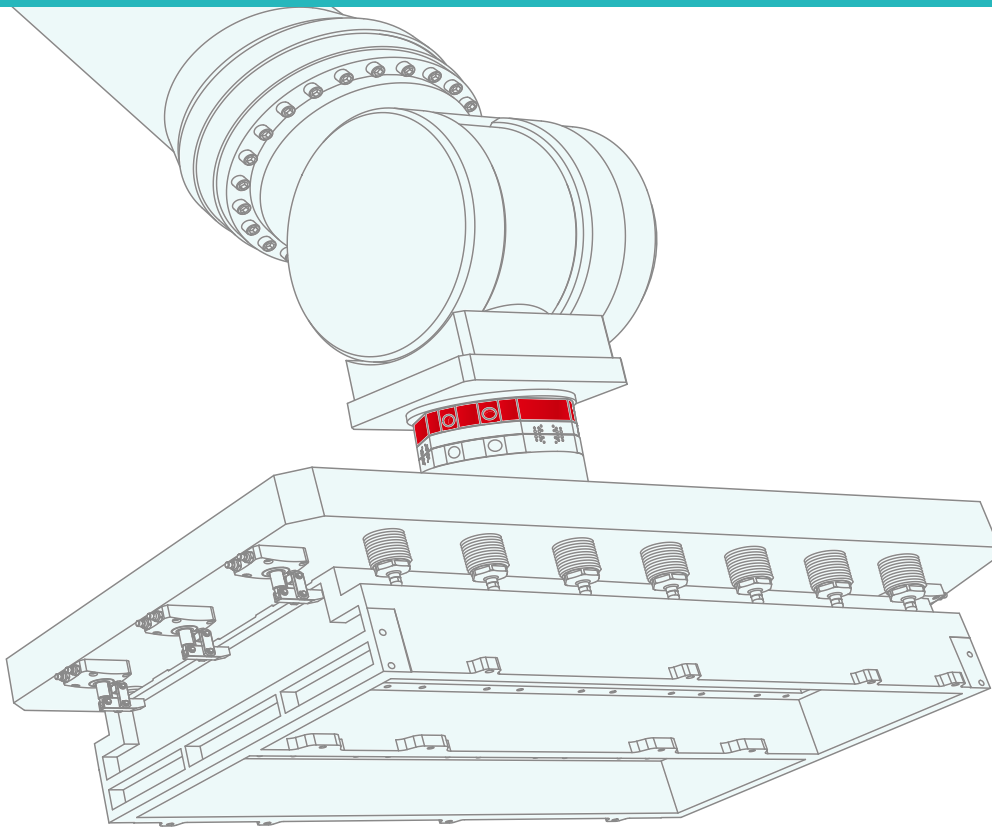


FA • Industrial Robot Related Products

Application Examples Vol.5



Theme 1

Transfer

Theme 2

Setup

Theme 3

Operation

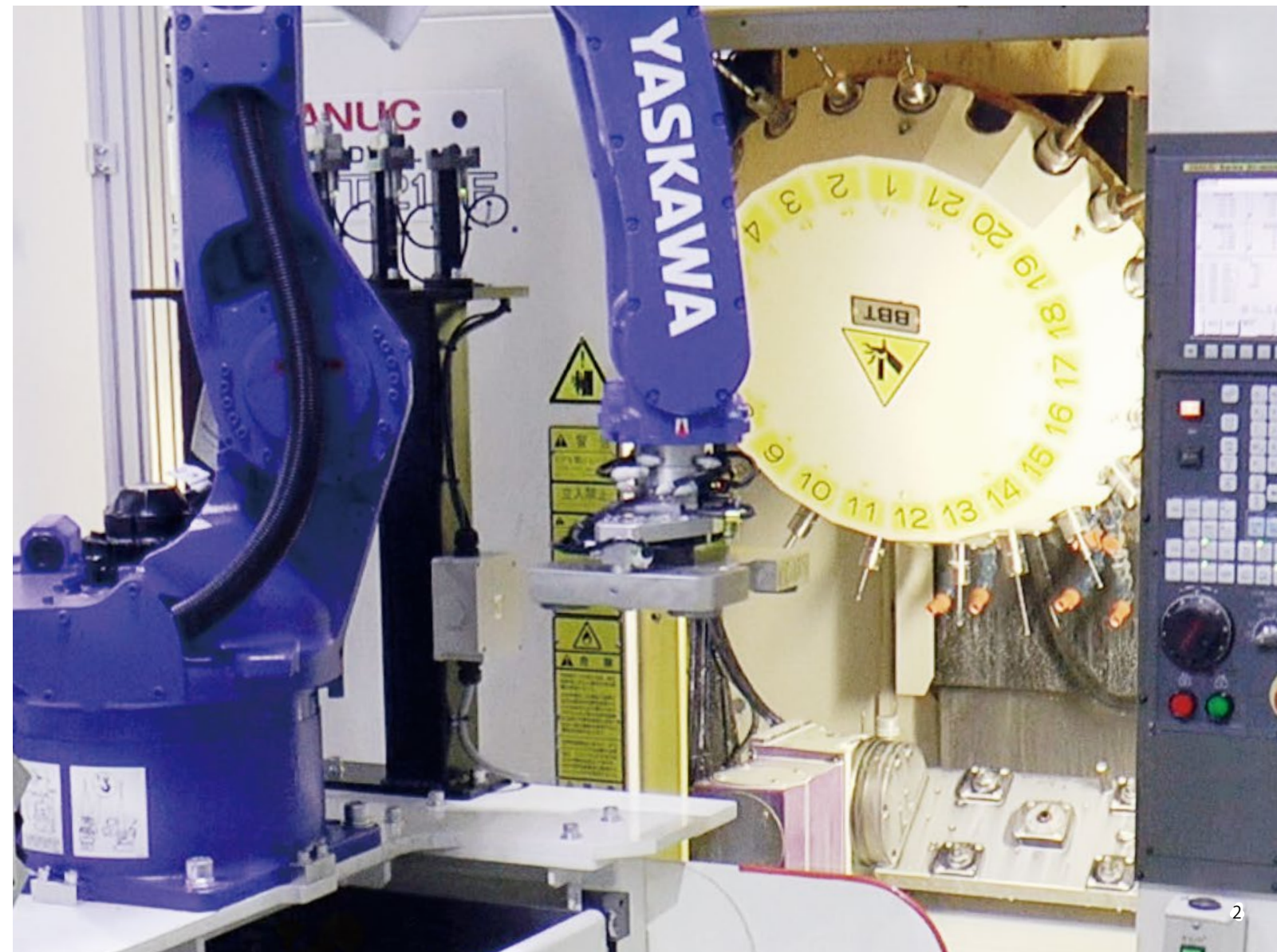
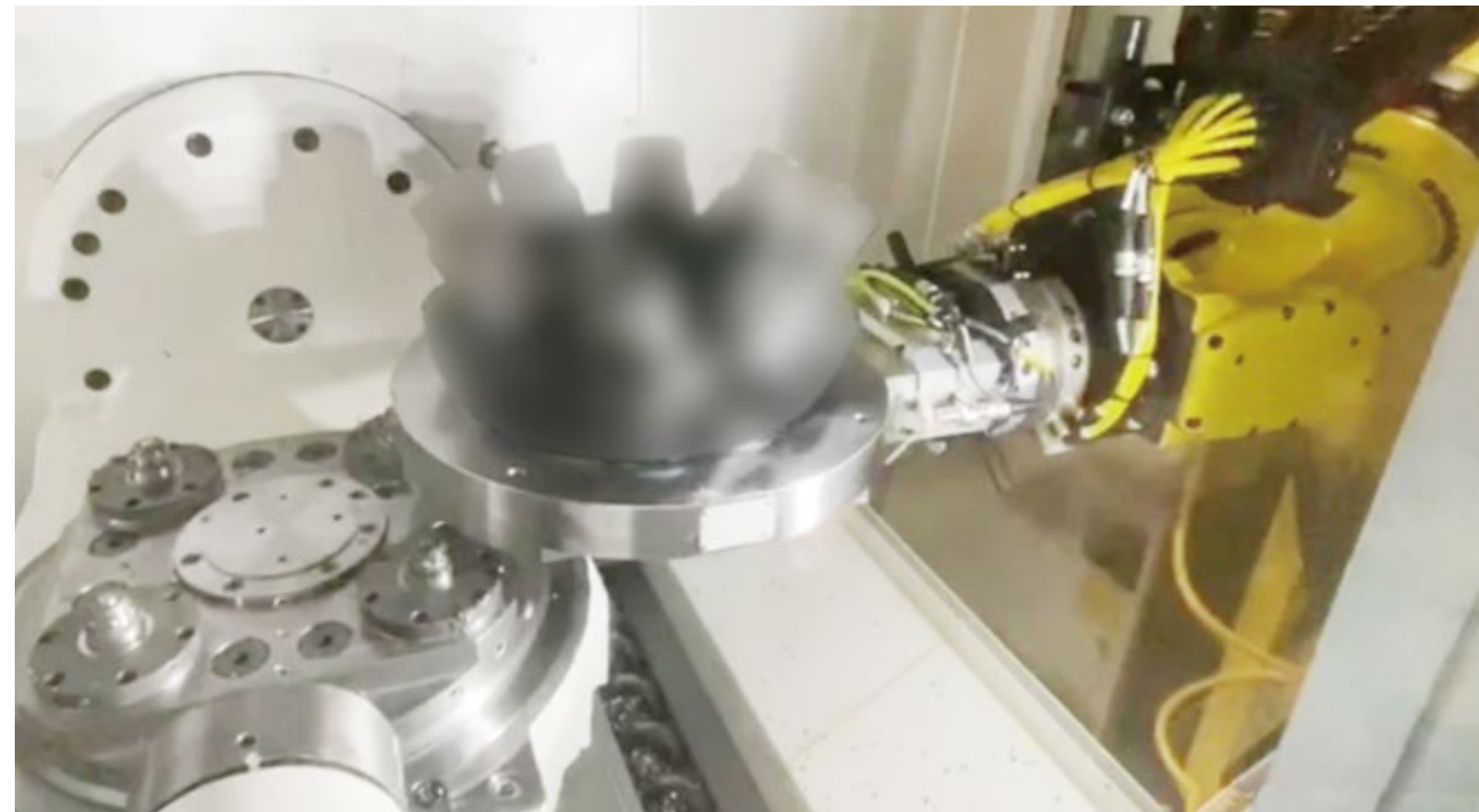
Theme 4

Positioning

**KOSMEK Products for Automation
and Setup Improvement
in Every Process**

Automation Transfer

AUTOMATION requires the ability to transfer various kinds of workpieces regardless of their shapes. KOSMEK provides transfer hands that are compact yet powerful, and applicable to a wide variety of workpieces, fixtures and pallets.





Pallet Gripper

Model **WVA**

Moment-Resistible Gripper Suitable for Pallet Transfer
Side approaching enables to save space for fixture stock.
P.5



NEW Robotic Hand Changer for High-Payload

Model **SWL**

Compact, Powerful and Safe Robotic Hand Changer
Payload Line-up : 80kg/120kg/180kg/300kg.
Directly mounted on a robot with compatible mounting dimensions.
P.7



Lifting Hole Clamp

Model **SWJ**

Lifting type hole clamp with functions of lift cylinder, linear guide, locating and clamping.
Locating part expands to eliminate the gap between the pin and workpiece hole.
Zero gap makes no backlash.
P.9



FA Pneumatic Hole Clamp

Model **WKH**

Gripper expands and pulls workpiece in.
Clamps the workpiece by holding its holes, allowing for 5 faces accessible.
Light Weight, Smaller Footprint, and High-Power
P.11



High-Power Pneumatic Hole Clamp

Model **SWE**

Engineered for clamping a workpiece in a machine tool.
Strong clamping force with mechanical lock replaces hydraulics allows for transferring heavy workpieces and five-face machining.
P.13



Hole Gripper

Model **WKK**

Gripper expands and pulls workpiece in.
Air blow function prevents cutting chips and coolant, allowing for transferring workpieces to and from various machining and die casting processes.
P.14



Compliance Module

Model **WRC**

The misalignment correcting device which can be directly mounted to KOSMEK Robotic Tool Changer (7kg ~ 75kg Payload). Mechanical floating function allows for simple installation. Suitable for transfer and assembly process with a robot.
P.15



High-Power Pull Stud Clamp

Model **WPT**

Clamps with the Pull Bolt. Compact Body with Powerful Holding Force
Safe and compact robotic hand with self-locking function.
P.17



Ball Lock Cylinder

Model **WKA**

The simple and compact robotic hand hooks a workpiece with steel balls.
P.19



Locating Pin Clamp

Model **SWP**

Expansion Locating Pin allows for stable operation with large clearance and high repeatability with internal chucking. Suitable for automated application.
Also recommended for end of arm tooling and clamp on equipment.
P.21



Link Clamp / Link Clamp Retracting model / Swing Clamp

NEW High-Power Pneumatic Clamp

Model **WCE/WFE/WHE**

Compact and high-power clamp cylinders with KOSMEK exclusive mechanical lock.
The new Link Clamp Retracting model whose largely retracted lever avoids interference during workpiece loading/unloading. Equipped with self-locking function to prevent a workpiece fall.
P.23



Pneumatic Swing Clamp

Model **WHC**

Compact pneumatic clamp cylinder with long operational life, high speed and accuracy.
This clamp is coolant resistant, and can be used in various applications with the use of auto switch.
P.25



NEW Pneumatic Link Clamp -Retracting model -

Model **WFC**

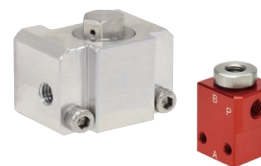
Retracted lever avoids interference during workpiece loading/unloading. This clamp is coolant resistant, and can be used in various applications with the use of auto switch.
※ Visit our website for detail.



NEW Pneumatic Link Clamp

Model **WCC**

Compact Cylinder with Built-in Link Mechanism. This clamp is coolant resistant, and can be used in various applications with the use of auto switch.
※ Visit our website for detail.



Air Safety Valve / Safety Push Valve

Model **BWS / SWRA**

Air Safety Valve : Ultra-compact and light air pilot check valve prevents a workpiece fall.
Safety Push Valve : Directly mounted on the KOSMEK Robotic Hand Changer (Model SWR), and prevents a tool fall caused by operational error of a valve.
P.27



Air Sequence Valve

Model **BWD**

A sequence valve (time delay valve) that can activate multiple actuators in sequence.
It controls air flow by using a check valve, flow control valve, air tank, switching valve, and initiate a time difference for air pressure supplied from primary side to secondary side.
P.29



Leakless Coupler

Model **JWC / JWD**

Leakless coupler enables to maintain clamping force since it keeps the air pressure even if a coupler is disconnected, remains air clamps in a locked state, and transfer a workpiece to the next station.
P.31



NEW Smart Series

Model **KS**

Powered by any power source. Smart fit on any application.
※ Visit our website for detail.



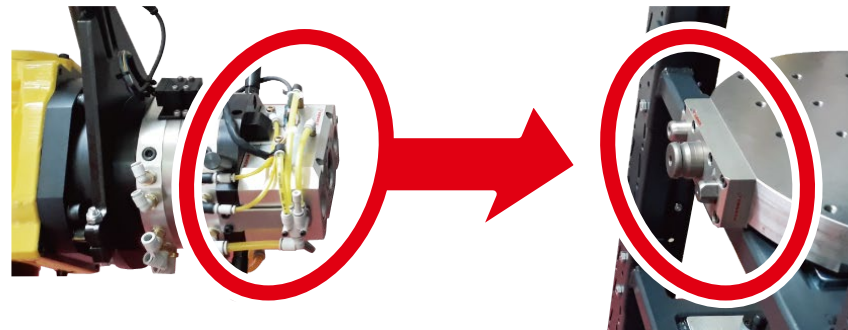
FA • Industrial Robot System

Pallet Gripper model **WVA**

The moment-resistible gripper is best suitable for pallet transfer.

Enables side-approaching transfer and thus space saving for fixture stocker and avoids interference when transferring to a narrow machine.

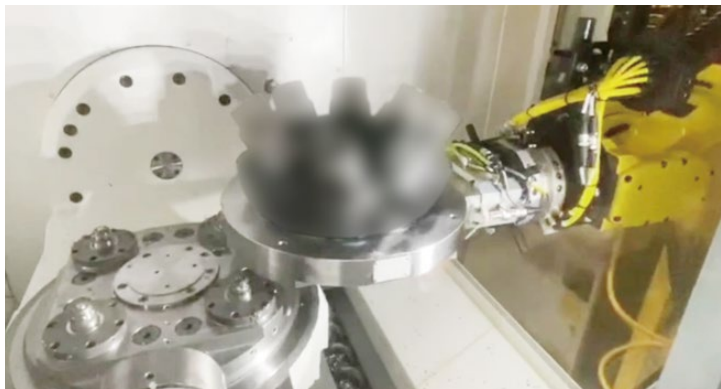
No Interference with Side-Approaching Transfer



Easy to Transfer by Approaching from the Side

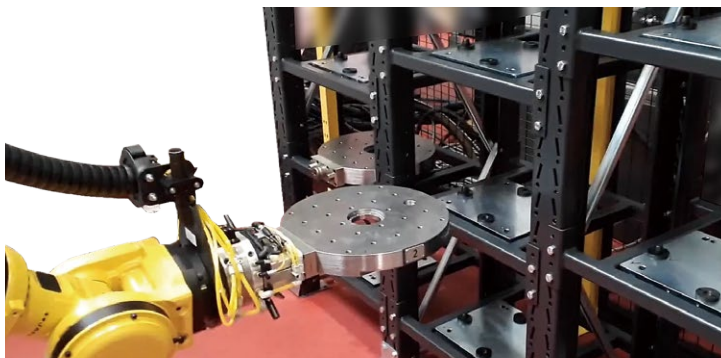
Withstands high moment when approaching to a pallet.

Avoid interference even when transferring to a narrow space.

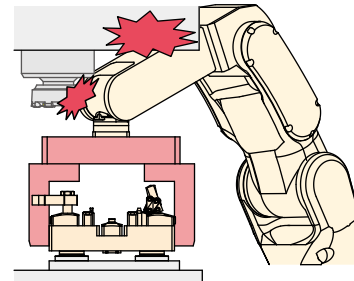


Make Pallet Storing Flexible

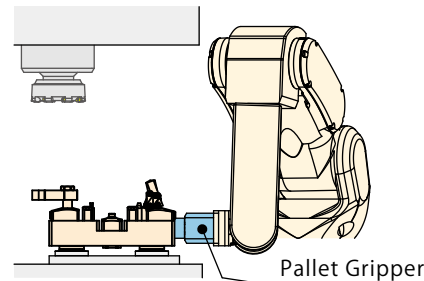
Side-approaching saves space for storing pallets and fixtures.



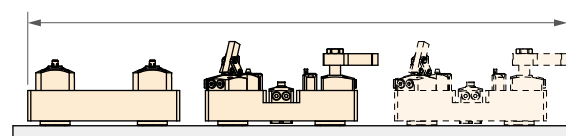
Before :
Inter-
ference
Occurs



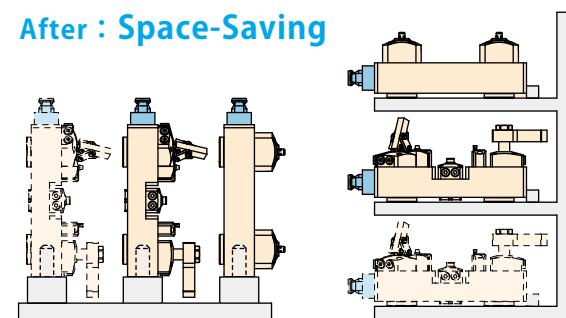
After :
Inter-
ference
Avoided



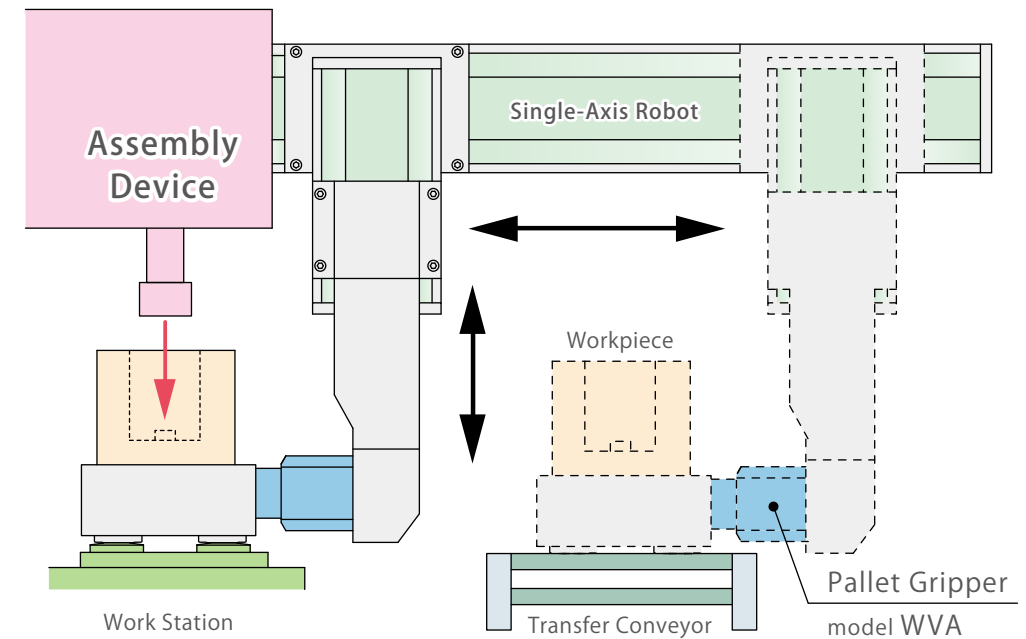
Before : Requires Space for Fixtures



After : Space-Saving



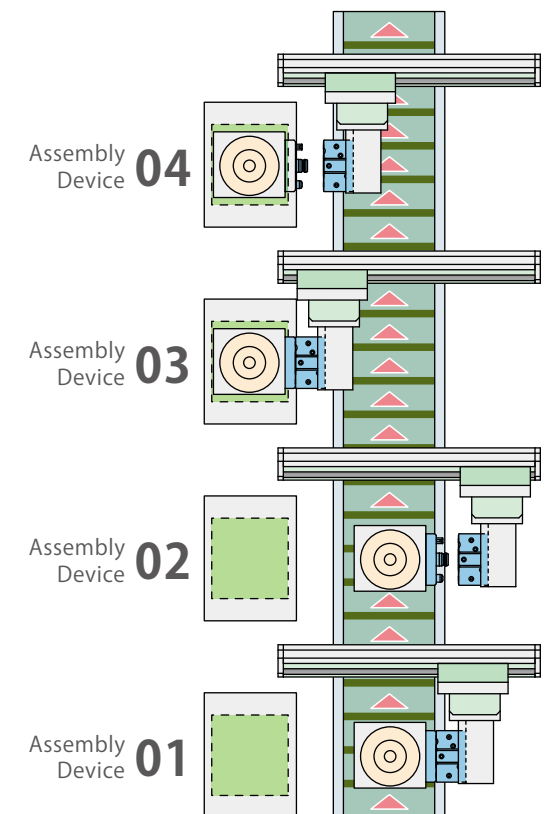
Side-Approaching to Reduce Equipment Cost



Side-Approaching Reduces Cost for Transfer Device

Easy to transfer into a device even when using with a single-axis robot. Requires less number of robot axes and shorter stroke for reduction in overall equipment cost.

Saves Space and Cost for Lines Requiring Multiple Processes



Application Example Video

Pallet Gripper Fixture Setup with Robot

Search

Video Title
Pallet Gripper Application Example

https://www.kosmek.co.jp/php_file/video_products.php?id=081&lang=2





FA • Industrial Robot System

Robotic Hand Changer for High-Payload model SWL

Payload Line-up : 80kg/120kg/180kg/300kg.

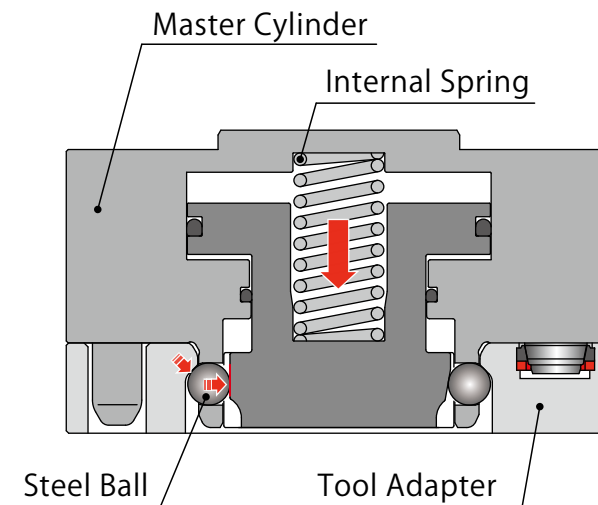
Directly mounted on a robot whose mounting dimensions of the flange based on ISO mounting pattern.

Compact, Powerful and Safe Tool Changer

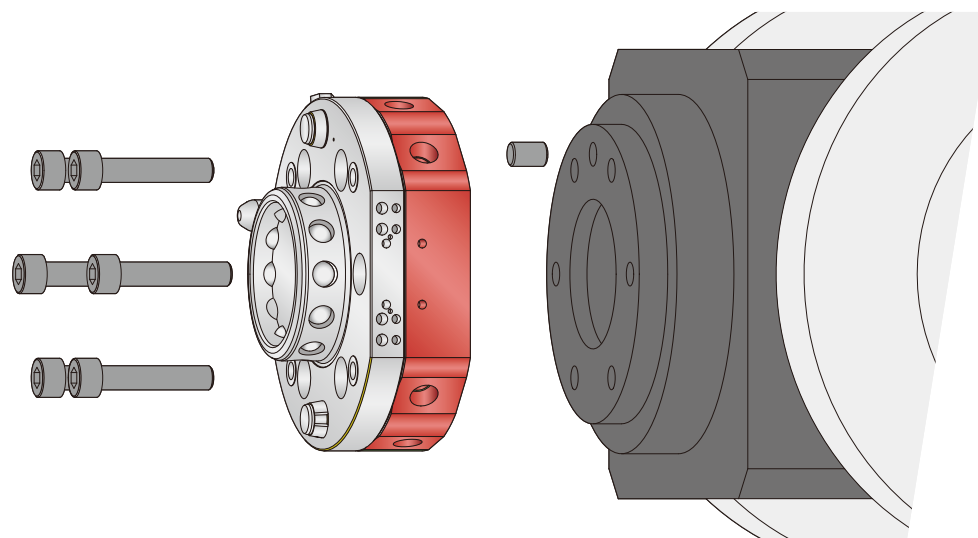
Securely prevents a tool fall with the two-step mechanical lock mechanism.



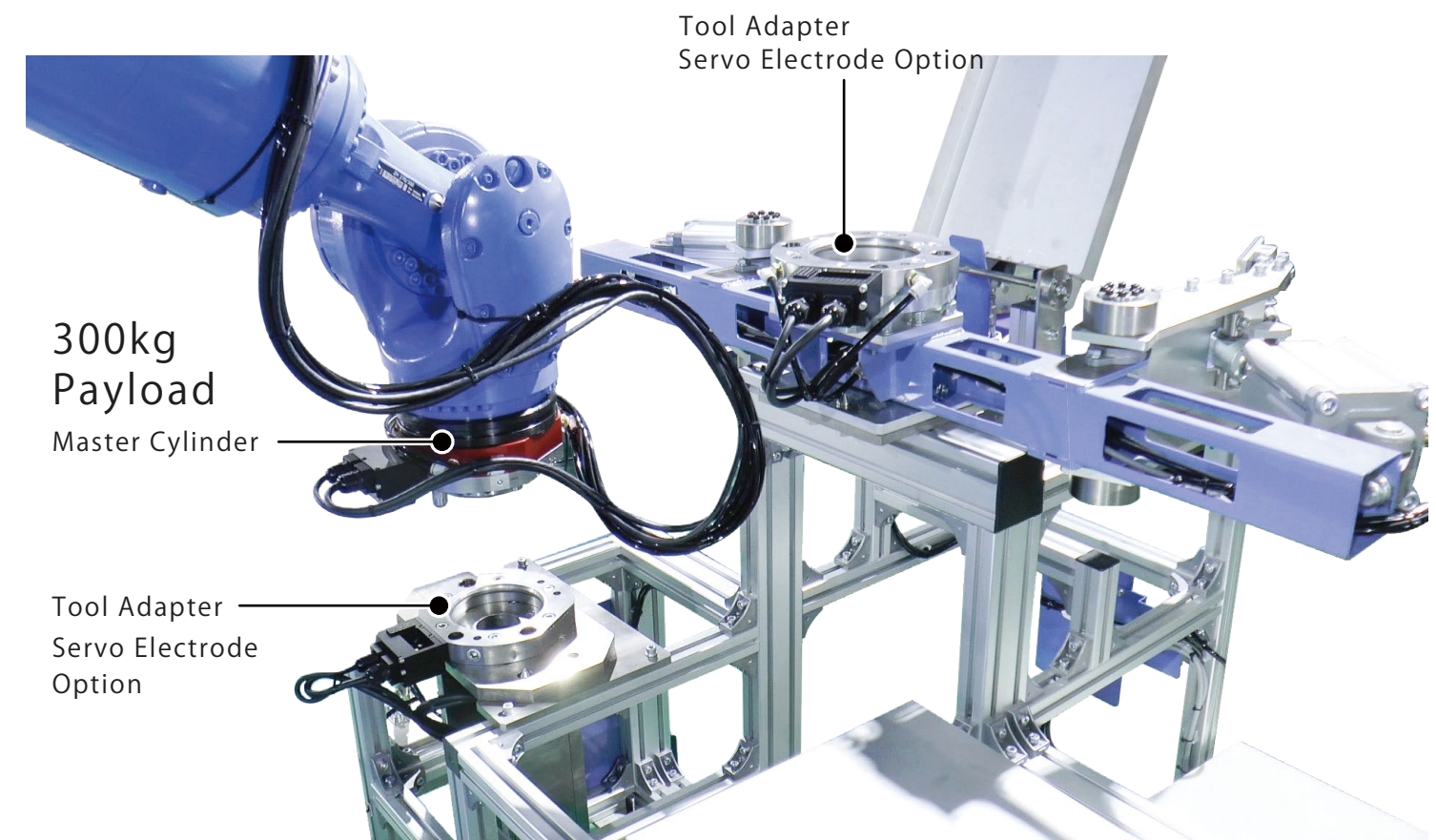
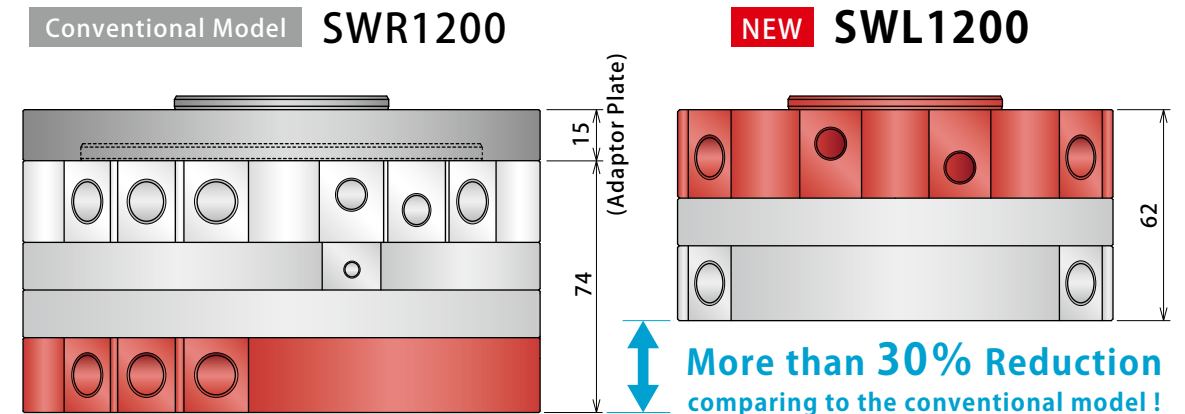
Steel Ball
(for Mechanical Lock)



Directly mounted on a robot with compatible mounting dimensions.



Thickness when Connected: more than 15% Reduced Comparing to the Conventional Model



Application Example Video

300kg Payload Robotic Hand Changer

Search

Video Title

Robotic Hand Changer with 300kg Payload

http://www.kosmek.co.jp/php_file/video_products.php?id=149&lang=2



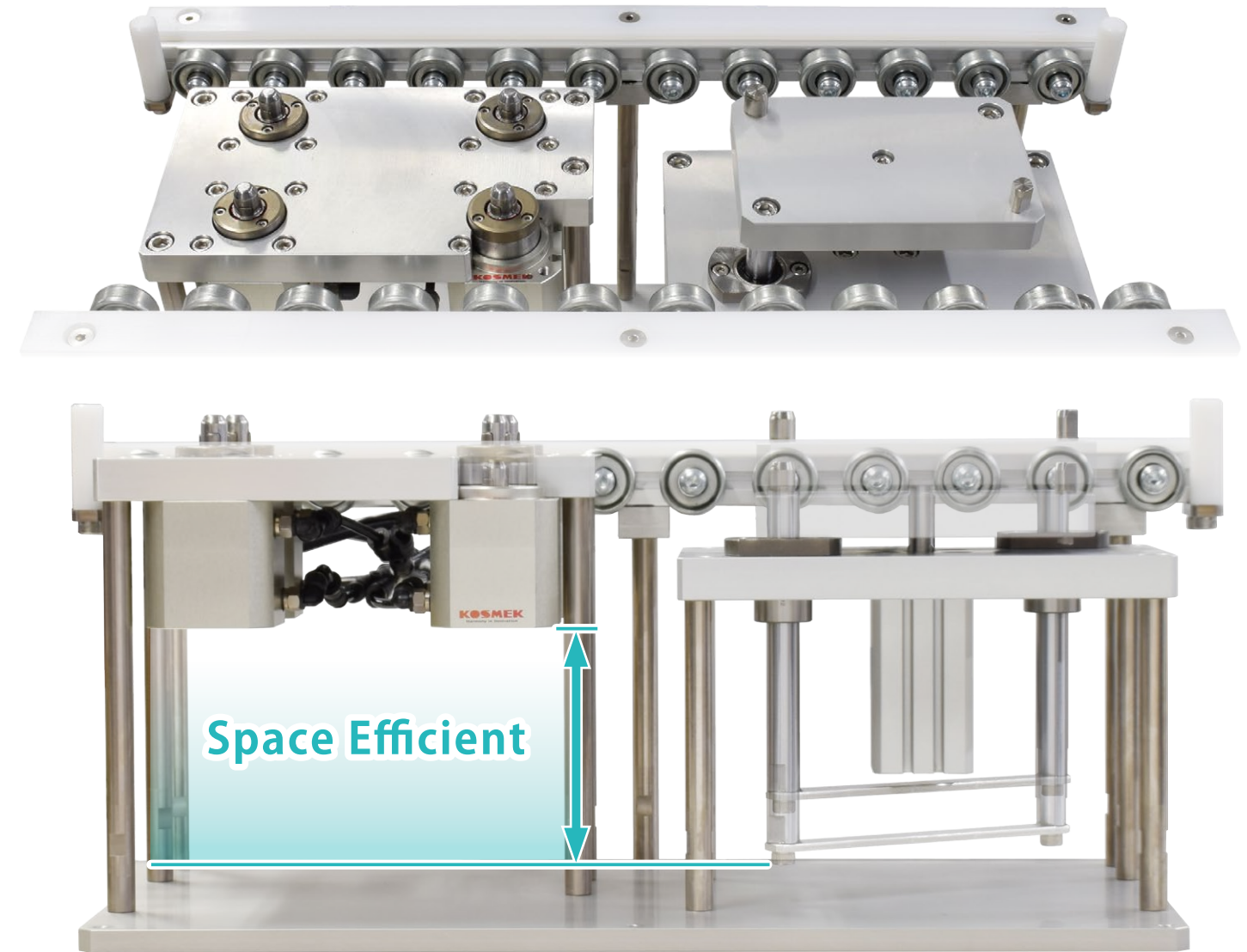
See our case studies



FA • Industrial Robot System

Lifting Hole Clamp model **SWJ**

Lifting type hole clamp with functions of lift cylinder, linear guide, locating and clamping. Locating part expands to eliminate the gap between the pin and workpiece hole. Zero gap makes no backlash.



After

Lifting Hole Clamp

Integrated Lift Cylinder, Linear Guide and Locating Pin with Clamping Function.

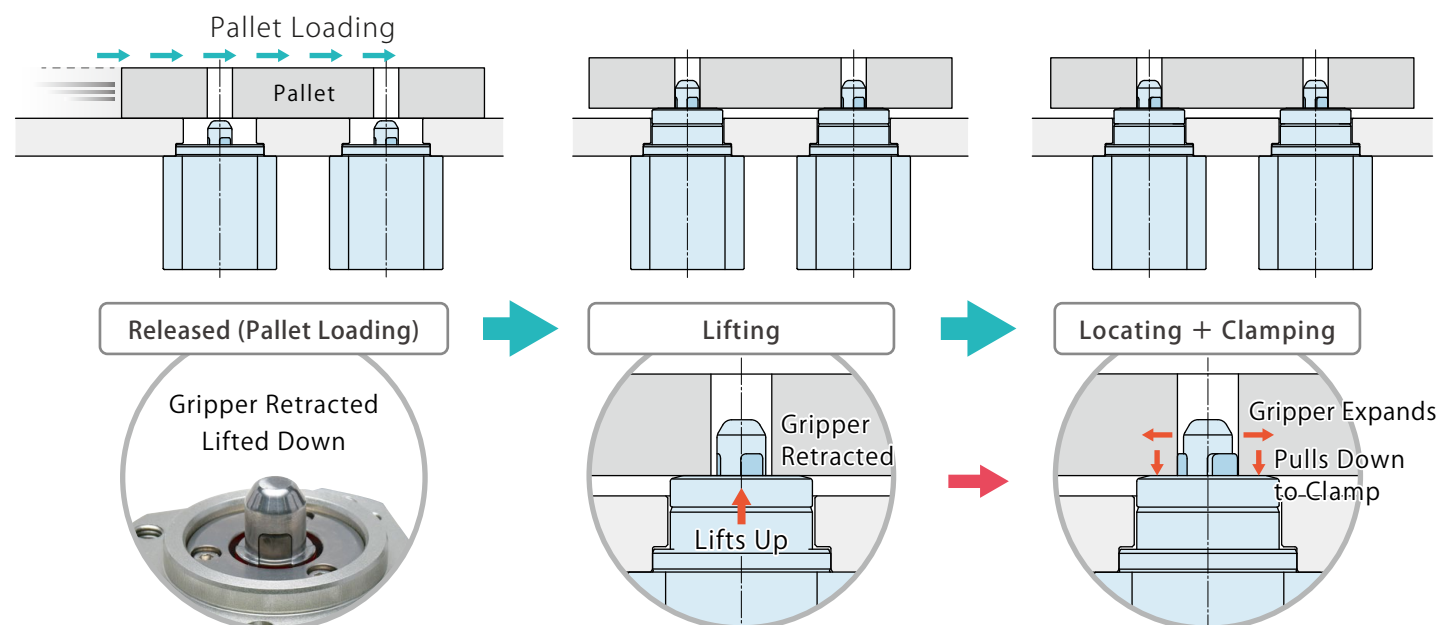
- Simple • Number of Parts : Few
- Space Efficient
- With Clamping Function
- No Backlash due to no gap between the pin and pallet hole.

Before

General Cylinder + Fixture

Needs to place lift cylinders, linear guides and locating pins separately.

- Complicated • Number of Parts : Many
- Requires Space
- Requires Additional Clamps
- Backlash due to gap between the pin and pallet hole.



Application Example Video

Assembly and Inspection with a Robot Lifting Hole Clamp

Search

Video Title
Assembly • Inspection Robot Case Study

https://www.kosmek.co.jp/php_file/video_products.php?id=026&lang=2





FA • Industrial Robot System

FA Pneumatic Hole Clamp model WKH

Gripper expands and pulls workpiece in.

Clamps the workpiece by holding its holes, allowing for 5 faces accessible.

Light Weight, Smaller Footprint, and High-Power

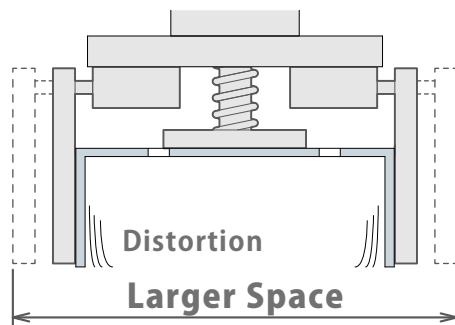
Compact Transfer Hand for Housing Parts

Compact Hand Holding a Workpiece Hole

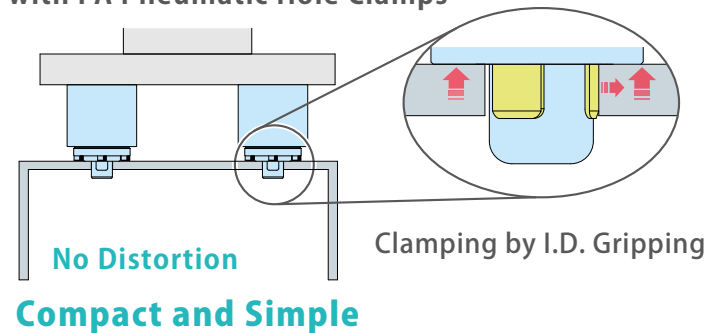
FA Pneumatic
Hole Clamp
Model WKH



Hand with Linear Cylinders

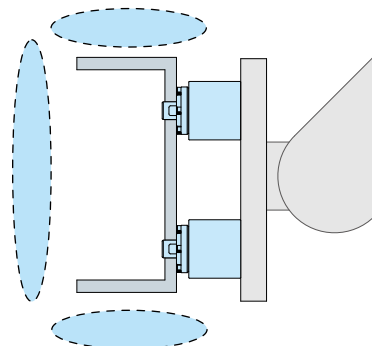


Hand with FA Pneumatic Hole Clamps



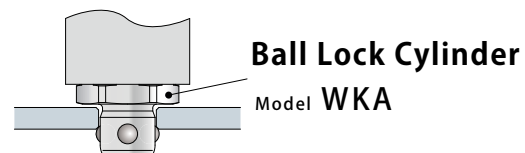
Easy to Assemble without Interference around Workpiece

Easy to
Approach



For Even More Compact Hand

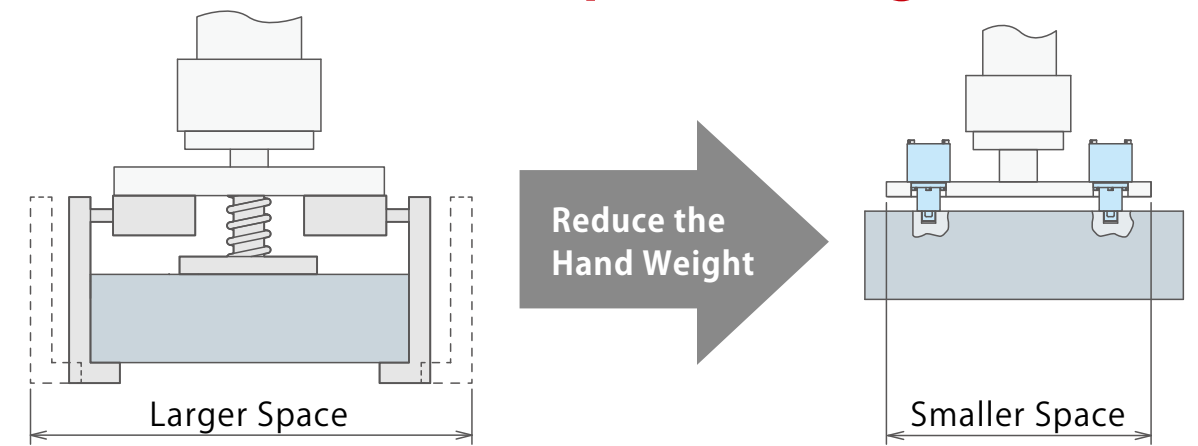
You can make a transfer hand even more compact by using Ball Lock Cylinder (model WKA) that simply holds a workpiece with steel balls.



Advantages of FA Pneumatic Hole Clamp

Chuckling Inside of Workpiece Holes Allows for

Compact and **Light** Applications

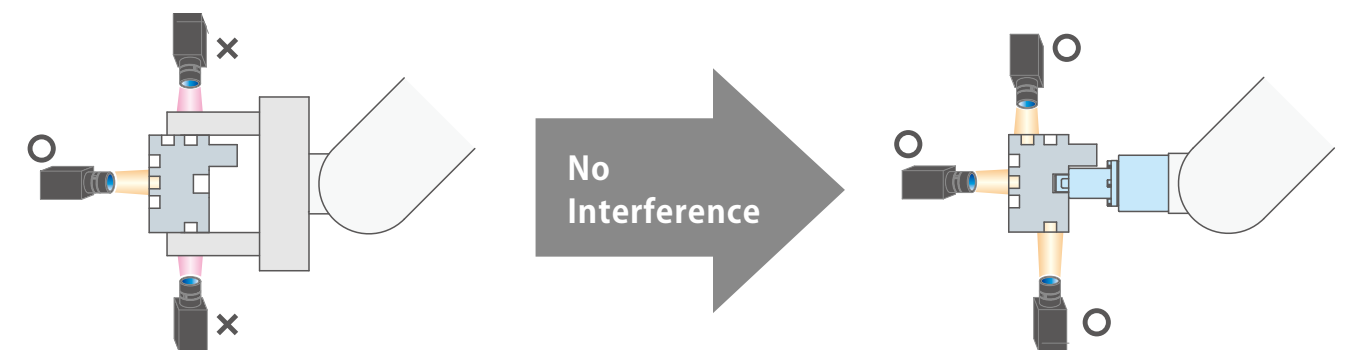


Hand with Parallel Hand/Linear Cylinder

Hole Clamp: Compact and Light
with Powerful Gripping Force

Chuckling Inside of Workpiece Holes Allows for

Zero Interference and **Minimum Setup**



Interferes with the hand
when holding a workpiece.

No Interference,
5 Faces Accessible



Application Example Video

FA Pneumatic Hole Clamp Application Example

Search

Video Title

Introducing Application Examples of FA Pneumatic Hole Clamp

http://www.kosmek.co.jp/php_file/video_products.php?id=117&lang=2



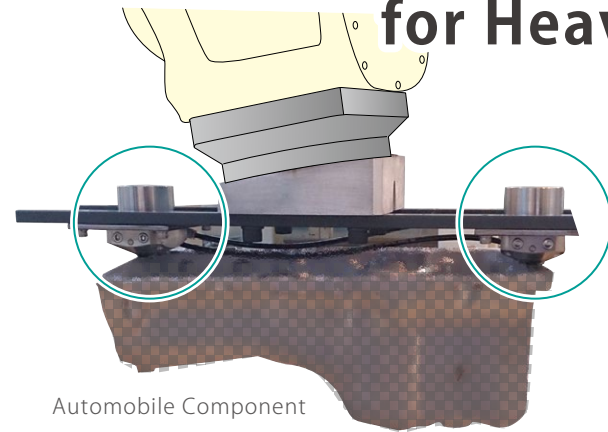


FA • Industrial Robot System

High-Power Pneumatic Hole Clamp model **SWE**

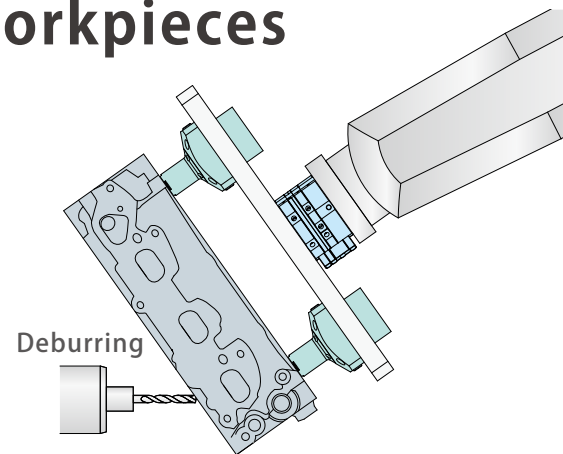
Engineered for clamping a workpiece in a machine tool.

Strong clamping force with mechanical lock replaces hydraulics allows for transferring heavy workpieces and five-face machining.

Light and Compact Transfer Hand for Heavy Workpieces

Automobile Component

Transfer the Heavy Workpiece with Light Hands

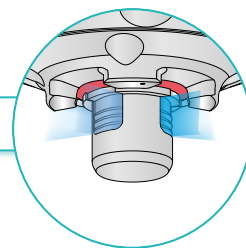


Deburring

5 Faces Accessible with No Interference

Save Energy with Light Hands

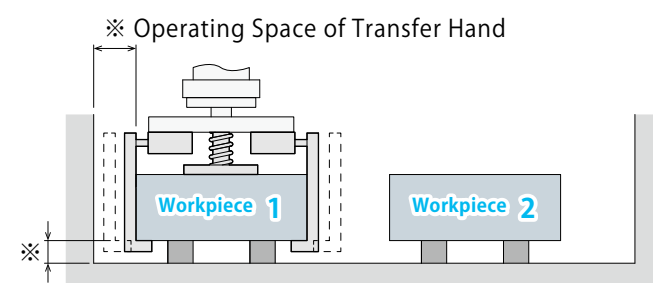
Reducing the weight of the hand speeds up the robot and maximizes utilization of its payload leading to downsizing of the robot size.

Air Blow

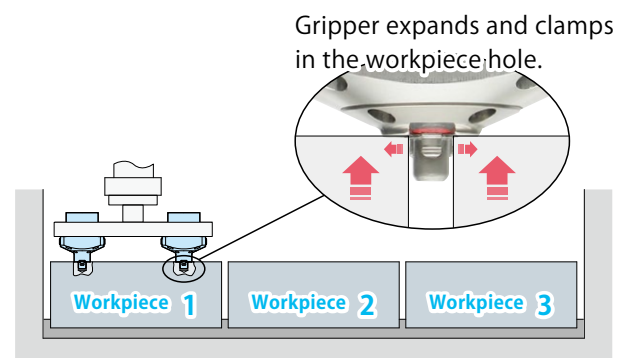
The air blow function cleans the product itself and a workpiece hole.

Saves Space for Storing without Interference around Workpiece

High-Power Pneumatic Hole Clamp to grip a workpiece hole eliminates an operating space for transfer hand, minimizing a storing space for workpieces. Also, an internal spring prevents a workpiece fall even when air pressure drops to 0MPa.



Hand with Linear Cylinders



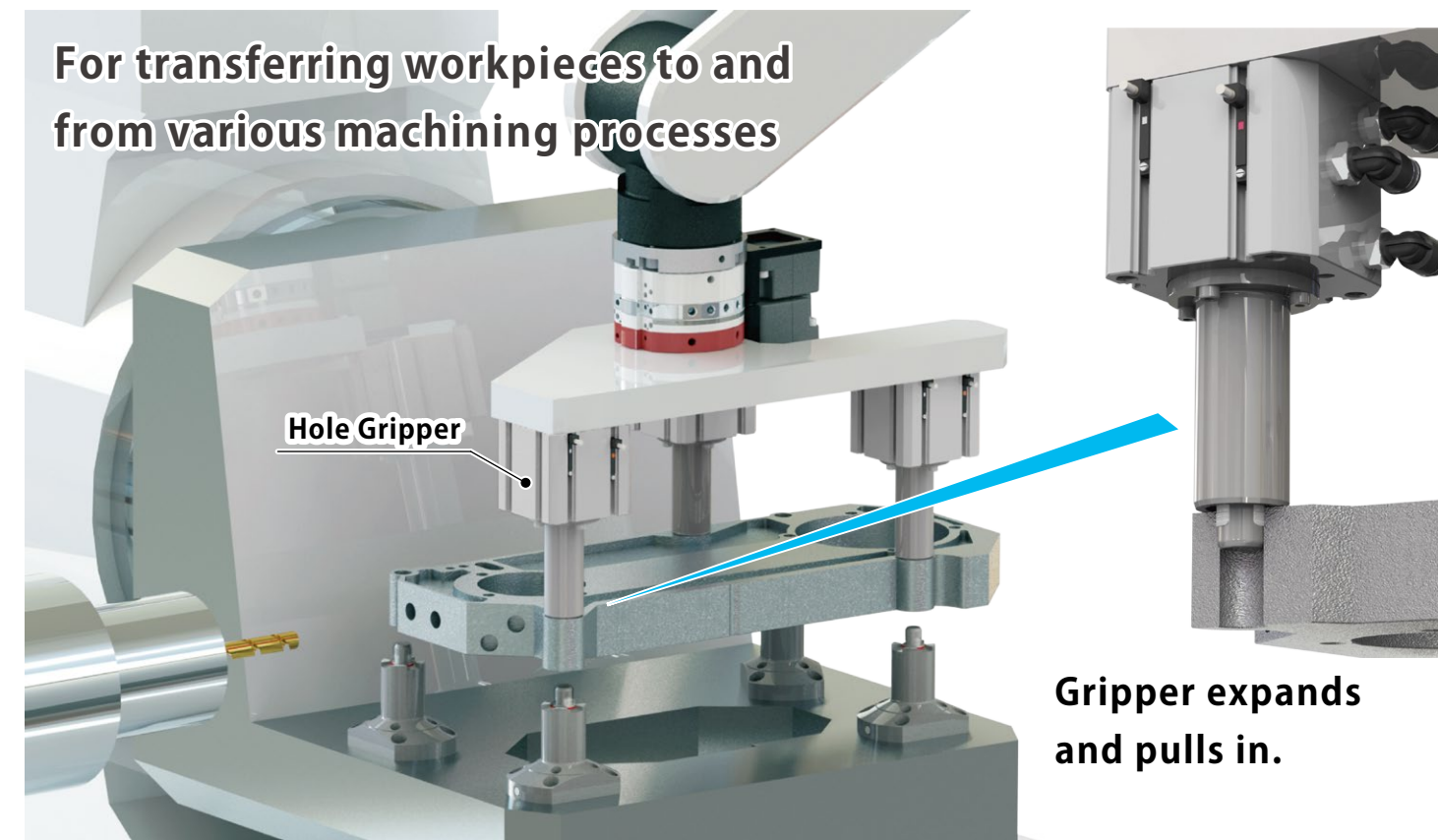
High-Power Pneumatic Hole Clamp



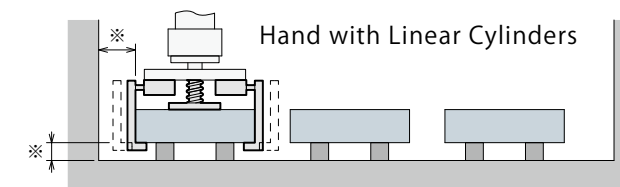
FA • Industrial Robot System

Hole Gripper model **WKK**

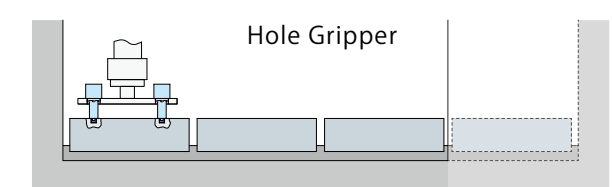
Gripper expands and pulls workpiece in. Air blow function prevents cutting chips and coolant, allowing for transferring workpieces to and from various machining and die casting processes.

For transferring workpieces to and from various machining processes

Hole Gripper

Gripper expands and pulls in.**Space Saving for Transfer Hand and Stocker**

Hand with Linear Cylinders



Hole Gripper

※ Operating Space of Transfer Hand



See our case studies

Application Example Video

Pallet Setup and Robot Deburring with Tool Changer

Search

Video Title

Tool Change / Pallet Setup / Robot Deburring Image

http://www.kosmek.co.jp/php_file/video_products.php?id=007&lang=2



FA • Industrial Robot System

Compliance Module model **WRC**

The misalignment correcting device which can be directly mounted to KOSMEK Robotic Tool Changer (7kg ~ 75kg Payload). Mechanical floating function allows for simple installation. Suitable for transfer and assembly process with a robot.

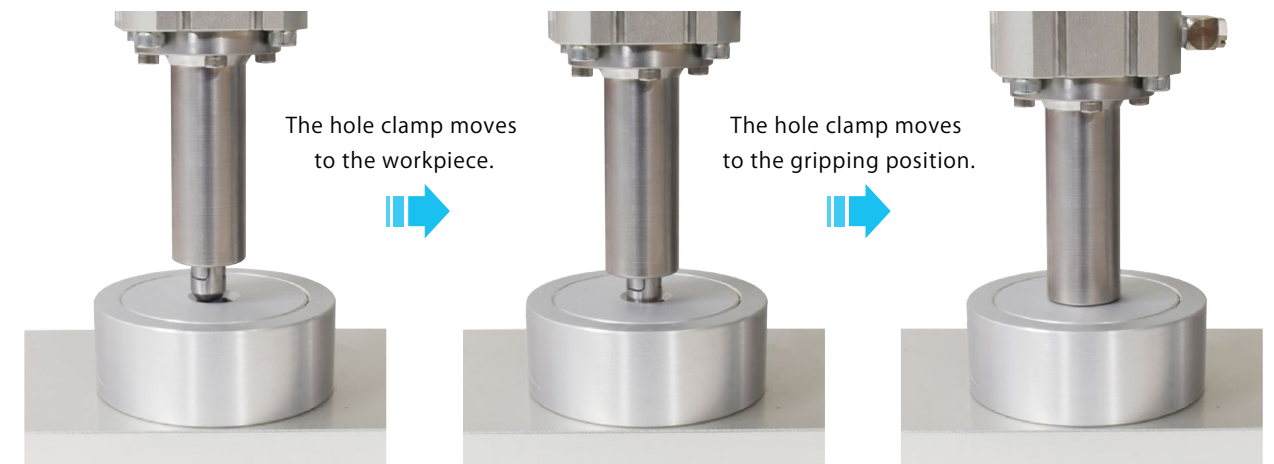
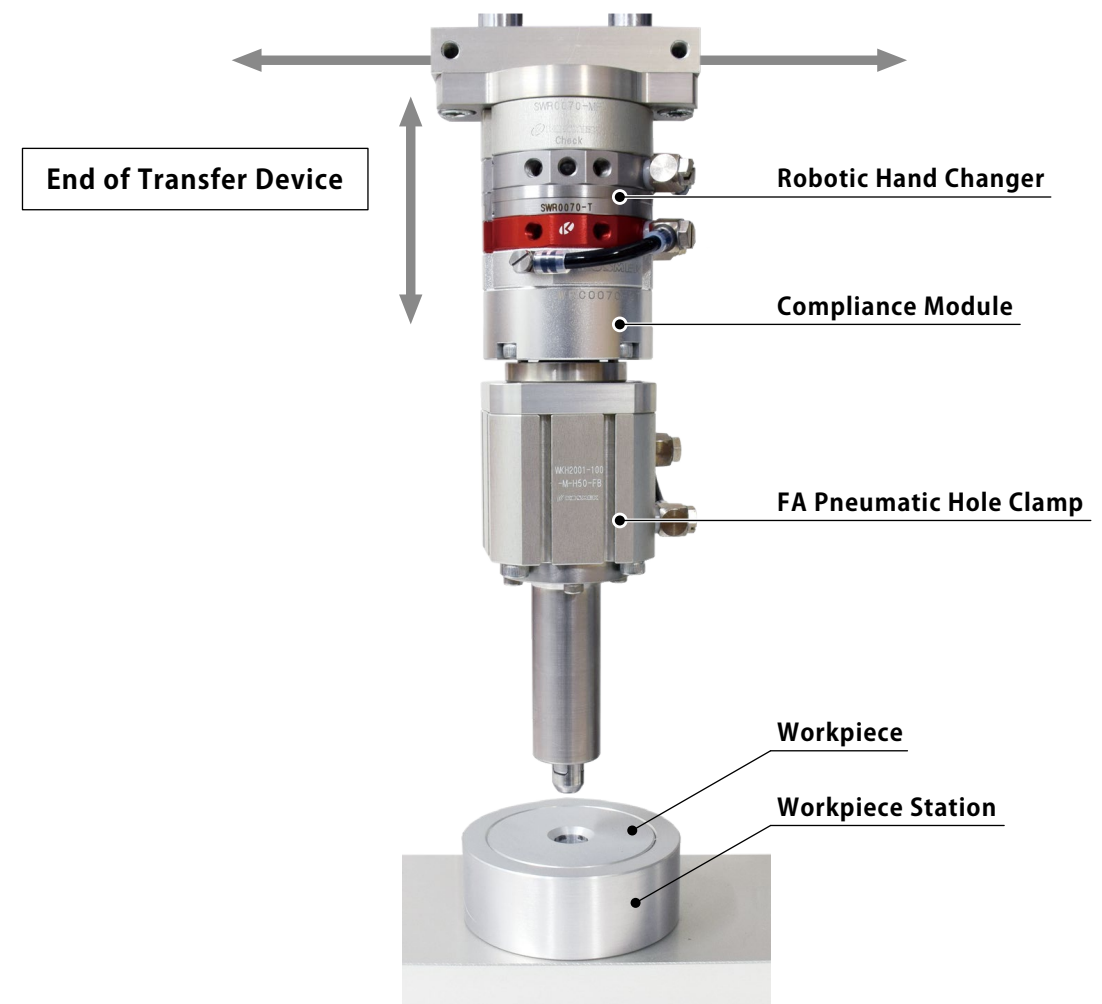
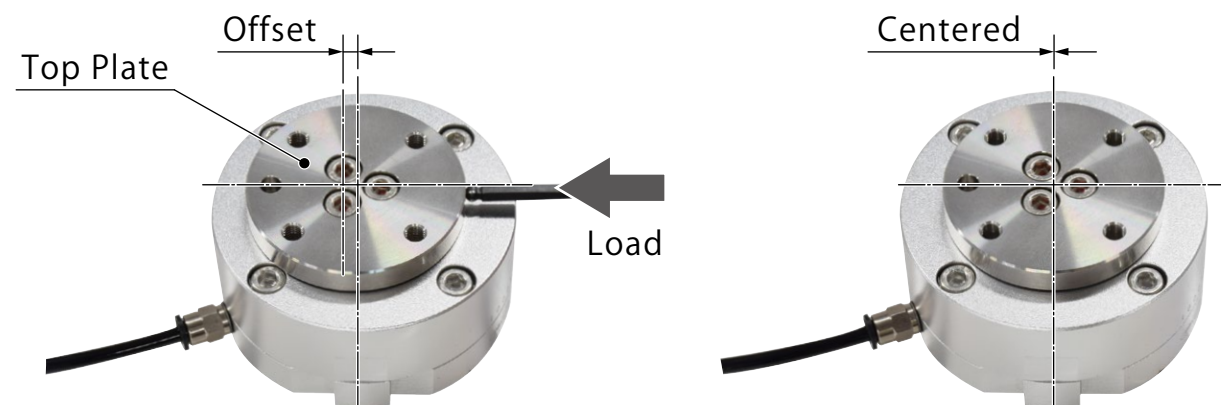
Correct Misalignment during Robot Transfer

Easy to Correct Misalignment with Mechanical Floating Function



Directly Mounted to
Robotic Hand Changer (model SWR)

Misalignment of Workpiece is Corrected by the Floating Top Plate



Misalignment between the clamp tip
and the center of the workpiece.

The misalignment is corrected
by the compliance module.

When gripping the workpiece, there is
no load applied to the transfer device.



Product Introduction Video

[Product Page](https://www.kosmek.co.jp/php_file/eng_product_page.php?no=313_01_01&lang=2)
https://www.kosmek.co.jp/php_file/eng_product_page.php?no=313_01_01&lang=2




FA • Industrial Robot System

High-Power Pull Stud Clamp model WPT

Clamps with the Pull Bolt. Compact Body with Powerful Holding Force

Safe and compact robotic hand with self-locking function.

Easy to Transfer with a Compact Hand

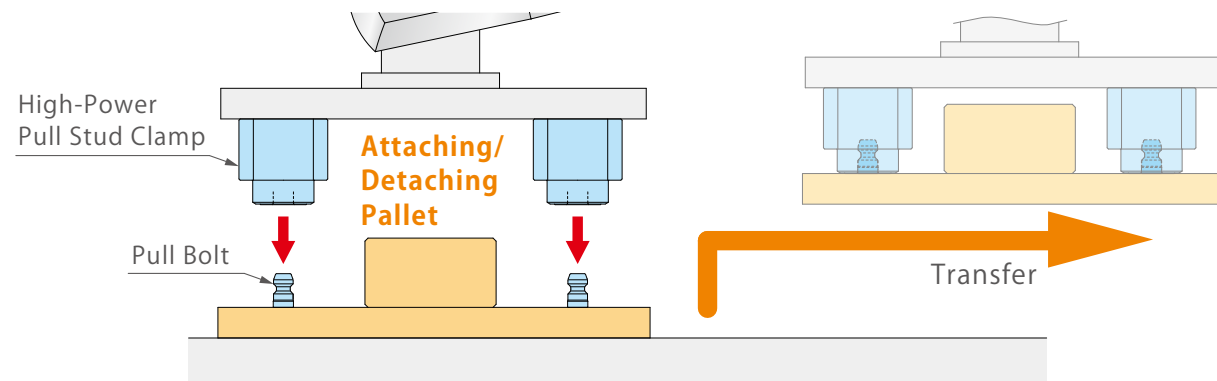
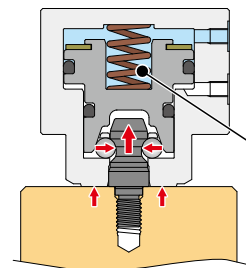
Powerful

This compact cylinder exerts 1.2kN holding force at maximum. ※In case of WPT0600.



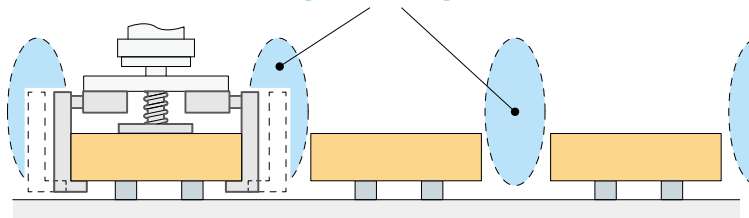
Safe

Fall Prevention with Spring



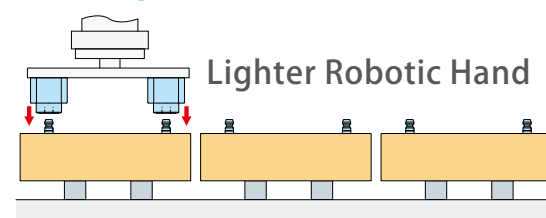
Parallel Hand

Requires Space

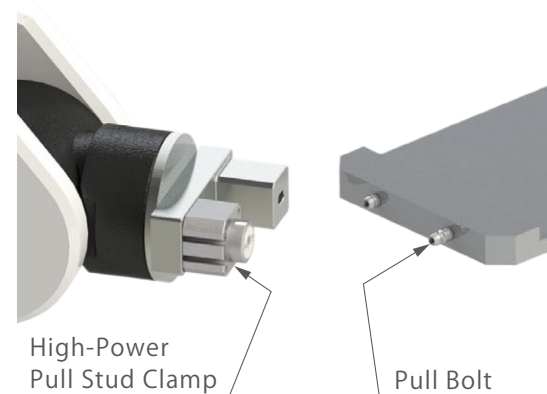


High-Power Pull Stud Clamp

Saves Space for Fixture Stocker



Side-Approaching Hand for Small Pallet

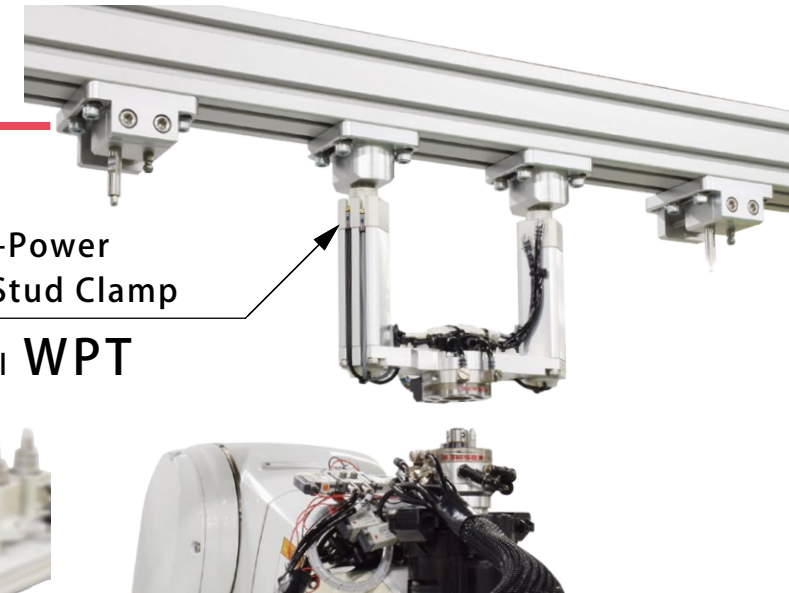


Saving Space for Tool Stocker



High-Power Pull Stud Clamp

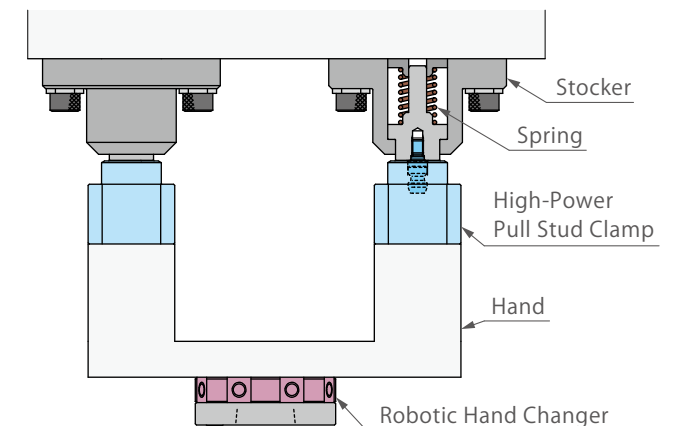
Model WPT



Self-locking function enables to hold the tool on the stocker when air supply is turned OFF.

Holds a tool on a tool stocker and stays locked even after air pressure is cut off.

Saving valuable space by setting the tool stocker above the equipment. Self-locking function of Pull-Stud Clamp enables to hold a tool with holding force powered by built-in spring even after detaching the tool. High-Power Pull Stud Clamp makes a stocker safe and simple.



Application Example Video

Deburring with Robot and KOSMEK Products

Search

Video Title

KOSMEK Product Application Example: Deburring Process

http://www.kosmek.co.jp/php_file/video_products.php?id=044&lang=2



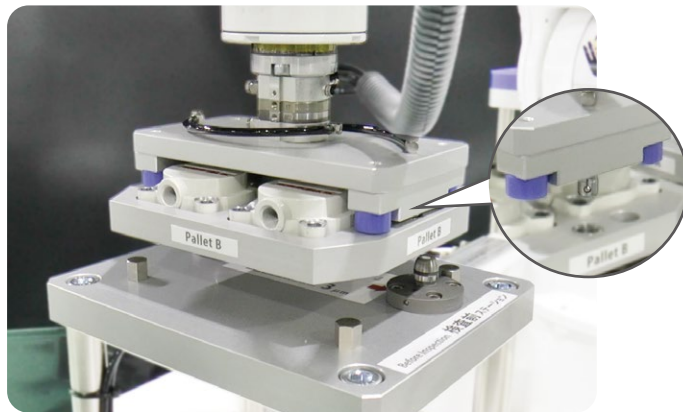
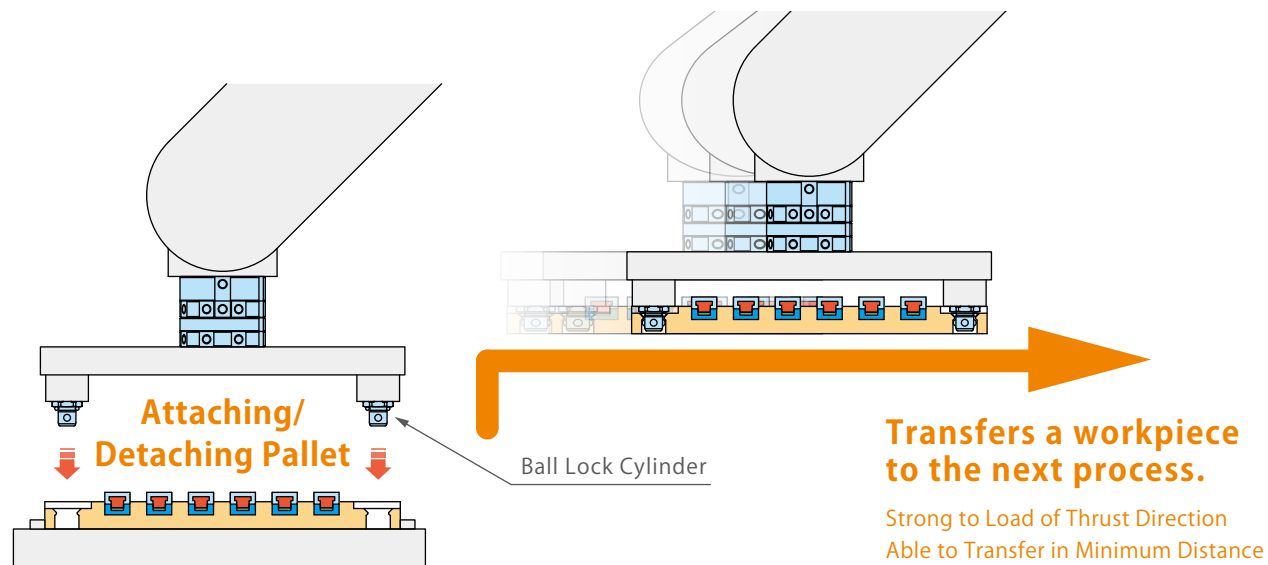


FA • Industrial Robot System

Ball Lock Cylinder model **WKA**

Securely transfers pallets and prevents pallet drops with the steel balls (Ball Lock). The light weight and compact design allows for maximizing the robot's ability without reducing its portable weight.

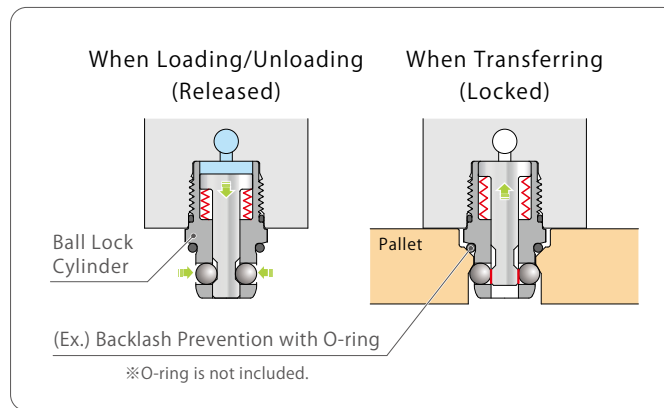
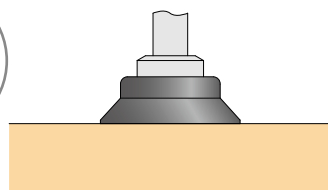
For Faster and More Accurate Pallet Transfer



Current Method

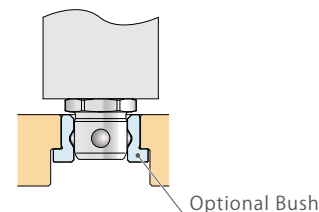
Limited Speed • Limited Weight
Low Suction Force

Suction Pad



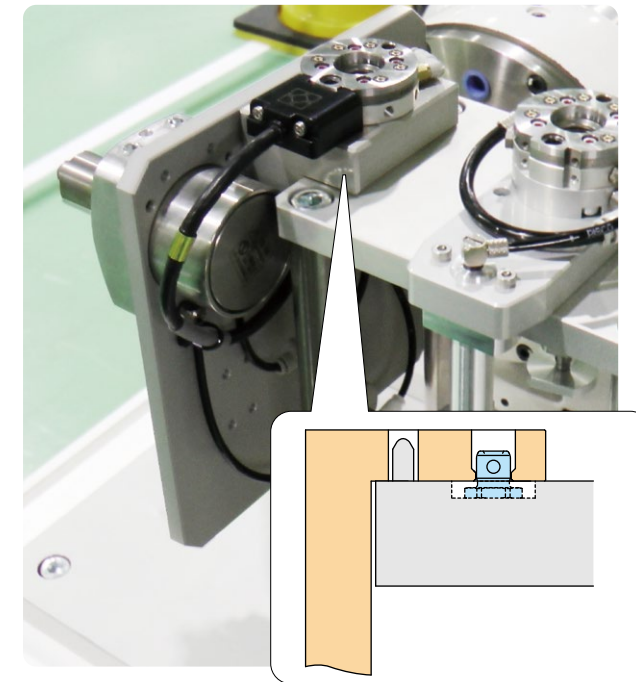
Ball Lock Cylinder

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

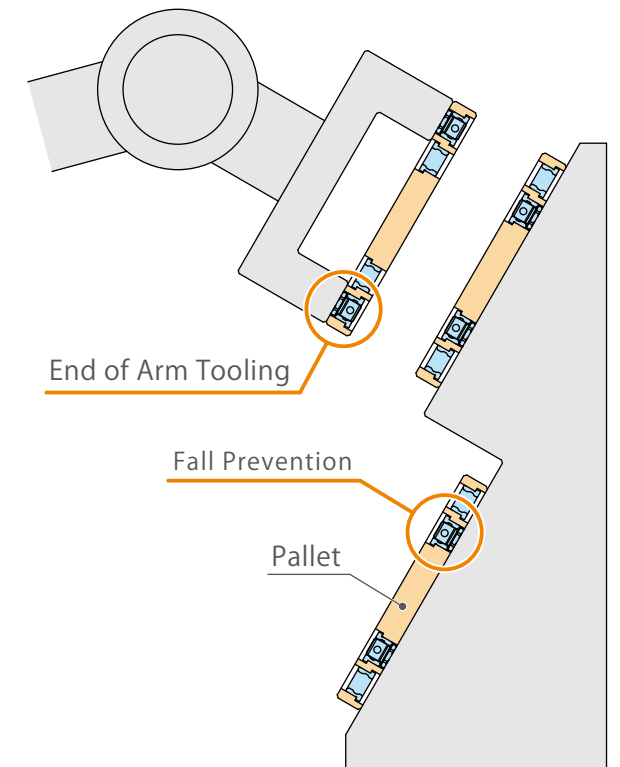


Optional Bush

For More Compact Tool Stocker



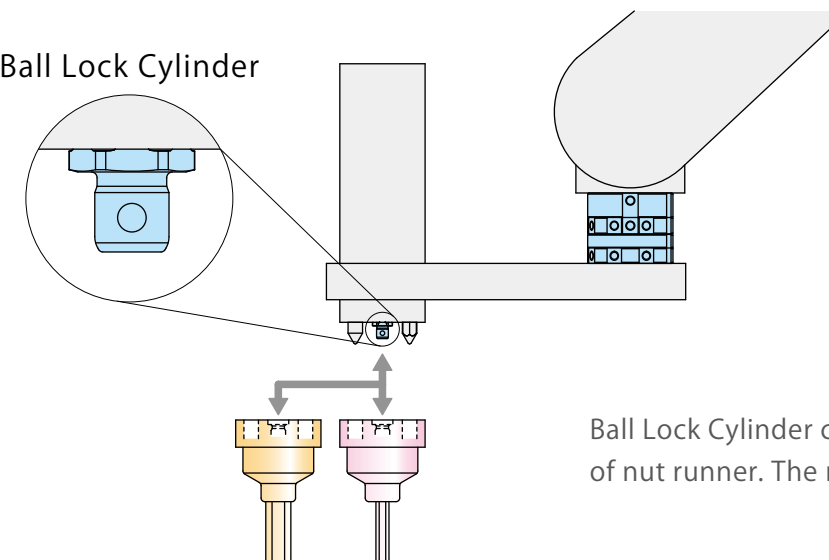
Offset Hand



Pallet Stocker

For Bit Change of Nut Runner

Ball Lock Cylinder



Ball Lock Cylinder changes only the bit part of nut runner. The nut runner part is shared.



Application Example Video

Soldering Automation with Ball Lock Cylinder

Search

Video Title
Soldering Automation with WKA Ball Lock Cylinder

http://www.kosmek.co.jp/php_file/video_products.php?id=079&lang=2





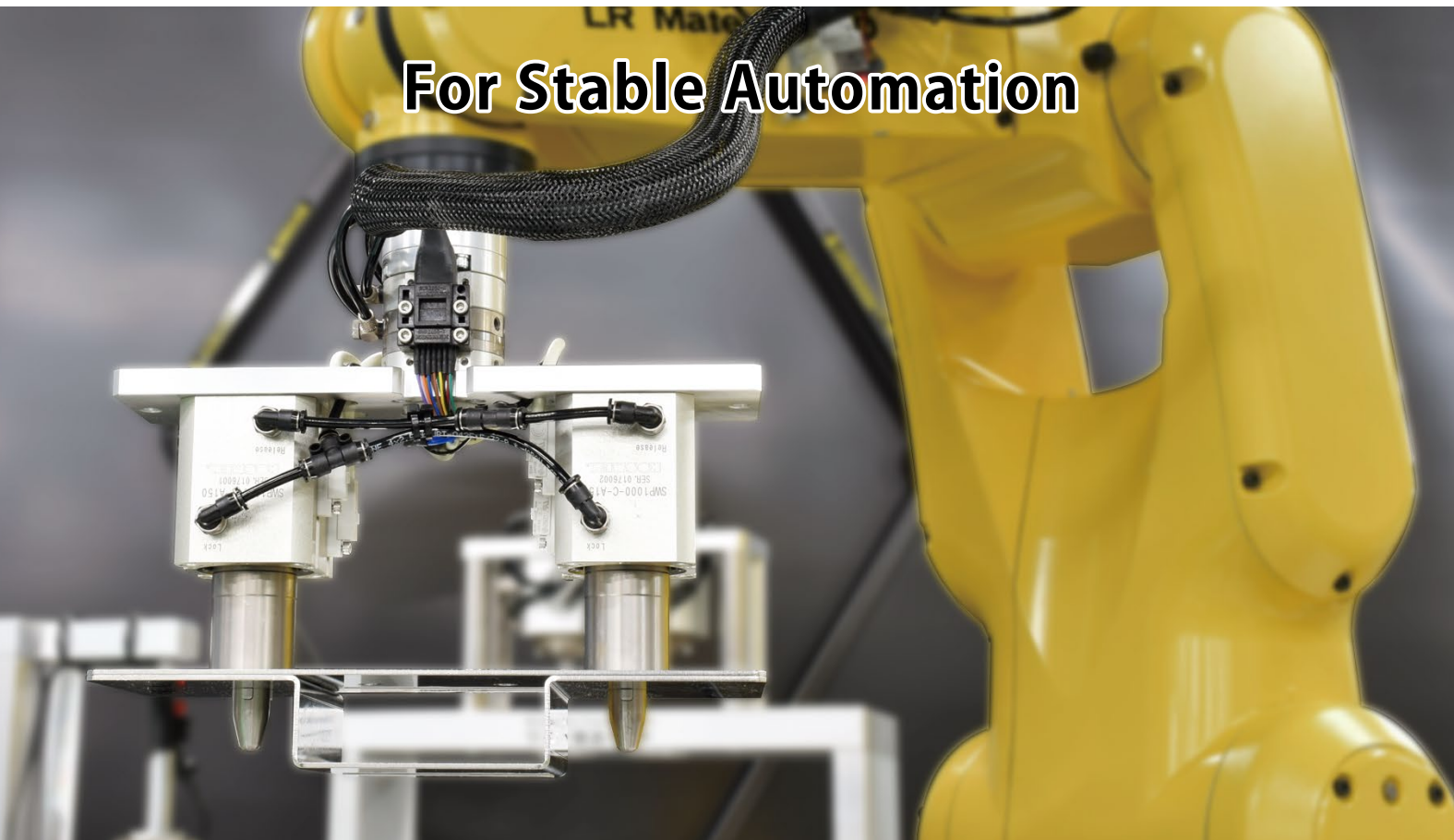
FA • Industrial Robot System

Locating Pin Clamp model SWP

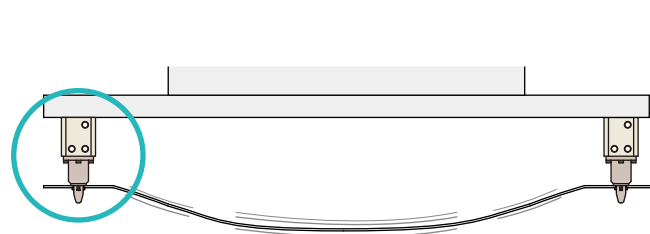
Expansion Locating Pin allows for stable operation with large clearance and high repeatability with internal chucking. Suitable for automated application such as end of arm tooling and clamp on equipment.

Prevents Short Time Breakdown

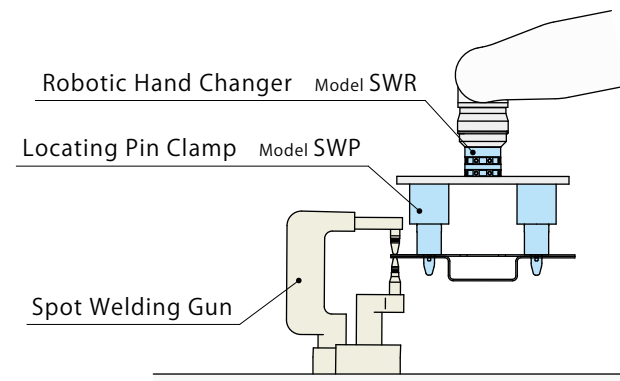
For Stable Automation



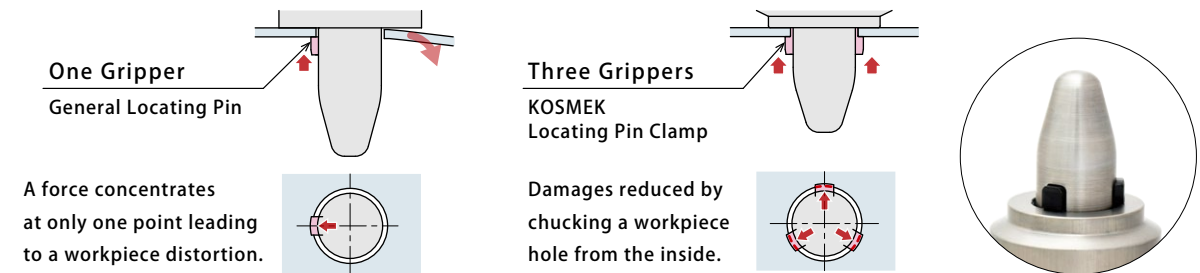
Assembly Line and Spot Welding for Automobile Exterior Parts



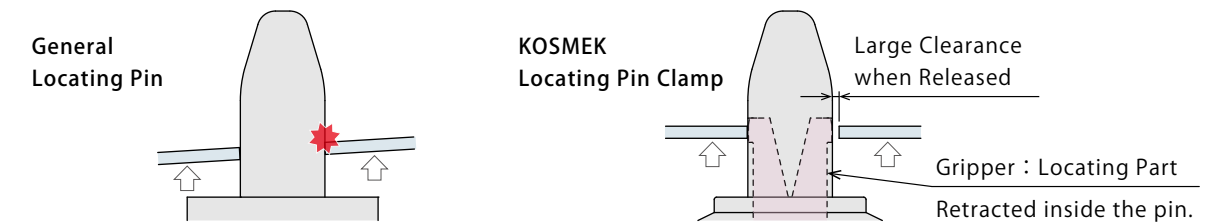
Withstands Distortion of Large Workpiece



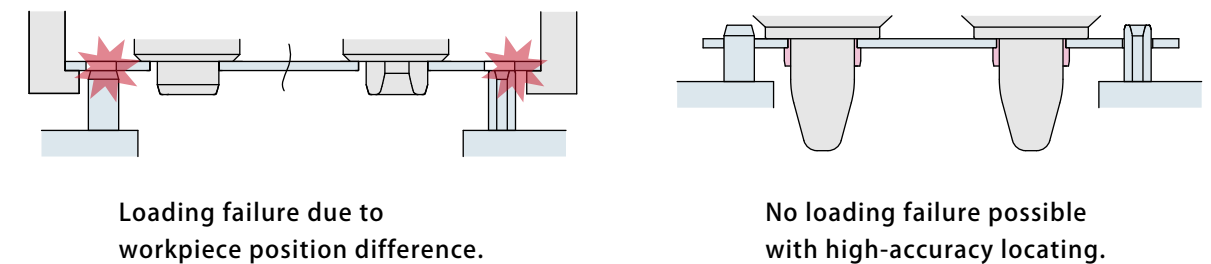
Drastically Reduce Damage to Workpiece !



Large Clearance for Smooth Loading/Unloading

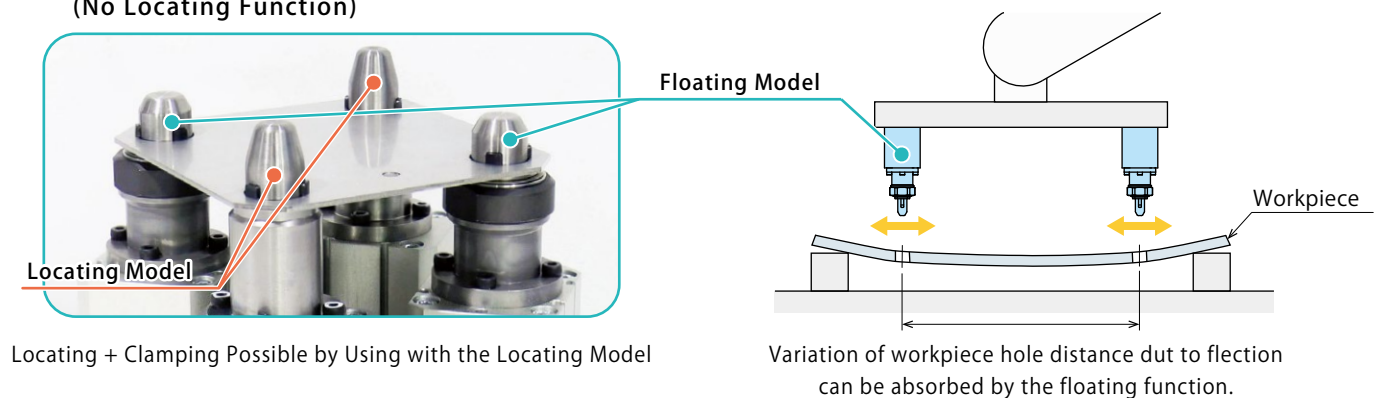


High-Accuracy Locating to Prevent Loading Errors



Floating Model Allows for Warp or Flection of Workpiece

The floating model allows the pin head to float according to the workpiece hole at released state. (No Locating Function)



Locating + Clamping Possible by Using with the Locating Model



Product Introduction Video

Floating Model of Locating Pin Clamp

Search

Video Title

Introducing Floating Model of Locating Pin Clamp

http://www.kosmek.co.jp/php_file/video_products.php?id=083&lang=2





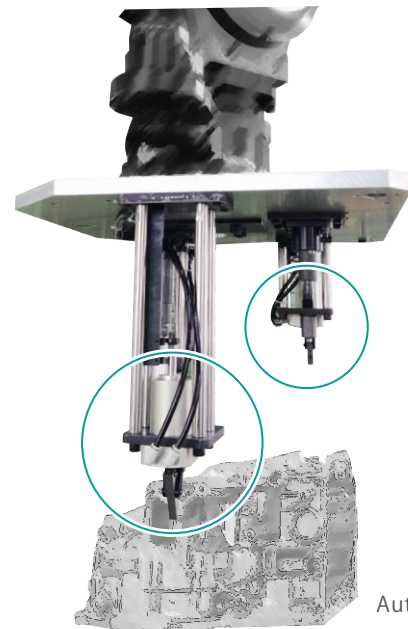
High-Power Pneumatic Clamp

Compact and high-power clamp cylinders with KOSMEK exclusive mechanical lock. Equipped with self-locking function※ to prevent a workpiece fall, thus used for safe transfer hand.

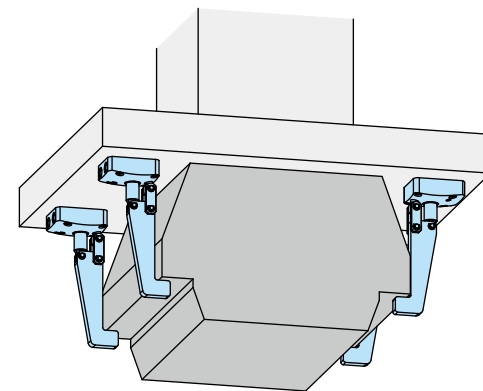
※ The function only for the model WCE and WFE.

Link Clamp / Link Clamp Retracting model / Swing Clamp
model **WCE/WFE/WHE**

Light and Compact Transfer Hand for Irregular Shaped Workpieces

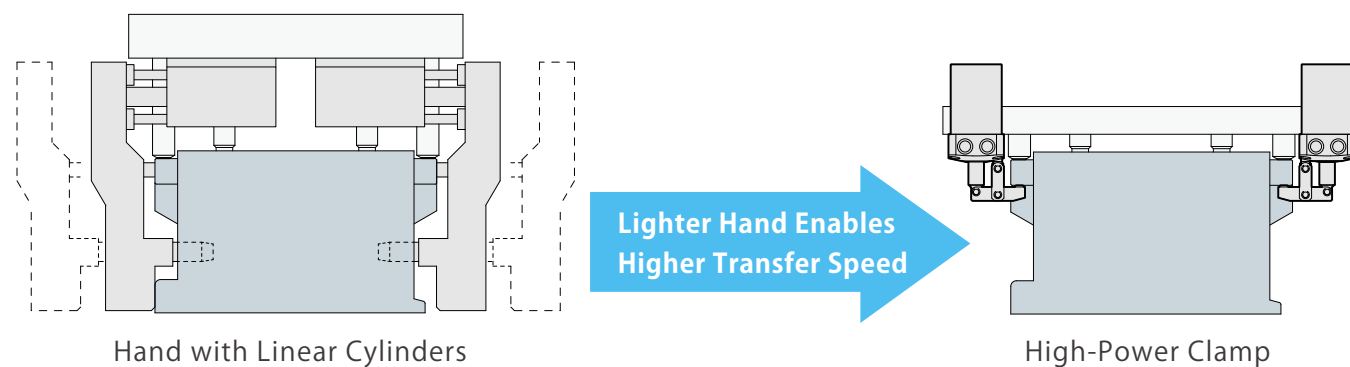


Automobile Component



Clamping a Specific Spot, Light and Compact Hand Increases Operating Speed

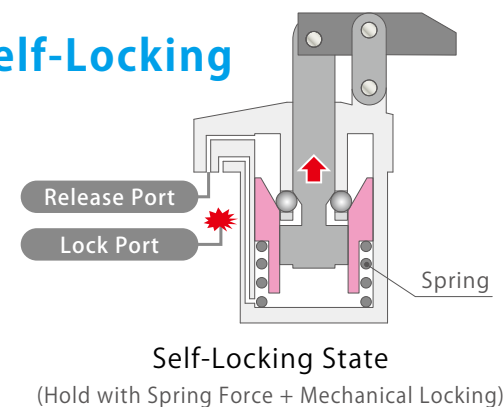
Compact and high-powered clamp cylinder enables to downsize a transfer hand.



Prevents a Workpiece Fall with Self-Locking

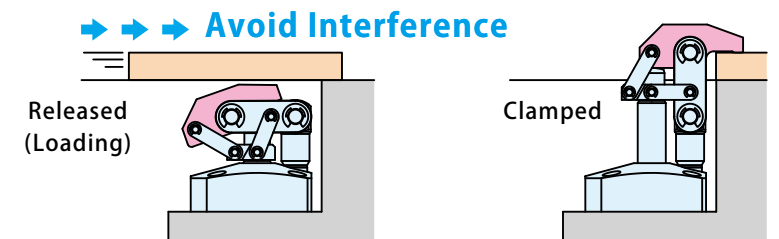
The function only for the model WCE and WFE.

High-Power Pneumatic Link Clamp (model WCE and model WFE) have built-in self-locking function to maintain clamped state even when air supply is cut off, thus Installed as a safe transfer hand.

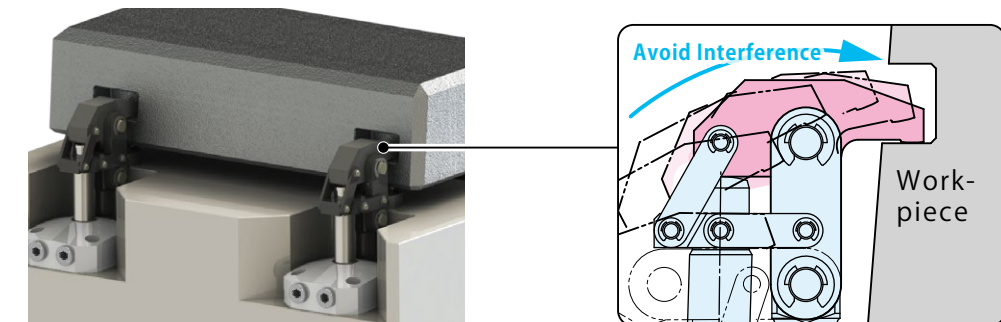


The lever of Link Clamp (model WFE) is largely retracted to avoid interference during workpiece loading/unloading.

Avoid interference with a workpiece when loading and unloading

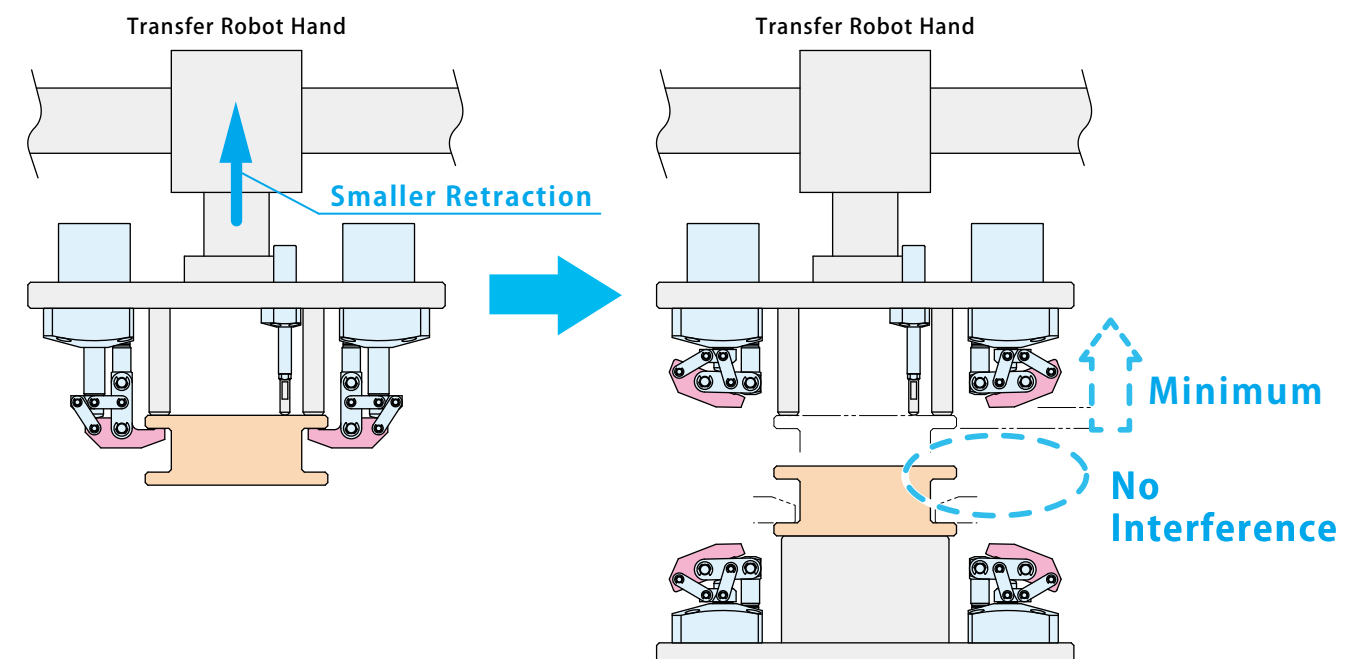


Enables to Clamp Difficult Clamping Points



For Robot Hands

The largely retracted lever minimizes robot retraction.



Product Introduction Video

Link Clamp Retracting model

Search

Video Title

New model "High-Power Pneumatic Link Clamp -Retracting Model-"

http://www.kosmek.co.jp/php_file/video_products.php?id=143&lang=2





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Pneumatic Swing Clamp model WHC

Compact pneumatic clamp cylinder with long operational life, high speed and high accuracy. This clamp is coolant resistant, and can be used in various applications with the use of auto switch.

Long Operational Life • High Speed • High Accuracy

Coolant Resistant

Compact Body

※According to our research.
The World's Smallest Class

High Accuracy • Long Operational Life

Strong swing mechanism with **3 steel balls** tracking. Allows for high-speed and long operational life. (Conducted in-house operation test 2 million times.)

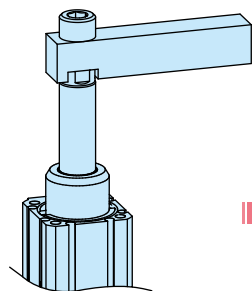
For creating high-lifespan, environmentally friendly facilities.

Swing Complete Position Repeatability : **±0.5°** (±0.75° only for WHC0161)

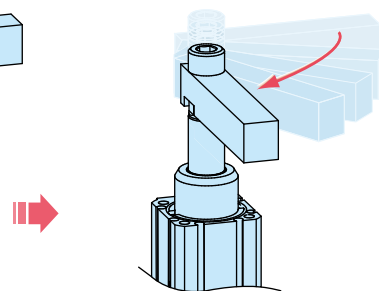
Swing Angle Accuracy **90±3°**



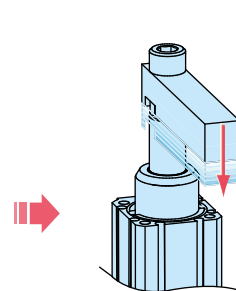
Action Description



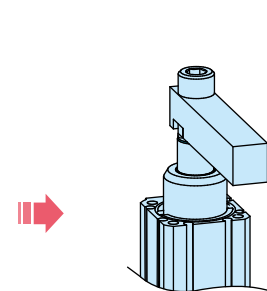
Before Swing
(Released State)



The lever descends
as it swings.

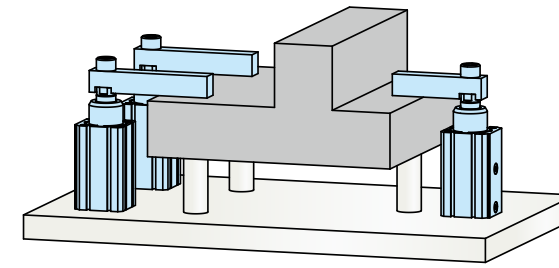


After swing completion,
it descends vertically.

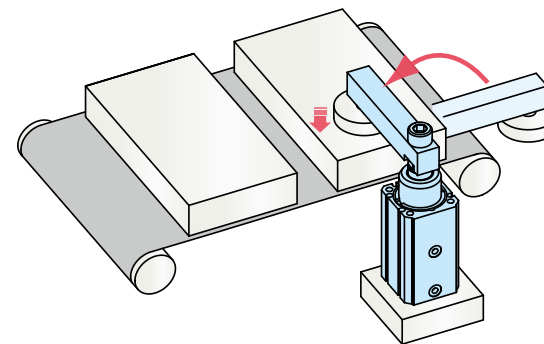


Action Completed
(Clamped State)

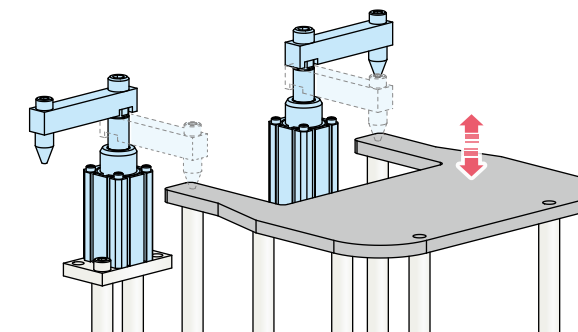
Application Examples



For Clamping a Workpiece during
Assembly, Machining and Testing



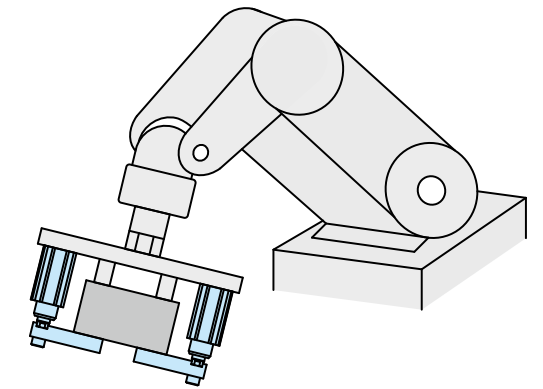
For Clamping a Workpiece on a Device



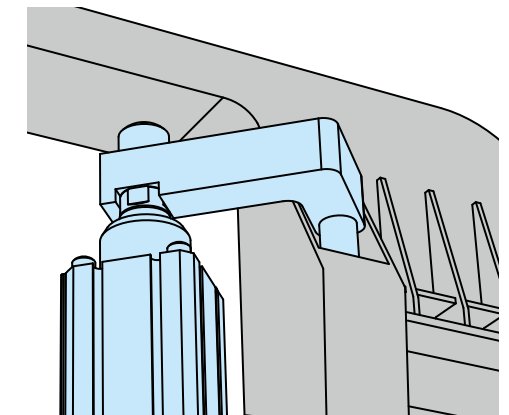
To Simplify Welding Fixtures,
For Easier Loading/Unloading

※ Please consider spatter prevention.

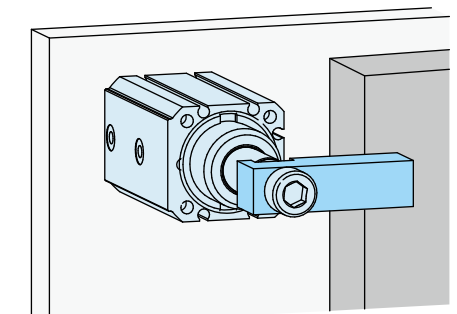
Welding model WHG/WCG with powerful protection
is also available.



For End of Arm Tooling



To Avoid Interference,
To the Place Requiring Accuracy



Mounting on a Vertical Surface

※ Make sure to check "Notes for Lever Design"
on the product catalog before use.



Product Introduction Video

Video Title

Mount it on a wall surface! Pneumatic Swing Clamp with
powerful swing mechanism - model WHC

http://www.kosmek.co.jp/php_file/video_products.php?id=133&lang=2



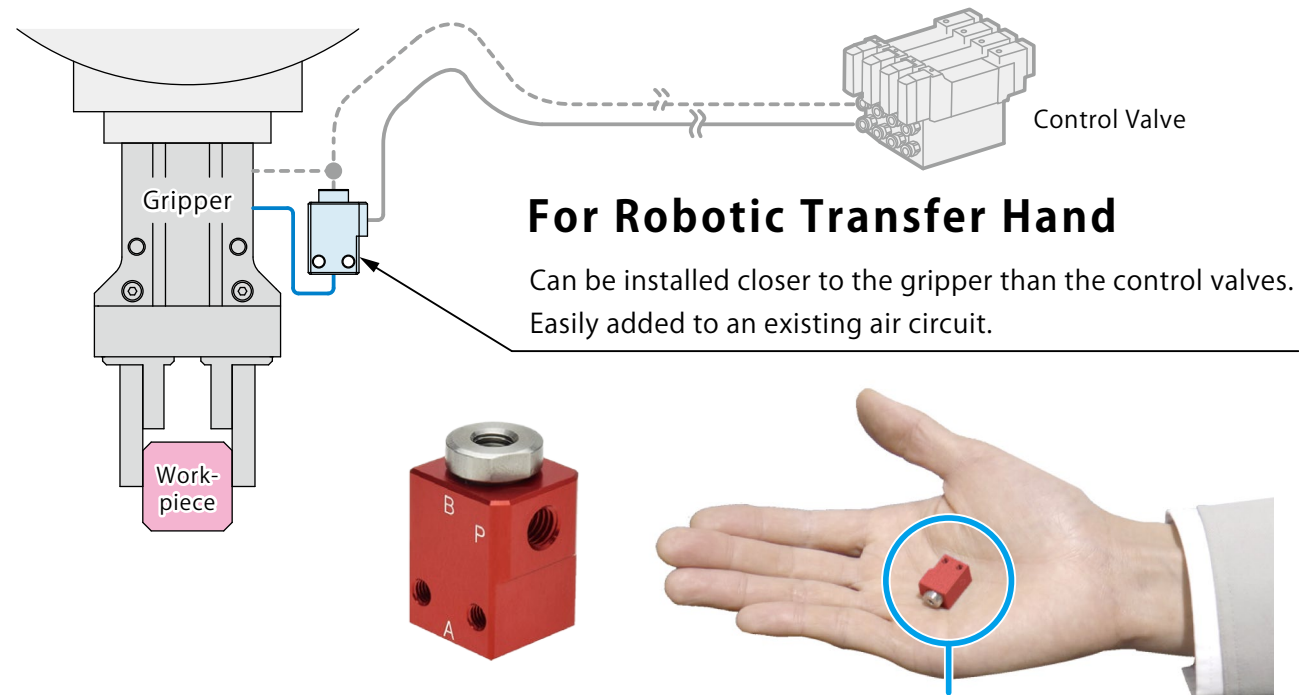


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Air Safety Valve model **BWS**

Ultra-compact and light air pilot check valve to prevent a workpiece fall during robot transfer. Maintains air pressure in a circuit even when air supply is stopped due to power failure, etc.

Workpiece Fall Prevention for Safety



Maintains pressure to prevent a workpiece fall even when air supply is cut off.

Air Safety Valve maintains air pressure in a circuit even when air supply is cut off due to power failure or piping damage caused by deterioration of air tube or a lack of consideration to piping design.

Prevents a workpiece fall during transfer with a robot, protecting a workpiece and equipment.

Built-in sealing is a soft seal with high reliability.



Even when
air is cut off



FA • Industrial Robot System

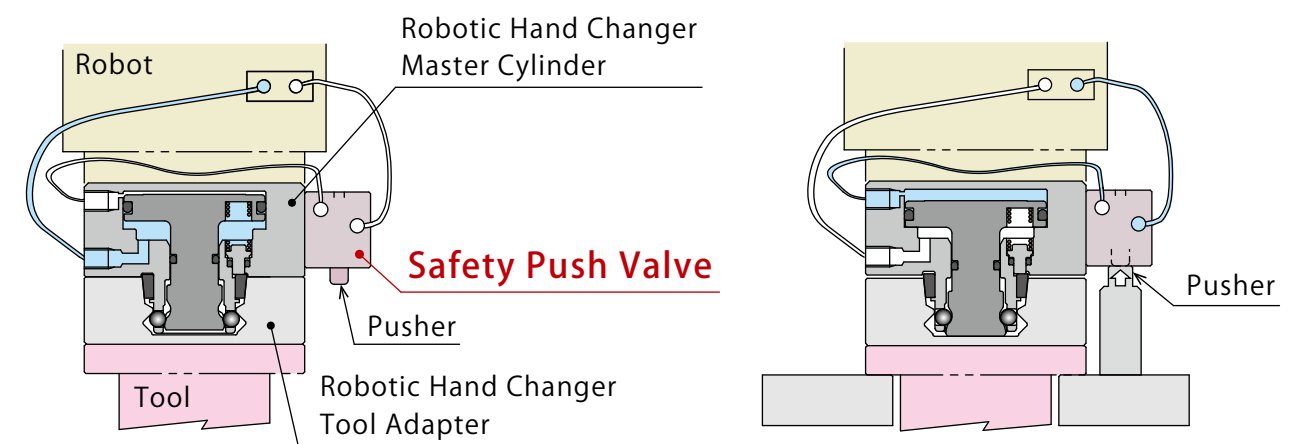
Safety Push Valve model **SWRA**

Prevents a tool fall caused by operational error of a valve during robot teaching. Enables to limit the SWR to release only at a designated position (tool stocker).

Prevent Errors during Robot Teaching

Prevent a Tool Fall of Robotic Hand Changer during Teaching

Able to mount directly on the Kosmek Robotic Hand Changer (Model SWR), and prevent a tool fall caused by valve operating error during robot teaching. Enables to limit the robotic hand changer to release only at a designated position (tool stocker).



Locked State

Even if the valve should switch during transfer, release action will not be performed.

Releasable State

Release action is possible only at tool stocker.

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Air Sequence Valve model BWD



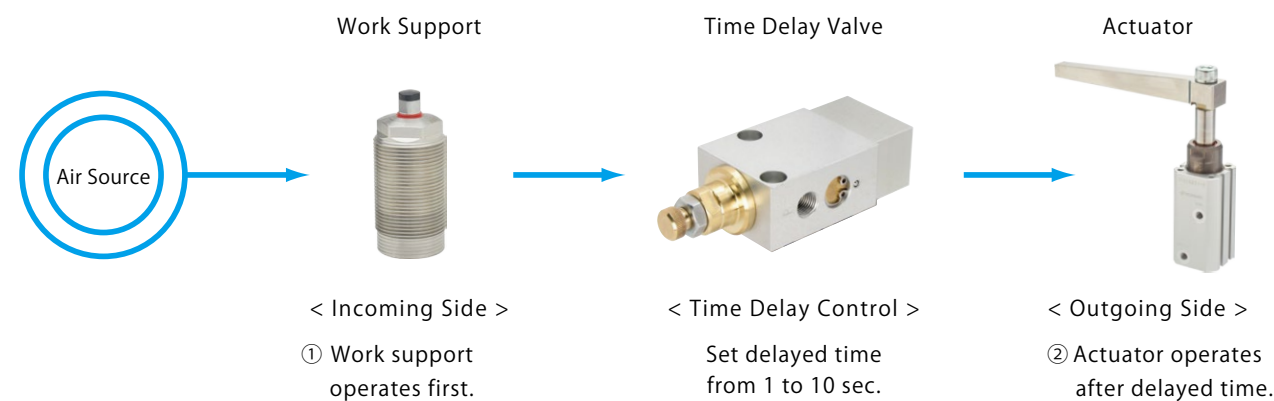
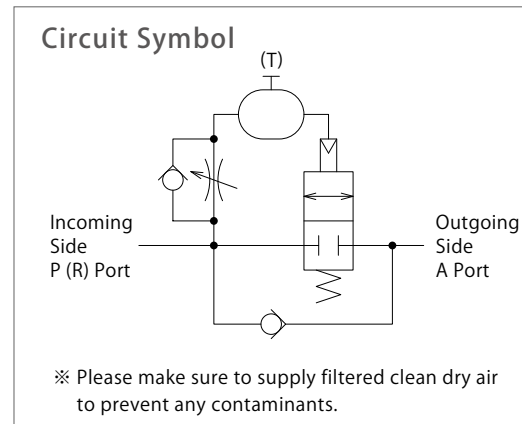
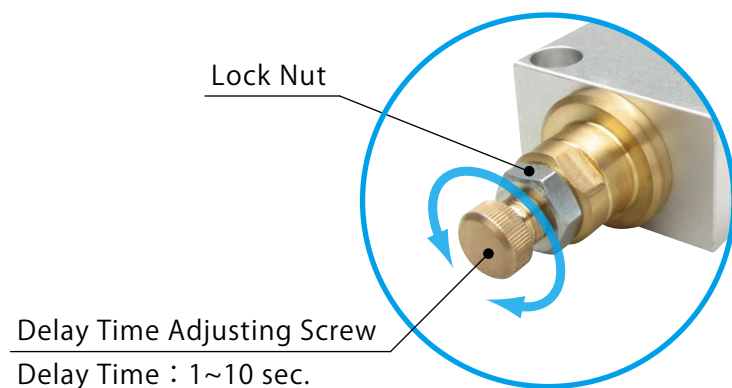
A sequence valve (time delay valve) that can activate multiple actuators in sequence. It controls air flow and initiate a time difference for air pressure supplied from primary side to secondary side.

Activates Multiple Actuators in Sequence

Electric Control or Air Pilot Port Not Required.

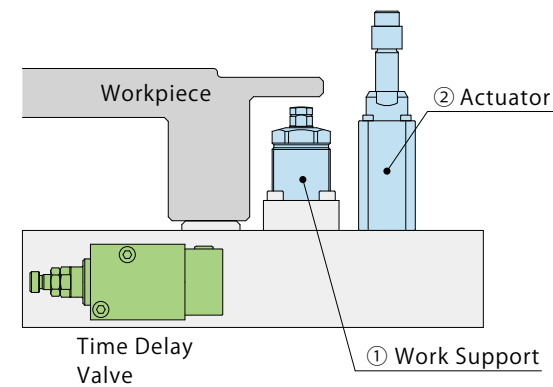
Actuators can be actuated with minimal number of ports.

It controls the air flow by using a check valve, flow control valve, air tank, switching valve and activates multiple actuators in sequence. This has a compact and high performance sealing structure and can be built into fixtures for machining centers. It can be installed in explosion proof surroundings because electricity control is not required.

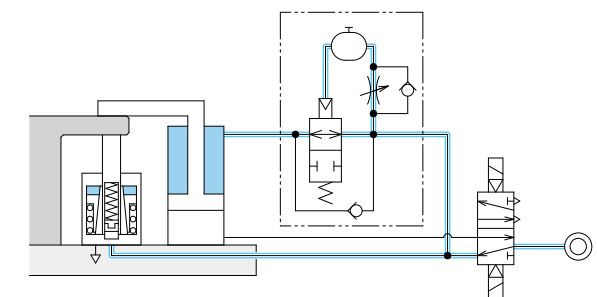
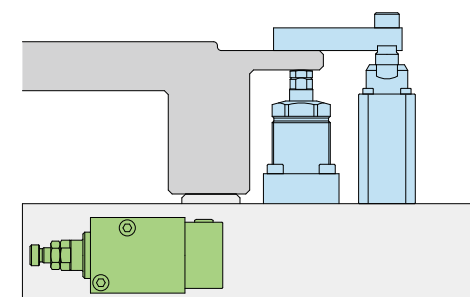
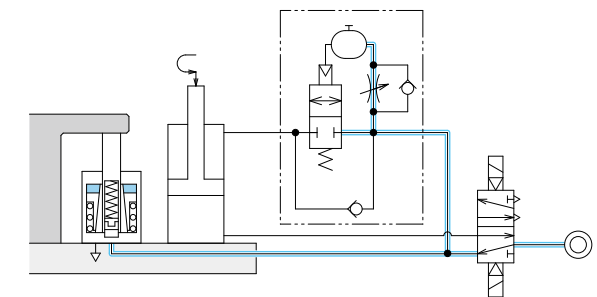
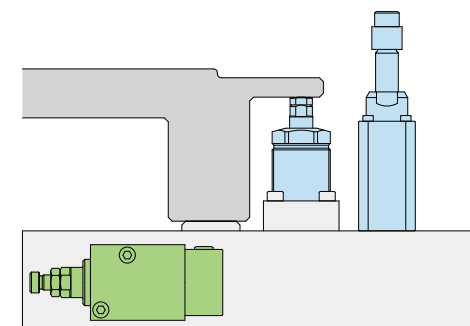
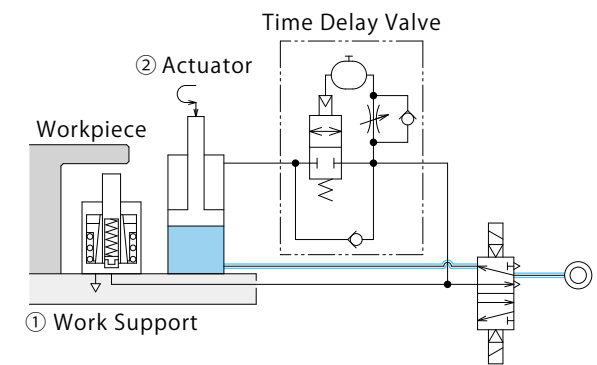


Action Description

Image



Circuit Example



Operating Procedure

Locking	Air pressure is turned ON
	① Work Support is activated.
	The built-in switching valve activates once the tank in the air sequence valve is filled with air.
Releasing	② Actuator is activated.
	Locking action is completed.
	Air pressure is turned OFF.
Releasing	① Work Support and ② Actuator are released at almost the same time.
	Releasing action is completed.



FA • Industrial Robot System

Leakless Coupler model JWC/JWD

Leakless coupler enables to maintain clamping force since it keeps the air pressure even if a coupler is disconnected, remains air clamps in a locked state, and transfer a workpiece to the next station.

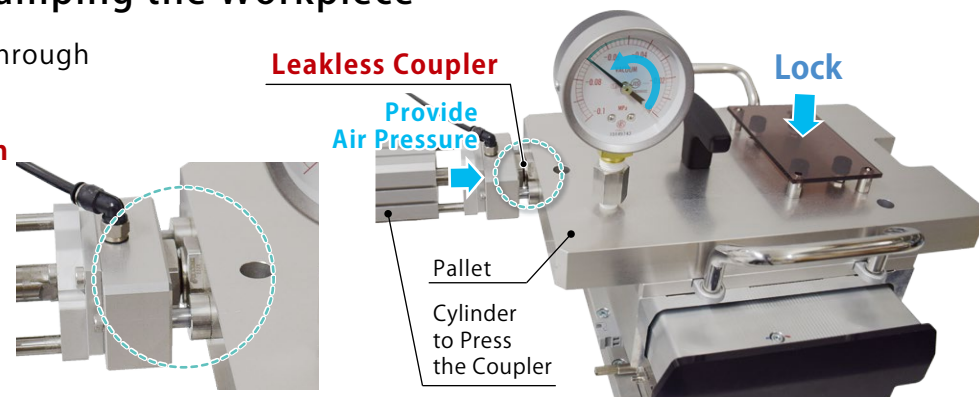
Leakless Coupler Maintains Pressurized State to Solve Pallet Transfer Problems

Provide and maintain air pressure in devices on a pallet.

1 Loading and Clamping the Workpiece

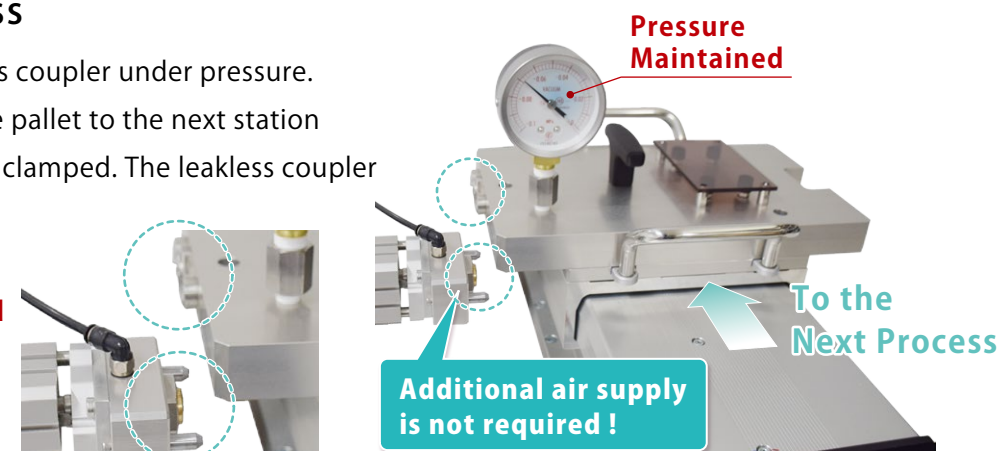
Provide air pressure through leakless coupler.

Available for use with negative pressure and vacuum air.



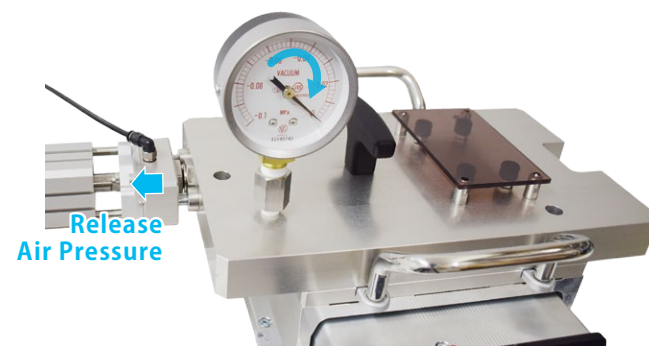
2 Working Process

Disconnect the leakless coupler under pressure. Possible to transfer the pallet to the next station while the workpiece is clamped. The leakless coupler maintains air pressure inside the circuit, so it can be disconnected from the air source.

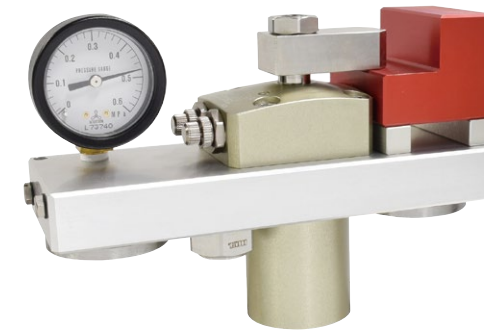


3 Unloading the Workpiece

After the operation is completed, connect couplers to release air out and unload the workpiece.



Detaching a workpiece from air source, transfer with pressure maintained.

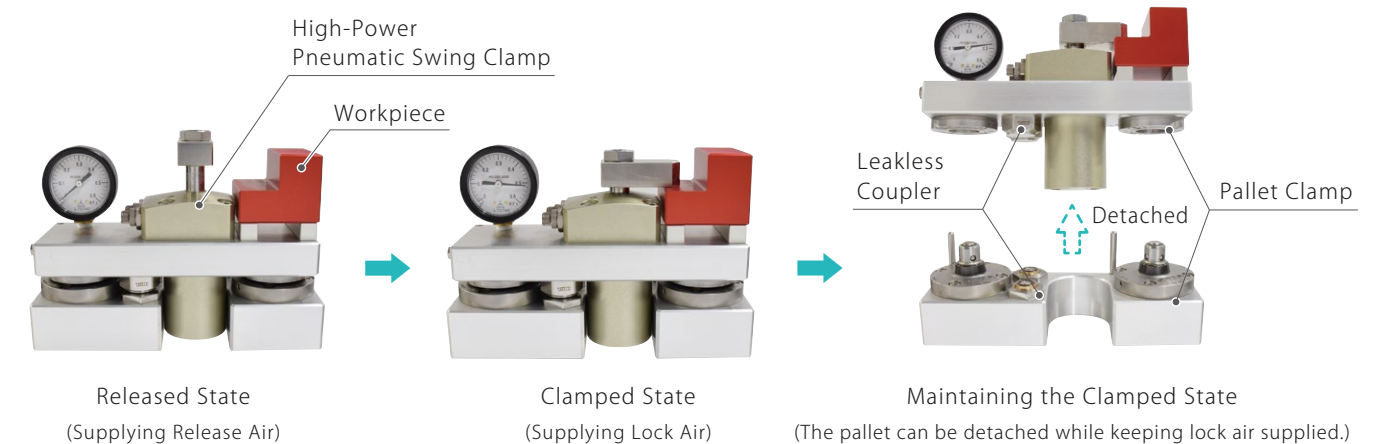


Detaching Method using Leakless Coupler and High-Power Pneumatic Swing Clamp

Maintains air pressure with check valve of Leakless Coupler JWD.

Able to transfer a workpiece even when detached from air source.

High-power pneumatic clamp withstands reaction force with holding force generated by mechanical locking. Piston rod will not be pressed back by reaction force so that air pressure in the circuit will not be compressed.



KOSMEK AUTO COUPLERS

※ Auto Coupler does not have a non-leak (pressure holding) function.

 Model JVA/JVB 1MPa or less AIR NEGATIVE AIR POSSIBLE ※ HYD.OIL and COOLANT are available only for JVA0201/JVB0201.	 Model JTC/JTD 7MPa or less HYD.OIL AIR NEGATIVE AIR POSSIBLE	 Model JVC/JVD 7MPa or less HYD.OIL AIR NEGATIVE AIR POSSIBLE
 Model JVE/JVF 1MPa or less AIR COOLANT NEGATIVE AIR POSSIBLE	 Model JNA/JNB 1MPa or less AIR NEGATIVE AIR POSSIBLE	 Model JNC/JND 25MPa or less HYD.OIL AIR
 Model JLP/JLS 3.5MPa or less / 25MPa or less HYD.OIL AIR COOLANT		



Product Introduction Video

KOSMEK Leakless Coupler JWC

Search

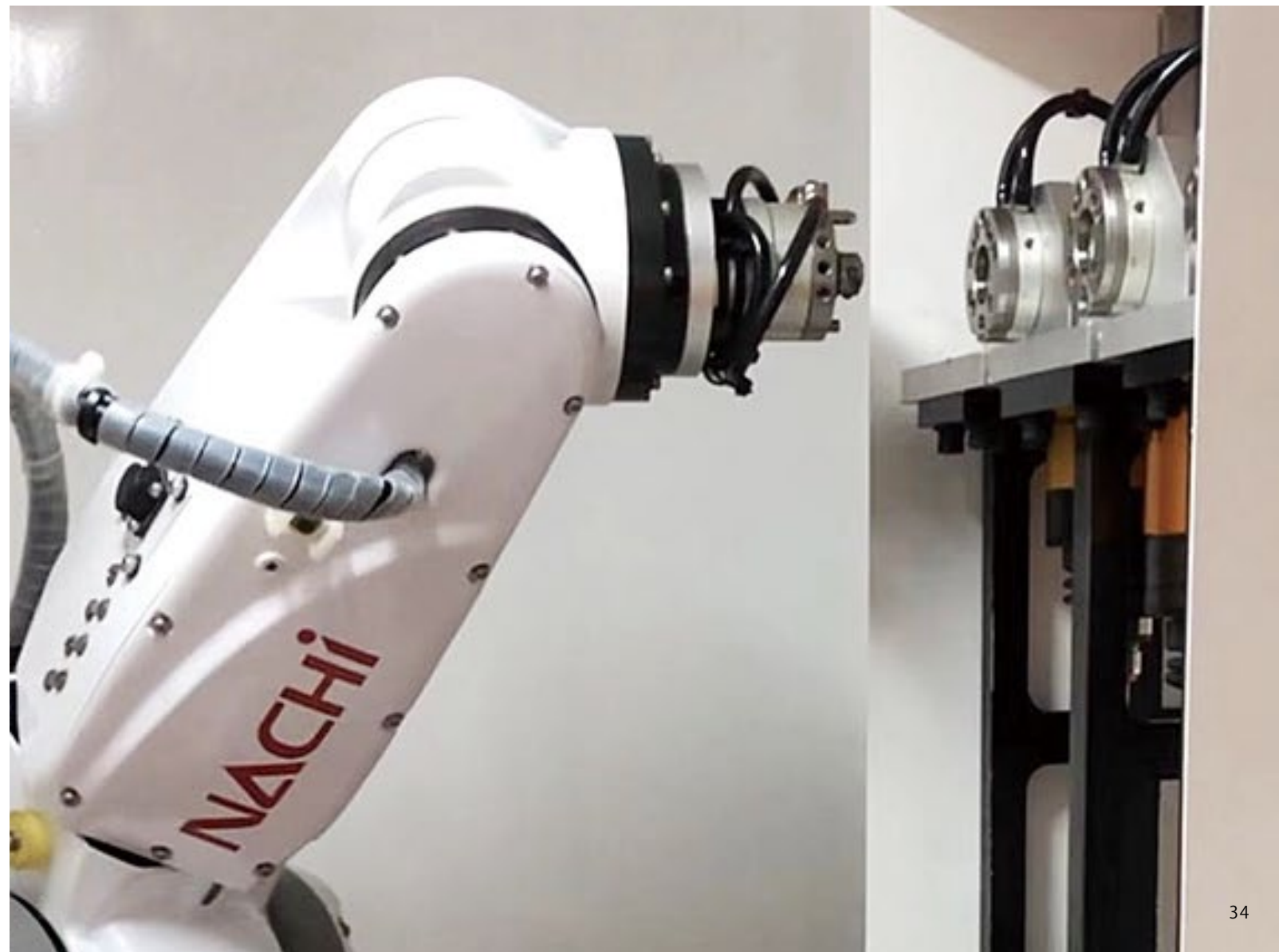
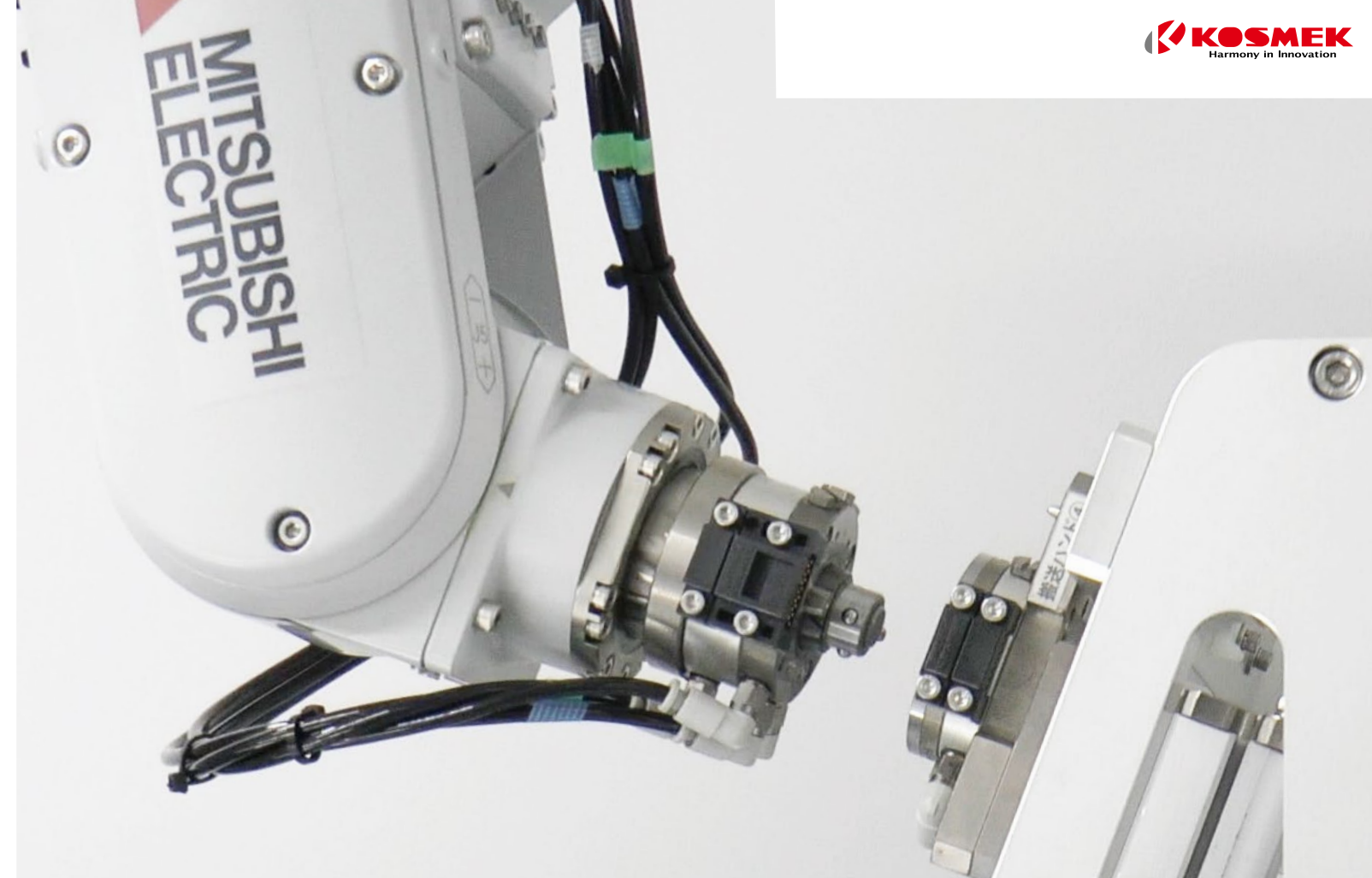
Video Title
Leakless Coupler to Maintain Air Pressure

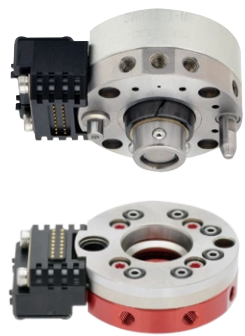
http://www.kosmek.co.jp/php_file/video_products.php?id=050&lang=2



Automation Setup

Automating a single operation is not sufficient to meet requirements from customers. Robots and applications need the ability to perform multiple operations. KOSMEK provides safe automation products that enable unattended setup of robotic hands, fixtures and pallets.





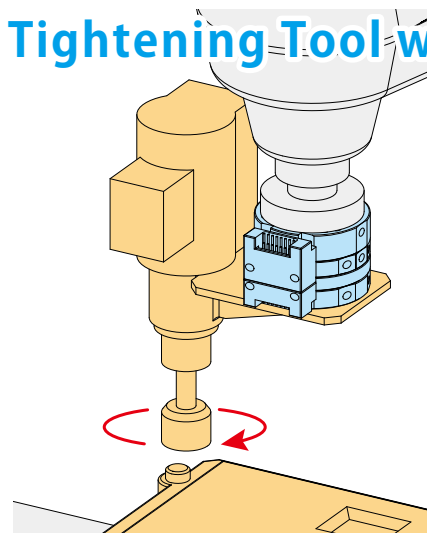
FA • Industrial Robot System

Robotic Hand Changermodel **SWR**

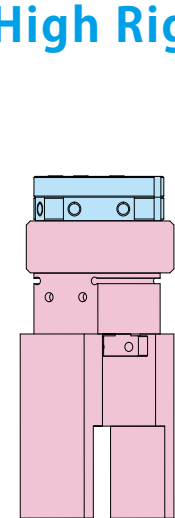
High-accuracy and high-rigidity robotic hand changer (repeatability: 0.003mm) enables multiple functions of robots and setup time reduction. Enhances the productivity of automated production line.

Zero Backlash: High Accuracy, High Rigidity and High Durability

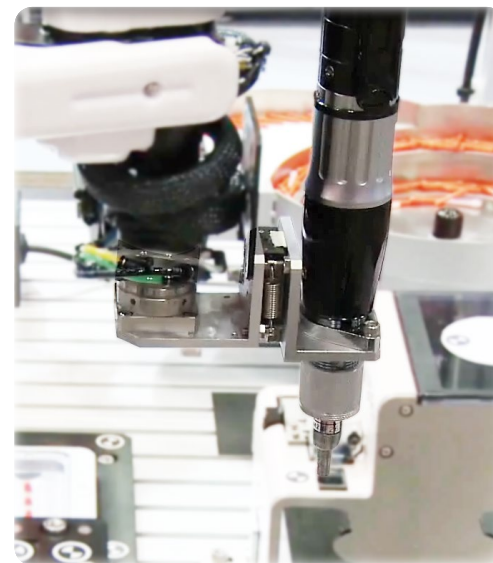
Change the Transfer Hand and Screw Tightening Tool with High Rigidity



Screw Tightening Tool

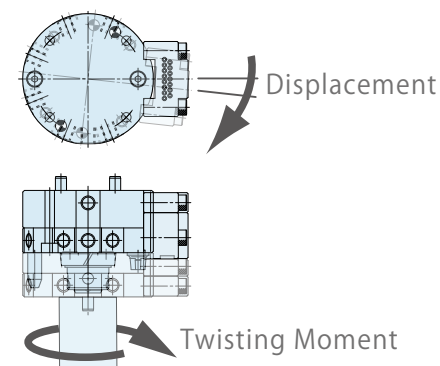
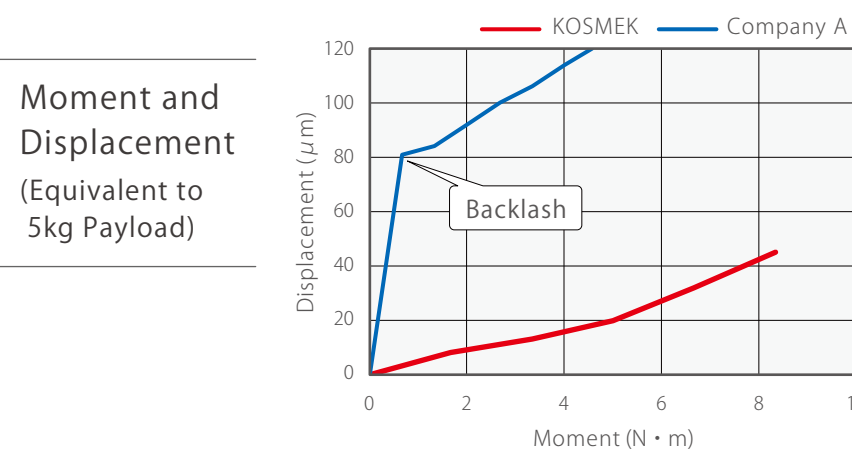


Transfer Hand

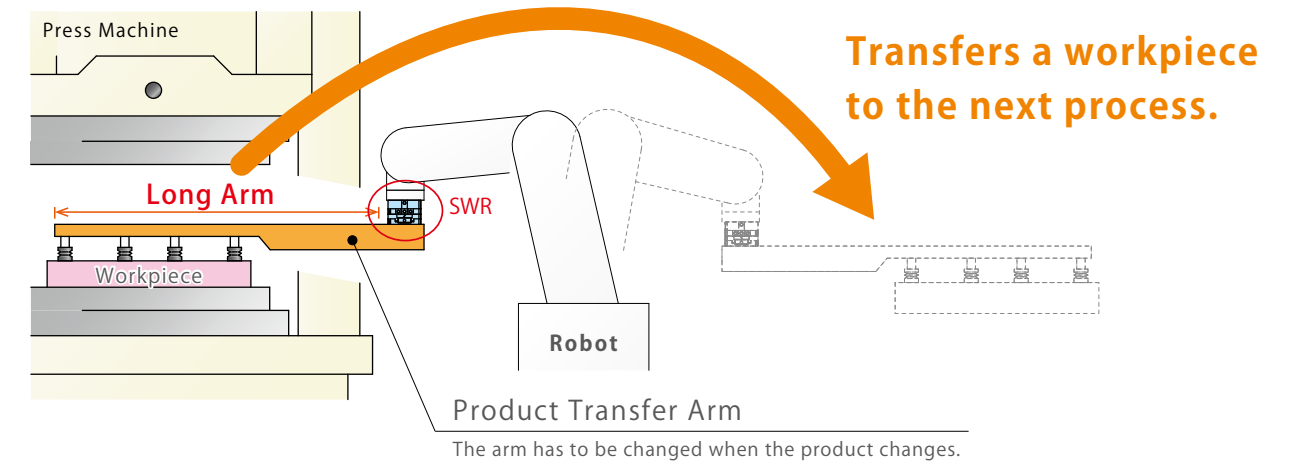


Strong to Torque and Not Damaged by Impact Load

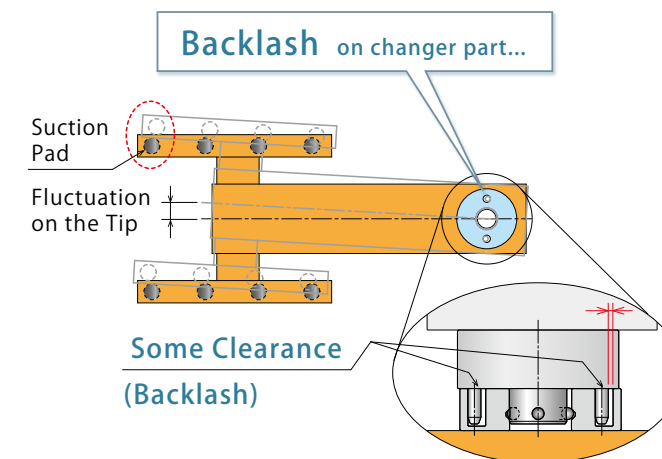
Exclusive non-backlash function is strong to torque and overcomes disadvantages of tool changers. 3 μ m repeatability allows for highly reliable operation without fluctuation of the bit edge.



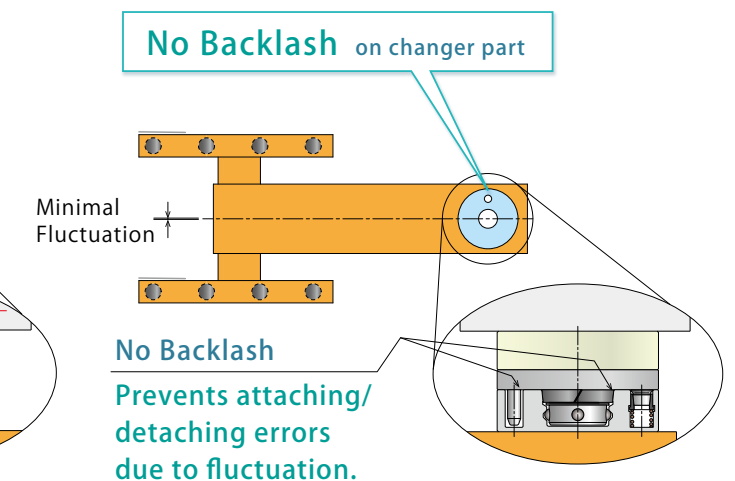
High-Accuracy Change of Press-to-Press Transfer Arm



General Tool Changer

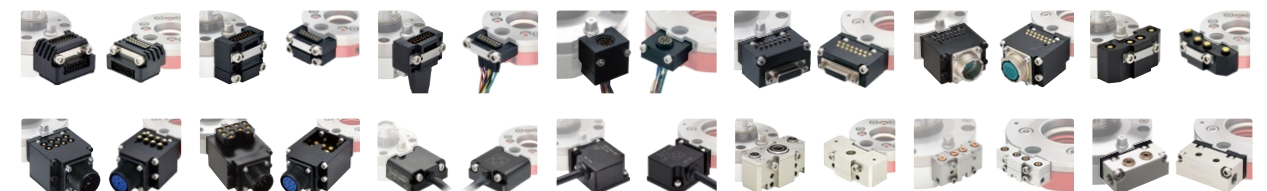


KOSMEK Robotic Hand Changer



A Variety of Electrode and Air Joint Options

- For connecting signal lines
- For noncontact connecting
- For using in a washing device
- For using under mist
- For connecting AC power
- For adding extra air ports



Application Example Video

Dual-Armed Robot YuMi and KOSMEK Hand Changer

Search

Video Title

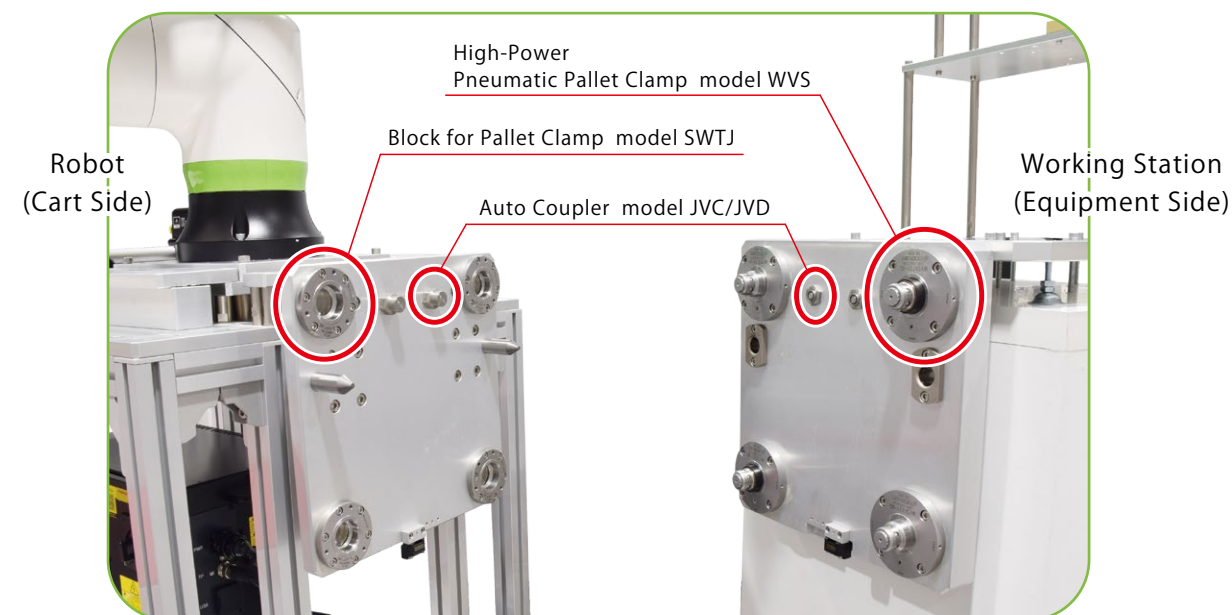
Change the Hands of YuMi with Ultra-Light Hand Changer

http://www.kosmek.co.jp/php_file/video_products.php?id=076&lang=2


Connect Robot to a Transfer Cart or an AGV with Mechanical Lock



Automatic Connection • Robot Setup Change
 High-Accuracy Locating. No Re-Positioning Required.



Manual Robotic Hand Changer
model SXR



Auto Coupler
model JVC/JVD



High-Power Pneumatic Pallet Clamp
model WVS

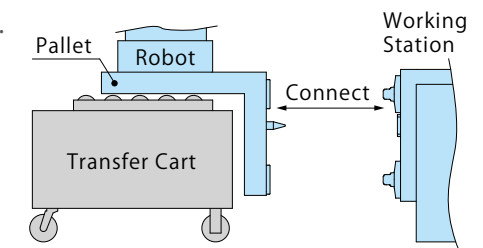
KOSMEK FA • Industrial Robot Related Products to Solve Various Tasks for Customers

High-accuracy locating enables secure repeatability. User friendly. No correcting software required.

Repeatability is 3 μ m in a connected state by using Pallet Clamp (model WVS). Able to connect the working station with the robot on the pallet with high accuracy, this demo does not require re-positioning of the robot with a camera or software, reducing time or device for correcting.

Mechanical locking connection enables a user-friendly application.

(Note) As shown in the drawing, this demo does not connect the entire cart, but locates and clamps only the pallet equipped with the robot. The pallet is not fixed to the transfer cart. (Fall prevention is required separately.)



Connect Air (Fluid) Automatically

Auto Coupler (model JVC/JVD) enables to provide air to the cart from the air source installed to the work station. We offer a wide variety of couplers including Leakless Coupler (model JWC/JWD) that enables to maintain air pressure on the cart.

(Example : Install an air tank on a cart and provide air pressure. Hold the air pressure with Leakless Coupler, and activate pneumatic devices on the cart to connect the cart to the work station.)

User-Friendly Hand/Tool Change

Manual Robotic Hand Changer (model SXR) enables quick change of hand/tool by disconnecting the end of arm tooling with push button operation. Best suitable for collaborative robots. Allows for effortless changeover of applications and workpieces.



Application Example Video

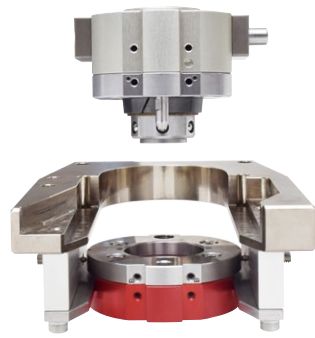
KOSMEK Location Clamp + Manual Cart + Robot

Search

Video Title
High-Accuracy Location Clamp + Manual Cart + Robot

http://www.kosmek.co.jp/php_file/video_products.php?id=088&lang=2





FA • Industrial Robot System

Mechanical Robotic Hand Changer model **SMR**

Mechanical robotic hand changer that uses robot's power.

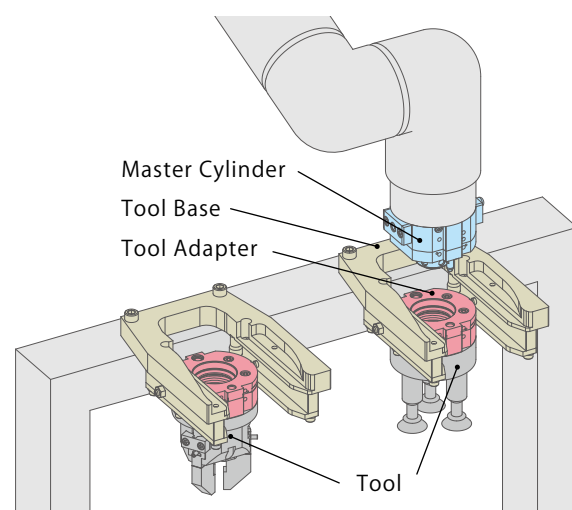
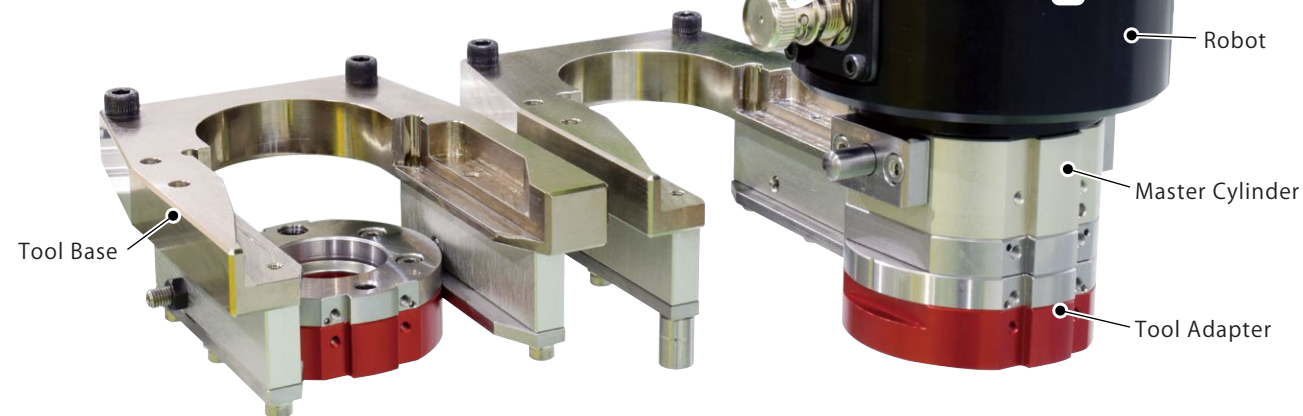
No power source such as air or electricity required when connecting and disconnecting. Zero backlash when connected.

High accuracy locating with 0.003mm repeatability.

No Power Source Required

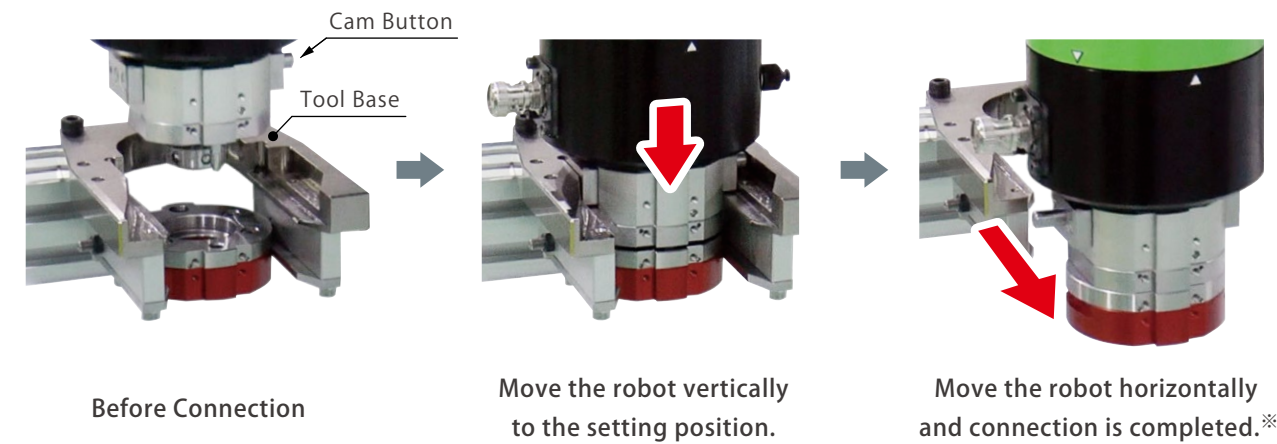
Hand Change with Robot's Power

Repeatability: 3μm



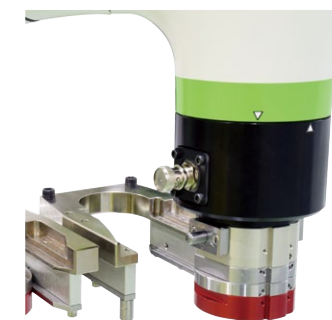
High-precision robotic hand
changer enables a robot to
perform multiple operations.

Reduce tool change time,
Increase productivity.



※ During horizontal movement, the cam button moves in contact with the tool base. At this time, a load is applied to the robot.

■ Collaborative Robot Installation Examples



FANUC CORPORATION



UNIVERSAL ROBOTS



DENSO WAVE INCORPORATED



ELITE ROBOTS



YASKAWA ELECTRIC CORPORATION



Product Introduction Video

Mechanical Robotic Hand Changer SMR

Search

Video Title

Mechanical Robotic Hand Changer, Model SMR

http://www.kosmek.co.jp/php_file/video_products.php?id=150&lang=2




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Manual Robotic Hand Changer model SXR

Manual Robotic Hand Changer Best Suitable to Collaborative Robot

Manual Single-Setup Possible !

Payload : 0.5~1kg、3~5kg、7~10kg Repeatability : 0.05mm

Best Suitable for Collaborative Robot

Push in two pushers to attach/detach a tool.



Attach the tool.



Setup Completed

※ It becomes the locked state with built-in spring when releasing the pushers.

Applicable to a Variety of Collaborative RobotsApplicable Robot Model
: CRXApplicable Robot Model
: COBOTTAApplicable Robot Model
: HC10DTPApplicable Robot Model
: ASSISTAApplicable Robot Model
: duAroApplicable Robot Model
: URApplicable Robot Model
: TM ROBOTApplicable Robot Model
: DOBOT CR**Manual Changer makes attaching/detaching of torch easy.**

Push in two pushers to attach/detach a torch.



Attach the torch, and setup is completed.

※ It becomes the locked state with built-in spring when releasing the pushers.

Handy torch can be shared by robot and operator, allowing manual welding and robot welding to be used separately.**Application Example Video**

DOBOT CR Hand Change KOSMEK

Search

Video Title

Quick change of collaborative robot DOBOT CR's hand

http://www.kosmek.co.jp/php_file/video_products.php?id=140&lang=2



FA • Industrial Robot System

Compact Location Clamp model **SWQ**

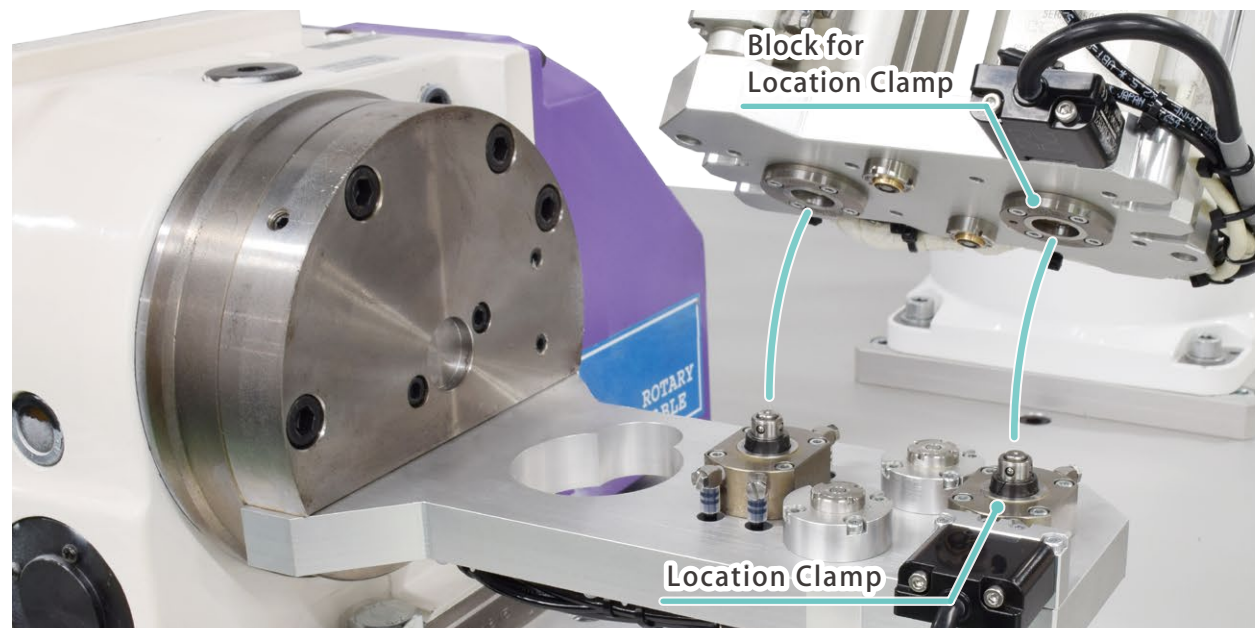
Drastically minimizes pallet setup time and improves productivity.

Suitable for automatic setup with robot.

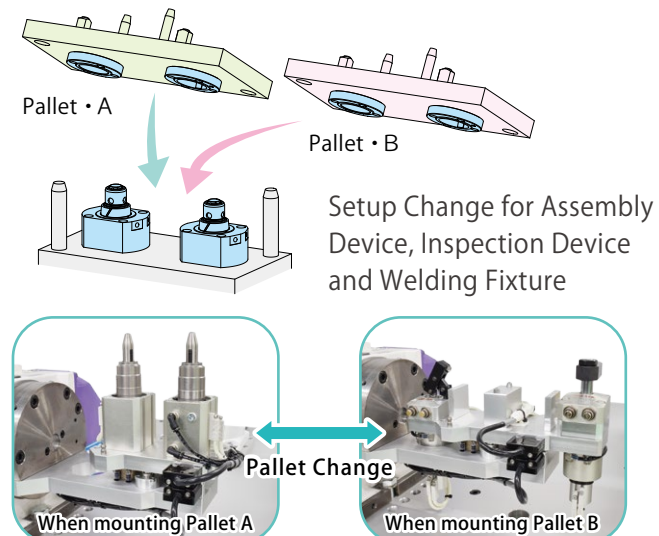
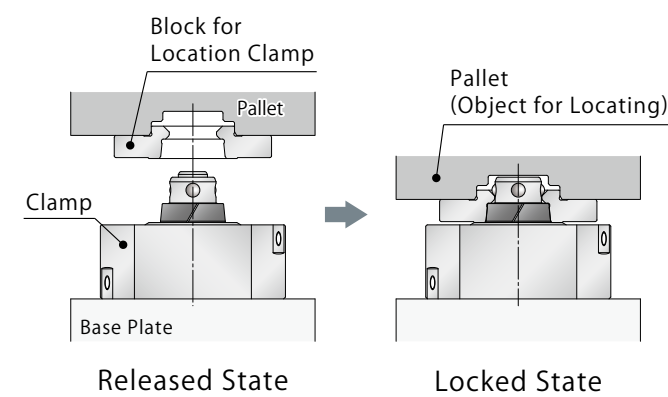
Locating Repeatability : 0.003mm

For High-Speed and Automated Pallet Change

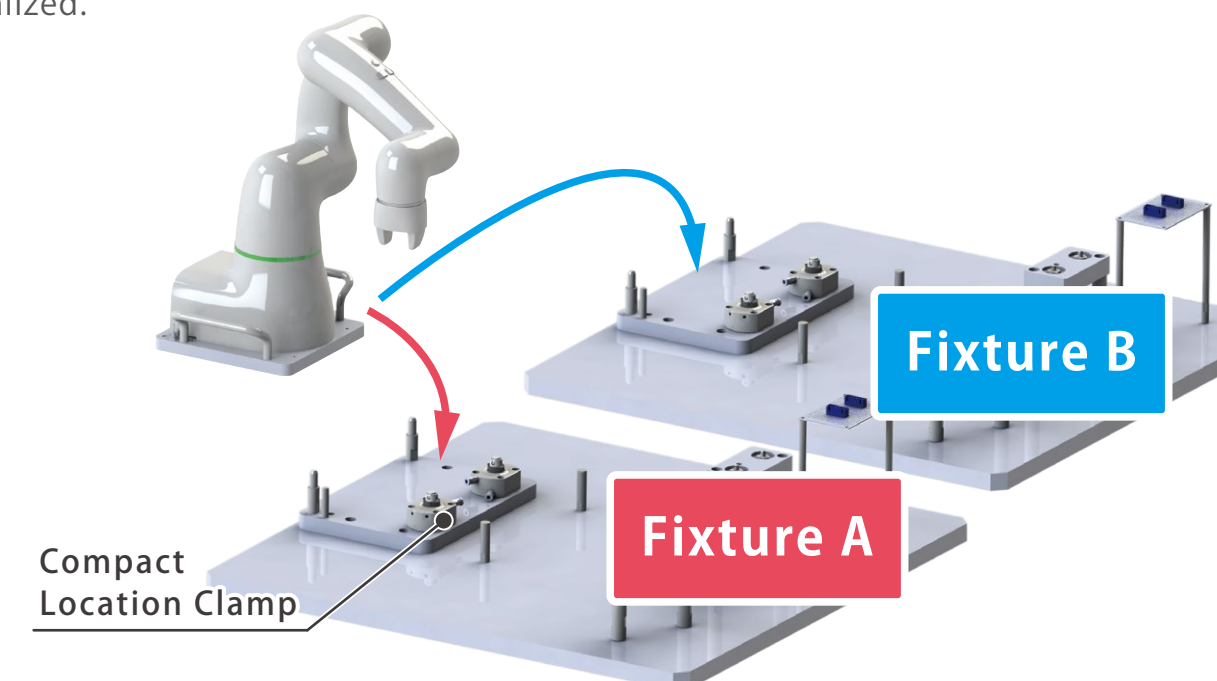
**Quick Locating and Clamping Reduces Setup Time
and Increases Productivity**

**High-Accuracy Locating Eliminates Alignment Inspection**

Action Description

**Sharing a Compact Collaborative Robot****No Re-Teaching Required even after Re-Setting the Robot****Robot Setup**

A single robot can be used for both "Fixture A" and "Fixture B" that have different operations. By moving and changing over the robot, the operations can be generalized.





FA • Industrial Robot System

Smart Series Location Clamp

model **KSL**

Powered by any power source. Smart fit on any application.

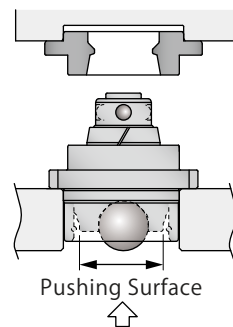
Location Clamp that enables easier pallet change and setup.

Locating Repeatability : 0.01mm

Action Description

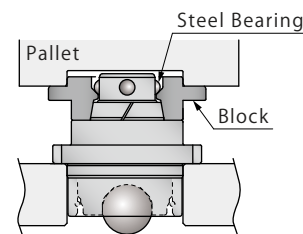
< Released >

When the pushing surface is pushed in, the steel bearings retract.



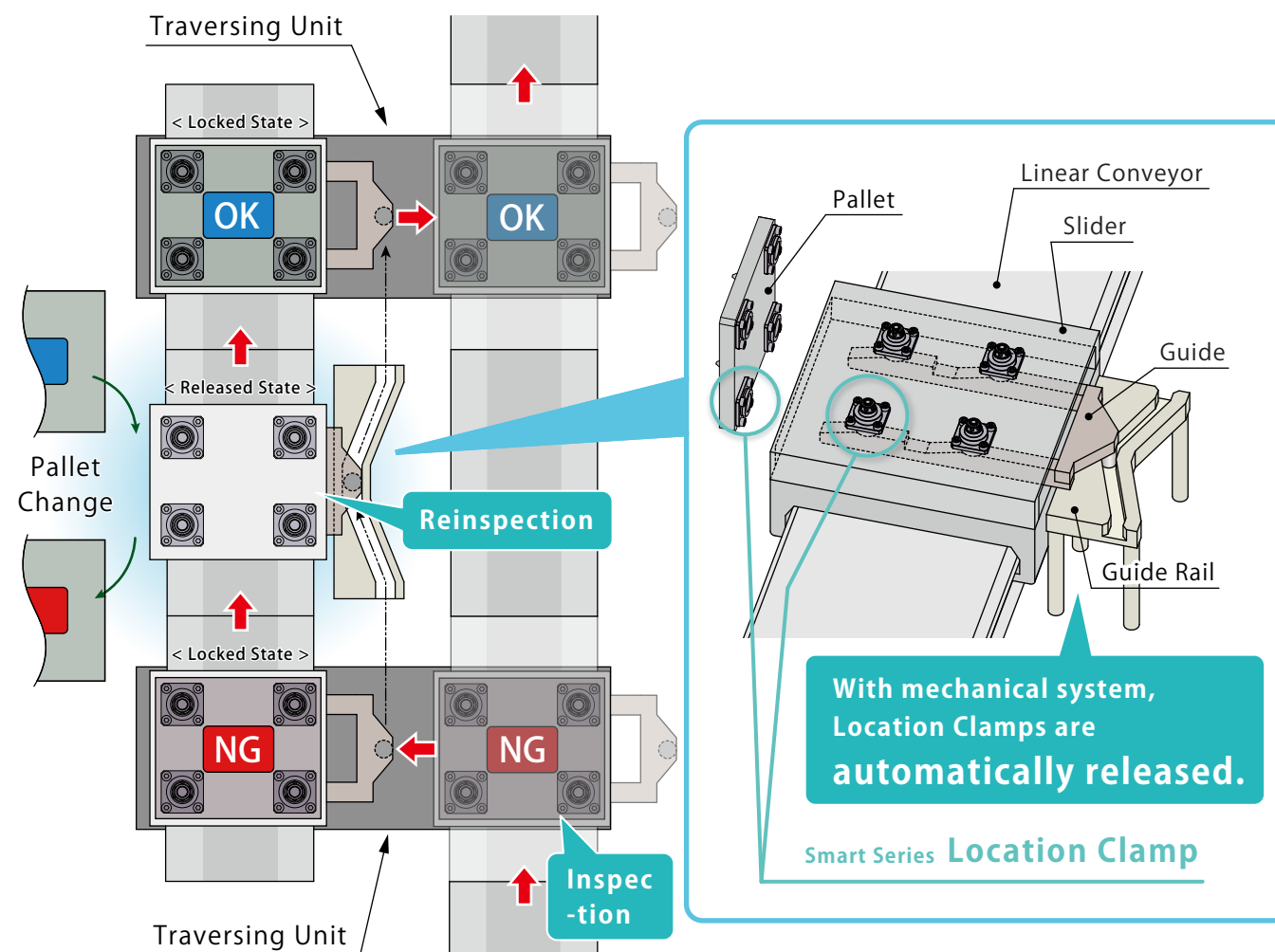
< Locked >

When the pushing surface is released, the steel bearings expand with the built-in spring. It pulls in the block, and completes the clamping/locating.

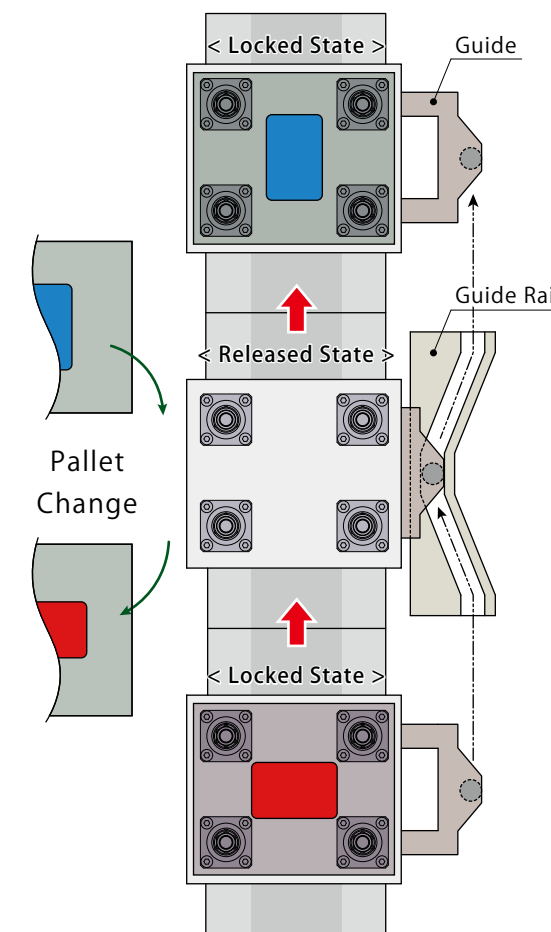
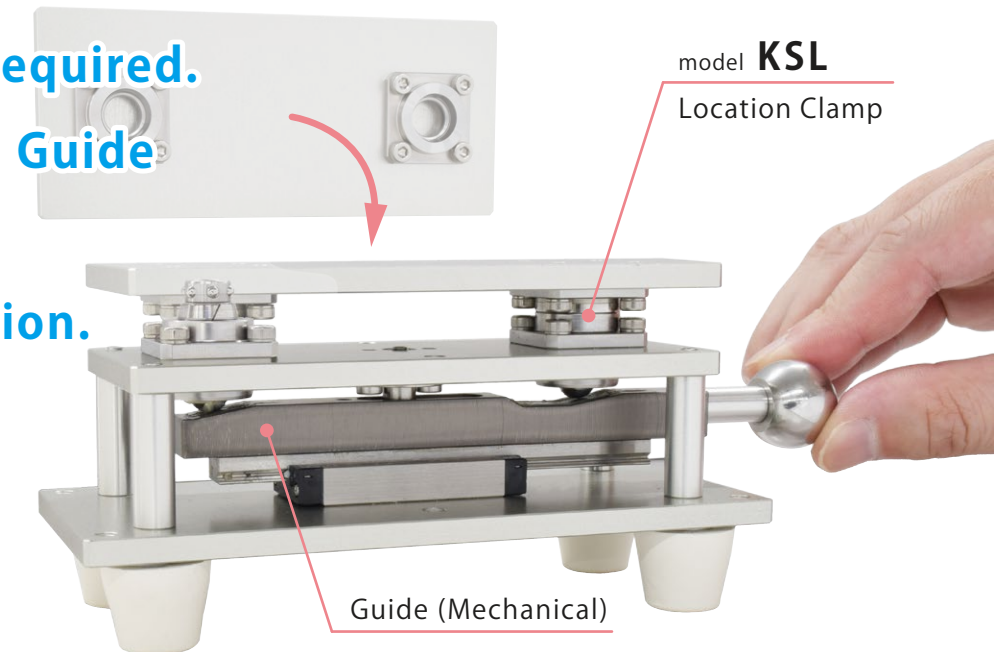


No Air Needed. Pallets Changed by Slider Operation

Power source is not required to change pallets.

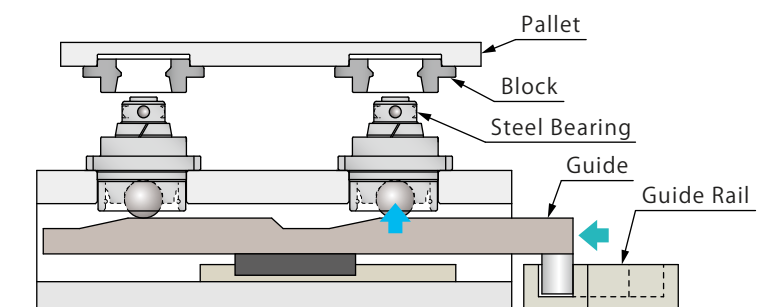


No Power Source Required. Pallet Change with Guide Allows for Setup Time Reduction.



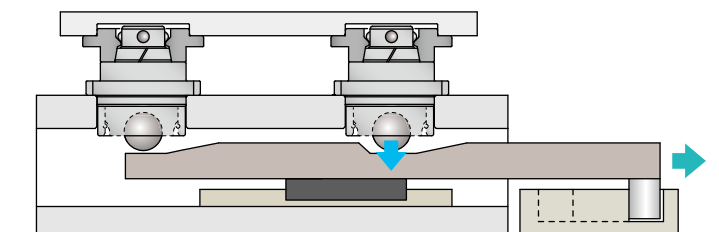
< Released State >

Location Clamp is released when the guide is pushed by the guide rail, and the pallet can be changed.



< Locked State >

Location Clamp is locked when the guide is pulled by the guide rail, and the pallet is locked and located.



See the product video

Product Introduction Video

Smart Series Location Clamp

Search

Product Page

https://www.kosmek.co.jp/php_file/eng_product_page.php?no=354_01_01&lang=2

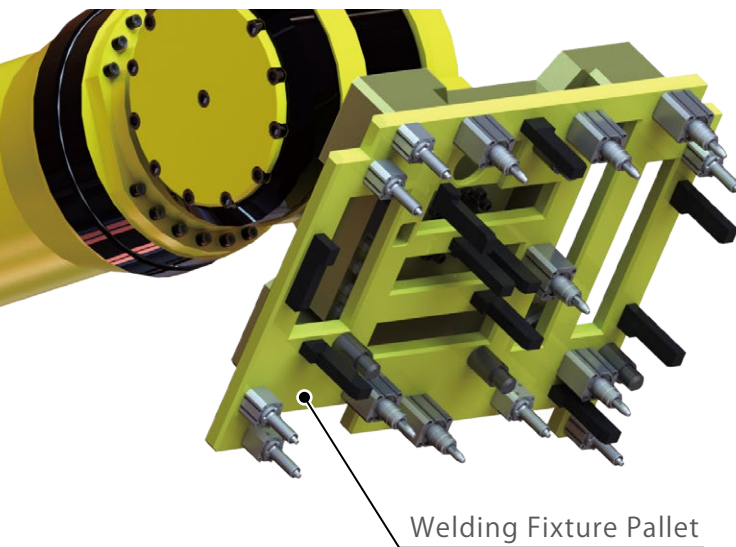




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High-Power Pneumatic Pallet Clamp model **WVS**

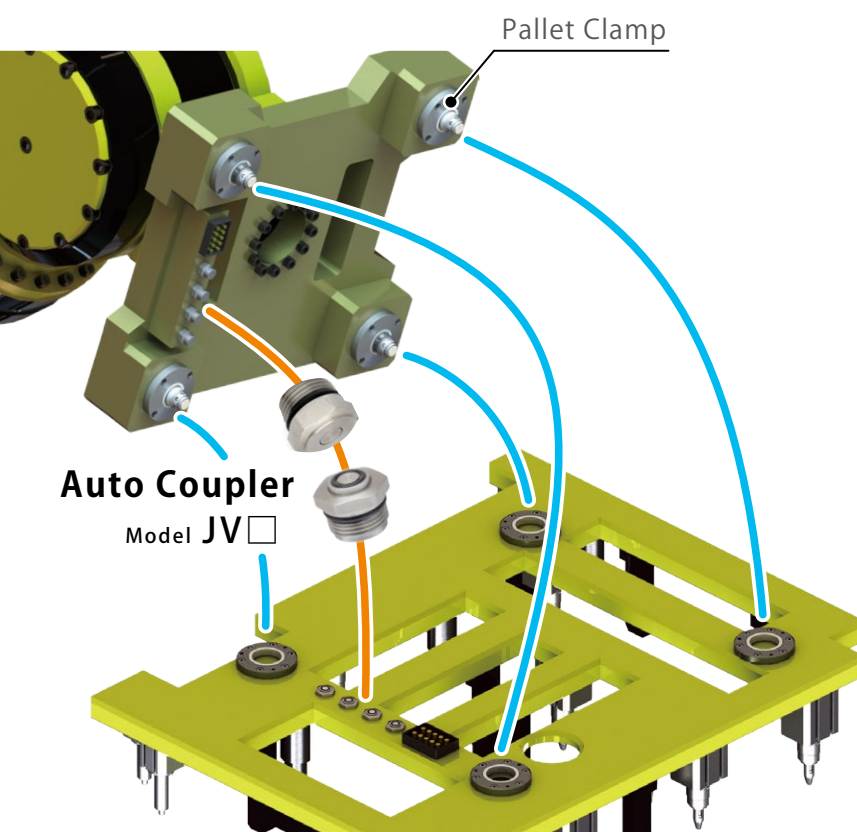
Pallet Clamp enables anyone to change fixtures easily and with high accuracy. This makes pallet loading/unloading smooth, and thus it is suitable for automatic pallet changeover with robots.

Welding Fixture • Pallet Change

Welding Fixture Pallet

Pallet Change and High-Accuracy Locating of a Positioner with a Robot for Standardization of Equipment

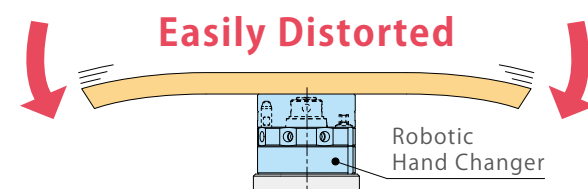
Multiple workpieces can be used in this application by changing welding fixtures with Pallet Clamp. $3\mu\text{m}$ locating repeatability enables high-accuracy pallet change and setup time reduction.



Pallet Clamp

Auto Coupler
Model JV

In case a pallet can be distorted due to its size :
Using multiple pallet clamps in an application enables to withstand moment.



In case of Robotic Hand Changer : Only single unit can be installed to a pallet, because it completes pallet locating with one unit, leading to distortion.



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High-Power Automation Pallet Clamp model **WVG**

Locates and clamps simultaneously.

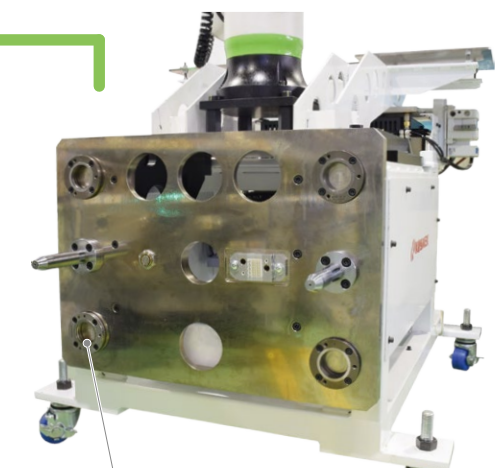
Fixture changeover becomes faster and easier, and equal clamping force and locating accuracy are ensured.

Robot Setup with High-Accuracy Locating

This clamp enables to connect a pallet equipped with a robot on the cart to the equipment. The equipment and the cart are physically connected, so it does not require re-positioning of the robot with a camera or software, reducing time or device for correcting.

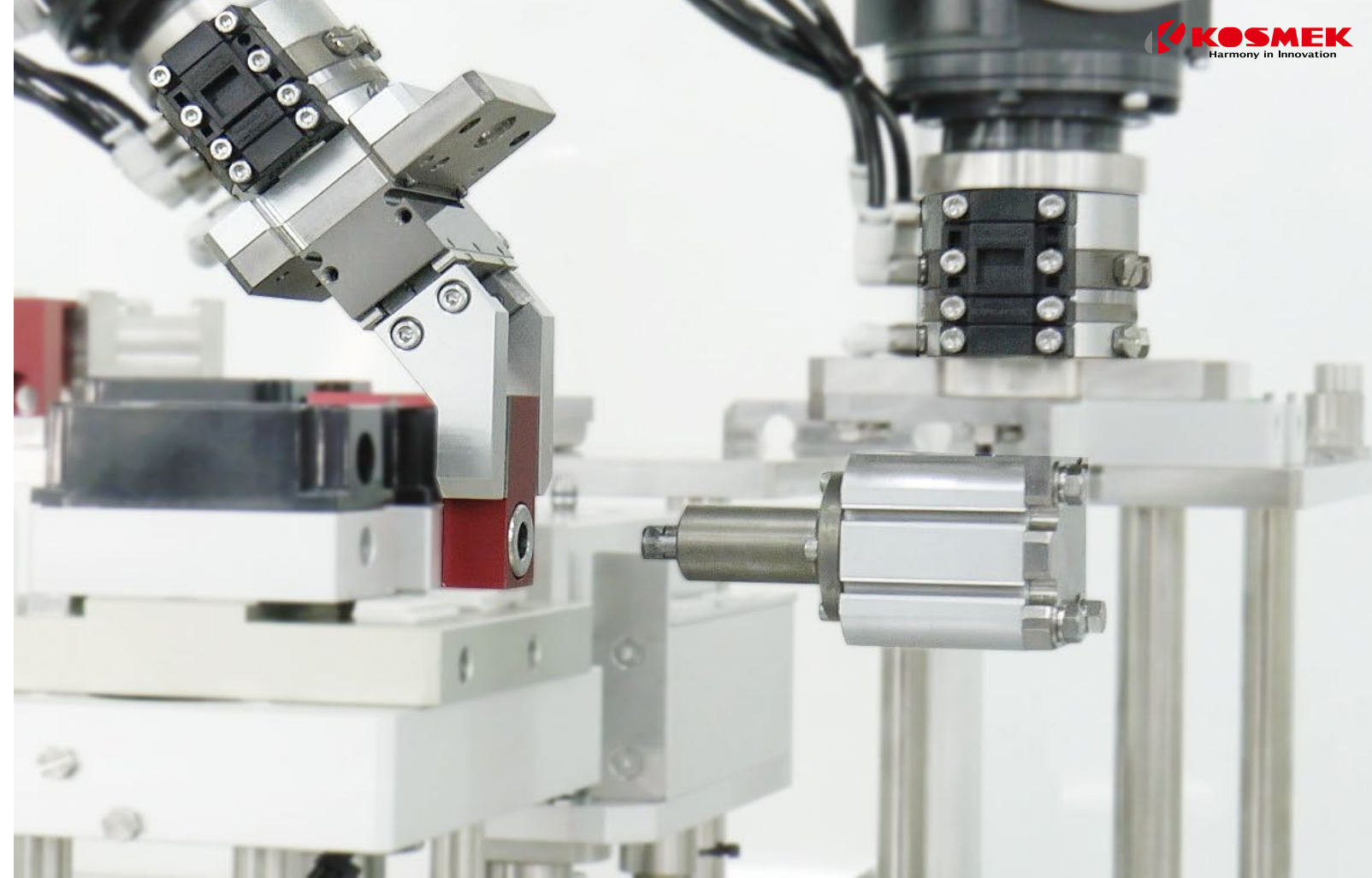
**Equipment****Cart**

(Note) This equipment does not connect the entire cart but locates and clamps only the pallet equipped with the robot.
The pallet is not fixed to the transfer cart.
(Fall prevention is required separately.)

**High-Power Automation Pallet Clamp** Clamp Side (WVG)**High-Power Automation Pallet Clamp** Block Side (WVGB)

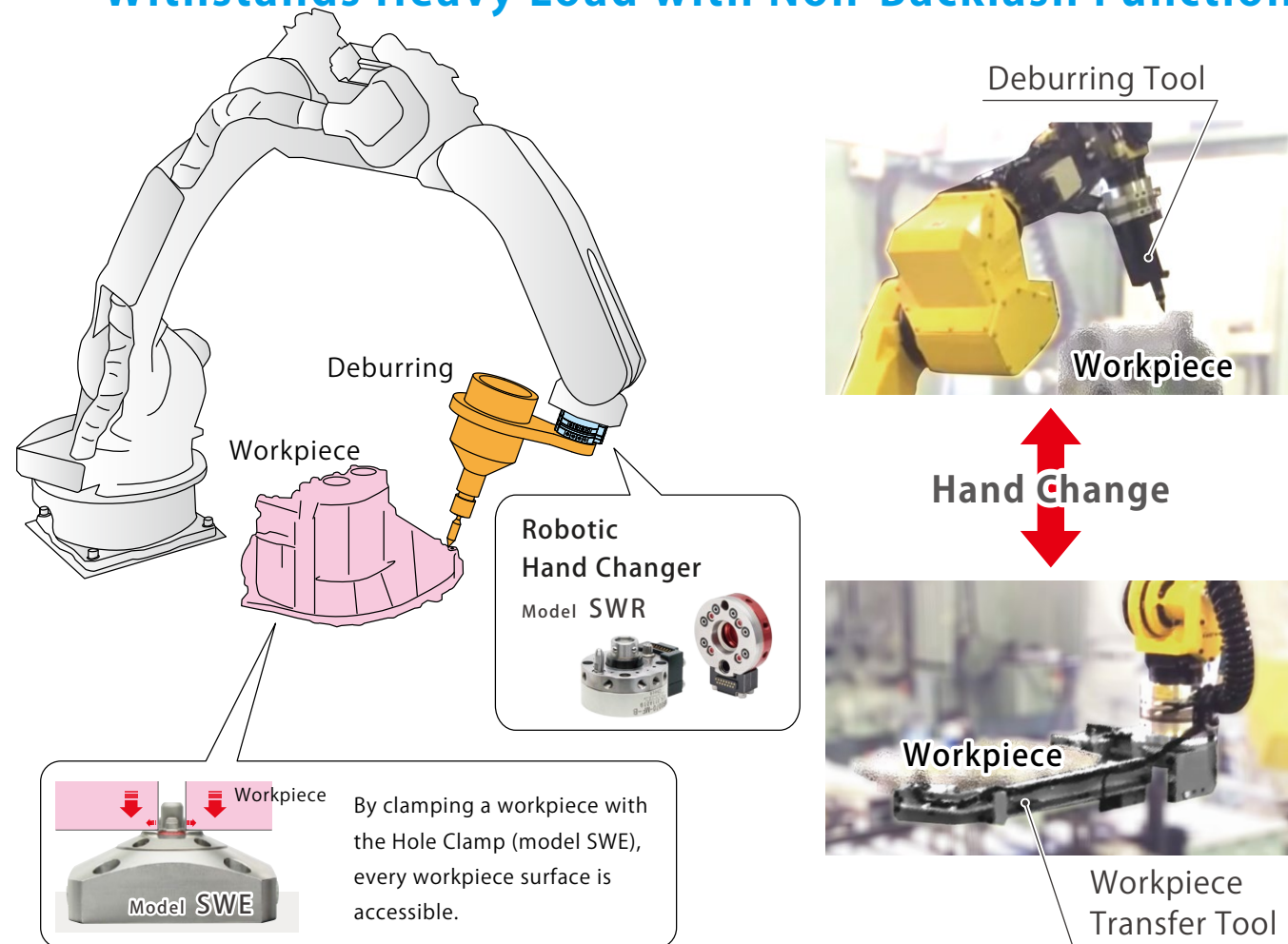
Automation Operations

Various operations performed by robots:
Transfer, inspection, deburring, press fitting,
screw tightening...etc.
KOSMEK's products support automation
in every process.

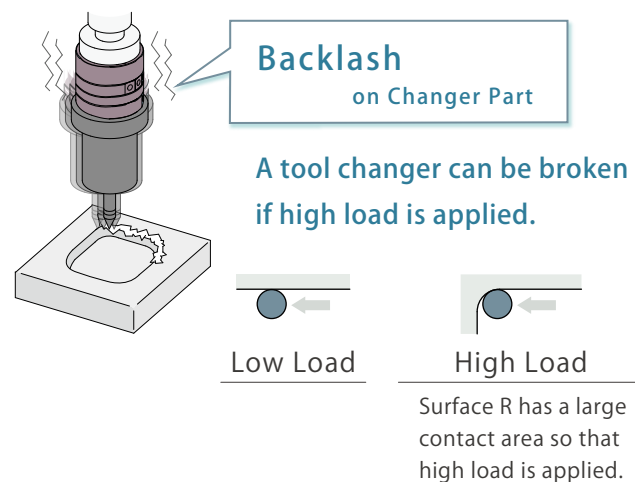


Change the Transfer Hand and Deburring Tool with High Rigidity

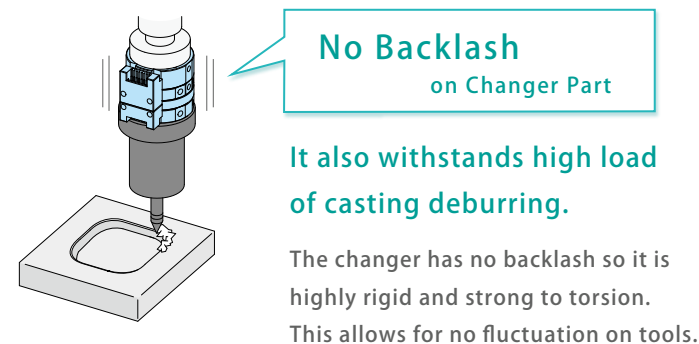
Withstands Heavy Load with Non-Backlash Function



General Tool Changer

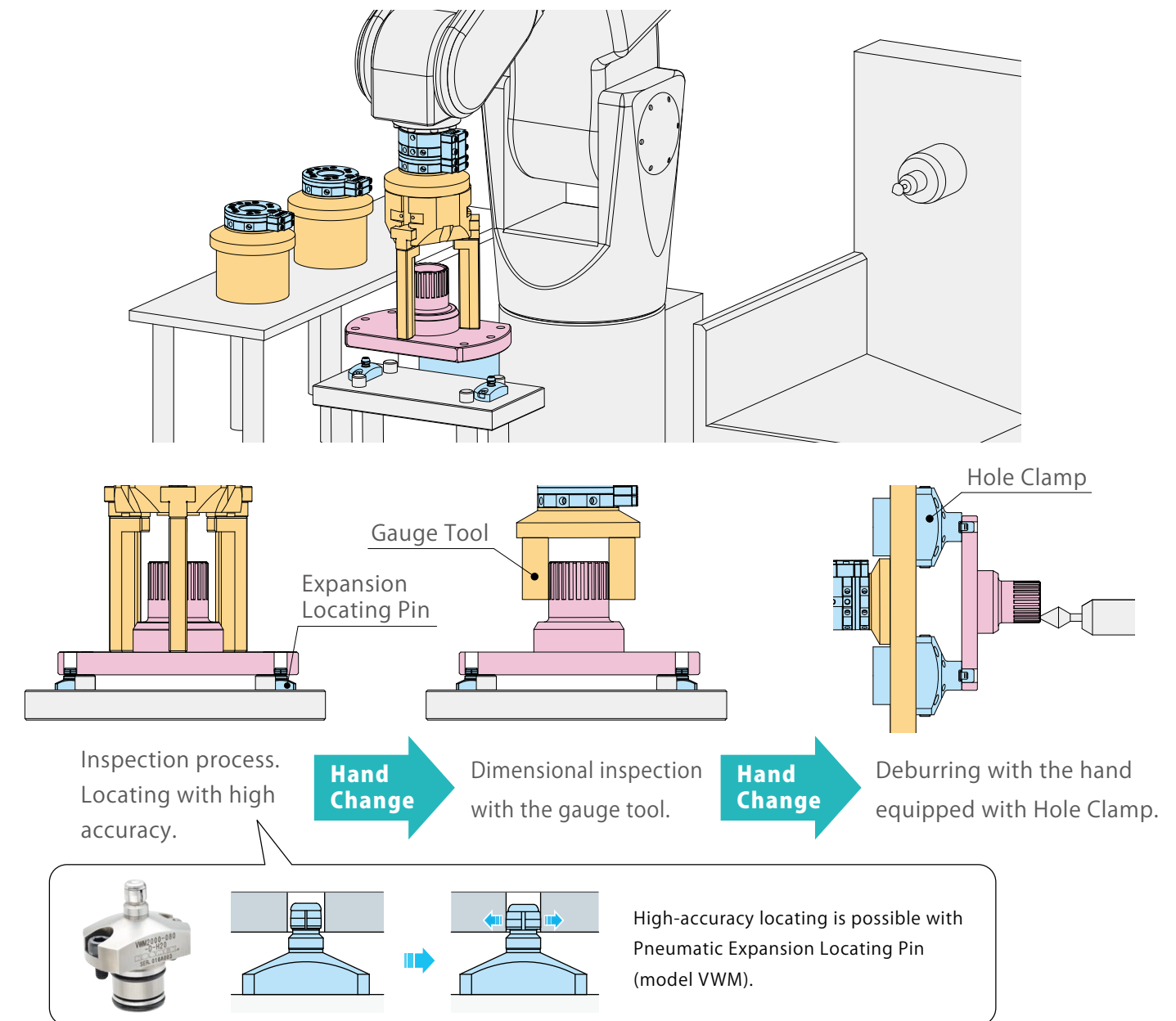


KOSMEK Robotic Hand Changer



Transfer → Inspection → Deburring A Robot Completes Multiple Operations

3 μ m Repeatability Enables to Integrate Various Processes



Application Example Video

Deburring with Robot and KOSMEK Products

Search

Video Title
KOSMEK Product Application Example: Deburring Process

http://www.kosmek.co.jp/php_file/video_products.php?id=044&lang=2





FA • Industrial Robot System

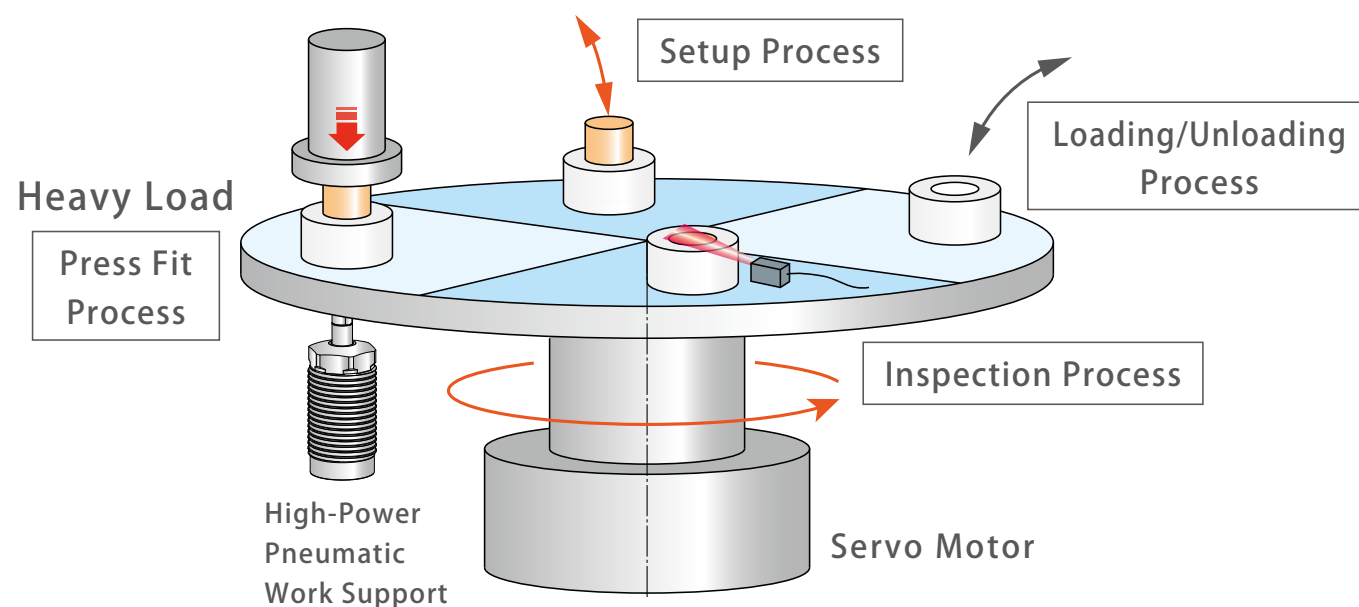
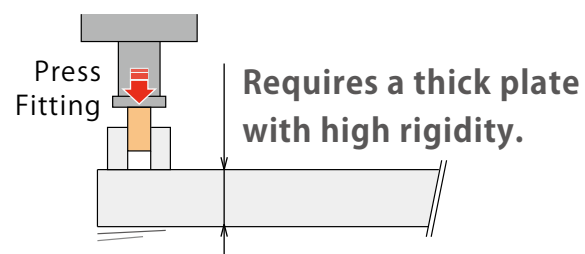
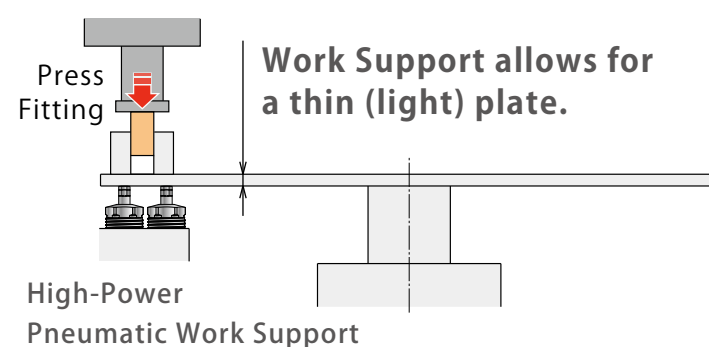
High-Power Pneumatic Work Support model **WNC**

Strong support force that is equivalent to hydraulic pressure prevents chattering and deformation during workpiece machining. The work support has been improved for environmental resistance: Knockout Function to release adherence that ensures highly reliable operation.

Partial Increase in Rigidity for Downsizing of Equipment

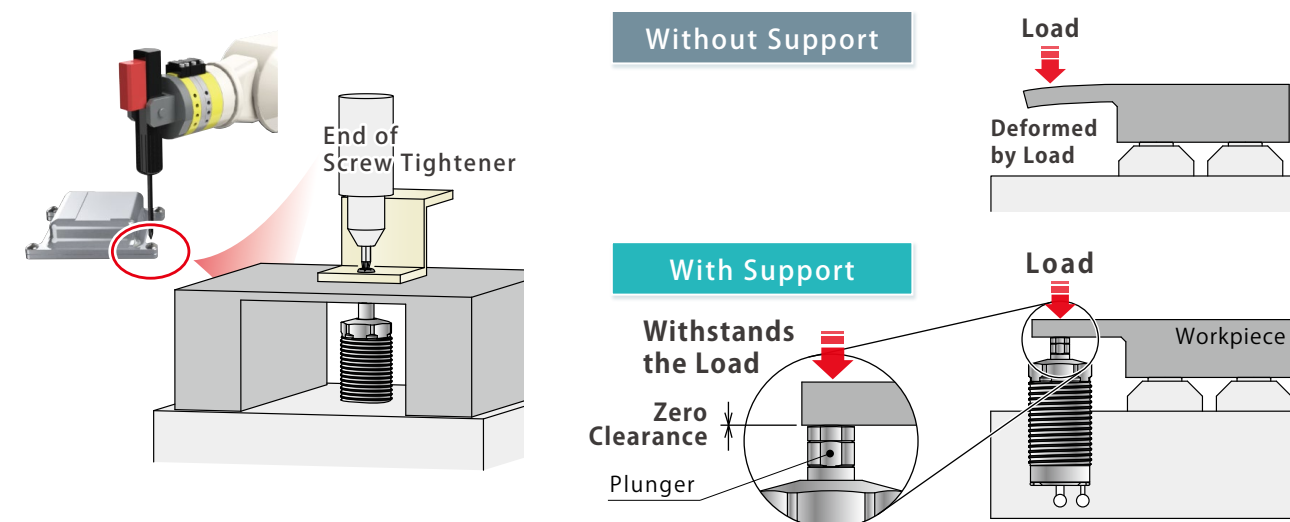
Supports Load to Reduce the Size and Cost of Equipment

Supporting the load with high-power pneumatic support enables a thinner rotary table and compact servo motor. This allows for more compact application, cost reduction and quality improvement.

**Without Support****With Support**

For Backup of Screw Tightening

Prevents Deformation and Improves Quality



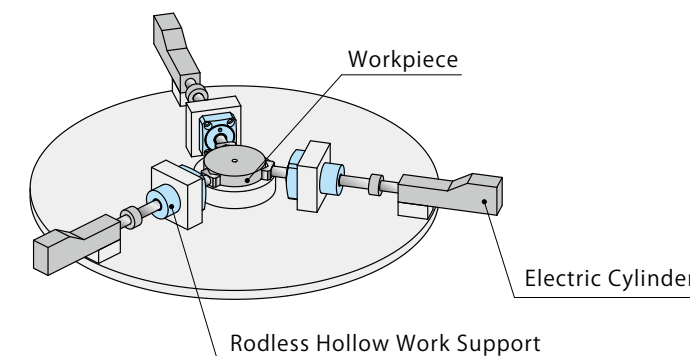
Backup of Automatic Setup with Electric Cylinder



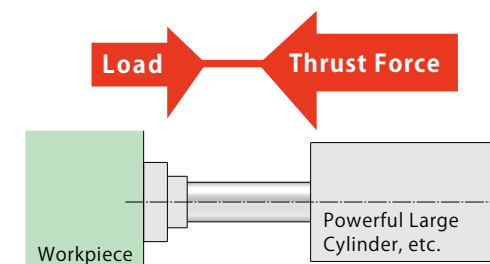
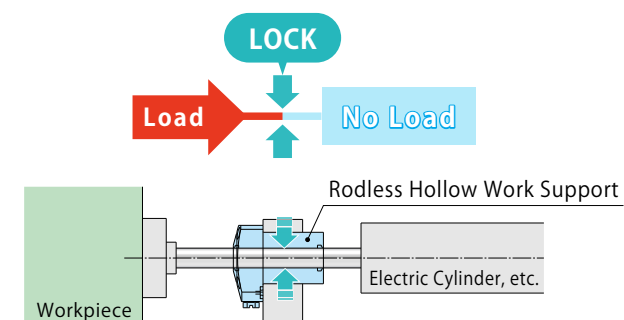
FA • Industrial Robot System

Pneumatic Work Support [Rodless Hollow] model **WNA**

Work Support holds the rod and prevents dislocation, overload to the cylinder and deformation caused by load. Compact and low power cylinder can be selected.

**Without Support**

Requires a powerful cylinder to withstand the load. Excessive thrust is applied to the workpiece.

**With Support**



FA • Industrial Robot System

Quick Chuck Changer

model **SXQ**

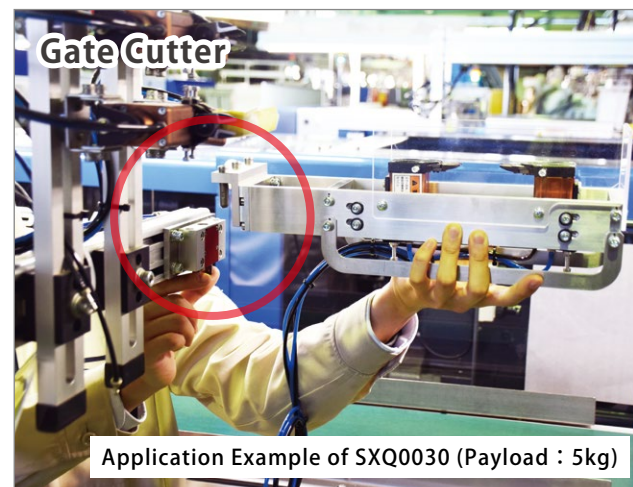
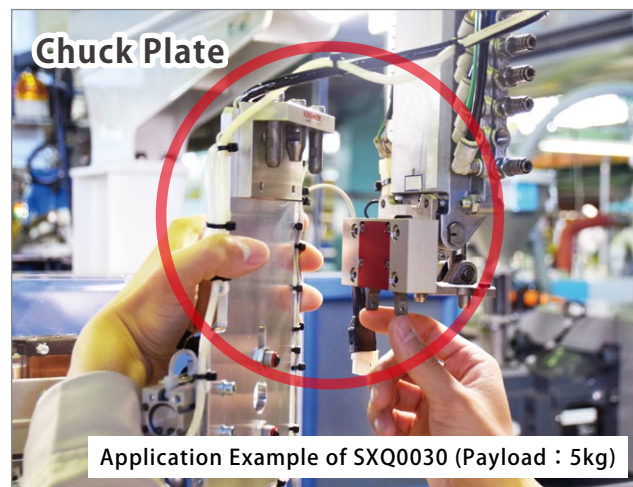
Quick Chuck Changer is specially designed for picker robots.

Enables simple and quick change of chuck plate without any tools.

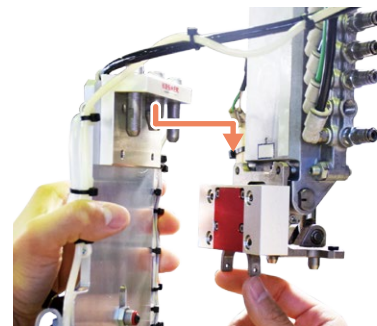
For safety and setup time reduction. Payload Line-up : 5kg, 15kg

Quick Change of End of Arm Tooling without Any Tools for Injection Molding Picker Robot

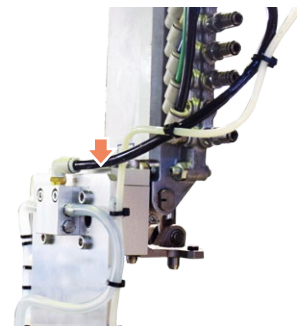
Quick Change of Chuck Plate and Gate Cutter



Connecting Methods

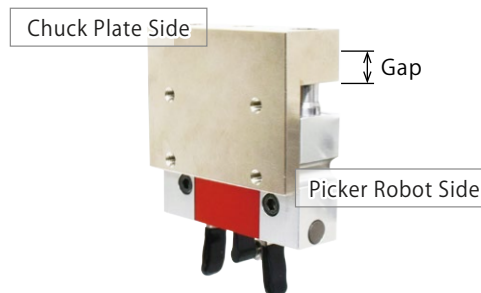


Push in the chuck plate to the end of the picker robot.

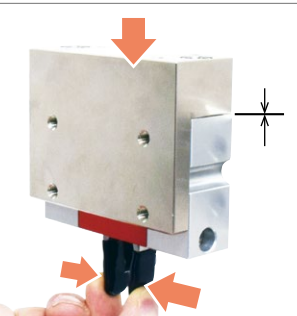


Connection is completed without any tools.

OR



Put the chuck plate on the end of the picker robot.



By pinching the arms, the chuck plate's own weight completes the connection.

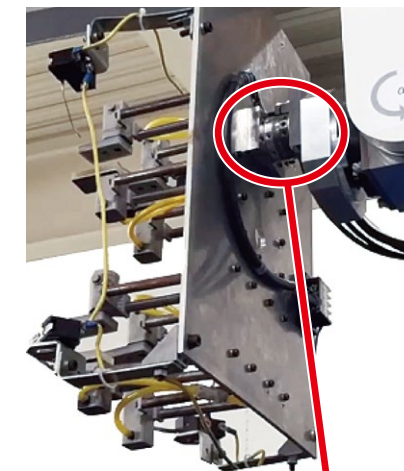
Automation with Robotic Hand Changer

High-accuracy connection ensures inserting to a target position.



model **SWR**

Robotic Hand Changer

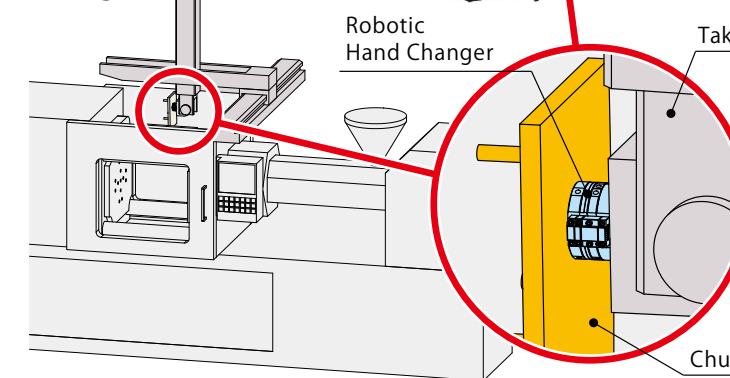


Automatic Leveling Level Unit

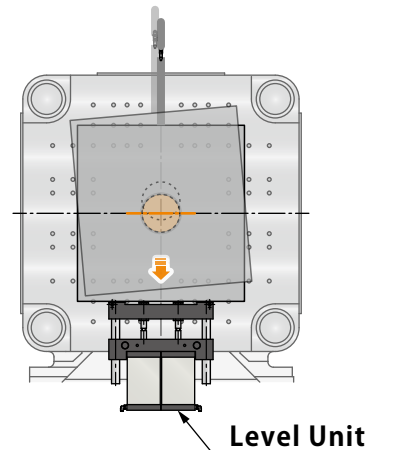
model **MHL**



Take-Out Robot



Chucking Plate

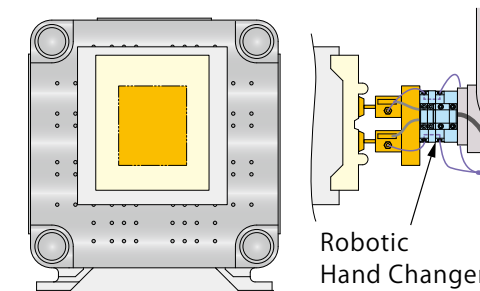


Level Unit

Adjust the level just by loading a mold !

KOSMEK Robotic Hand Changer

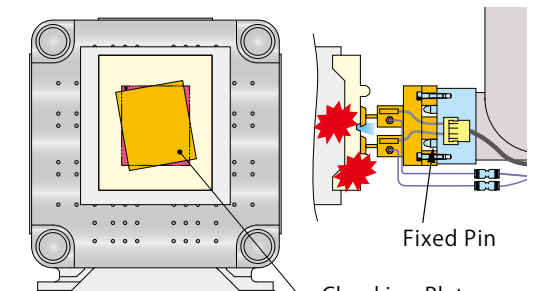
No Backlash



Robotic Hand Changer

General Fixed Pin

Backlash



Fixed Pin

Chucking Plate



Application Example Video

Injection Molding Picker Robot SXQ

Search

Video Title

Quick Chuck Changer for Injection Molding Picker Robot (Model SXQ)

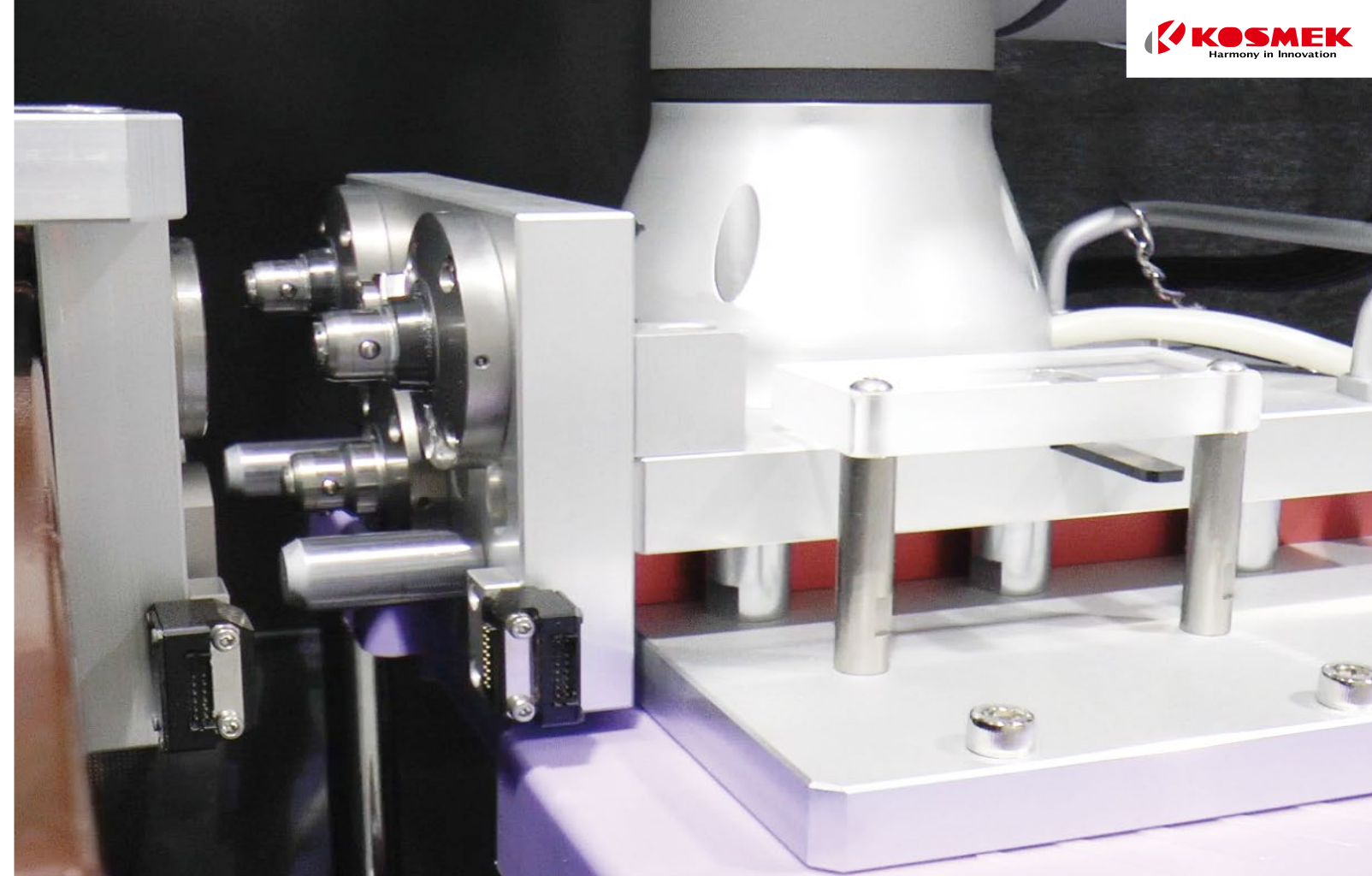
http://www.kosmek.co.jp/php_file/video_products.php?id=114&lang=2



Automation Positioning

While the widespread use of industrial robots is expected to lead to 24-hour operation and unmanned manufacturing in factories, there is no zero risk of production stoppages affected by a variety of errors.

KOSMEK's high-precision positioning products enable smooth automation, minimizing errors and improving productivity and quality.





FA • Industrial Robot System

Expansion Locating Pin

model **VRA/VRC/
VWM/VWK/VWH**

High-Accuracy Expansion Locating Pin

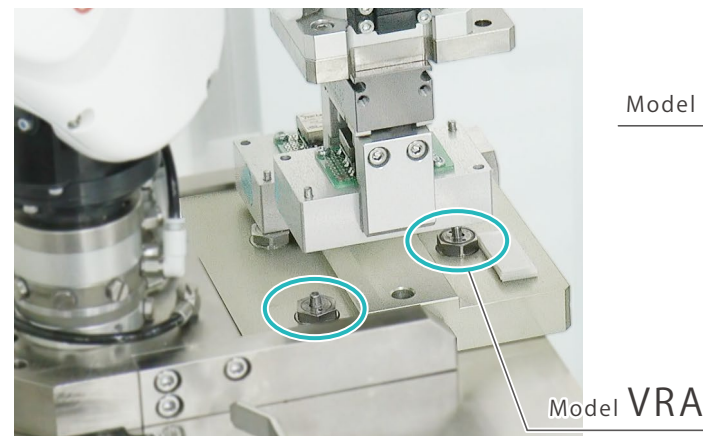
The pin expands and the clearance of workpiece hole becomes zero.

For Workpiece Hole Diam. : $\phi 3 \sim \phi 30$, Locating Repeatability : $3 \mu\text{m} \sim 30 \mu\text{m}$

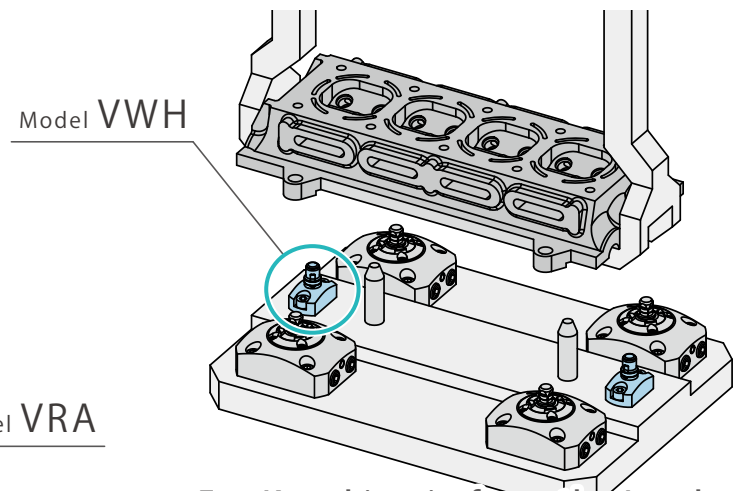
For High-Accuracy Locating, Robot Transfer and many more

A Wide Range of Models for Automation in Various Processes

	 Model VRA Model VRC		 Model VWM	 Model VWH	 Model VWK
Locating Repeatability	3 μm		3 μm	10 $\mu\text{m} \sim 30 \mu\text{m}$	10 μm
Workpiece Hole Diam.	$\phi 3 \sim \phi 6$	$\phi 4$	$\phi 8 \sim \phi 30$	$\phi 5 \sim \phi 15$	$\phi 5.7 \sim \phi 16.2$
Release Action	 Large Clearance		 Large Clearance	 Large Clearance	 Large Clearance
Lock Action	 Zero Clearance		 Large Expansion Stroke	 Large Expansion Stroke	 Large Expansion Stroke



< For Locating of Workpiece >

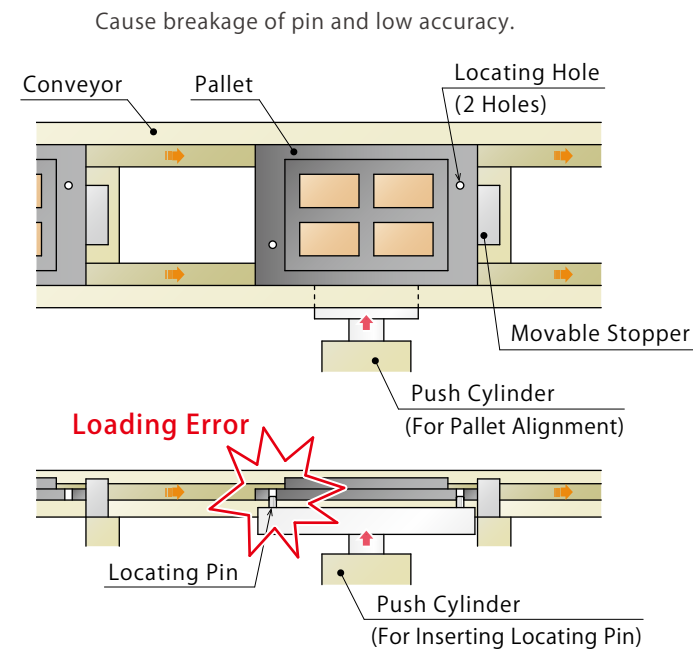


< For Knocking in from the Loader >

■ For Automation of Conveyor Transfer

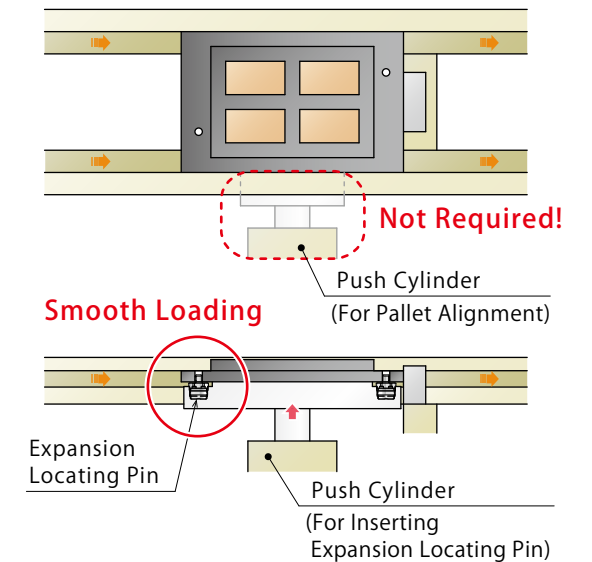
High-Accuracy Locating Enables Smooth Loading and Prevents Errors.

General Locating Pin



Expansion Locating Pin

When released: Large clearance enables smooth loading/unloading.
When locked: Zero clearance enables high-accuracy locating.



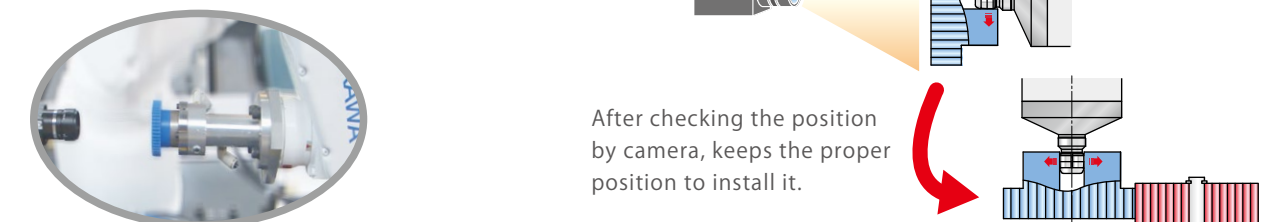
■ For Internal Chuck of Smaller Holes

High-Accuracy Locating Prevents Assembly Errors of Small Components



■ For Internal Chucking and Locating

Suitable for Workpiece Image Inspection



Application Example Video

Injection Molding Picker Robot SXQ

Search

Video Title

0.5kg-1kg Payload Robotic Hand Changer Application Example (Robot : MotoMINI, YASKAWA Electric)

http://www.kosmek.co.jp/php_file/video_products.php?id=035&lang=2





FA • Industrial Robot System

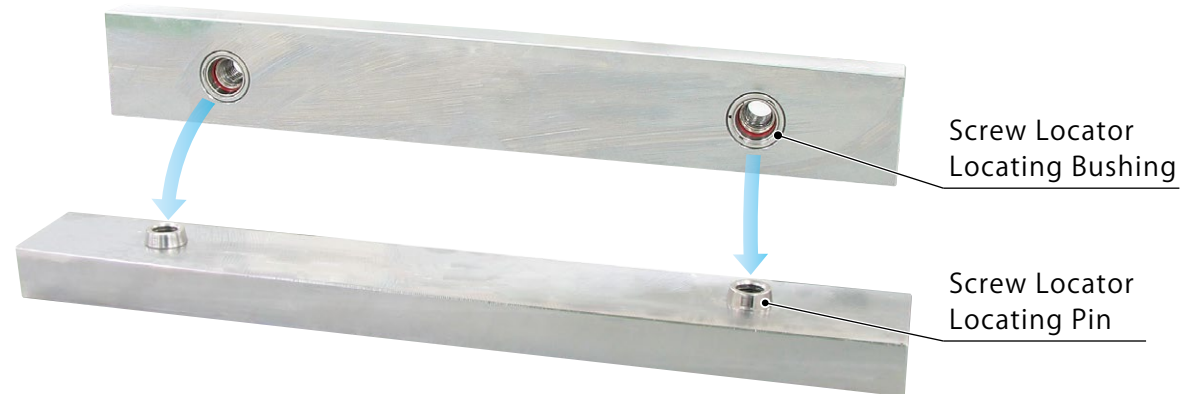
Screw Locator model **VXE/VXF**

Screw Locator with a movable taper sleeve performs high-precision locating of pallets and plates simply by fastening the bolts.

Locating Repeatability VXE : $5\mu\text{m}$ VXF : $3\mu\text{m}$

Productivity and Quality Improvement with High Accuracy Setup

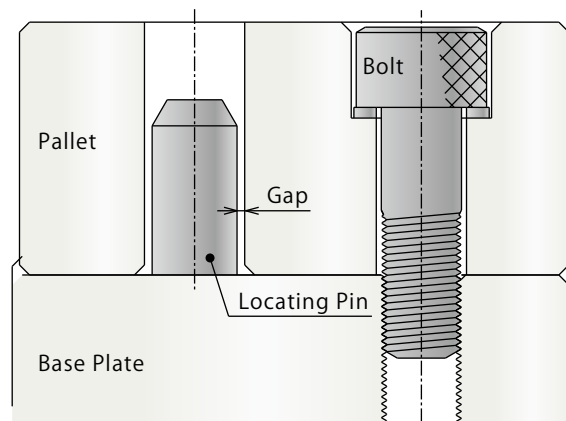
High-accuracy locating is possible just by tightening bolts.
Simple manual setup enables locating of pallets and plates.



※ Screw Locator consists of the locating bushing and the locating pin.

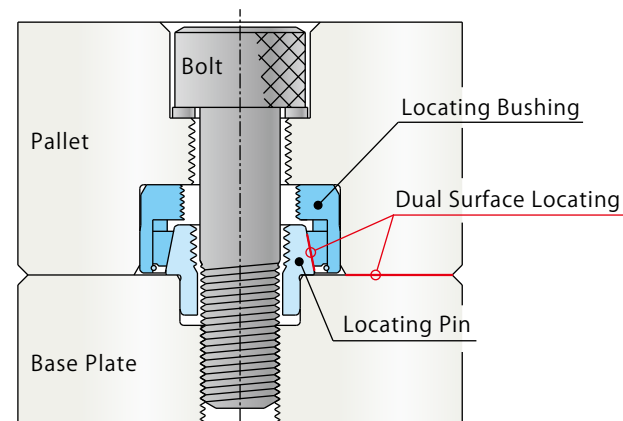
General locating pin has
a gap and poor locating repeatability.

Backlash • Low Accuracy • Space Required



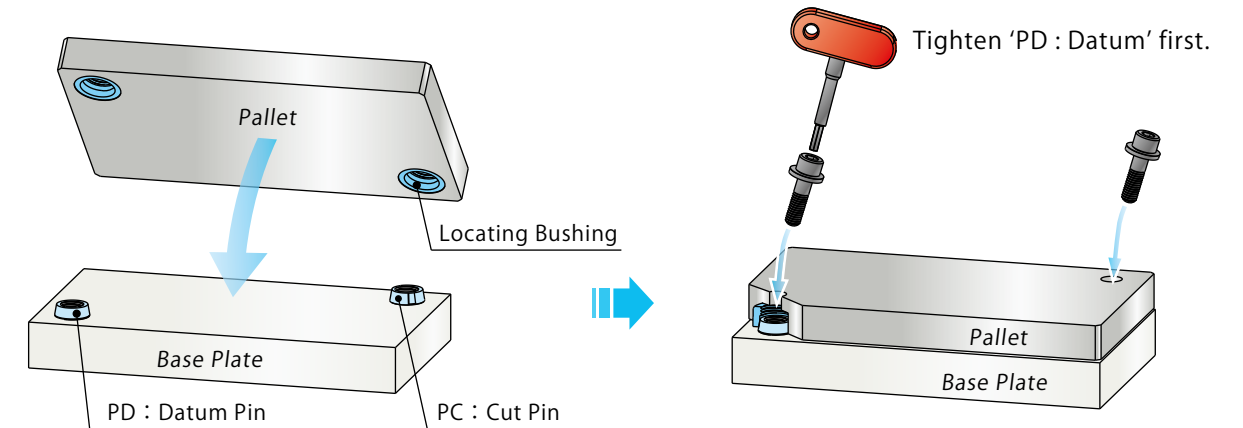
Screw Locator with Dual Surface Tightening
Locating Repeatability $3\mu\text{m}$ ($5\mu\text{m}$ for VXE)

High accuracy allows for high quality and less defective parts. Compact body saves valuable space.



Action Description

Fasten the pallet on the case plate with bolts.

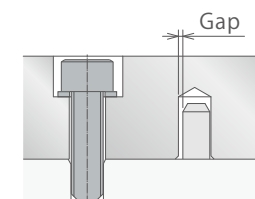


Application Example

General Fixed Pin : Manual Tightening,
Accuracy Correction Required

Table Press Machine

Upper Die (No Setup Change)

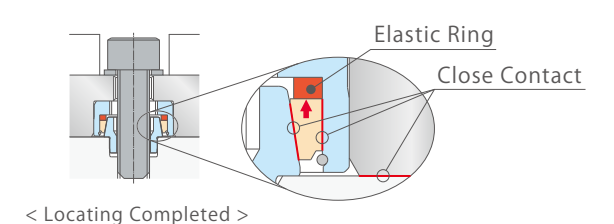


Low Accuracy and Repeatability due to Clearance
Hard to Load, Easy to Get Stuck, Manual Tightening

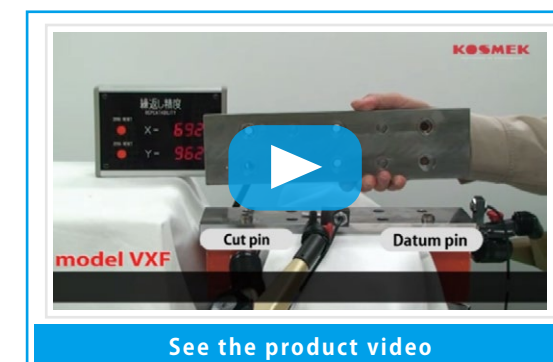
Screw Locator : Manual Tightening,
Accuracy Correction Not Required

Table Press Machine

Upper Die (No Setup Change)



Locating Repeatability: (VXE $5\mu\text{m}$, VXF $3\mu\text{m}$)
Easy Loading/Unloading with Taper Pin, Manual Tightening



Product Introduction Video

Screw Locator KOSMEK

Search

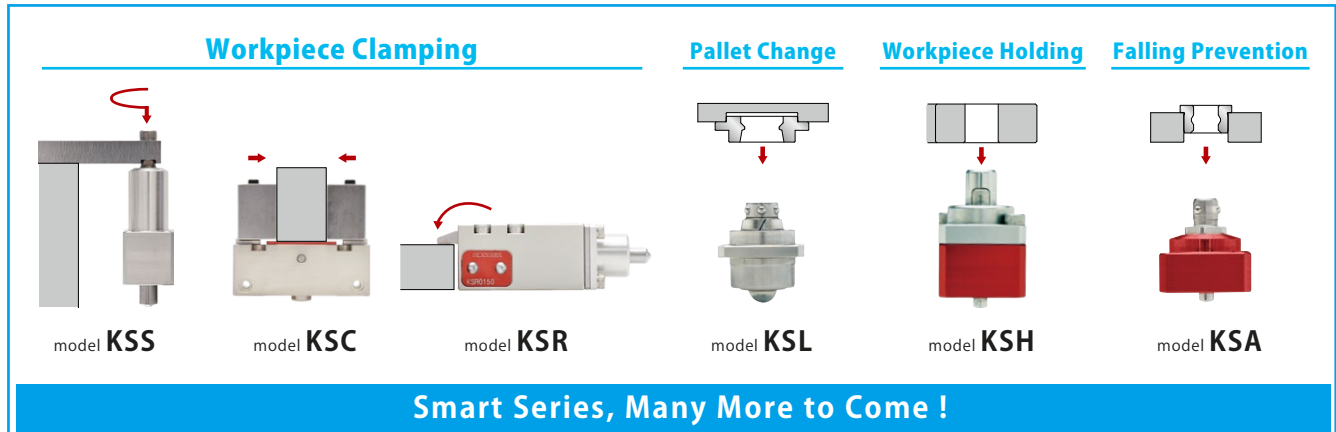
Product Page

https://www.kosmek.co.jp/php_file/eng_product_page.php?no=171_01_01&lang=2



| New Concept | Smart Series

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Solution for various issues such as no driving force, all electric system, carbon neutrality, SDGs, etc.

Please visit our website to find the best solution for your tasks!

KOSMEK SMART SERIES

SEARCH

Product Information Page

<https://www.kosmek.co.jp/english/products/robot/index.html>

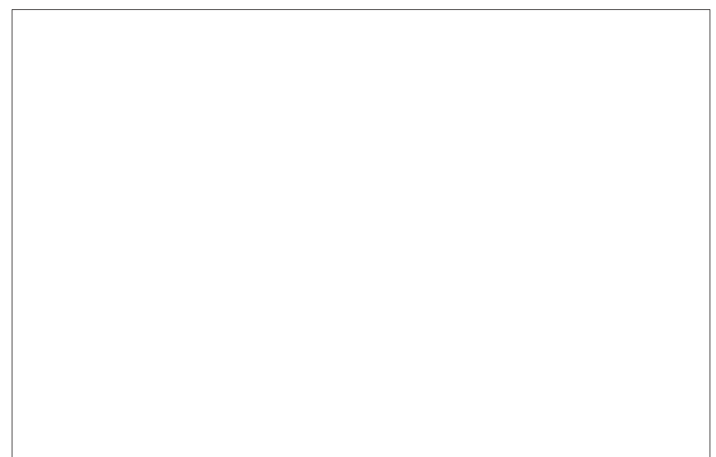


KOSMEK LTD.

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- For Further Information on Unlisted Specifications and Sizes, Please call us.
- Specifications in this Leaflet are Subject to Change without Notice.

