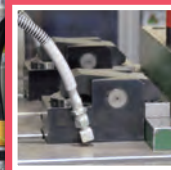


KOSMEK

Press Machine Related Products

Press



Quick
Die Change
System



All-Pneumatic
Die Change
System

Transfer



Press Load
Monitor

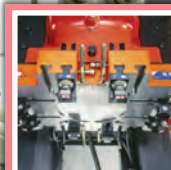


Robotic
Hand Changer

Welding

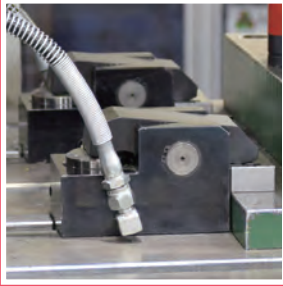


Welding
Clamp



Printed
Circuit Board
Knockout Unit

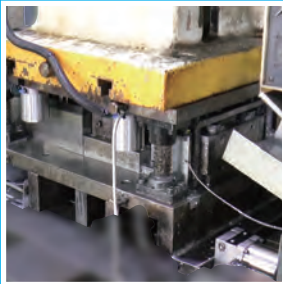
QUICK DIE CHANGE SYSTEMS



1

► P.05

**Hydraulic
Die Clamp**



► P.04

**High-Power
Pneumatic
Die Clamp**



2

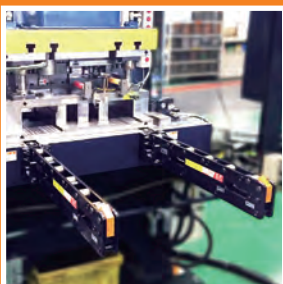
► P.12

**Hydraulic
Die Lifter**



► P.03

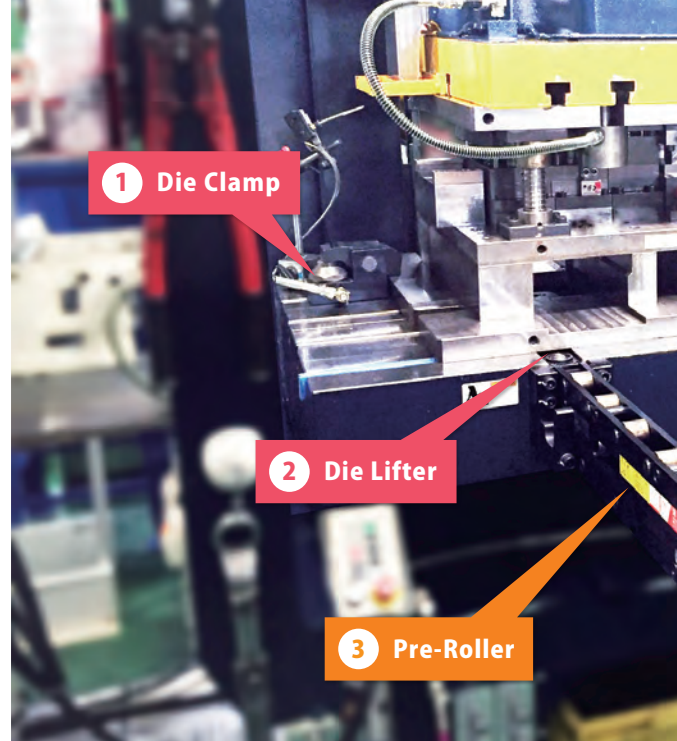
**Pneumatic
Free Roller
Lifter**

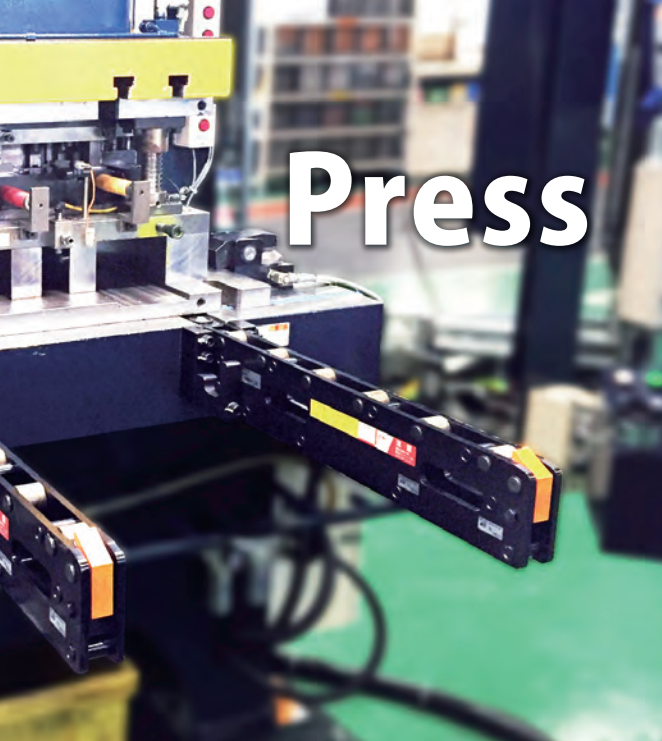


3

► P.13

Pre-Roller





Press



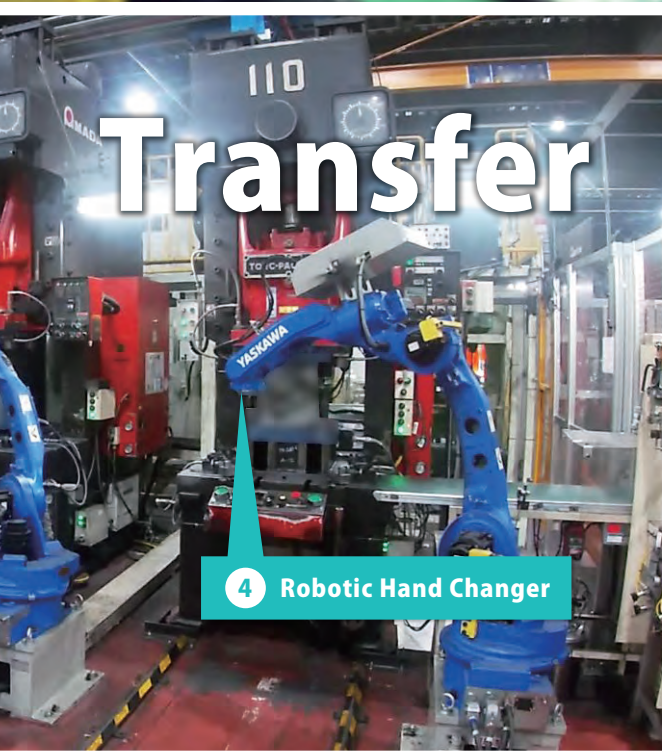
► P.15

**Overload
Protector**



► P.17

**Press
Load Monitor**



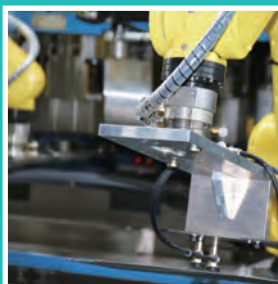
Transfer



► P.19

**Printed
Circuit Board
Knockout Unit**

4 Robotic Hand Changer



4

► P.23

**Robotic
Hand Changer**



Welding



5

► P.29

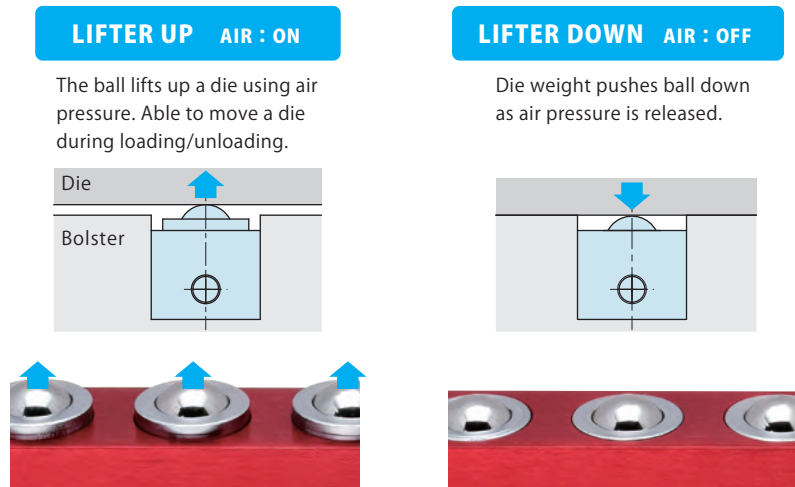
**Welding
Clamp**

Pneumatic Free Roller Lifter

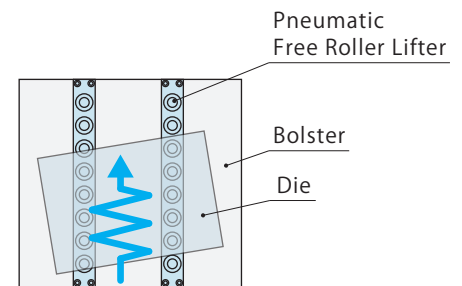
NEW

Newly added to the lineup.

Lift and Move a Die with Light Force



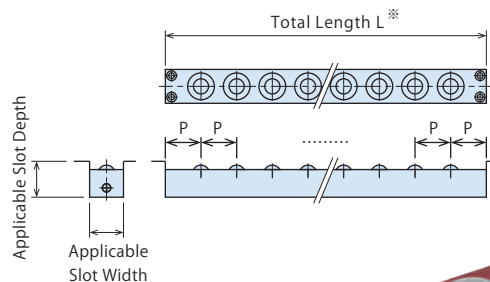
The Ball Moves 360° Flexibly



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

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



Model RQC

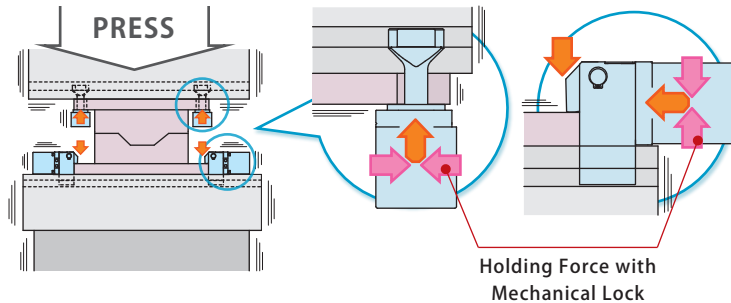
**Die
Change
KAIZEN**

Die Change with Clean • Energy Saving

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

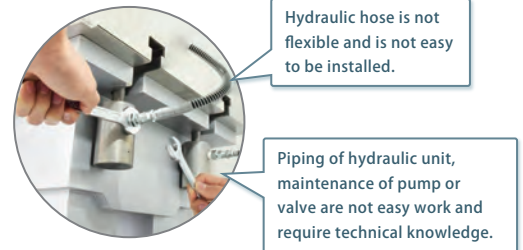
Drastically reduces the running cost as valves and other control devices are available on the market and easily replaced in case of trouble.

Pneumatic System



Short Time • Low Cost Maintenance

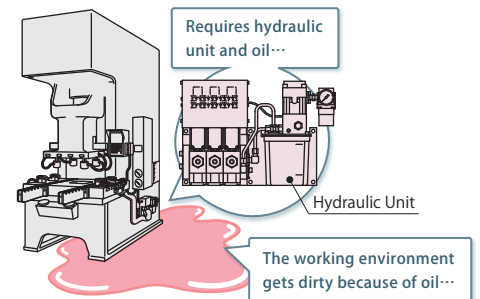
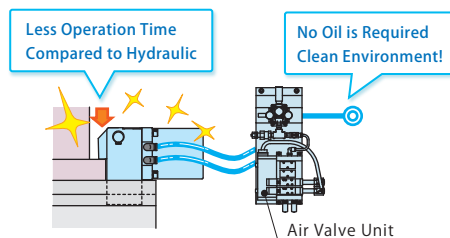
Hydraulic System



Long Time • High Cost Maintenance

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)



Model HQA/HQB

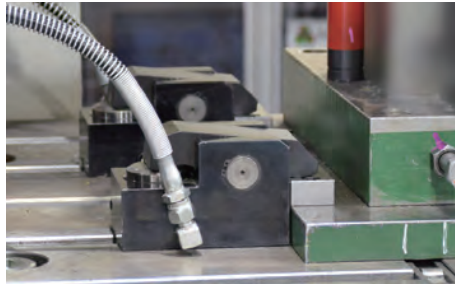
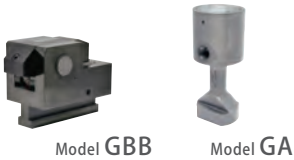
All-Pneumatic System
• Low Running Cost



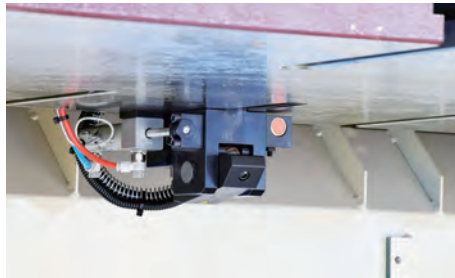
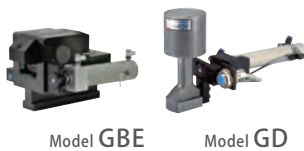
Hydraulic Die Clamp Series

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

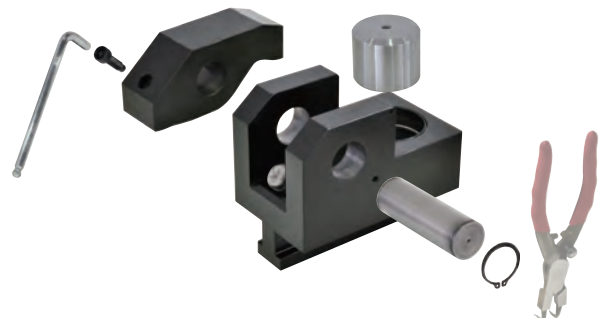
Best-Selling Hydraulic Die Change System
Application example videos available on our website.



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

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.



**Die
Change
KAIZEN**

Interlock with Press Machine

Reduce the Die

Long Stroke Models

Allows for Variation in Die Clamping Thicknesses

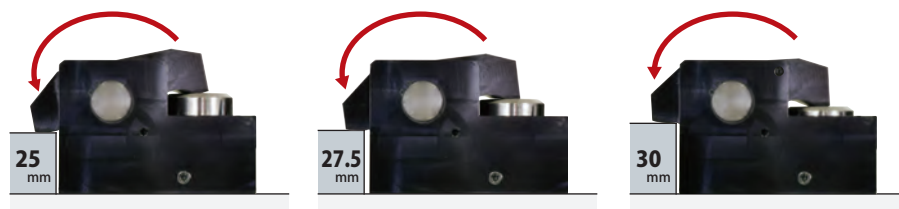
The die change system with longer stroke clamps enables use of non-standardized dies.

GBC

Long Stroke Lever Clamp

No U-Cuts Required

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



Specifications

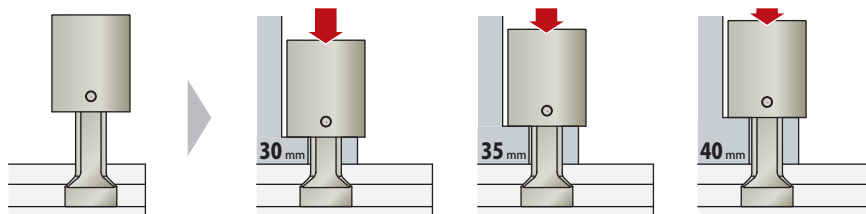
Model No.	GBC0100	GBC0160	GBC0250	GBC0400	GBC0630	GBC1000
Clamping Force	kN 10	16	25	40	63	100
Operating Pressure	MPa	25				
Withstanding Pressure	MPa	37				
Full Stroke	mm 8	9	10	12	15	15.5
Clamp Stroke	mm 0.5	1	1.5	3.5	1	1.5
Extra Stroke	mm 7.5	8	8.5	8.5	14	14
Die Clamping Thickness Variation	mm 5	5	5	5	10	10
Cylinder Capacity (at Full Stroke)	cm 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

(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 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.

for Safe Operation

Change Time

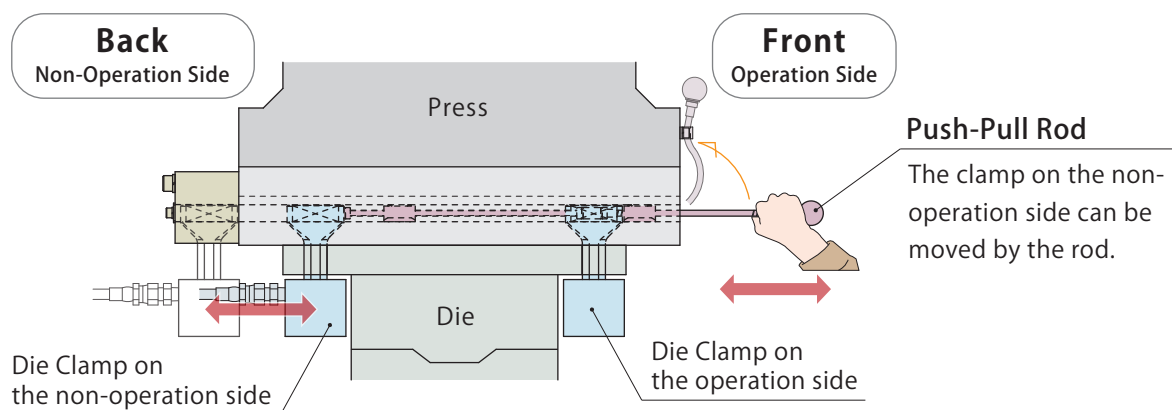


Slide Rod Die Clamp for Easy Setup

Having a problem when moving die clamps?

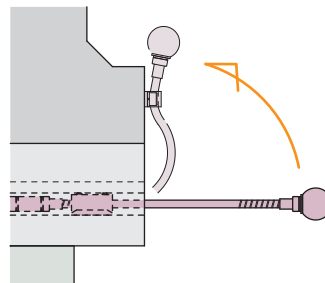
Solved by Slide Rod Die Clamp!

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.



Manual-Slide Model



Automatic-Slide Model

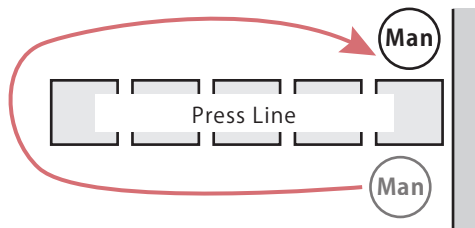
**Die
Change
KAIZEN**

Shorter Traveling Tiredness and

Able to Solve the Following Problems

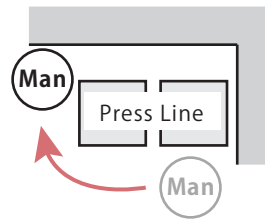
Traveling Distance

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...

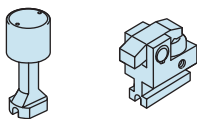


Reduce the traveling distance, tiredness and setup time.
Improve the safety (No need to work in a narrow space).
Reduce the die change time.

Lineup

GA-A/B

Piston Clamp
(Clamps at U-Cut of Die)

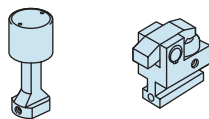


Model GA-A GBB-A

Rod Slide (for U-Cut)
For Operation Side

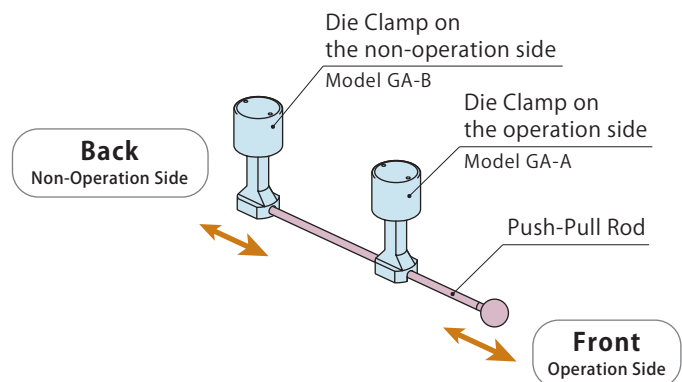
GBB-A/B

Lever Clamp
(No U-Cuts Required)



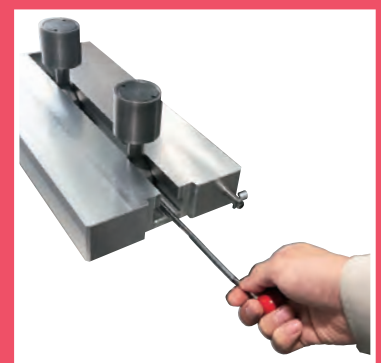
Model GA-B GBB-B

Rod Slide (for Tap)
For Non-Operation Side



※ Please contact us for applicable clamping force.

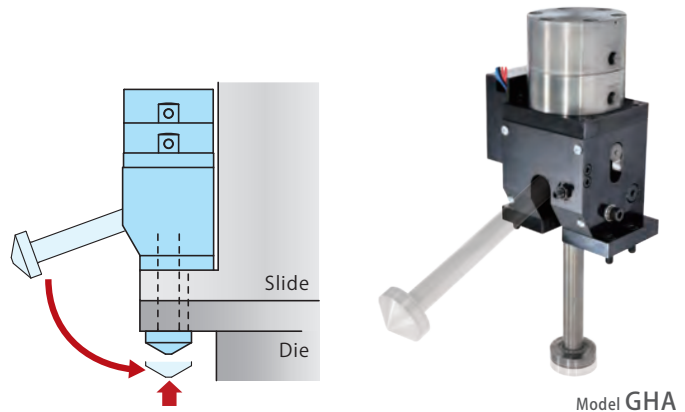
Distance reduces Setup Time



Swing Rod Clamp for Upper Die

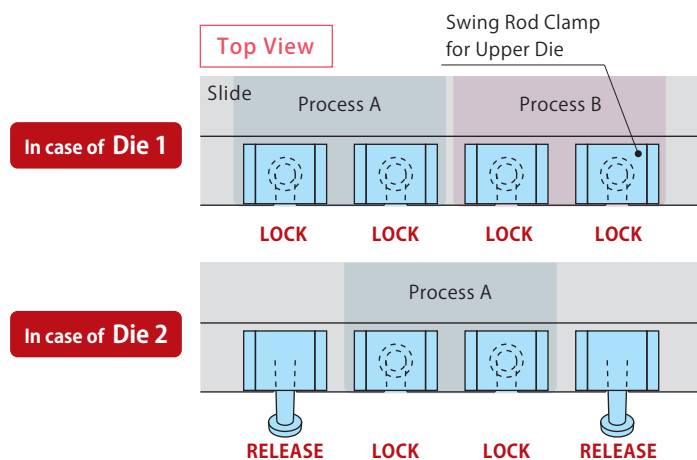
The swing rod retracts during die change.

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.

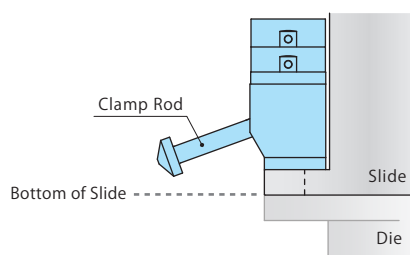


In case of Die 2, clamps can be in a released state during production.

Action Description

RELEASE

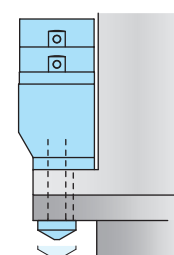
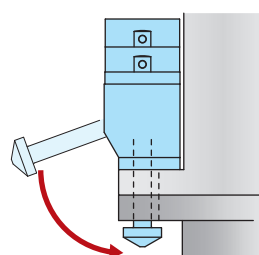
Release Pressure : ON
Lock Pressure : OFF



There is no interference during die change because the rod is kept above the bottom of the slide. The clamp rod is securely fixed so it withstands vibration of press machine.

LOCK

Release Pressure : OFF
Lock Pressure : ON



Die
Change
KAIZEN

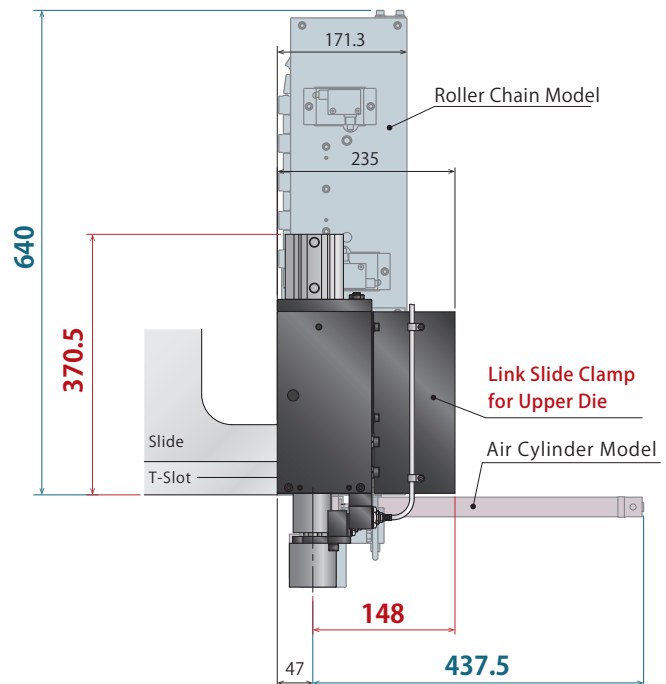
Withstands Vibration Swing Clamp

Link type Automatic-Slide Clamp

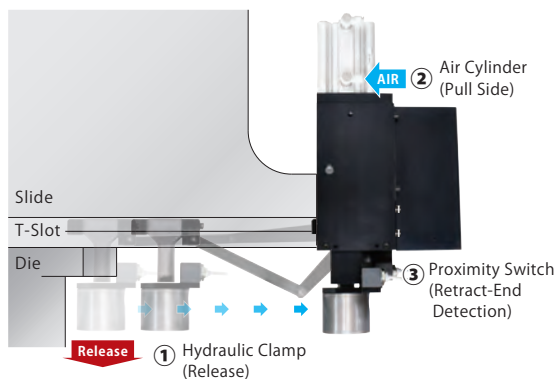
Compact Automatic-Slide Clamp

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 When hydraulic pressure is released : The clamp releases with built-in spring.
- ② When air pressure is supplied to the pull side port of the air cylinder : The clamp moves backward.
- ③ The proximity switch detects that the clamp moved backward.

LOCK



- ① When air pressure is supplied to the push side port of the air cylinder : The clamp moves forward until it touches the die.
- ② The proximity switch detects that the clamp moved forward.
- ③ When hydraulic pressure is supplied to the clamp : The clamp locks the die (U-Cut).

of Press Machine for Upper Die



Hydraulic Unit with Large Flow Pump

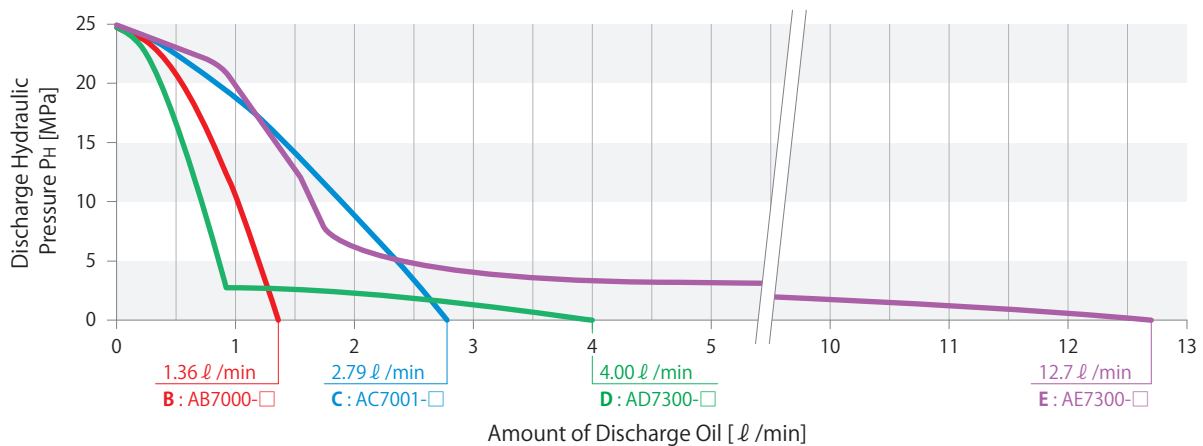
Large flow pump to increase operating speed of hydraulic clamps.

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

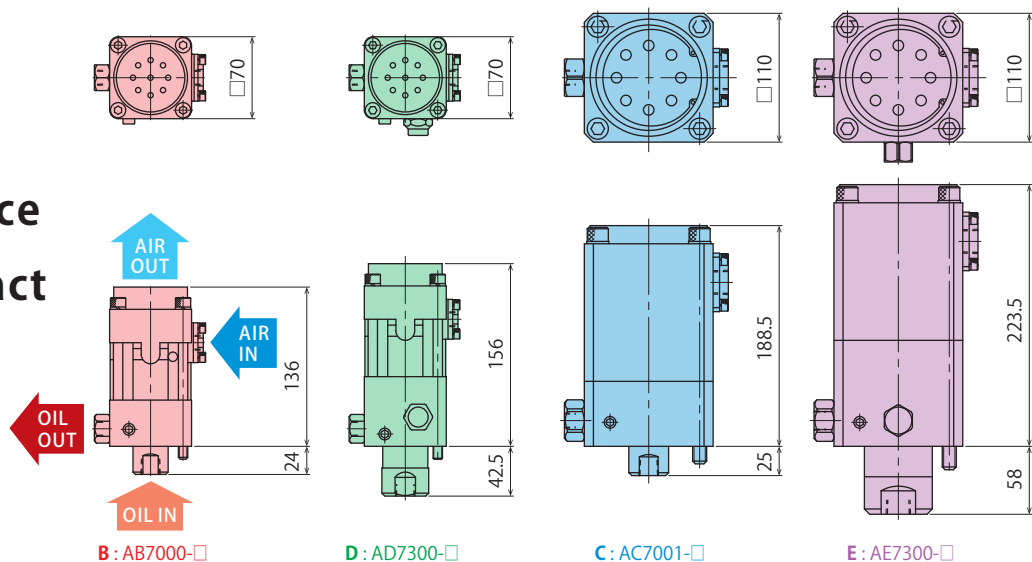
※ It varies depending on conditions of piping path and others.



Pump Performance Curve



High
Performance
and Compact

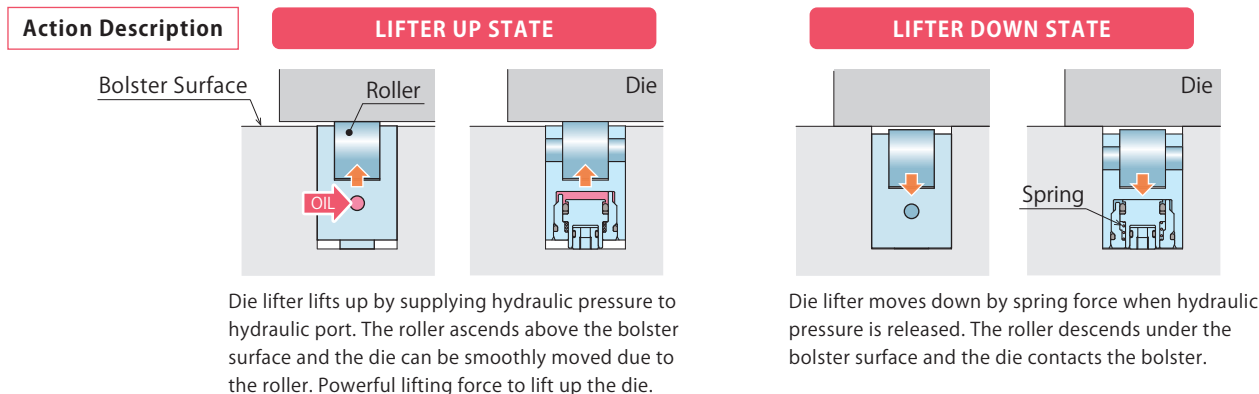


Die
Change
KAIZEN

Large Flow Air-Hydraulic
Drastic Reduction of

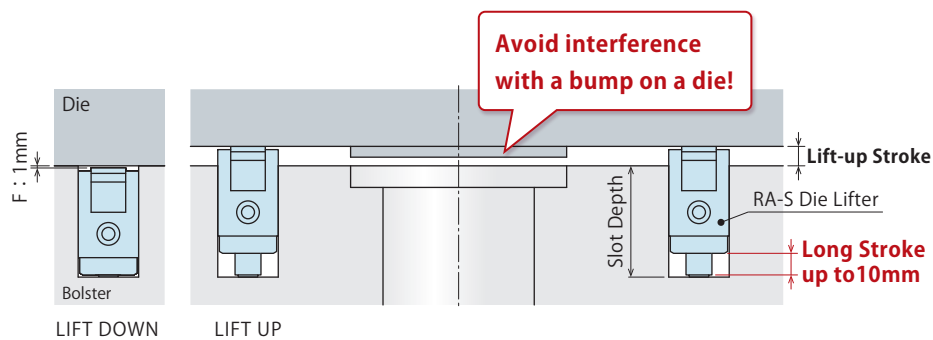
Hydraulic Die Lifter

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

Lift-up Stroke : up to 10mm



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	MPa		25			
Operating Temperature	°C		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.



Combination Pump for Operating Time

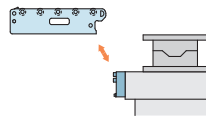
Pre-Roller

Broad Line-up of Pre-Rollers



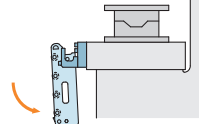
A Variety of Storing Methods!

Removable



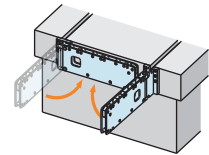
Model MRC

Removable • Vertical Folding



Model MRD

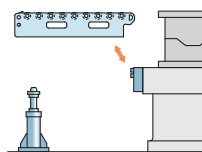
Horizontal Folding



Model MRE/MRF

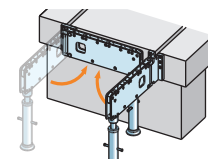
Stand Available for Longer Pre-Rollers!

Removable (with Stand)



Model MRG

Horizontal Folding (with Stand)

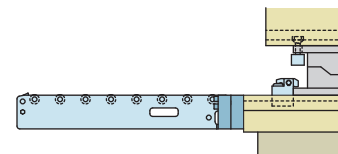


Model MRJ/MRK

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

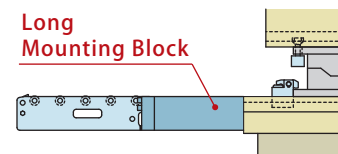
Standard

Requires long pre-rollers.



Long Mounting Block

For shorter pre-rollers.



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)

**Die
Change
KAIZEN**

Customer Satisfaction
A Broad Lineup +

Longer Pre-Roller

Die Travel Length up to 2m



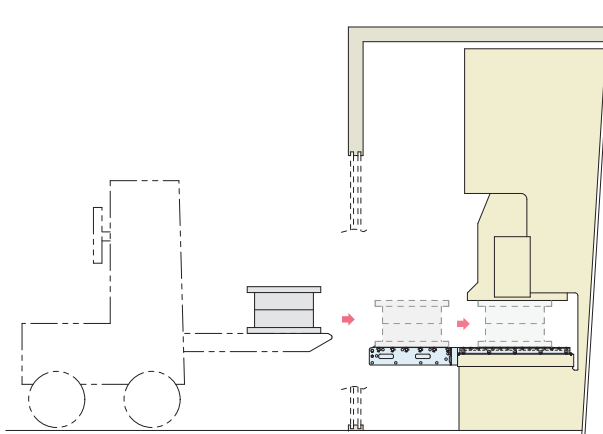
Model MRG
Removable Pre-Roller

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.

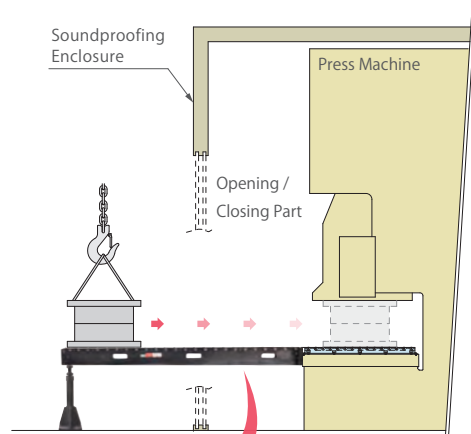
Short Pre-Roller

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.



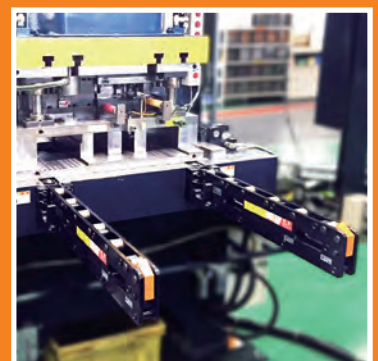
Longer Pre-Roller

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.

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.

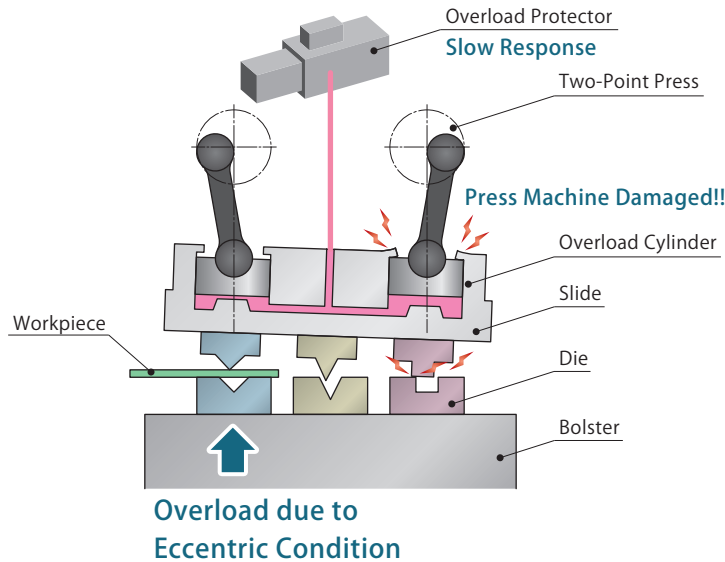
Quality
KAIZEN

Prevent Breakage of Quick Response

Task

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

Previously

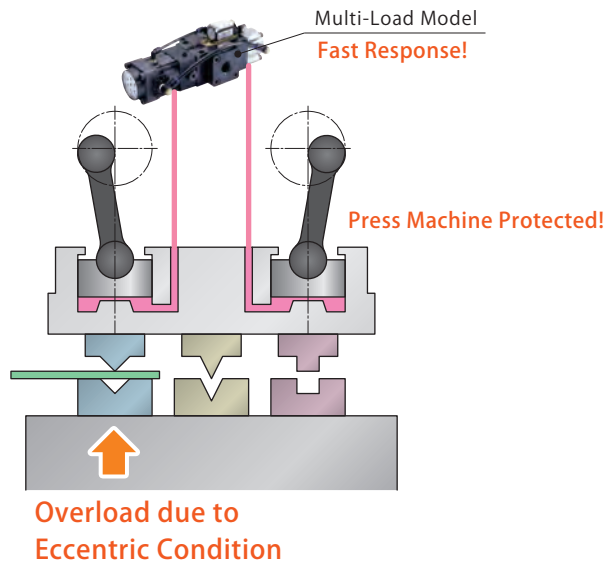


Problem

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.

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.

Displays the Press Load



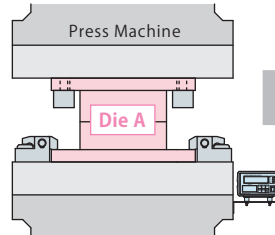
Model YK

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.

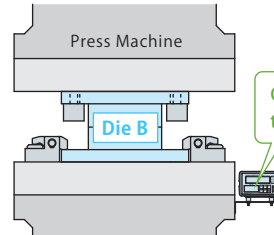
In case of changing to a die with different appropriate load

Die A : Appropriate Load 1200kN



Die Change

Die B : Appropriate Load 900kN



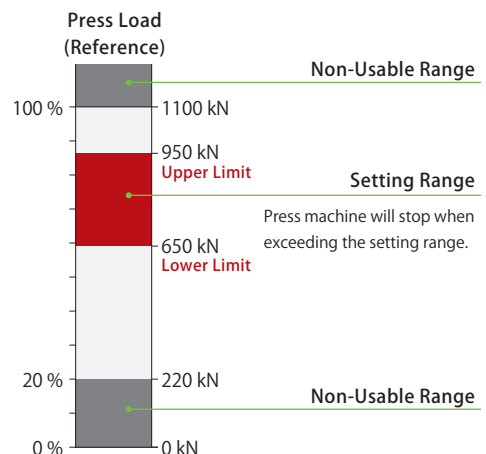
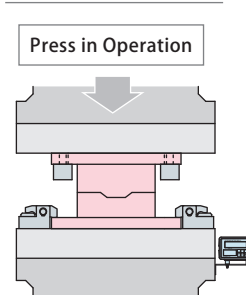
Quality Control by Monitoring Changes!

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.

In case of 1100kN Press



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!!

Quality
KAIZEN

Monitoring of Changes in Accuracy Control



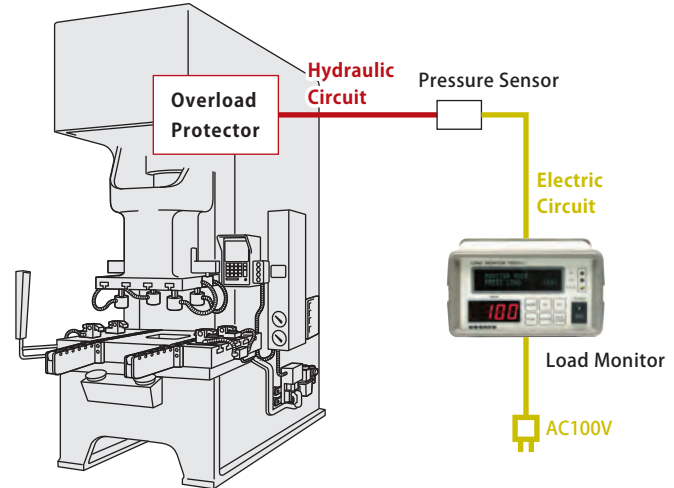
Easy Installation!

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	<ul style="list-style-type: none"> • High Cost 	<ul style="list-style-type: none"> • 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

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

Press Load Enables of Products



Printed Circuit Board Knockout Unit

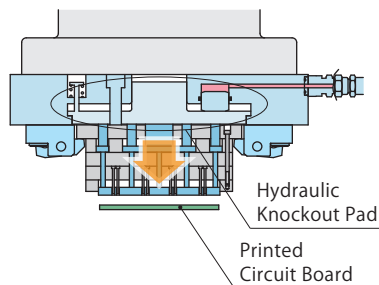
Having a problem with punching droops and burrs of printed circuit board pin hole?

KOSMEK Piercing System

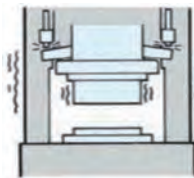
KOPIS is the Solution!

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.



In case of Mechanical Knockout Bar



Ejection with a mechanical knockout bar has an impact causing decrease in piercing accuracy and influence to the durability of a press device.

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.

Quality
KAIZEN

Even and Powerful Prevents Droops



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	: SS400
Holder Force	: 100kN
Knockout Force	: 300kN
Knockout Pad Stroke	: 9mm



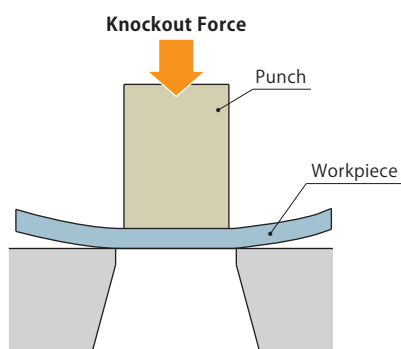
KOPIS can pierce thick metal plates with high accuracy. We have designed custom-made KOPIS for thicker workpieces. Please contact us for further information.

Application Example

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

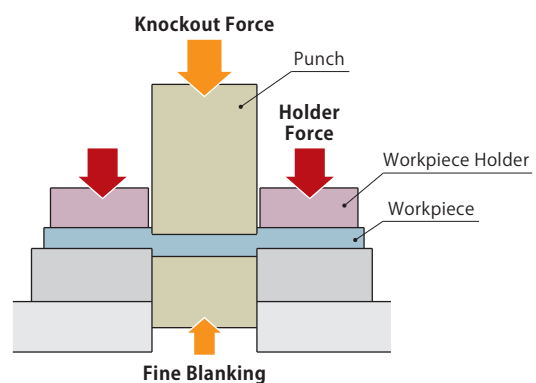
Standard Stamping Press

The workpiece is deformed due to knockout...



Fine Blanking

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



Knockout Force and Burrs



Fluid Supply to Moving Bolster

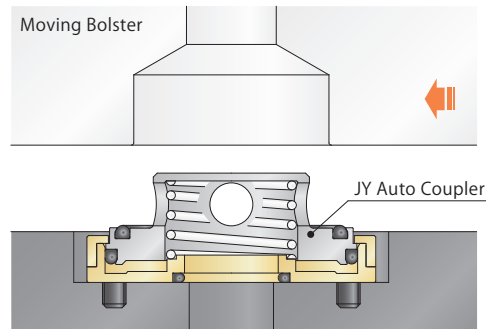
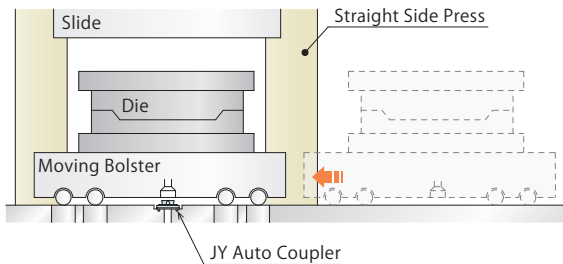
Automation of Fluid Circuit Connection

Special Product

Automatic Coupler Connection to Supply Fluid to the Moving Bolster

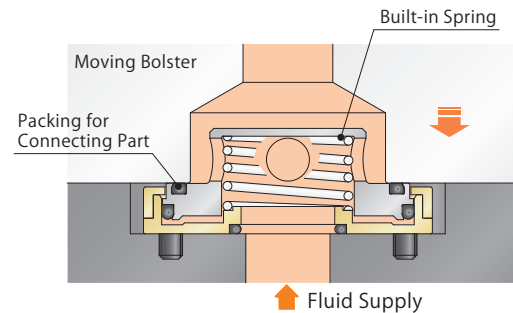
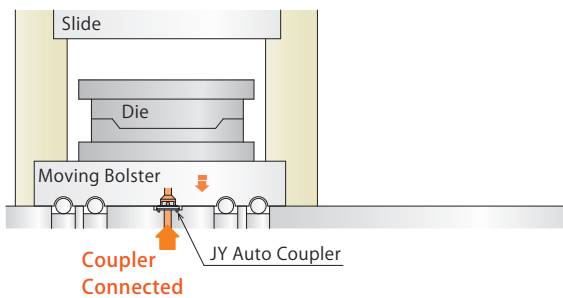
Disconnected State

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.



The built-in spring makes the packing and the bolster in close contact so that there is no air leakage.

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 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

Die
Change
KAIZEN

Customer Satisfaction
Automate Fluid

Multi Coupler

Connect and Disconnect Multiple Couplers at Once

Product Description Video

Product description video is available on our website.



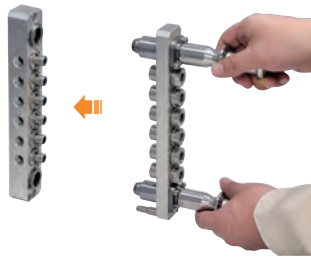
http://www.kosmek.co.jp/php_file/video_products.php?id=042&lang=2

What is a Multi Coupler ?

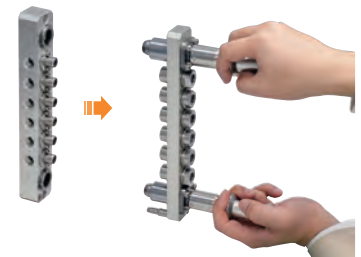
A Device to Connect Multiple Couplers in a Single Operation

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.

Connecting

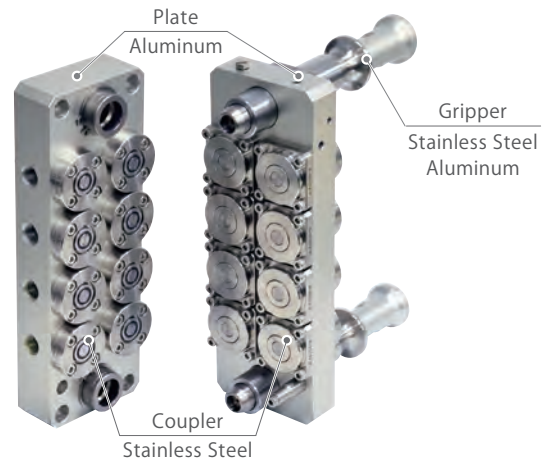


Disconnecting



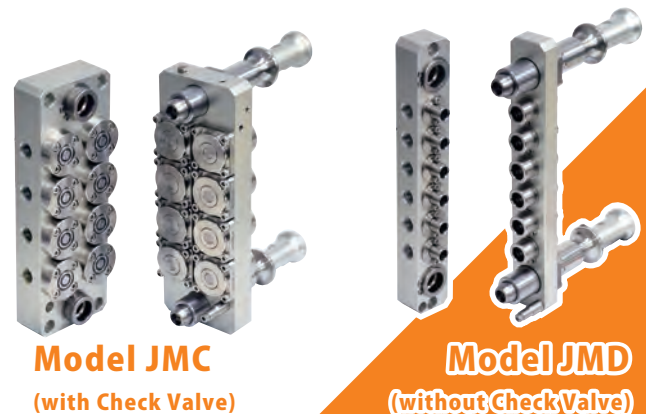
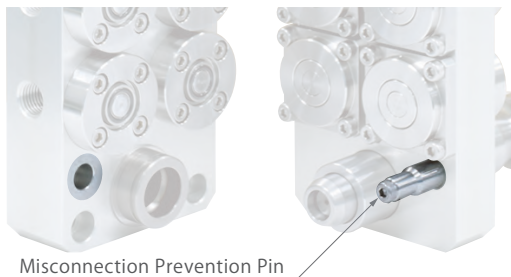
Anti-Corrosion Material

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.



Improved! Circuit Connection

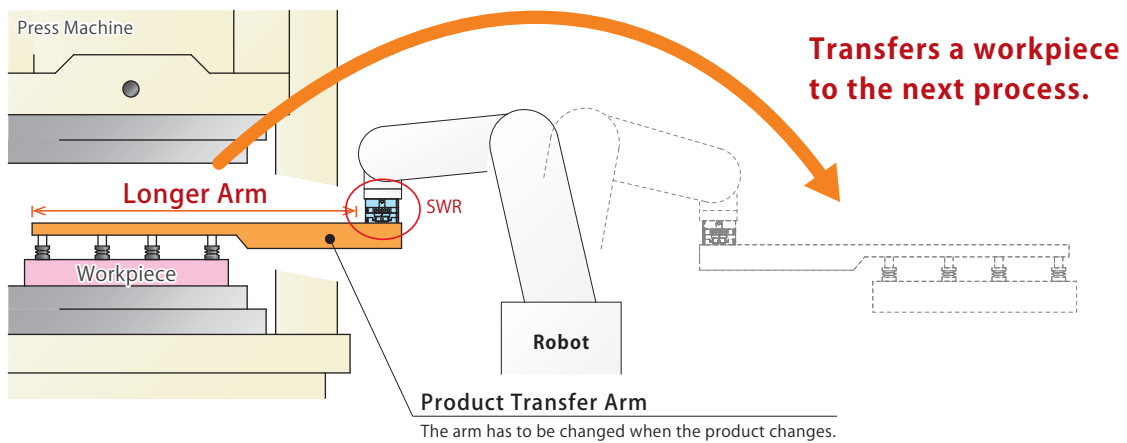


Robotic Hand Changer

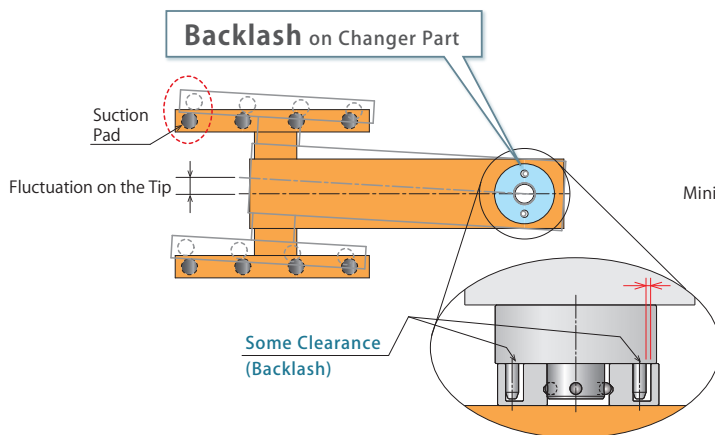
The World's Only Hand Changer with No Backlash

Transfer Arm Change with High Accuracy

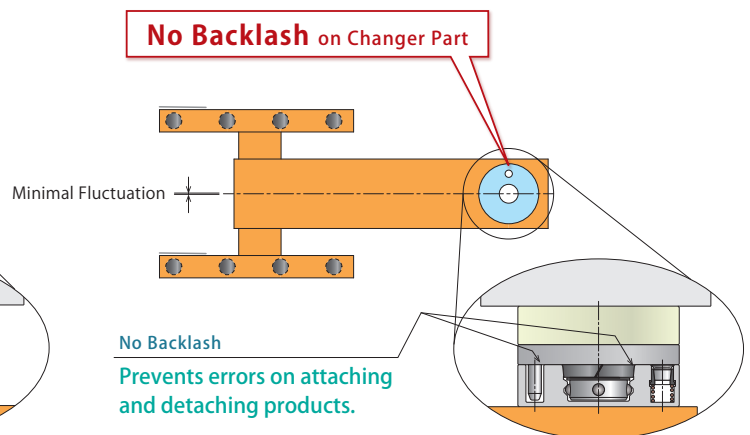
Zero-Backlash Robotic Hand Changer prevents fluctuation on the arm tip and maintains high accuracy even when transferring a longer arm.



Standard Tool Changer



KOSMEK Robotic Hand Changer

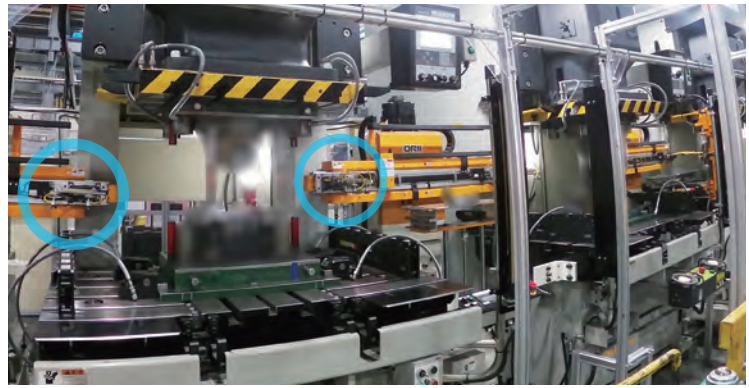


Transfer
KAIZEN

Zero-Backlash Transfer Arm Change

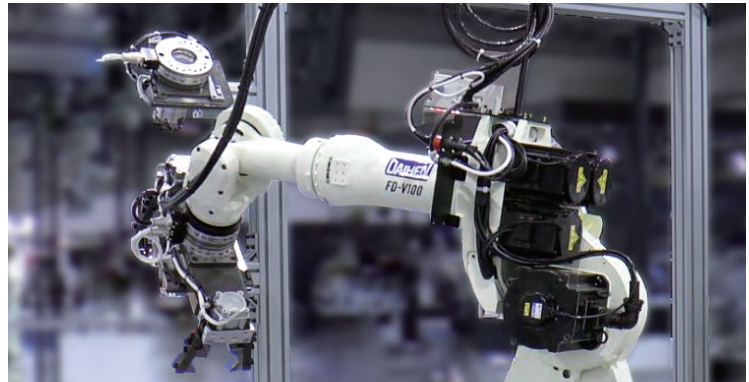
Hand Change for Gantry Loader

Transfer hand needs to be changed after die change. With 3 μ 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.



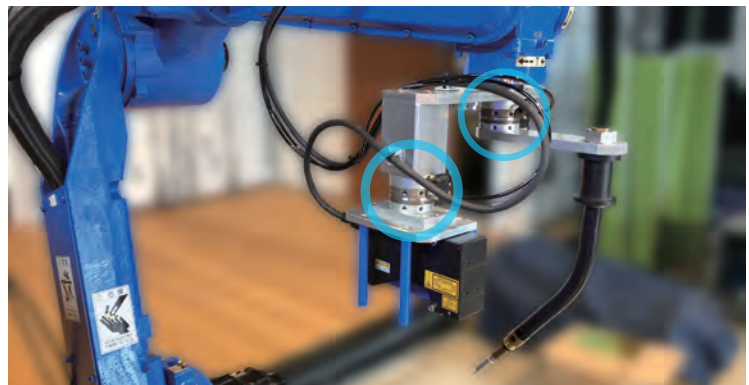
Transfer Hand Change for Welding Workpieces

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



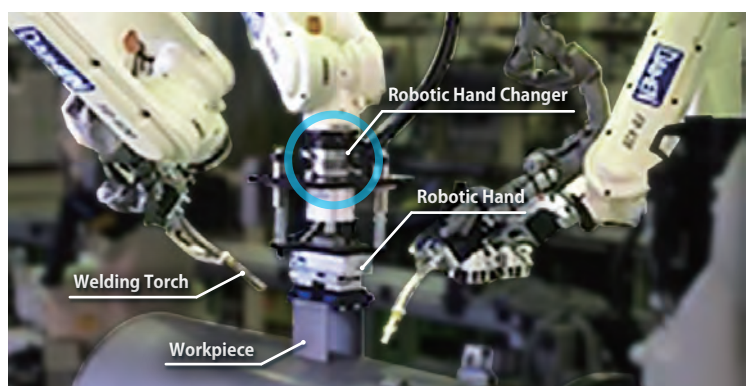
Changing of Welding Torch and Welding Vision Camera

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



Clamping of Welding Workpiece

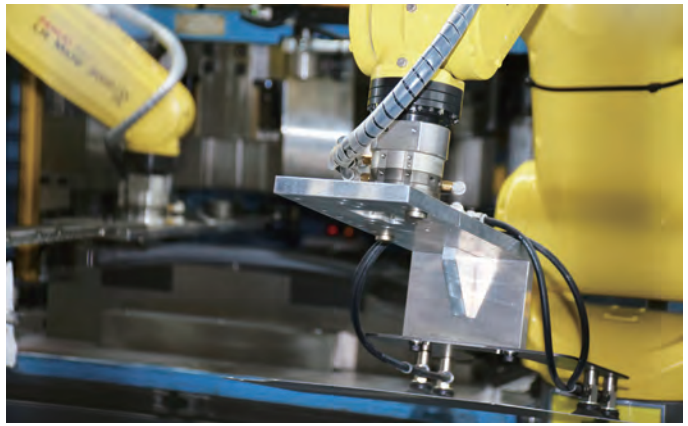
Robotic Hand Changer is used for changing robotic hands that hold a welding workpiece. KOSMEK non-backlash changer enables stable product quality and appearance of arc welding.



Hand Changer with High Accuracy

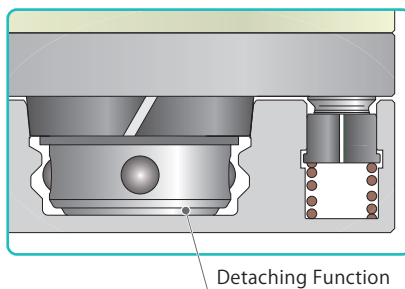


KOSMEK Exclusive Non-Backlash Mechanism

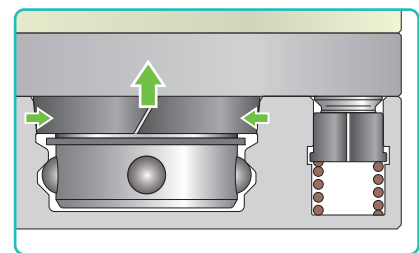


Action Description

Before
Connecting



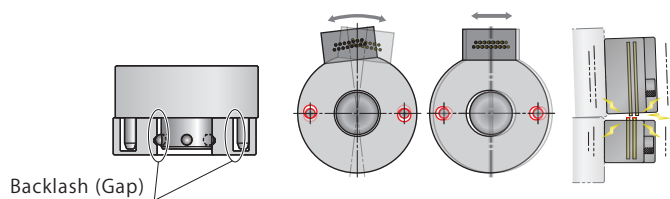
When
Connected



Standard Tool Changer

Backlash of a Tool Changer Causes Electrode Errors

Noise and Continuity Failure due to Friction of Contact Probe



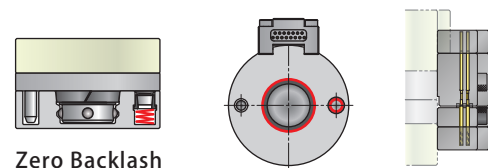
Continuity Failure of Electrode

Frequent Moment Stop

KOSMEK Robotic Hand Changer

Dual Contact to Connect with Zero Backlash

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



Zero Backlash

No Continuity Failure of Electrode

Sharp Decline of Moment Stop

Transfer
KAIZEN

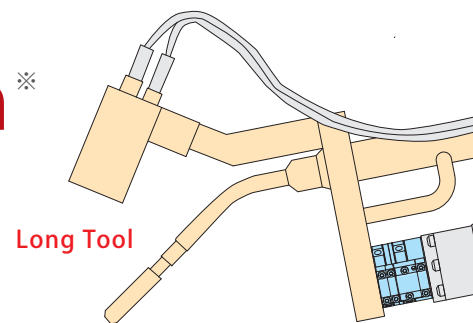
The World's Zero-Backlash

Secures the Aimed Position

Repeatability when Connected : **$3\mu m$** ※

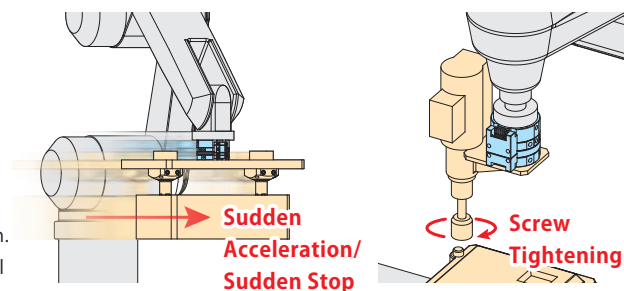
Even with a long tool or hand, fluctuation of the edge is extremely small. It secures high-accuracy processing even after tool change.

※ Repeatability is $5\mu m$ 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 $3\mu m$ repeatability even after 2 million cycles.



A Broad Lineup of Robotic Hand Changers



from 0.5kg Payload

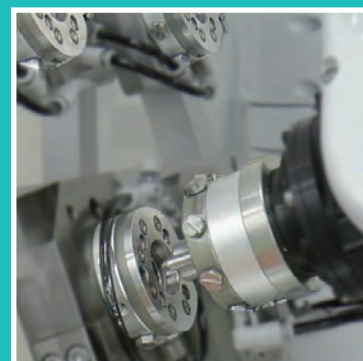
to 360kg Payload

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



Only Tool Changer



Light & Compact Robotic Hands

KOSMEK Exclusive Internal Chuck Series

Ball Lock Cylinder

The automatic cylinder holds and transfers a pallet.

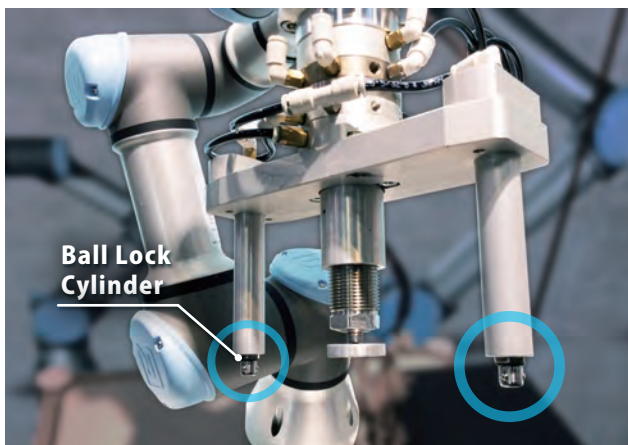
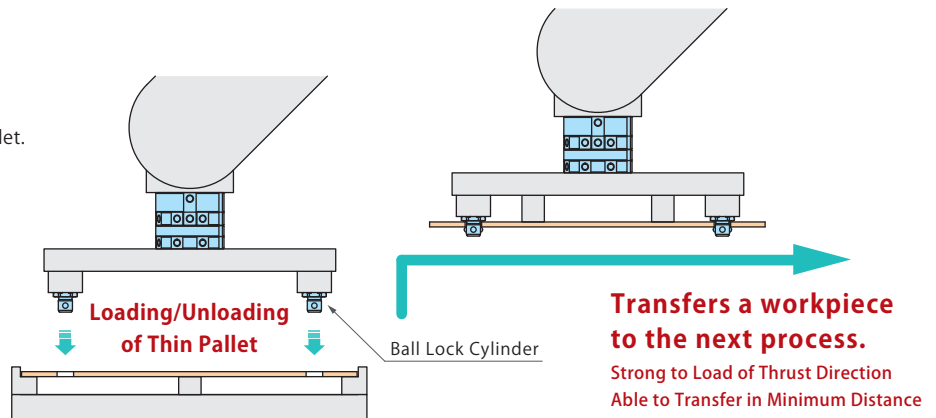
The steel balls prevent a pallet fall.

(Spring Lock / Air Release)

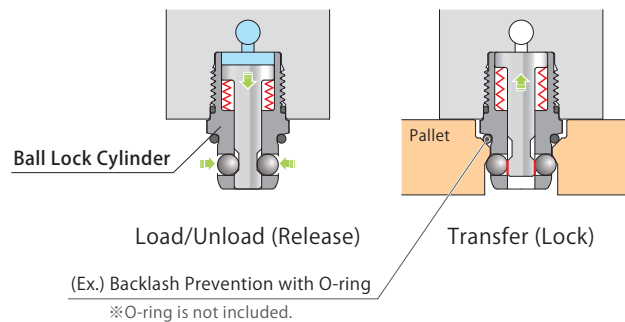
Pull-out Load Capacity (Holding Force) : 50N / 70N / 100N



Model WKA

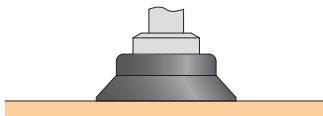


Action Description



Suction Pad

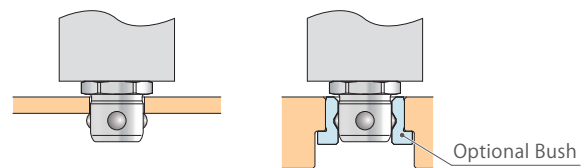
Limited Speed
Low Suction Force



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.

Transfer
KAIZEN

KOSMEK Exclusive
Much Faster and

Internal Chuck Series (Air Lock / Air Release)

Locating Pin Clamp

Clamp and locate a workpiece hole from above.

Workpiece Hole Diameter :
 $\phi 10 \sim \phi 20$ (9 sizes)
 Locating Repeatability : $50 \mu\text{m}$



Model SWP

FA Pneumatic Hole Clamp

The gripper expands and pulls a workpiece in.

Workpiece Hole Diameter :
 $\phi 6 \sim \phi 14$ (in 0.5mm increments)
 Locating Repeatability : $30 \mu\text{m}$



Model WKH

High-Power Pneumatic Hole Clamp

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

Workpiece Hole Diameter :
 $\phi 6 \sim \phi 13$ (in 0.5mm increments)
 Repeatability : N/A



Model SWE

Large Expansion Locating Pin

High-accuracy locating pin with large expansion stroke.

Workpiece Hole Diameter :
 $\phi 9 \sim \phi 15$ (in 1mm increments)
 Locating Repeatability : $10 \mu\text{m}$



Model VWH

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.

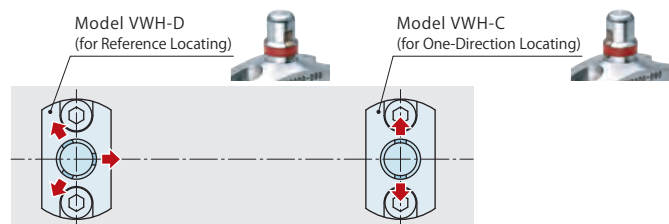
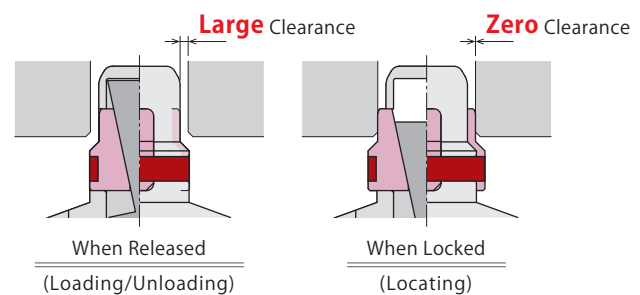
Locating Repeatability : $10 \mu\text{m}$

High-Accuracy model with
Locating Repeatability : $3 \mu\text{m}$
 is also available.



Model VWM

Expansion Stroke : 1.1mm



External Chuck Series (Air Lock / Air Release)

High-Power Parallel Hand



Model WPS

Compact Parallel Hand



Model WPA

Compact Parallel Hand



Model WPH

Three-Jaw Chuck



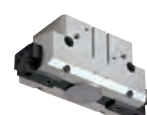
Model WPP

Two-Jaw Chuck



Model WPQ

Parallel Hand with Auto-Grip Changer



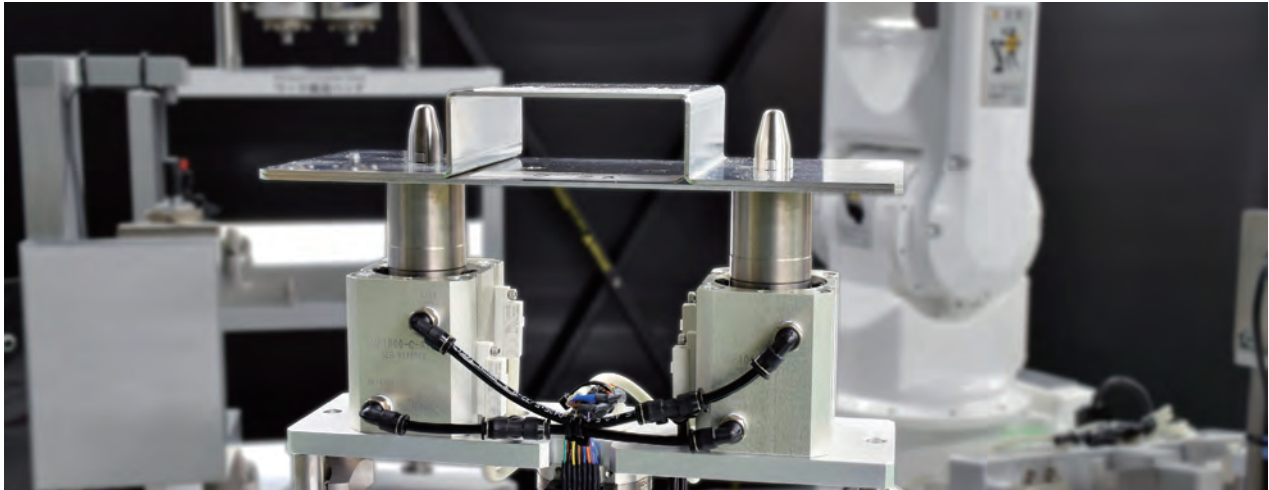
Model WPW

Internal Chucks for More Secure Transfer

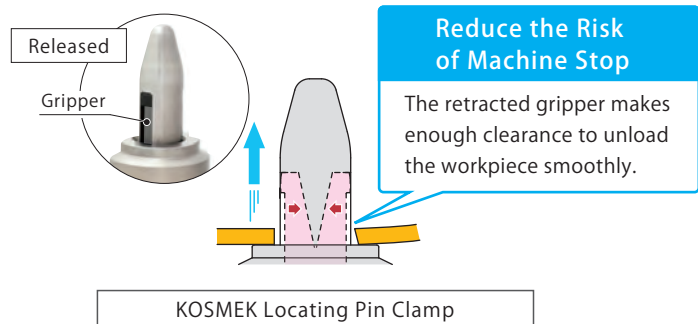
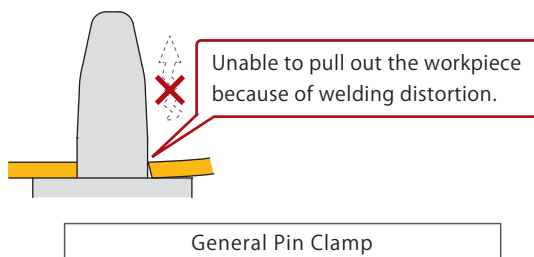


Welding Locating Pin Clamp

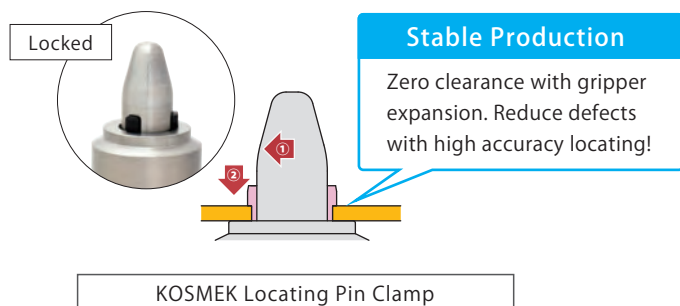
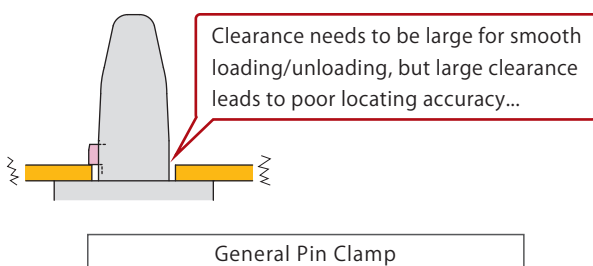
Locates and clamps simultaneously using workpiece holes.



Work Efficiency



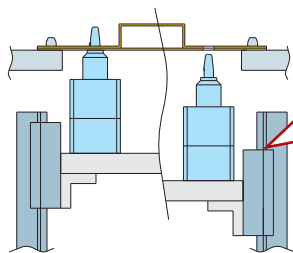
Stable Clamping



Welding
KAIZEN

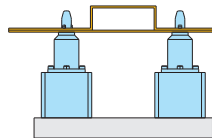
For Sheet Metal
Locates + Clamps

Lower Fixture Cost



Lifting device may be required to pull out the stuck workpiece due to welding distortion.

General Pin Clamp



KOSMEK Locating Pin Clamp

Simplified Equipment

Smooth loading/unloading enables to lower equipment cost.



Light

with Locked State Holding Function

Action Description

Release

Release Air **ON**
Lock Air **OFF**



Workpiece Loading/Unloading

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

Lock

Release Air **OFF**
Lock Air **ON**



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.

Spatter Resistant

Non-clearance prevents spatter from entering.

High-Accuracy Locating Locating Repeatability

0.05mm

Light • Compact

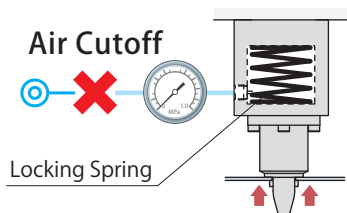
SWP0501

SWP1001



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



Model SWP

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.

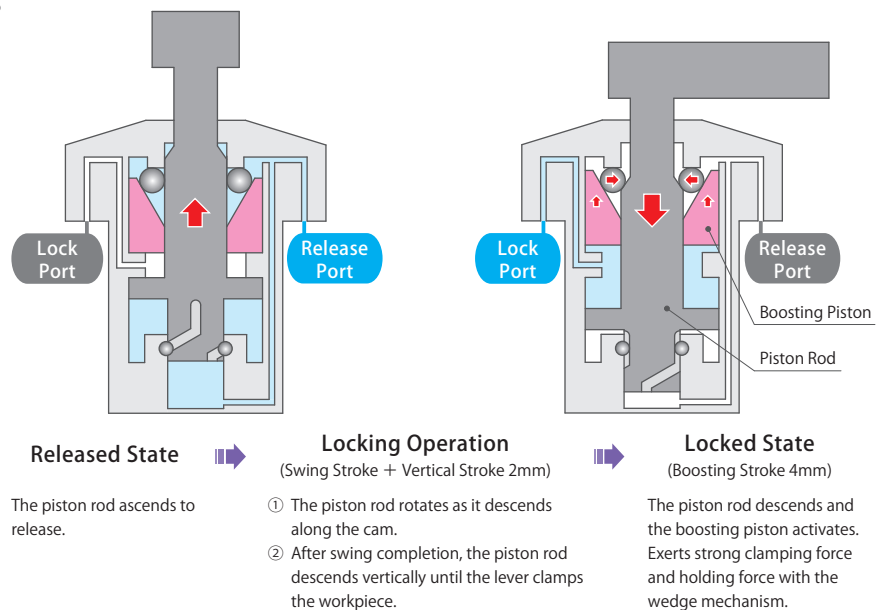
Triple Protective Structure for Anti-Contamination

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.



Special Rod Surface Finishing

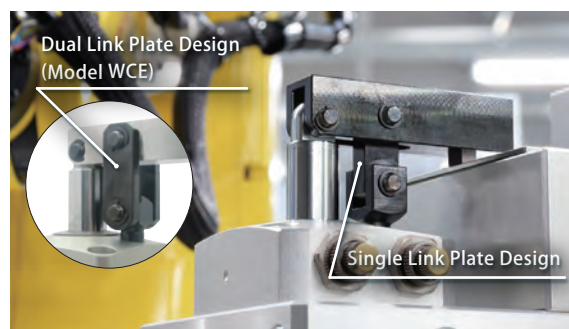
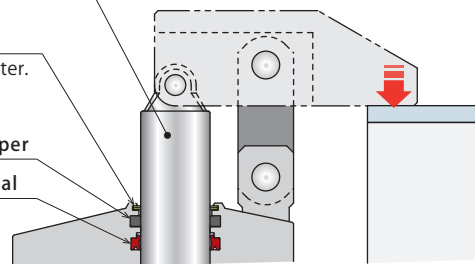
Spatter-Resistant coating protects body surface from weld spatter.

Coil Scraper

Removes weld spatter.

Soft Wiper

Dust Seal

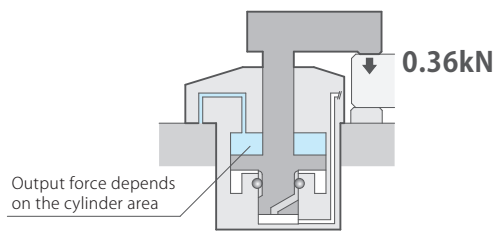


Welding
KAIZEN

High-Power Pneumatic Welding without

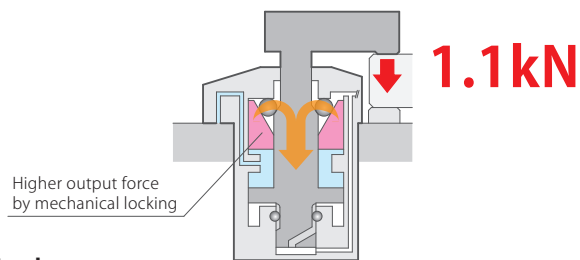
Standard

Standard Pneumatic Clamp
Model WHA0400



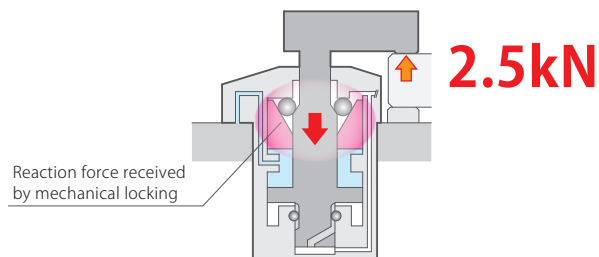
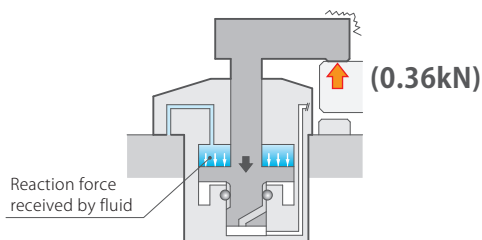
High-Power

High-Power Pneumatic Clamp
Model WHG1600



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 $\phi 40$
(Air Pressure 0.4MPa, Lever Length 60mm)

Holding Force as Equal to Hydraulic Clamp

※ Machining results by our own.

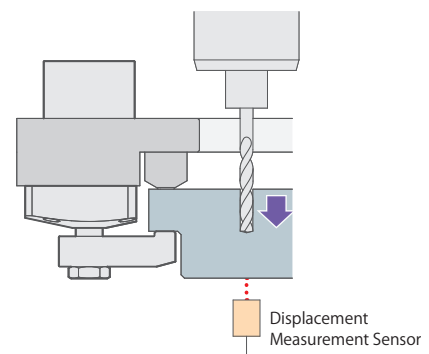
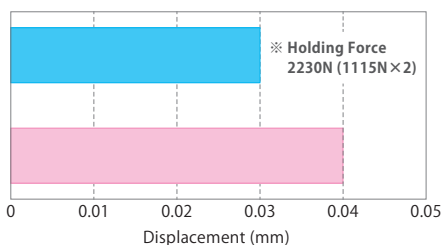
Displacement

【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

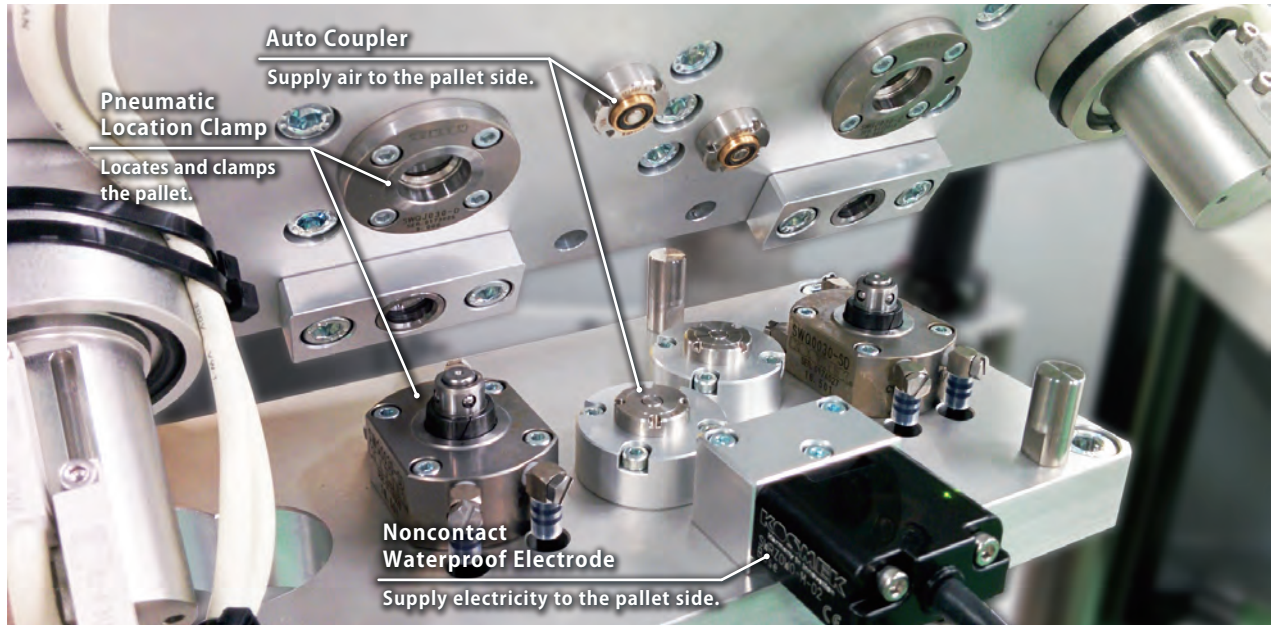
Clamp Enables Hydraulic Use



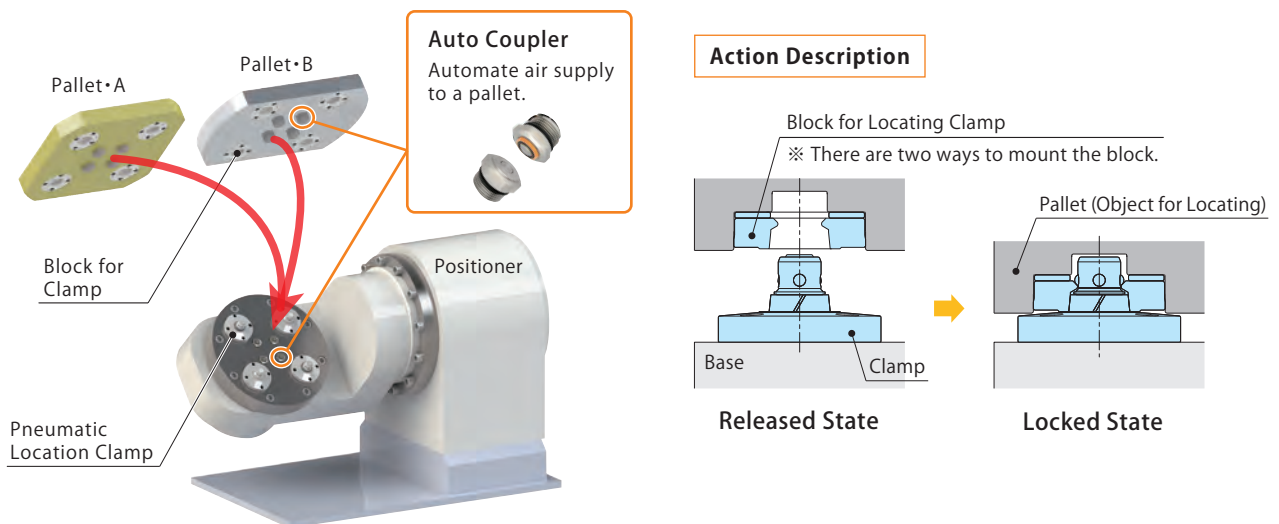
Pneumatic Location Clamp

Simultaneously locates and clamps the fixture on the positioner.

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



Fixture Setup on the Positioner



Setup
KAIZEN

For Welding Fixture
Reduce Setup Time

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.

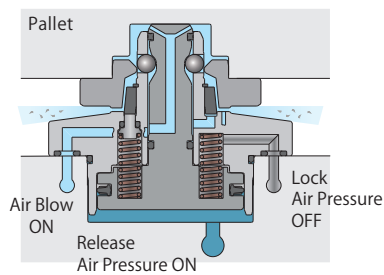


Screw Locator

Manual model
Fixed with a bolt.

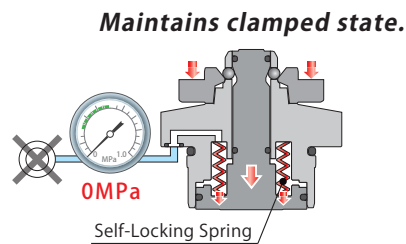


Air Blow and Seating Check



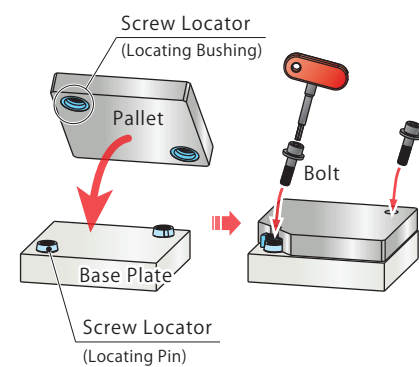
Contaminants are removed by air blow.
Seating surface is provided with the air hole, seating check is possible with a gap sensor.

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.

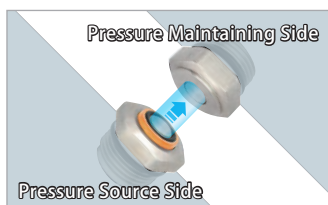
Screw Locator is also suitable for locating of compact dies.



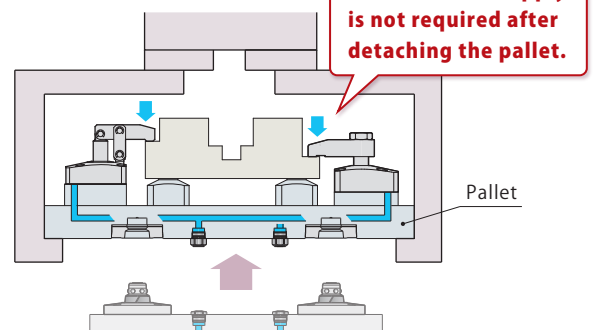
Leakless Coupler

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.



Model JWC/JWD



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

and Pallet Change to Improve Productivity



Company Profile



KOSMEK LTD. Head Office

Company Name	KOSMEK LTD.
Established	May 1986
Capital	¥99,000,000
Chairman & CEO	Tsutomu Shirakawa
President & CEO	Koji Kimura
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

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Our Products



QUICK DIE CHANGE SYSTEMS

For Press Machines



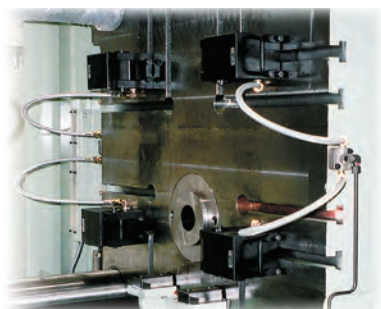
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FA • Industrial Robot Related Products



WORK CLAMPING SYSTEMS

Machine Tool Related Products



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For Diecast Machines

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For further information of products, please order the complete catalog from our website.



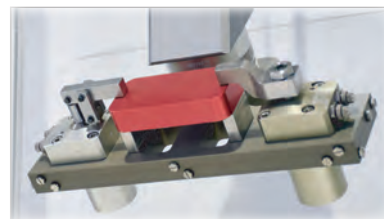
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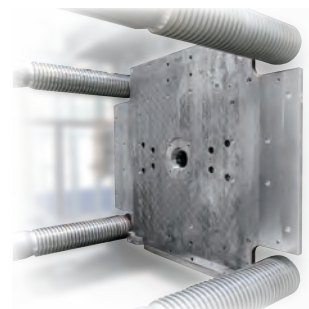
WELDING RELATED PRODUCTS

For Welding Applications



WASHING RELATED PRODUCTS

For Washing Applications



QUICK MOLD CHANGE SYSTEMS

For Injection Molding Machines

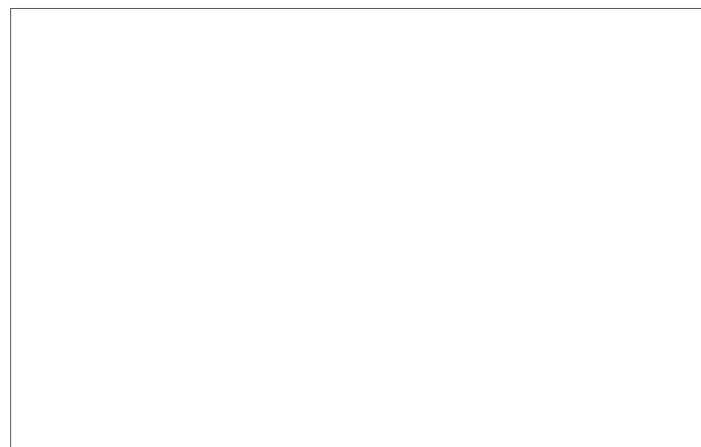


KOSMEK LTD.

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