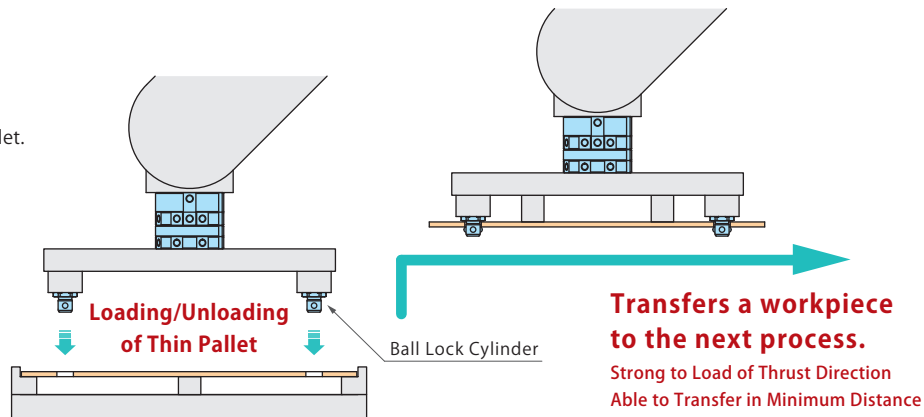


# Light & Compact Robotic Hands

## KOSMEK Exclusive Internal Chuck Series

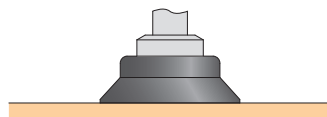
### Ball Lock Cylinder

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



### Suction Pad

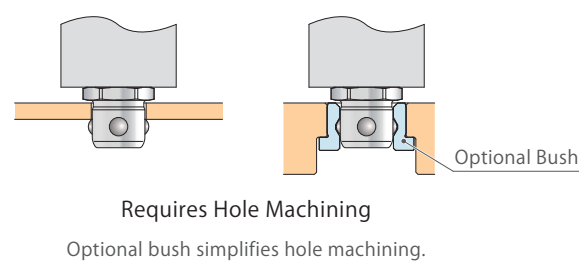
Limited Speed  
Low Suction Force



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



## 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.

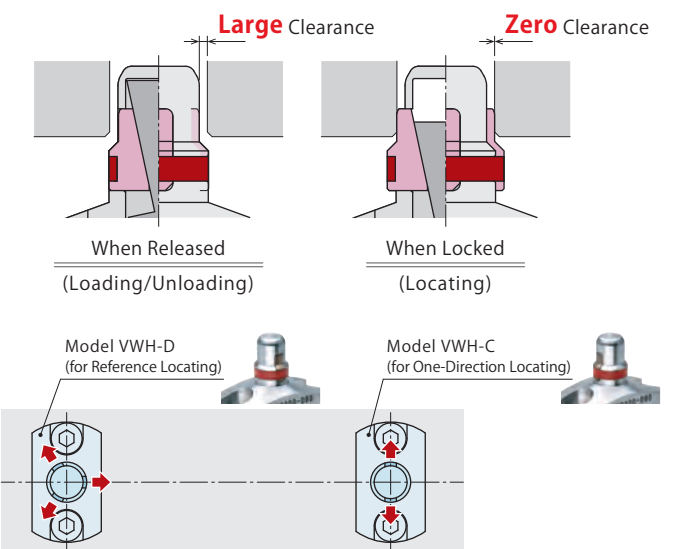
Both smooth loading/unloading and high-accuracy locating possible. KOSMEK expansion locating pin allows for stable automation by absorbing variations of reference hole diameter and hole distance and locating with high accuracy.

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

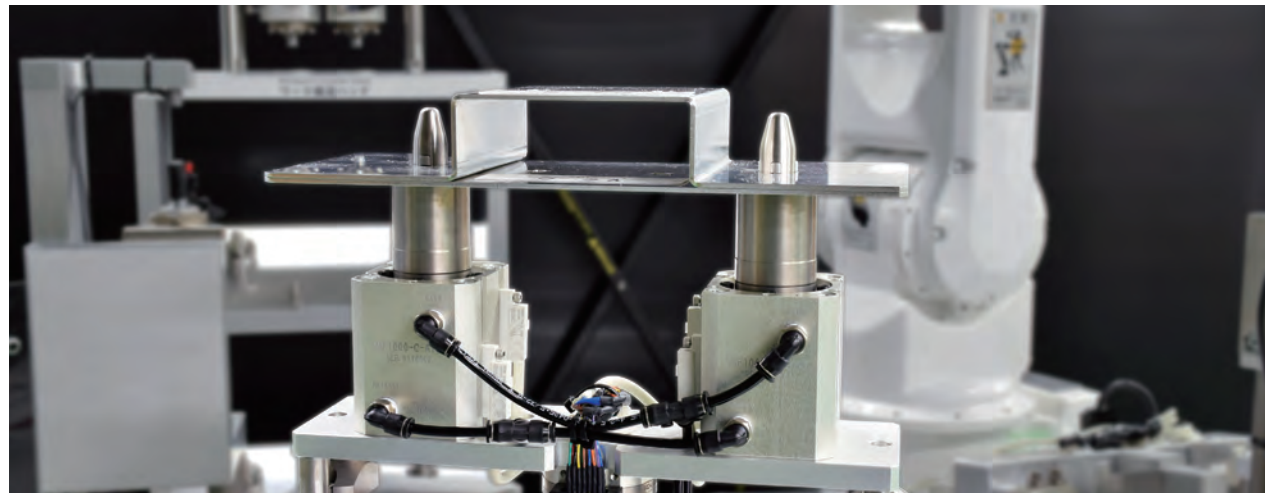
KOSMEK Exclusive  
Much Faster and

Internal Chucks for  
More Secure Transfer

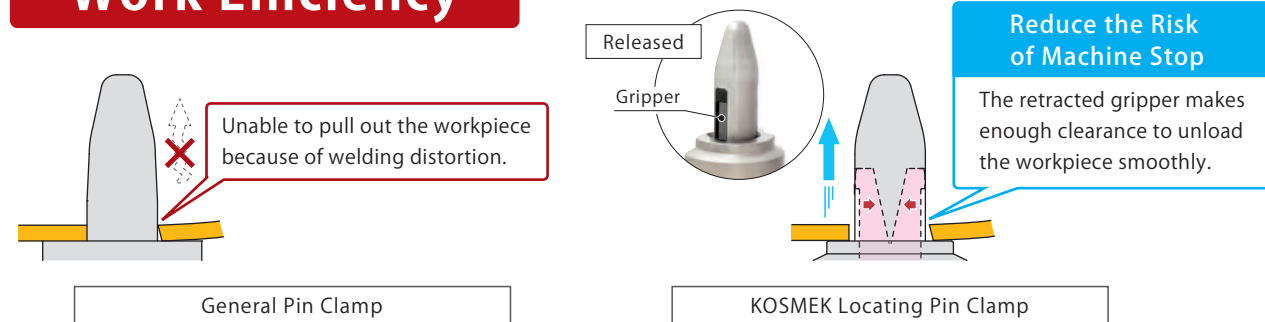


# Welding Locating Pin Clamp

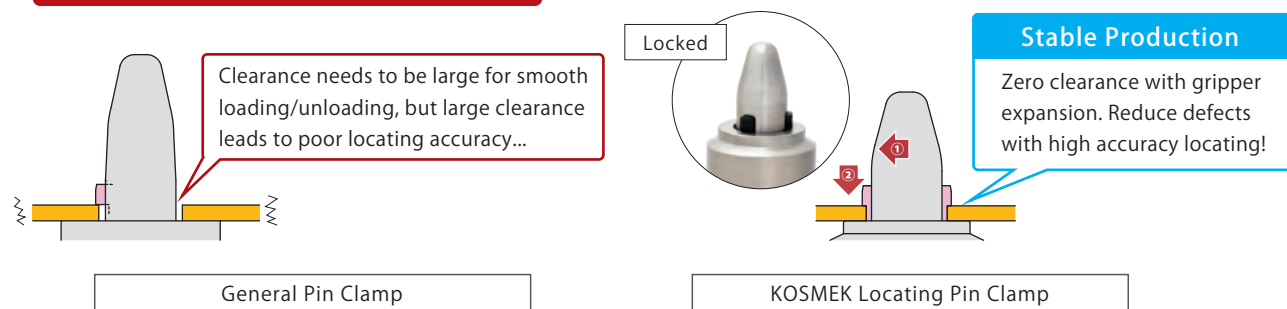
Locates and clamps simultaneously using workpiece holes.



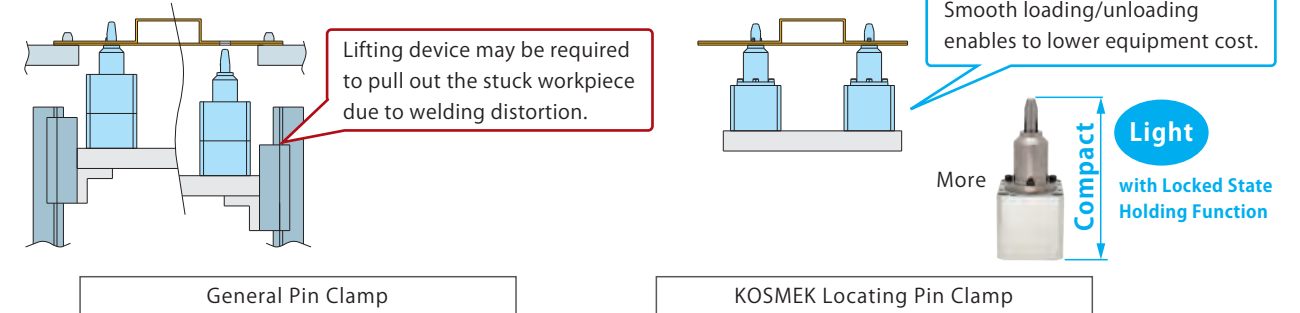
## Work Efficiency



## Stable Clamping



## Lower Fixture Cost



### Action Description



High-Accuracy Locating  
Locating Repeatability

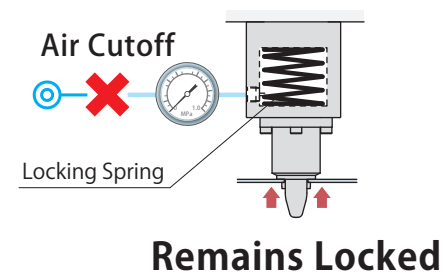
**0.05mm**

Light • Compact



Safety Function

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



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



Model SWP

Welding  
KAIZEN

For Sheet Metal  
**Locates + Clamps**

Workpiece  
**with High Accuracy**



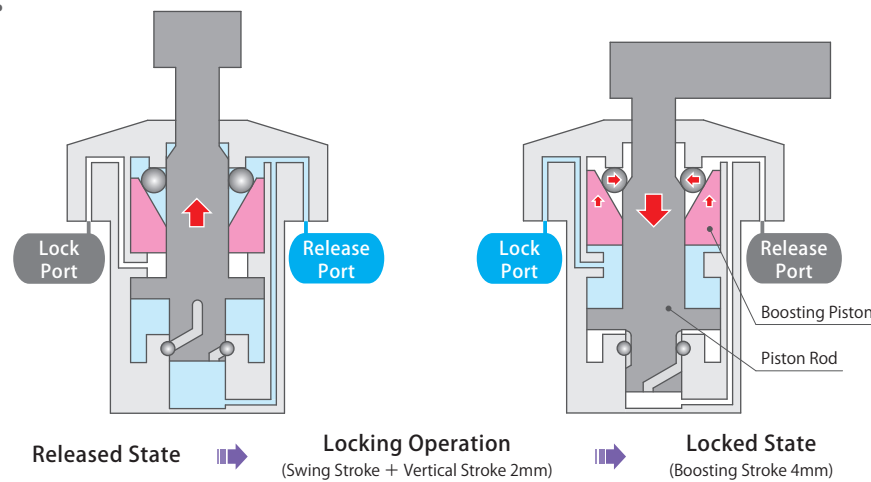


# Welding High-Power Pneumatic Clamp

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.



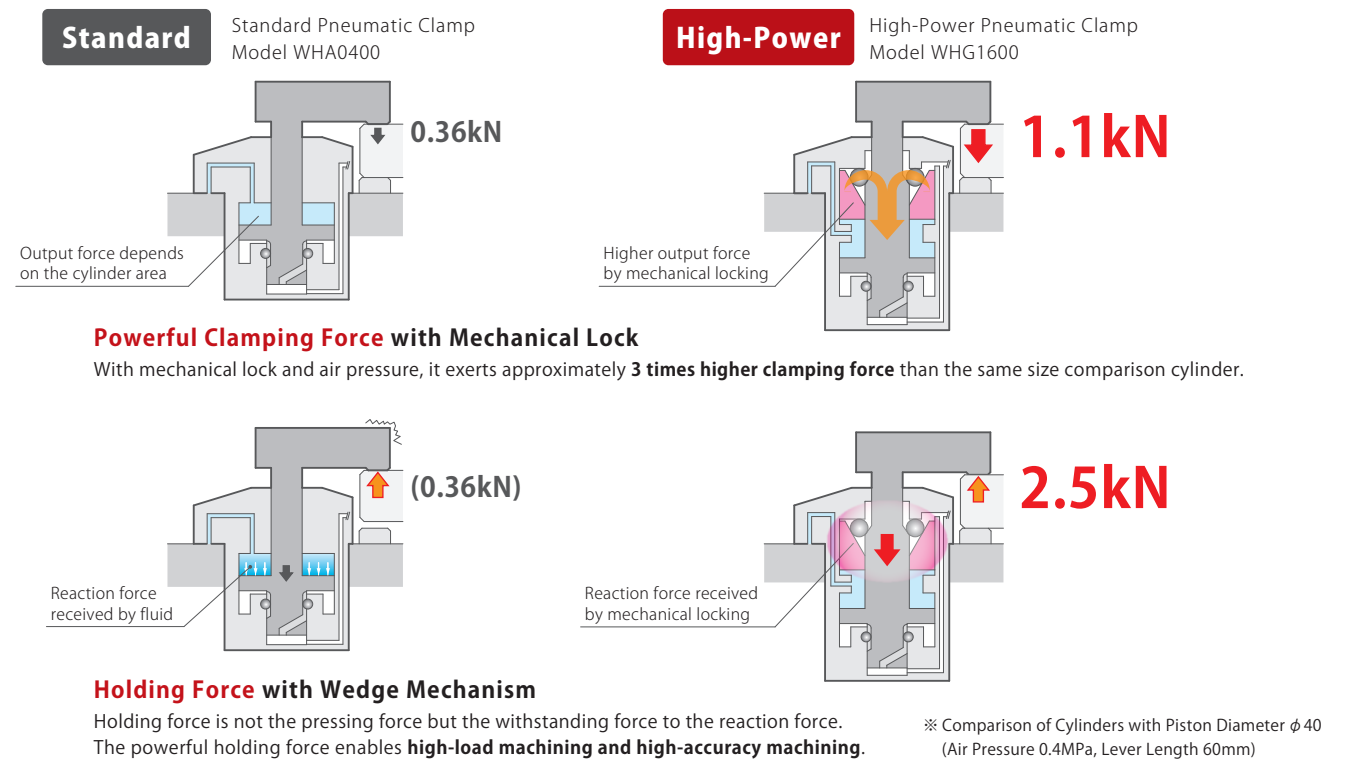
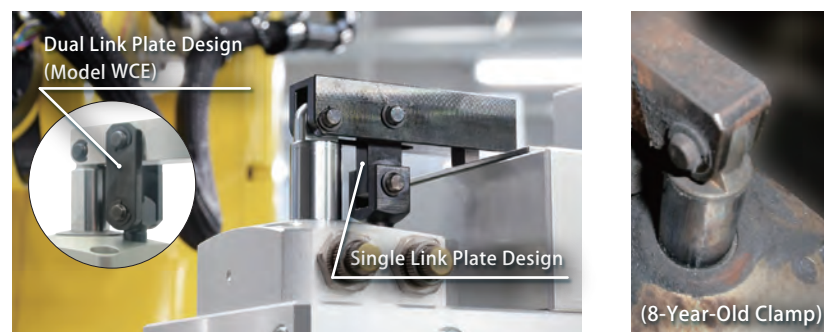
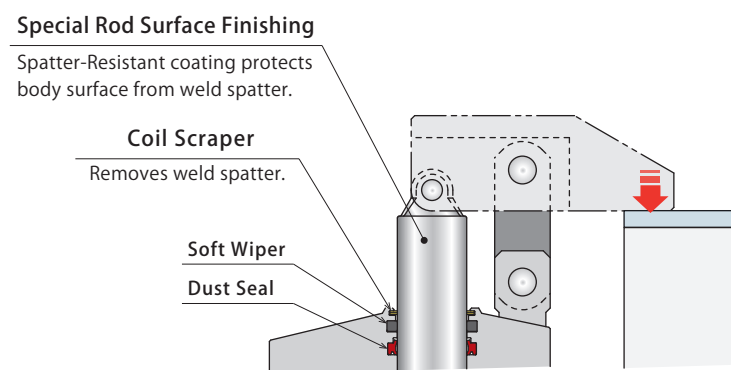
## Triple Protective Structure for Anti-Contamination

## 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.

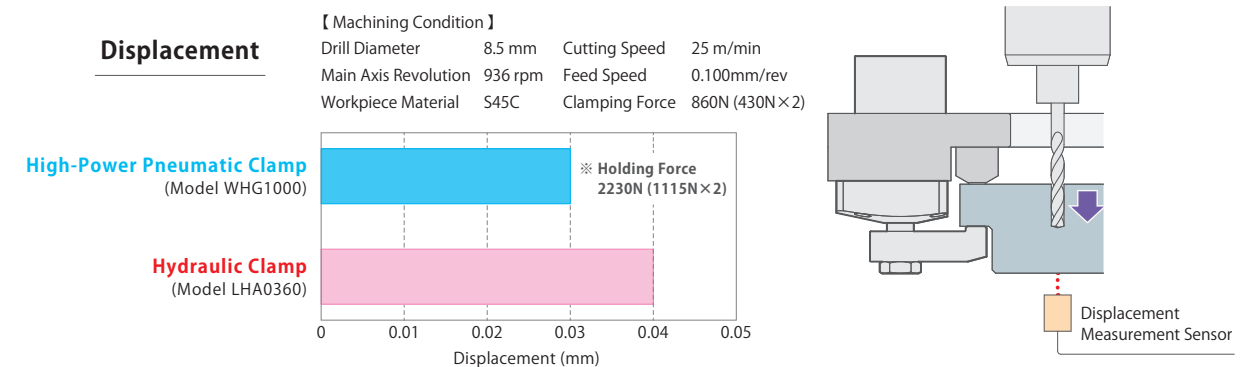
## High Durability Case Study

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



## Holding Force as Equal to Hydraulic Clamp

※ Machining results by our own.



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

**Welding**  
**KAIZEN**

# High-Power Pneumatic Welding without

# Clamp Enables Hydraulic Use



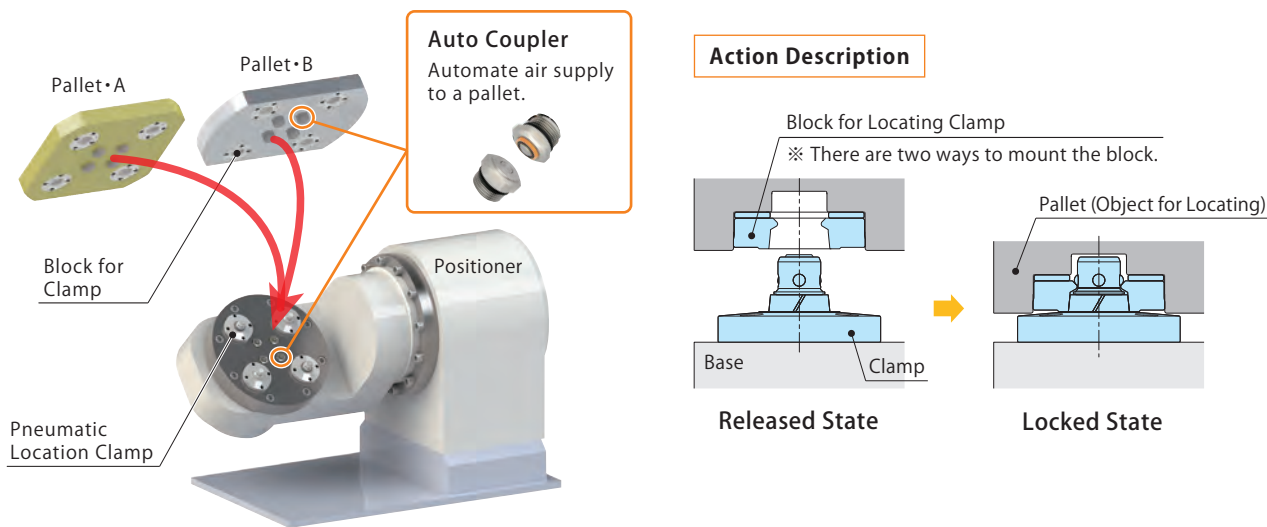
# Pneumatic Location Clamp

Simultaneously locates and clamps the fixture on the positioner.

Locating Repeatability  $3\ \mu\text{m}$



## Fixture Setup on the Positioner



## Pneumatic Location Clamp Series

### Compact Pneumatic Location Clamp

Compact model  
Suitable for setup change of small pallets and light fixtures.



### Pneumatic Location Clamp

With Contaminant Prevention  
Prevents contamination by cutting fluid and coolant of machine tools.



### High-Power Pneumatic Pallet Clamp

High-Power model  
Clamping force equivalent to hydraulic clamp.

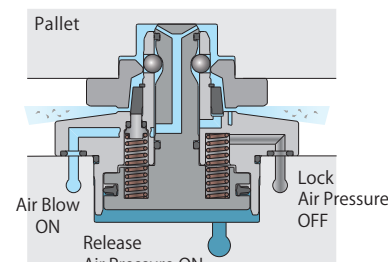


### Screw Locator

Manual model  
Fixed with a bolt.

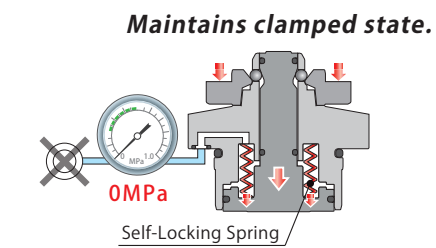


### Air Blow and Seating Check



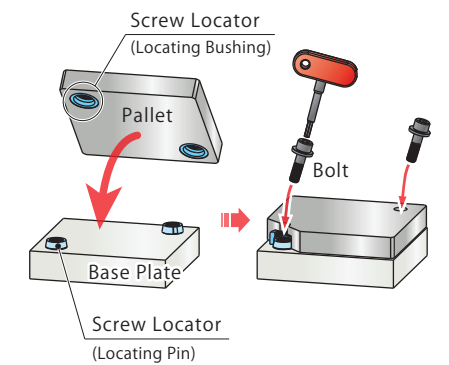
Contaminants are removed by air blow.  
Seating surface is provided with the air hole,  
seating check is possible with a gap sensor.

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



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.

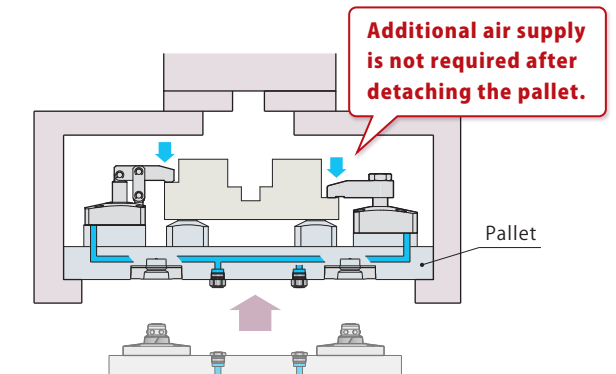
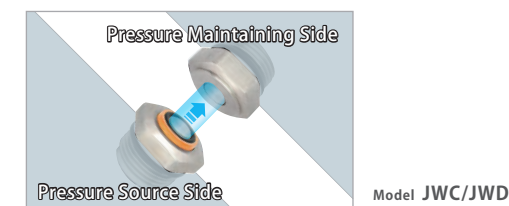
Screw Locator is also suitable for locating of compact dies.



## 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](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

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
United States of America SUBSIDIARY KOSMEK (USA) LTD.	TEL. +1-630-620-7650 FAX. +1-630-620-9015 650 Springer Drive, Lombard, IL 60148 USA
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 Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria
CHINA KOSMEK (CHINA) LTD. 考世美(上海)貿易有限公司	TEL. +86-21-54253000 FAX. +86-21-54253709 Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai 200125, China 中国上海市浦东新区浦三路21弄55号银亿滨江中心601室 200125
INDIA BRANCH OFFICE KOSMEK LTD. - INDIA	TEL. +91-9880561695 F 203, Level-2, First Floor, Prestige Center Point, Cunningham Road, Bangalore -560052 India
THAILAND REPRESENTATIVE OFFICE KOSMEK Thailand Representation Office	TEL. +66-2-300-5132 FAX. +66-2-300-5133 67 Soi 58, RAMA 9 Rd., Suanluang, Suanluang, Bangkok 10250, Thailand
TAIWAN (Taiwan Exclusive Distributor) Full Life Trading Co., Ltd. 盈生貿易有限公司	TEL. +886-2-82261860 FAX. +886-2-82261890 16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511 台湾新北市中和區建八路2號 16F-4 (遠東世紀廣場)
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
INDONESIA (Indonesia Exclusive Distributor) PT. Yamata Machinery	TEL. +62-21-29628607 FAX. +62-21-29628608 Delta Commercial Park I, Jl. Kenari Raya B-08, Desa Jayamukti, Kec. Cikarang Pusat Kab. Bekasi 17530 Indonesia

#### Sales Offices in Japan

Head Office Osaka Sales Office Overseas Sales	TEL. 078-991-5162 FAX. 078-991-8787 〒651-2241 兵庫県神戸市西区室谷2丁目1番5号
Tokyo Sales Office	TEL. 048-652-8839 FAX. 048-652-8828 〒331-0815 埼玉県さいたま市北区大成町4丁目81番地
Nagoya Sales Office	TEL. 0566-74-8778 FAX. 0566-74-8808 〒446-0076 愛知県安城市美園町2丁目10番地1
Fukuoka Sales Office	TEL. 092-433-0424 FAX. 092-433-0426 〒812-0006 福岡県福岡市博多区上牟田1丁目8-10-101

## Our Products



### QUICK DIE CHANGE SYSTEMS

For Press Machines



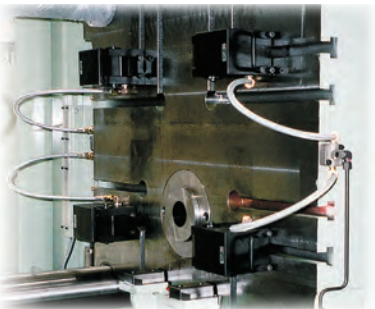
### FACTORY AUTOMATION SYSTEMS

FA • Industrial Robot Related Products



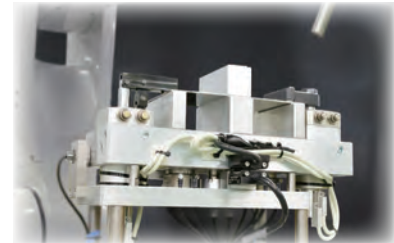
### WORK CLAMPING SYSTEMS

Machine Tool Related Products



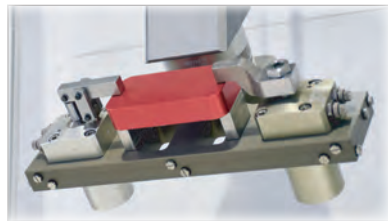
### DIECAST CLAMPING SYSTEMS

For Diecast Machines



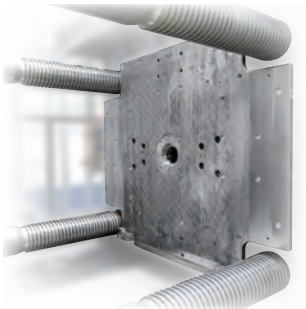
### WELDING RELATED PRODUCTS

For Welding Applications



### WASHING RELATED PRODUCTS

For Washing Applications



### QUICK MOLD CHANGE SYSTEMS

For Injection Molding Machines