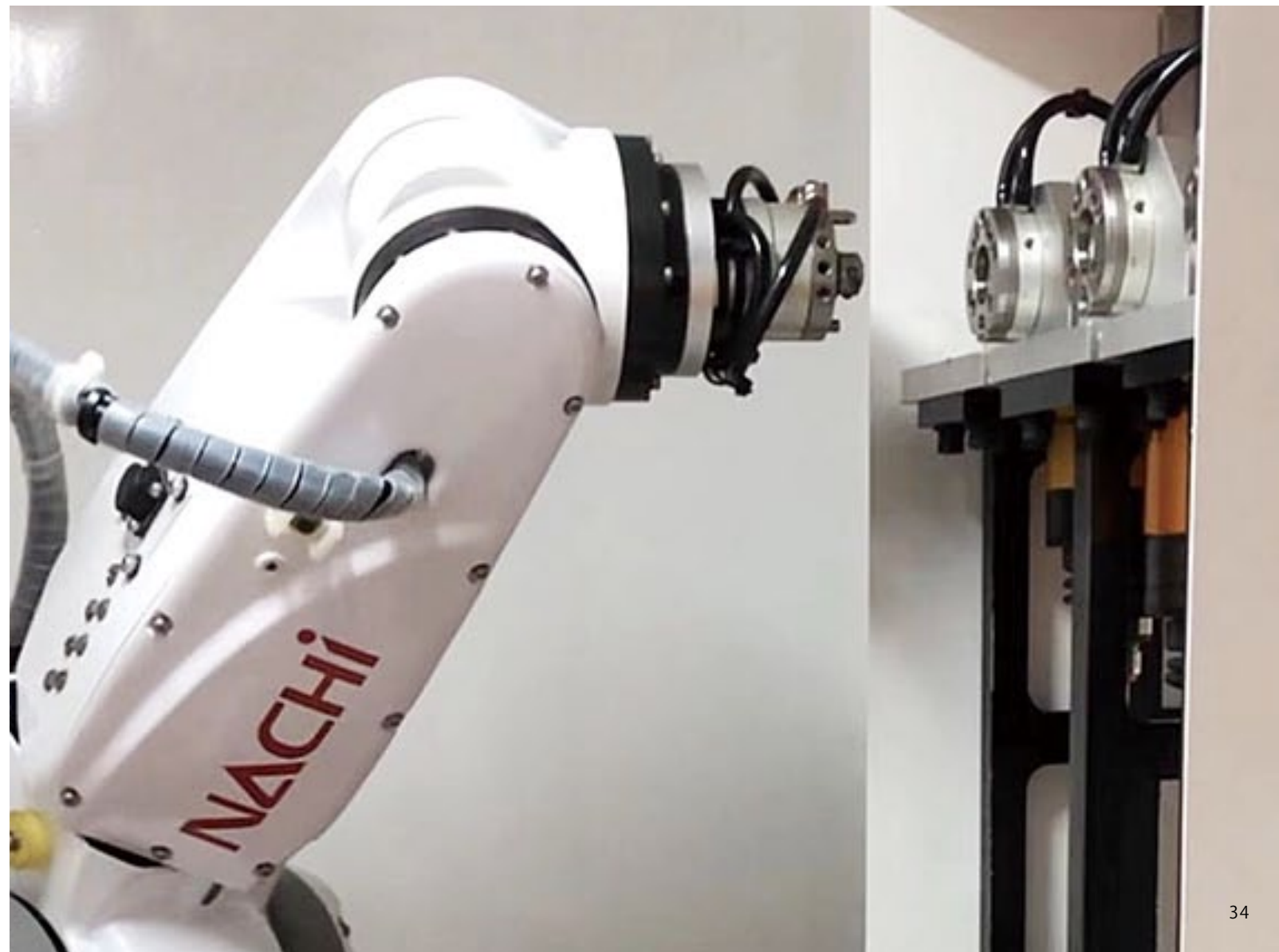
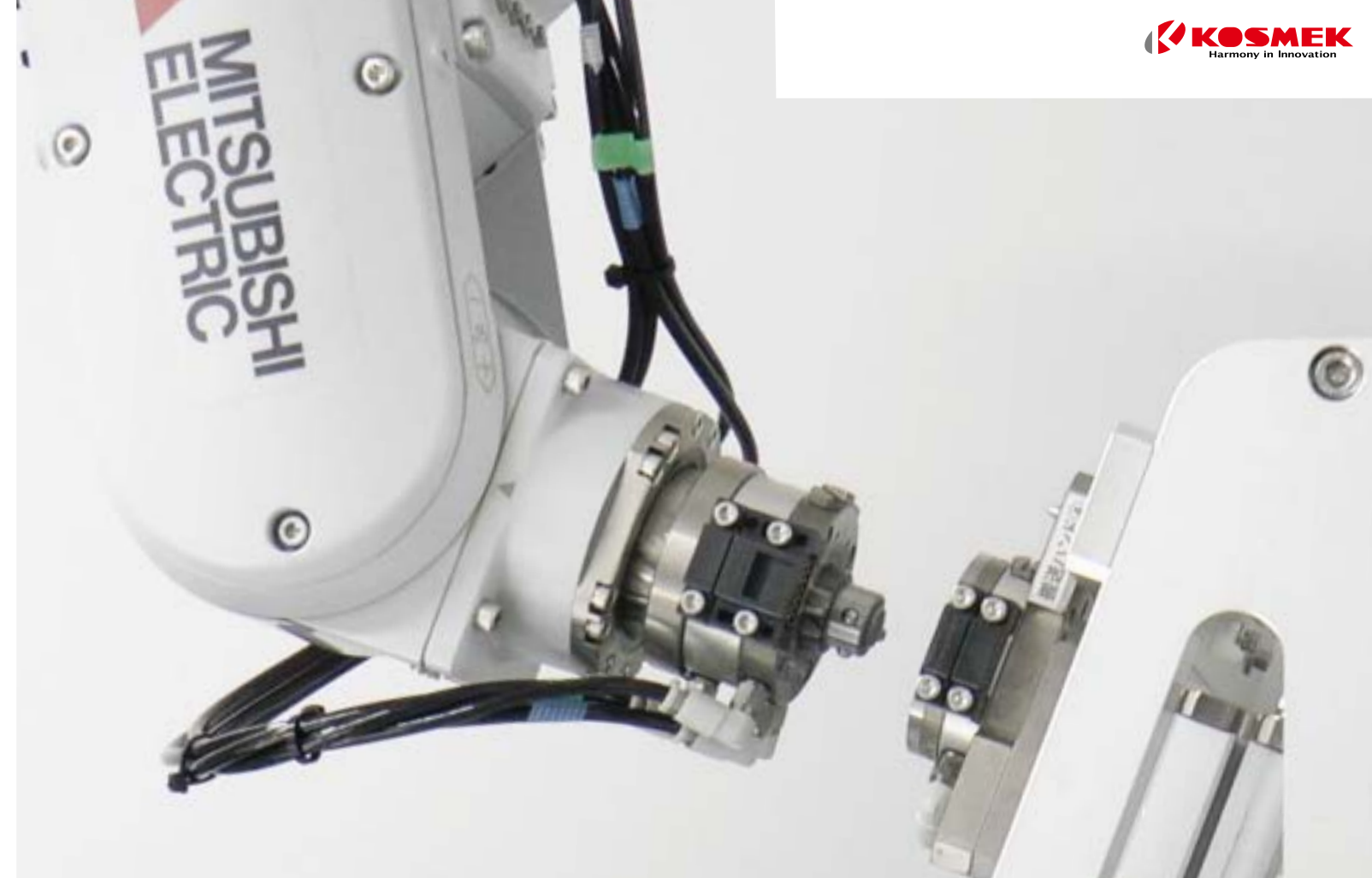


Automation Setup

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.





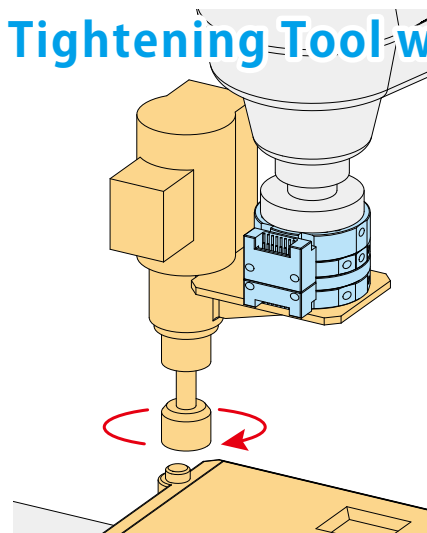
FA • Industrial Robot System

Robotic Hand Changermodel **SWR**

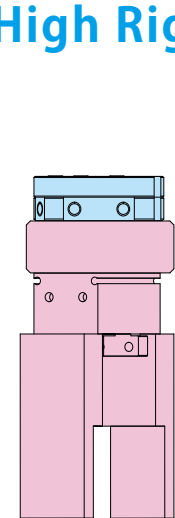
High-accuracy and high-rigidity robotic hand changer (repeatability: 0.003mm) enables multiple functions of robots and setup time reduction. Enhances the productivity of automated production line.

Zero Backlash: High Accuracy, High Rigidity and High Durability

Change the Transfer Hand and Screw Tightening Tool with High Rigidity



Screw Tightening Tool



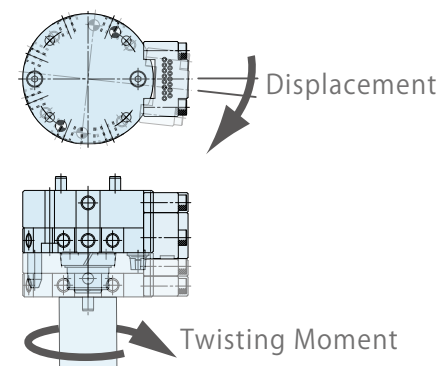
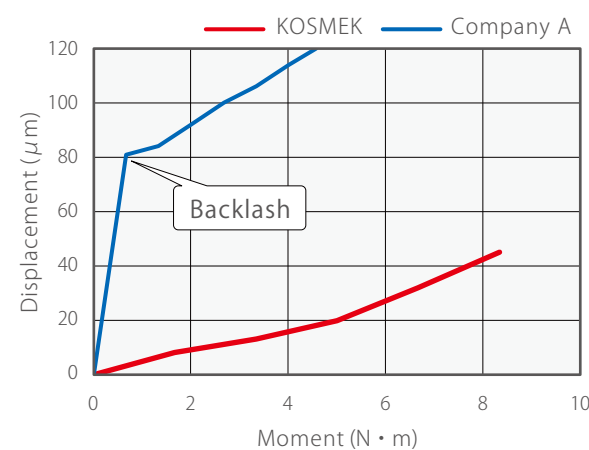
Transfer Hand



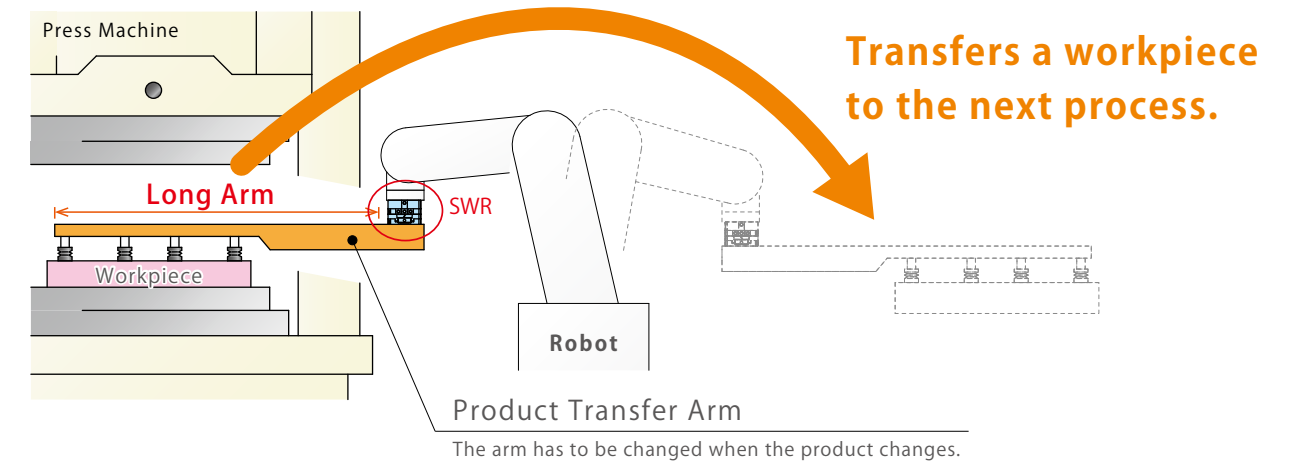
Strong to Torque and Not Damaged by Impact Load

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.

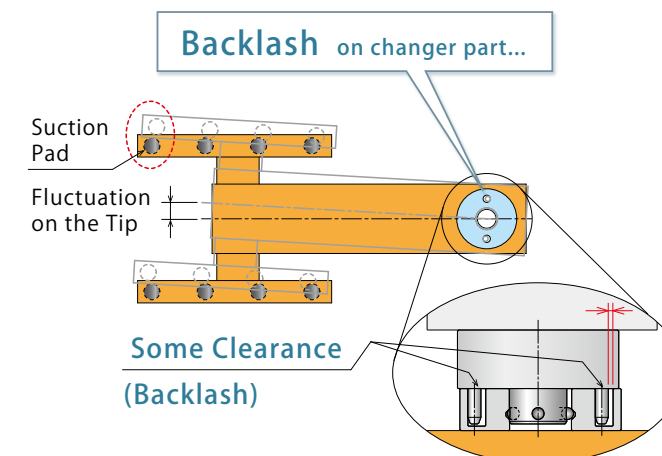
Moment and
Displacement
(Equivalent to
5kg Payload)



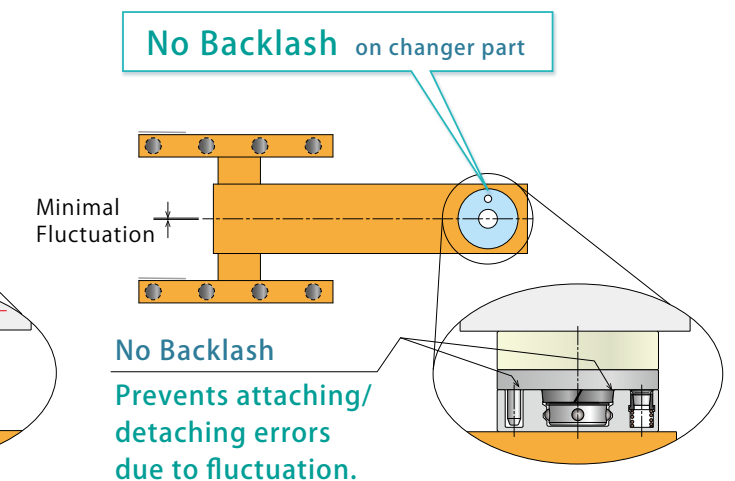
High-Accuracy Change of Press-to-Press Transfer Arm



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

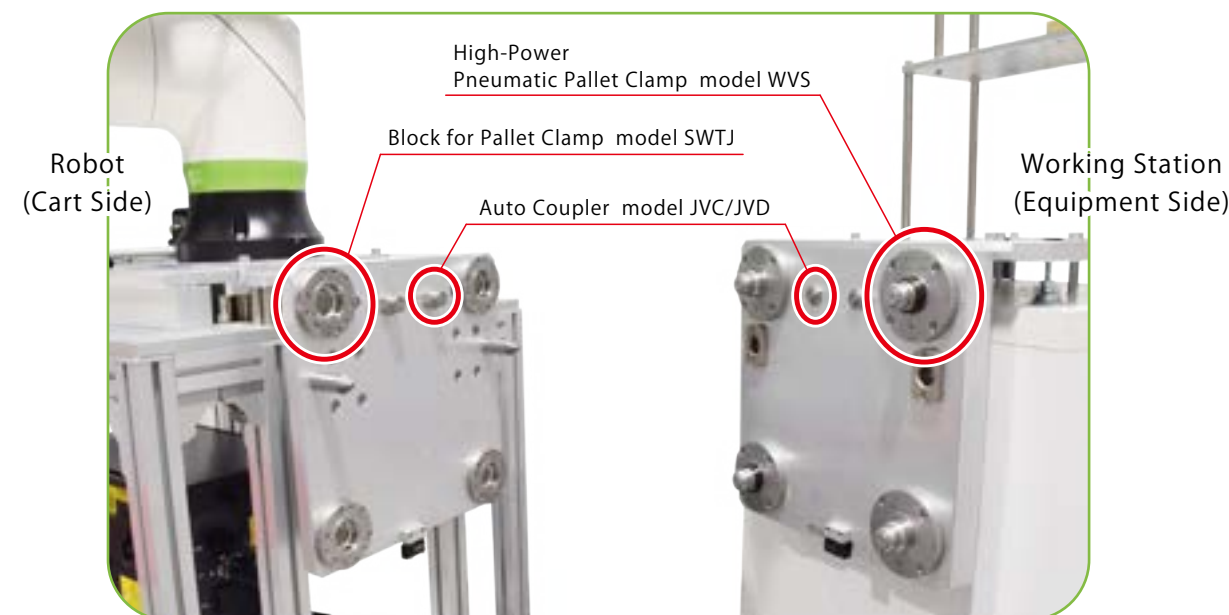
Change the Hands of YuMi with Ultra-Light Hand Changer

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.



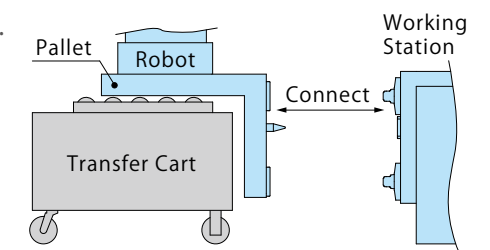
KOSMEK FA • Industrial Robot Related Products to Solve Various Tasks for Customers

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**

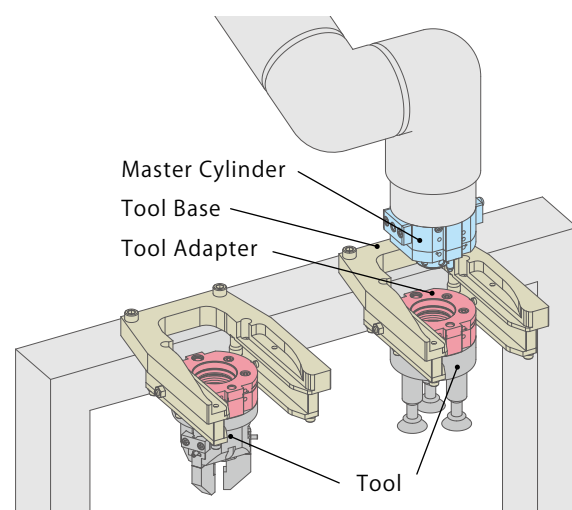
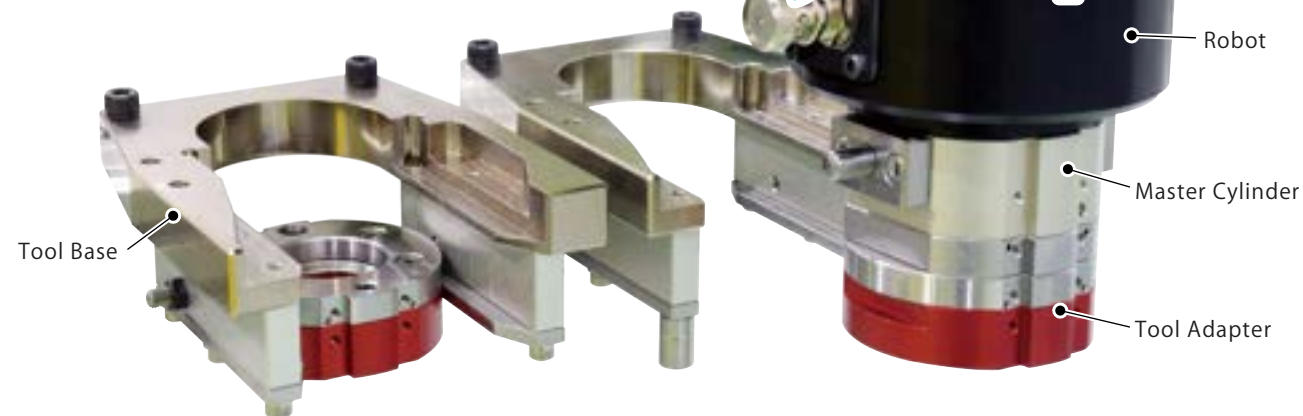
Mechanical robotic hand changer that uses robot's power.

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

High accuracy locating with 0.003mm repeatability.

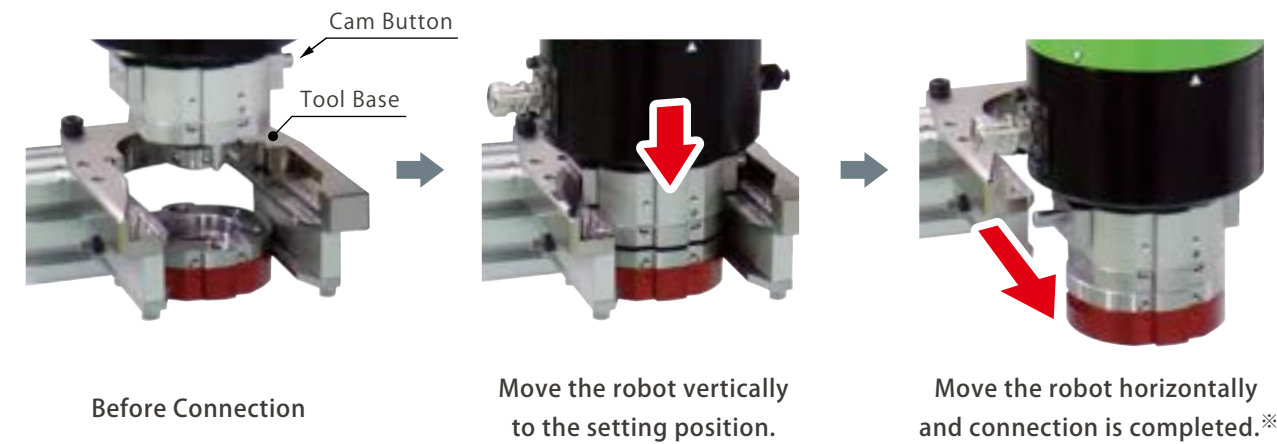
No Power Source Required Repeatability: 3μm

Hand Change
with Robot's Power



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




FA • Industrial Robot System

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



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Compact Location Clamp model **SWQ**

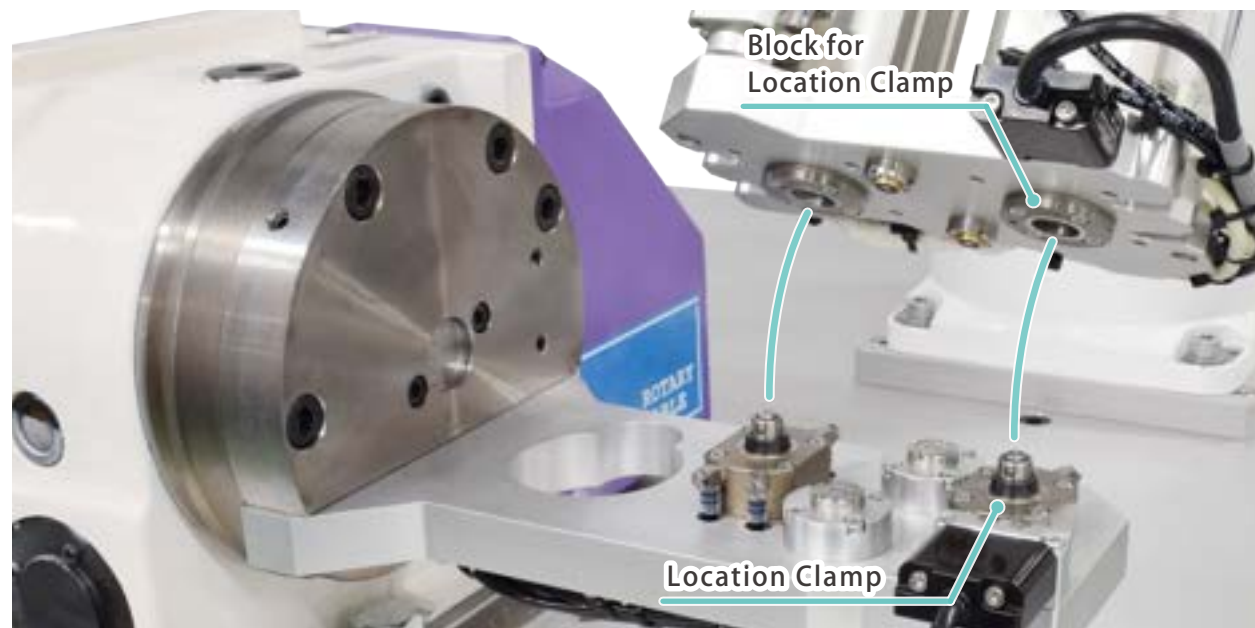
Drastically minimizes pallet setup time and improves productivity.

Suitable for automatic setup with robot.

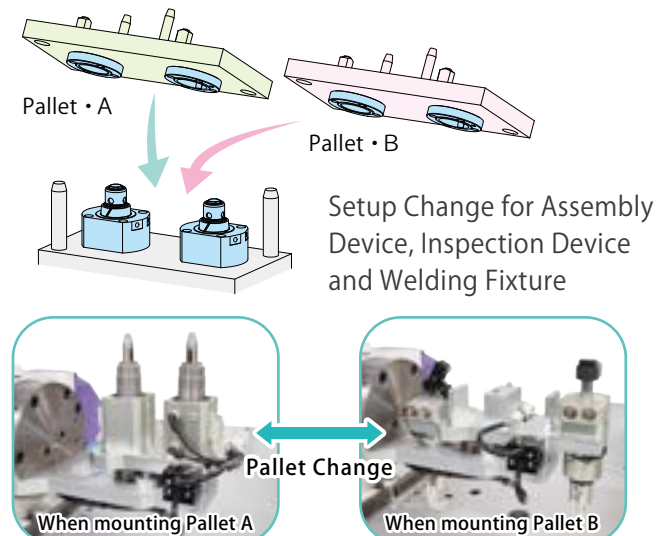
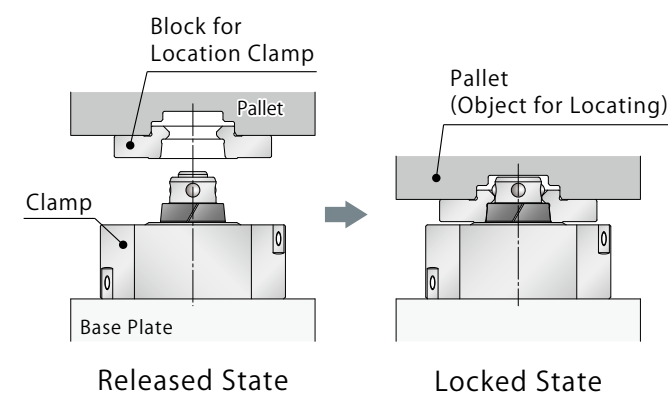
Locating Repeatability : 0.003mm

For High-Speed and Automated Pallet Change

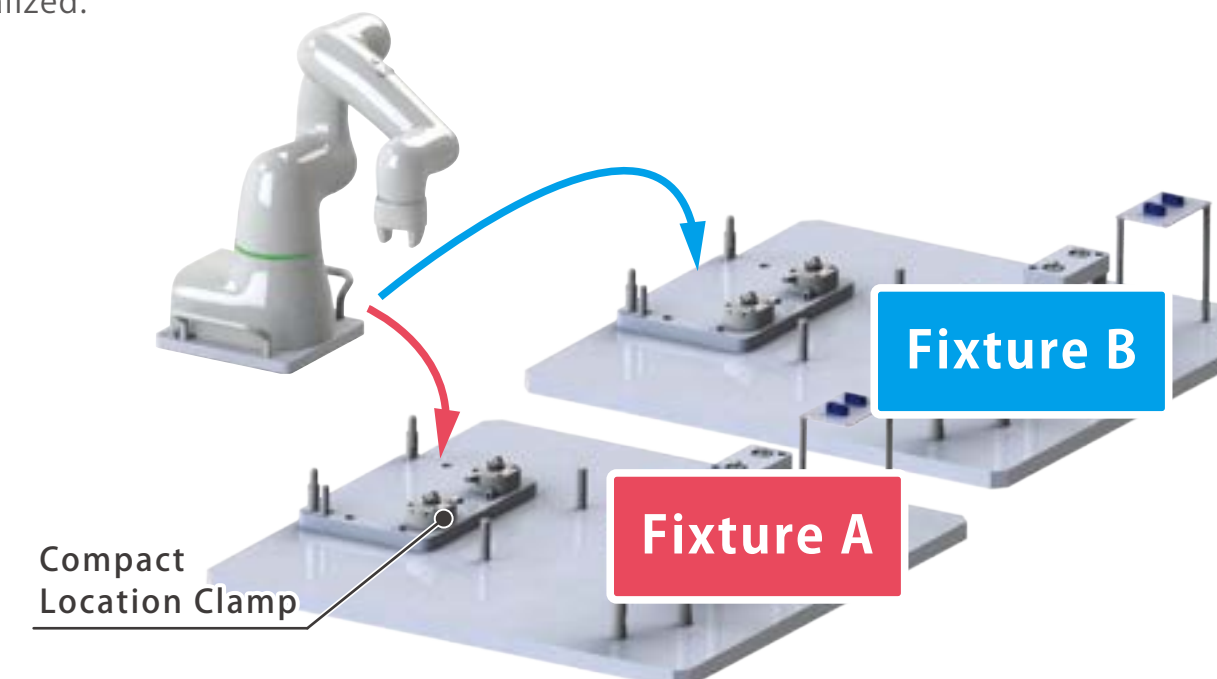
**Quick Locating and Clamping Reduces Setup Time
and Increases Productivity**

**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.





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Smart Series Location Clamp

model **KSL**

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

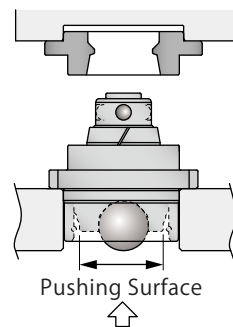
Location Clamp that enables easier pallet change and setup.

Locating Repeatability : 0.01mm

Action Description

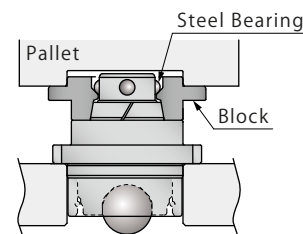
< Released >

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



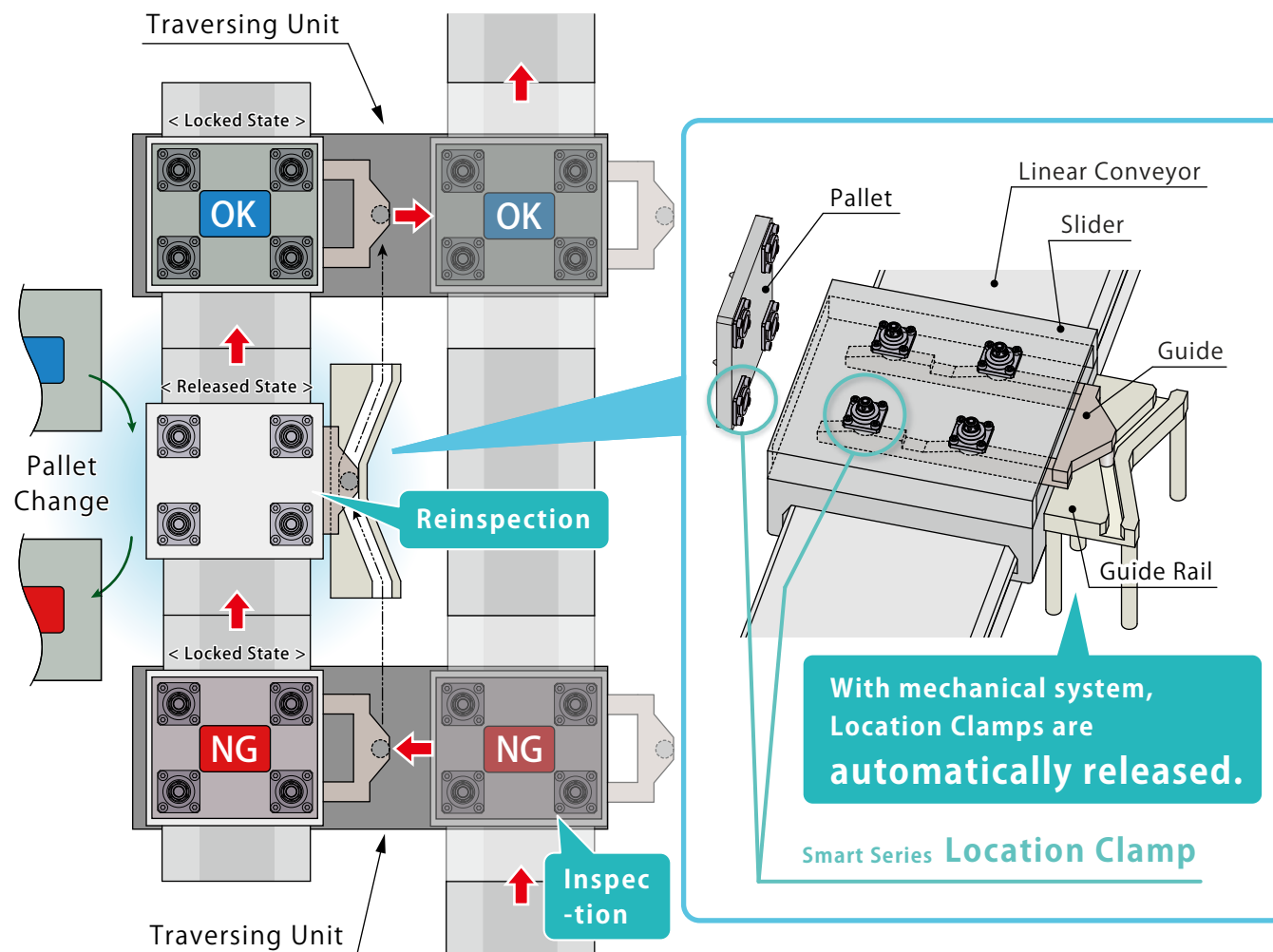
< Locked >

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.

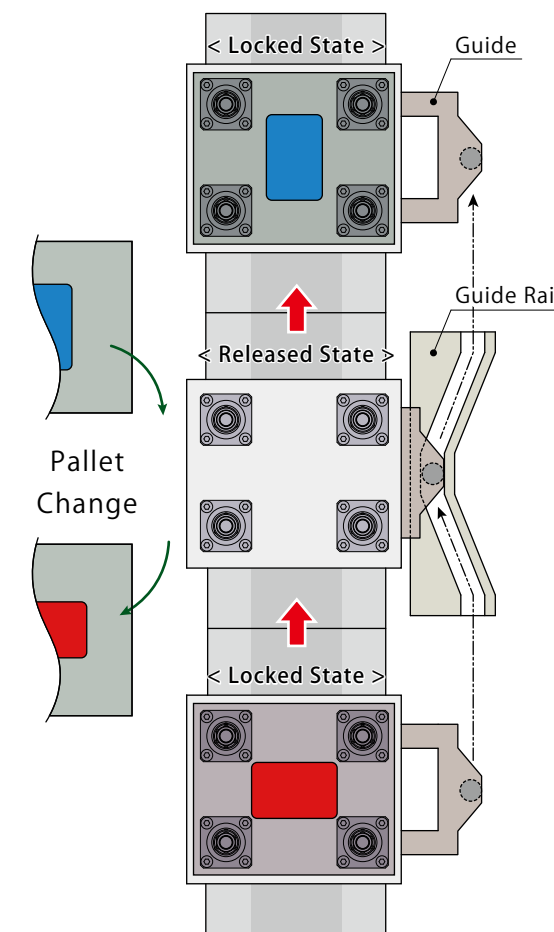
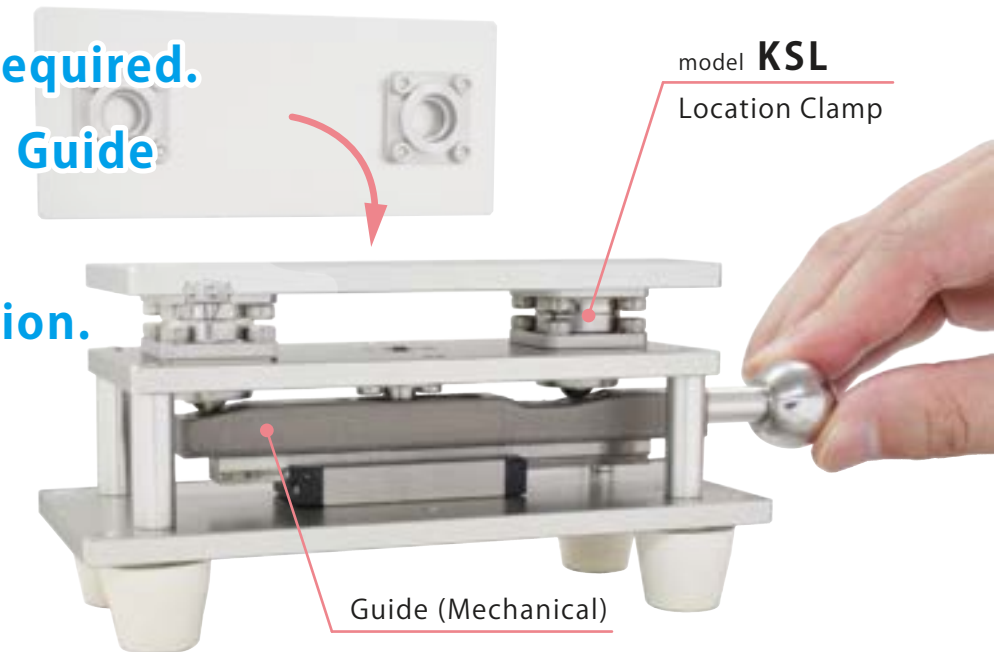


No Air Needed. Pallets Changed by Slider Operation

Power source is not required to change pallets.

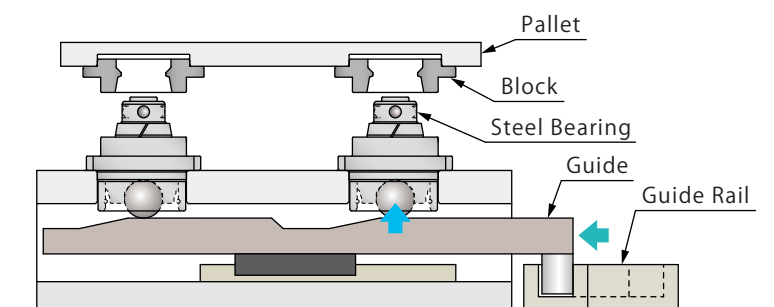


No Power Source Required. Pallet Change with Guide Allows for Setup Time Reduction.



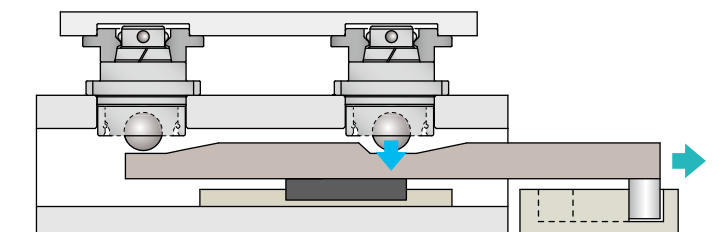
< Released State >

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.



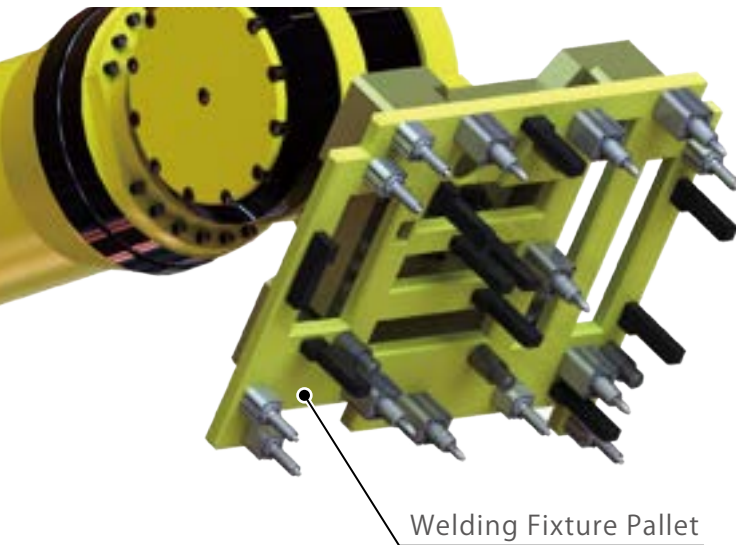
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High-Power Automation Pallet Clamp model **WVG**

Locates and clamps simultaneously.

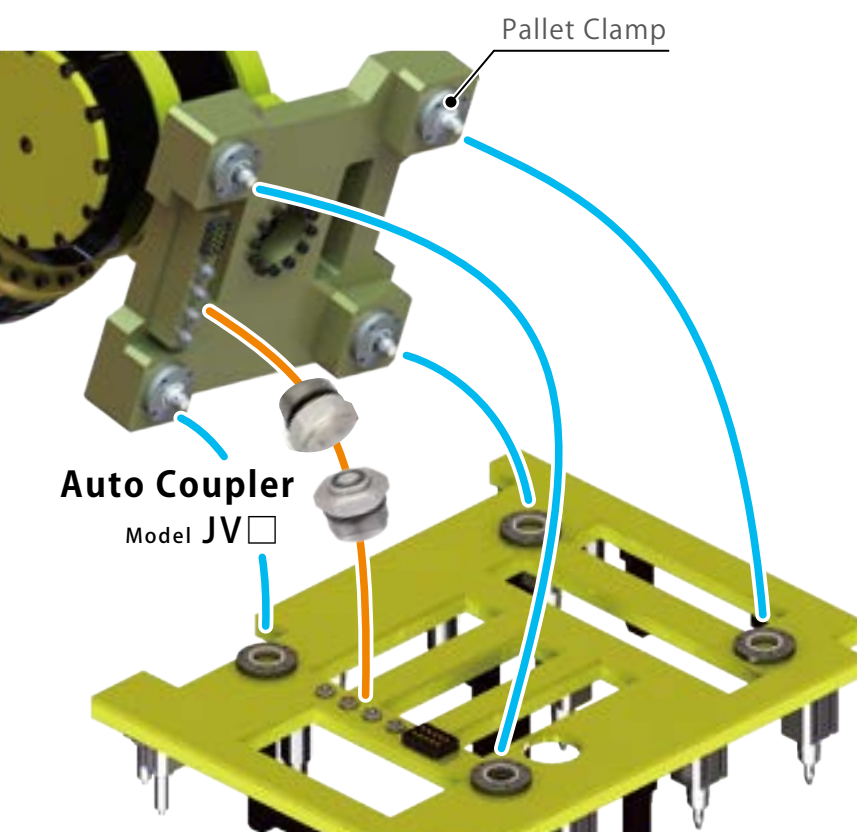
Fixture changeover becomes faster and easier, and equal clamping force and locating accuracy are ensured.

Welding Fixture • Pallet Change

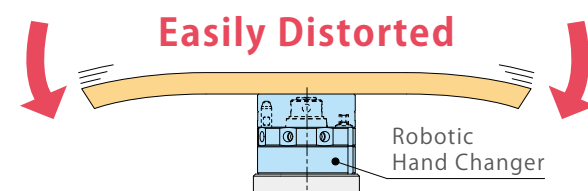


Pallet Change and High-Accuracy Locating of a Positioner with a Robot for Standardization of Equipment

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



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.

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.



(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.)



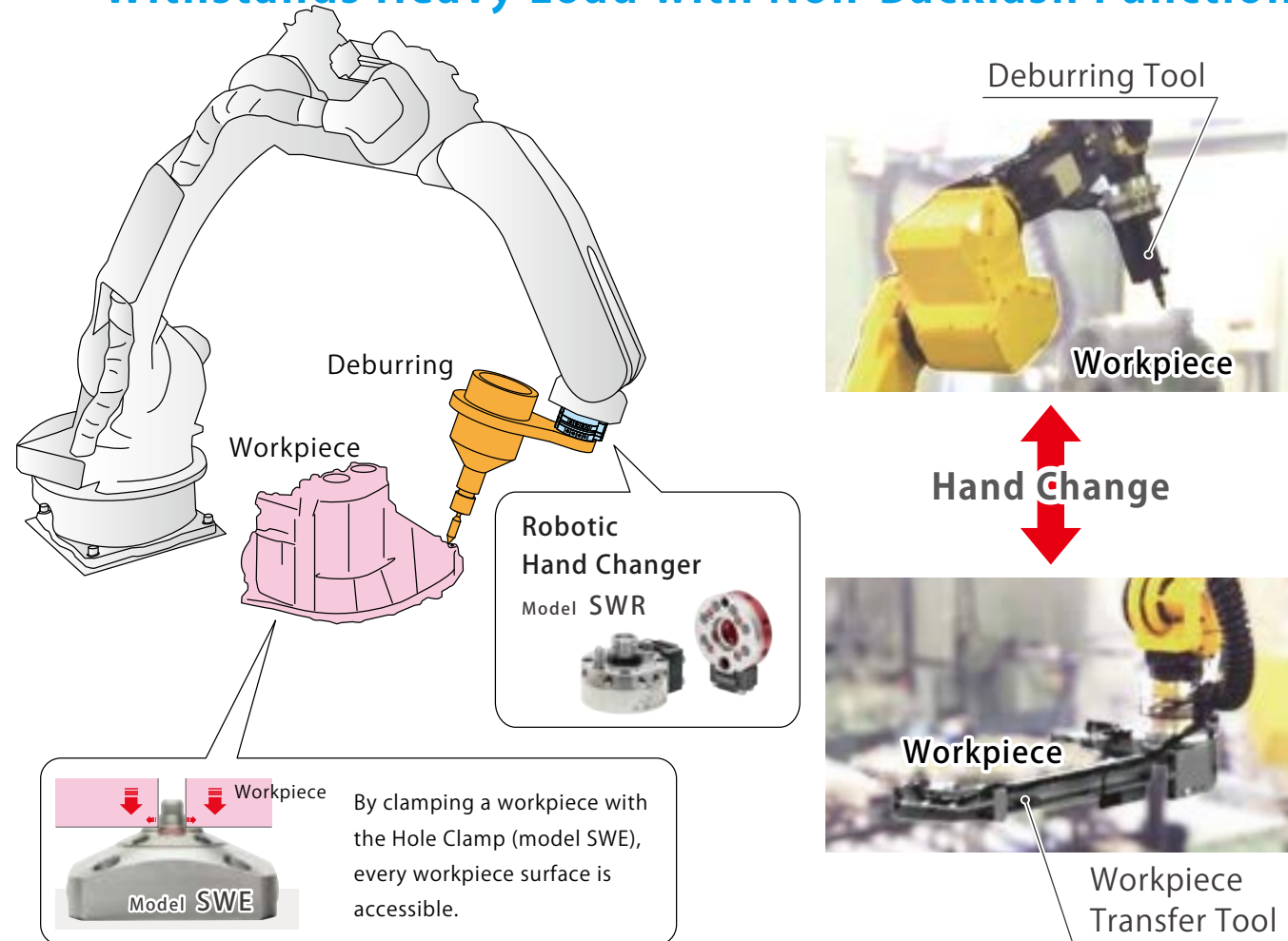
Automation Operations

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

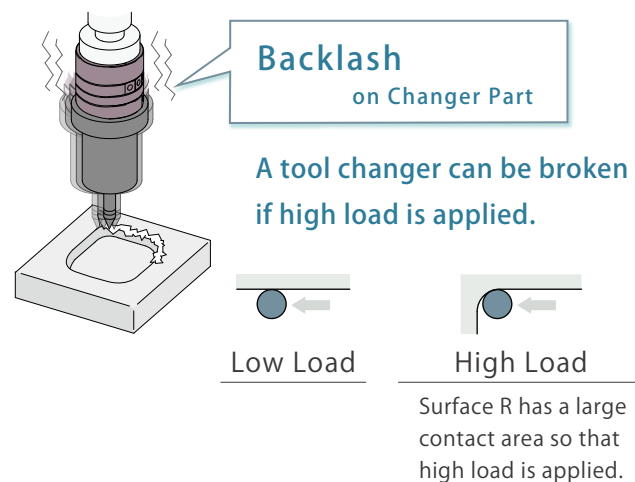


Change the Transfer Hand and Deburring Tool with High Rigidity

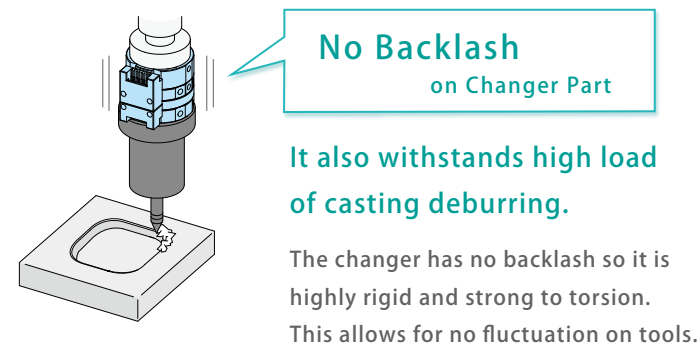
Withstands Heavy Load with Non-Backlash Function



General Tool Changer

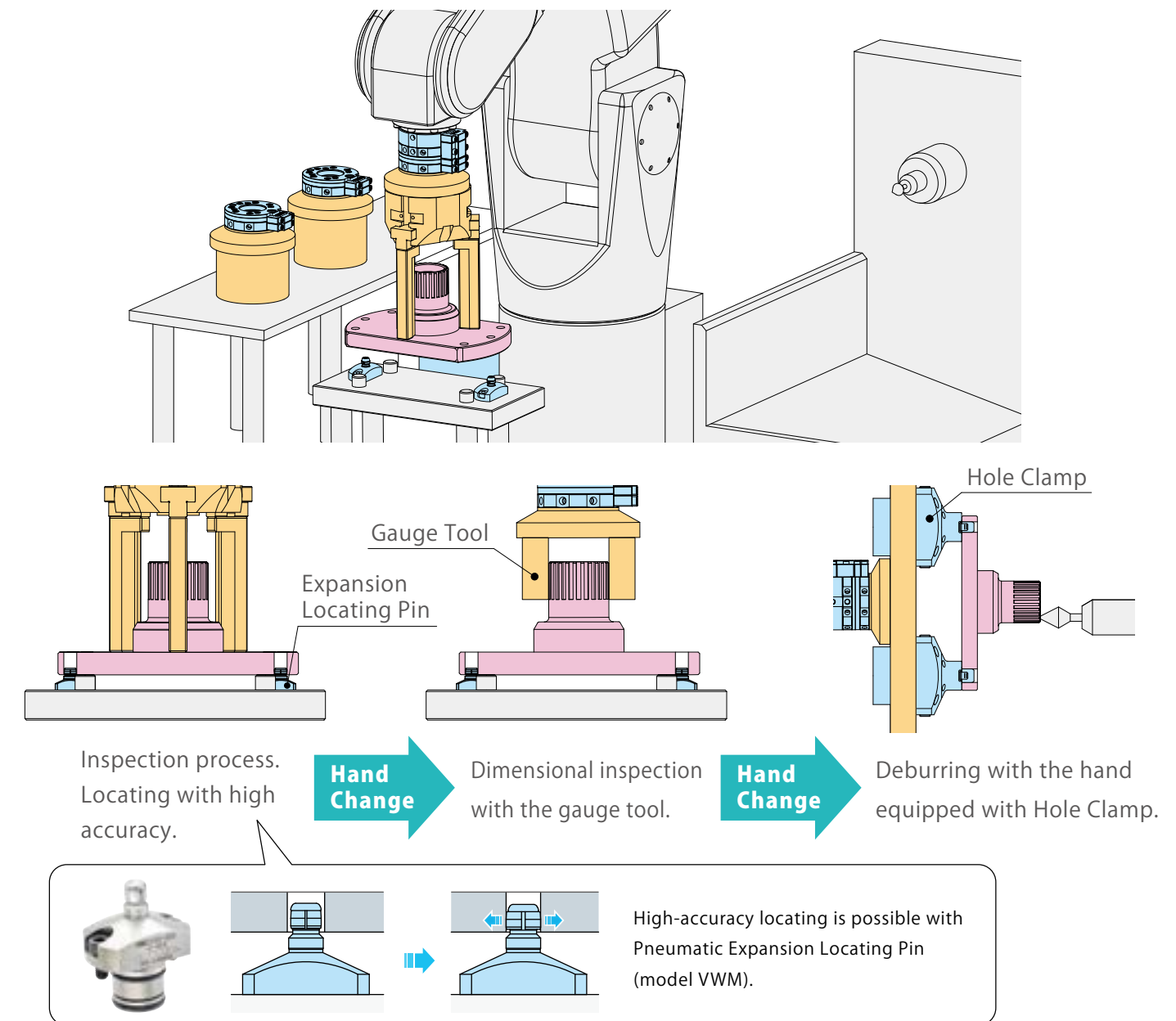


KOSMEK Robotic Hand Changer



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





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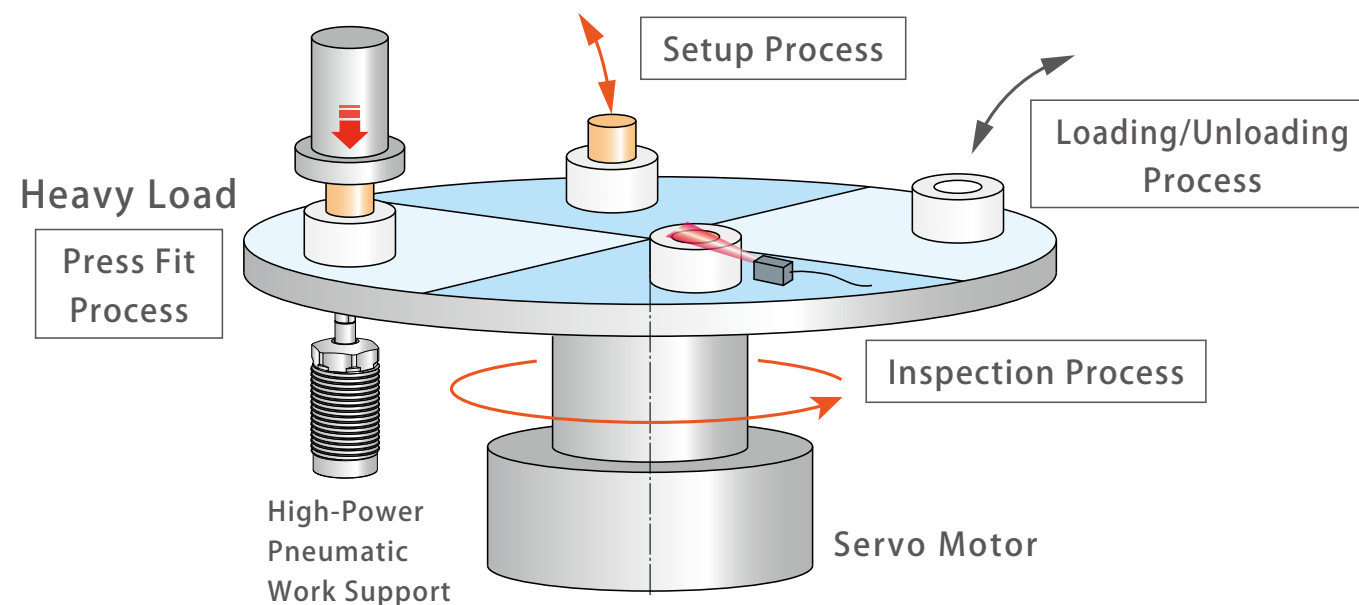
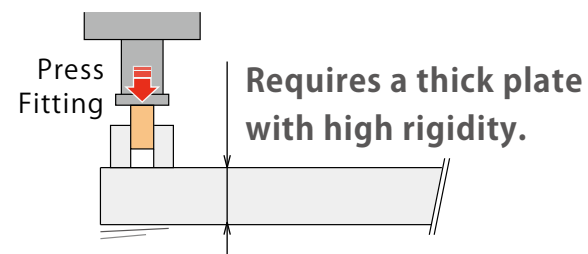
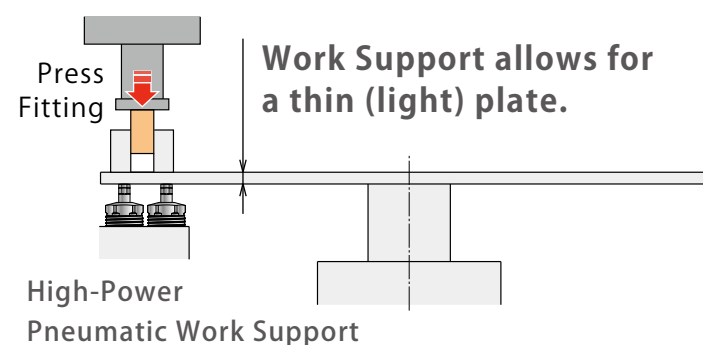
High-Power Pneumatic Work Support model **WNC**

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

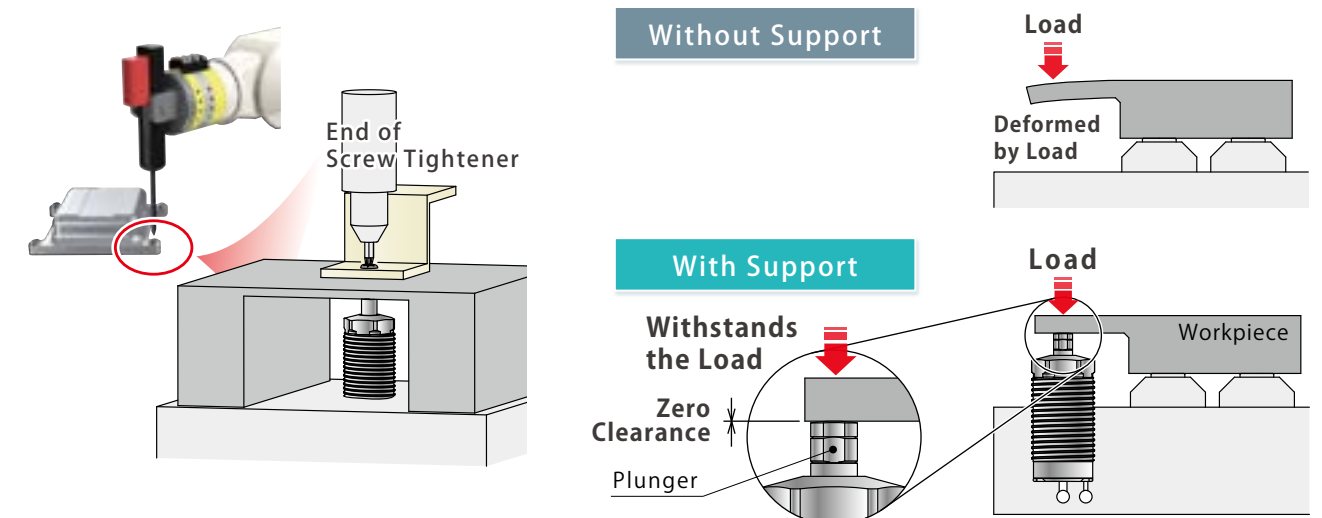
Supports Load to Reduce the Size and Cost of Equipment

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



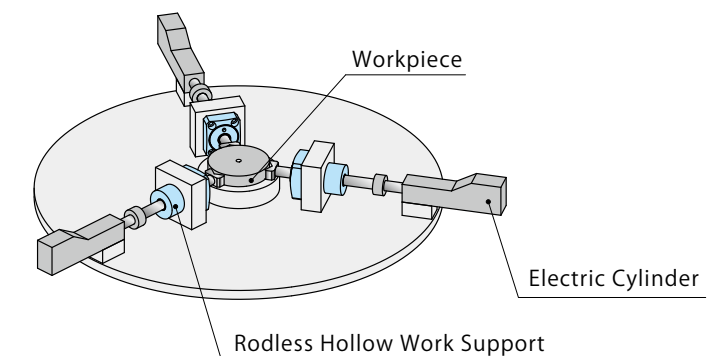
Backup of Automatic Setup with Electric Cylinder



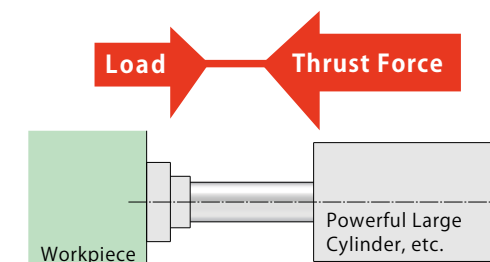
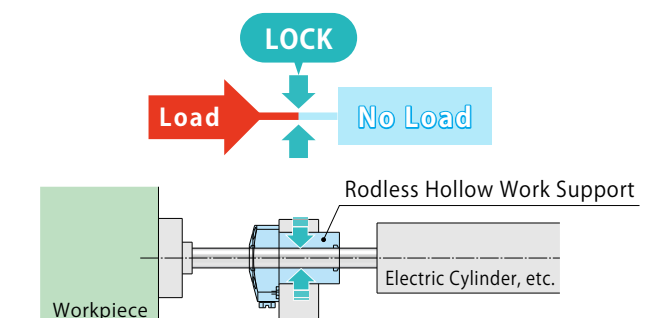
FA • Industrial Robot System

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**



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Quick Chuck Changer

model **SXQ**

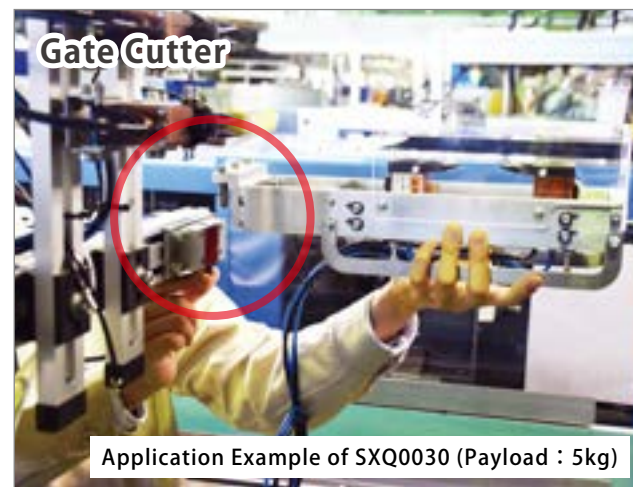
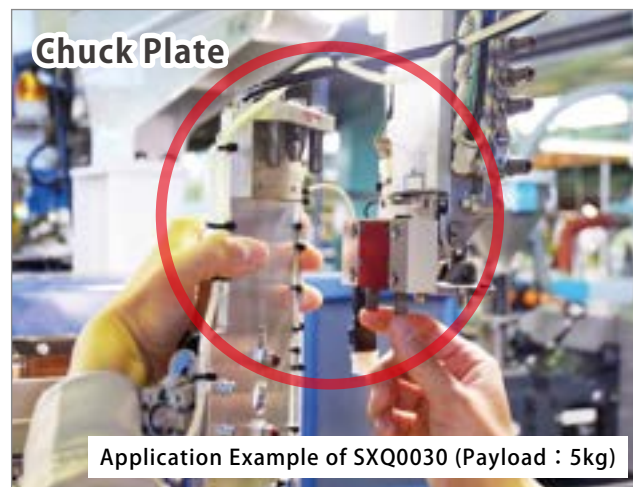
Quick Chuck Changer is specially designed for picker robots.

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

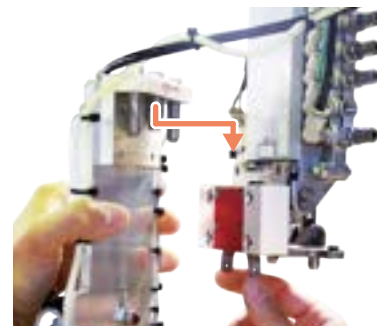
For safety and setup time reduction. Payload Line-up : 5kg, 15kg

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

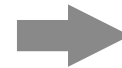
Quick Change of Chuck Plate and Gate Cutter



Connecting Methods

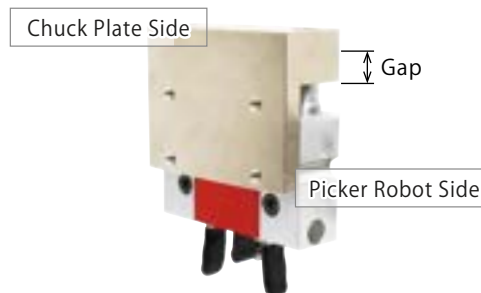


Push in the chuck plate to the end of the picker robot.

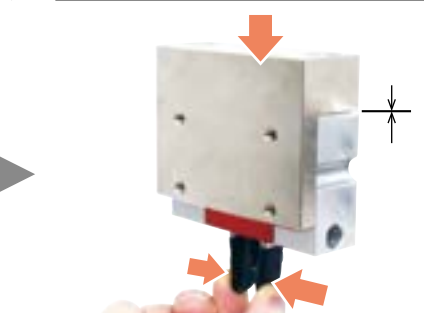


Connection is completed without any tools.

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.

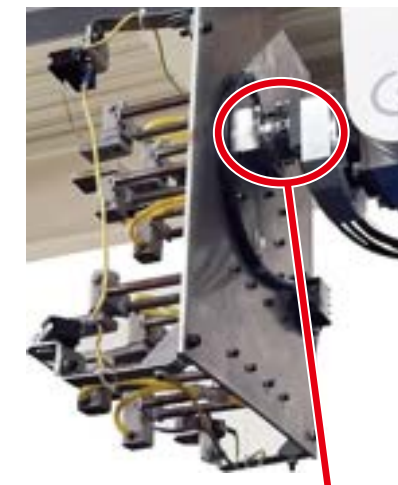
Automation with Robotic Hand Changer

High-accuracy connection ensures inserting to a target position.



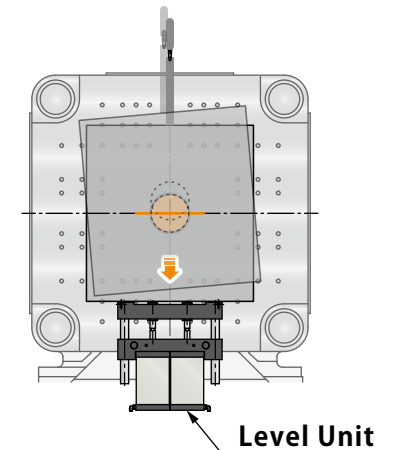
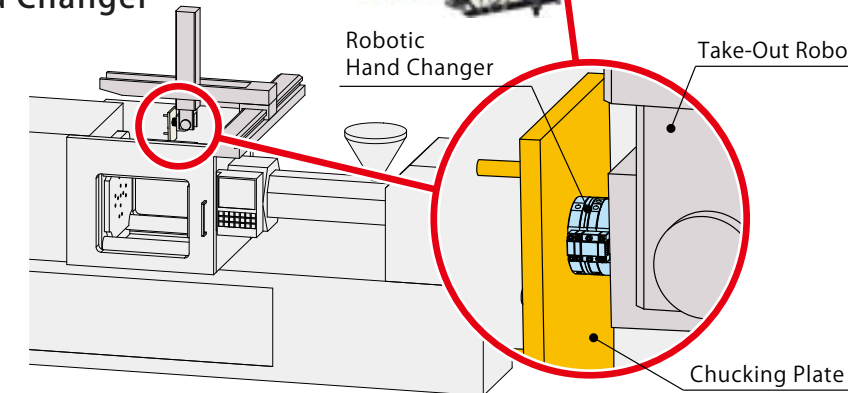
model **SWR**

Robotic Hand Changer



Automatic Leveling Level Unit

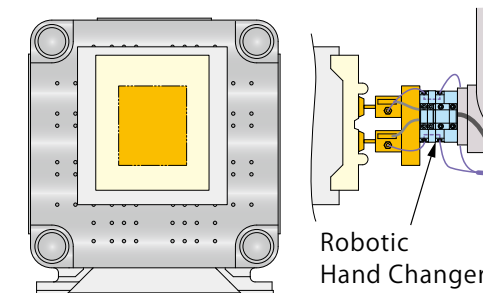
model **MHL**



Adjust the level just by loading a mold !

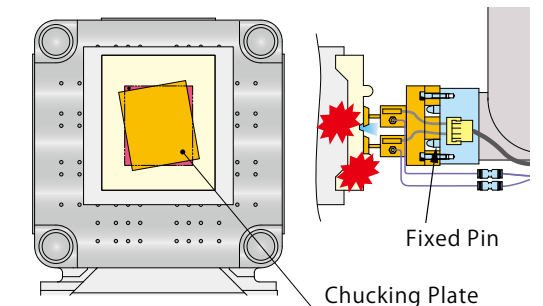
KOSMEK Robotic Hand Changer

No Backlash



General Fixed Pin

Backlash



Application Example Video

Injection Molding Picker Robot SXQ

Search

Video Title

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

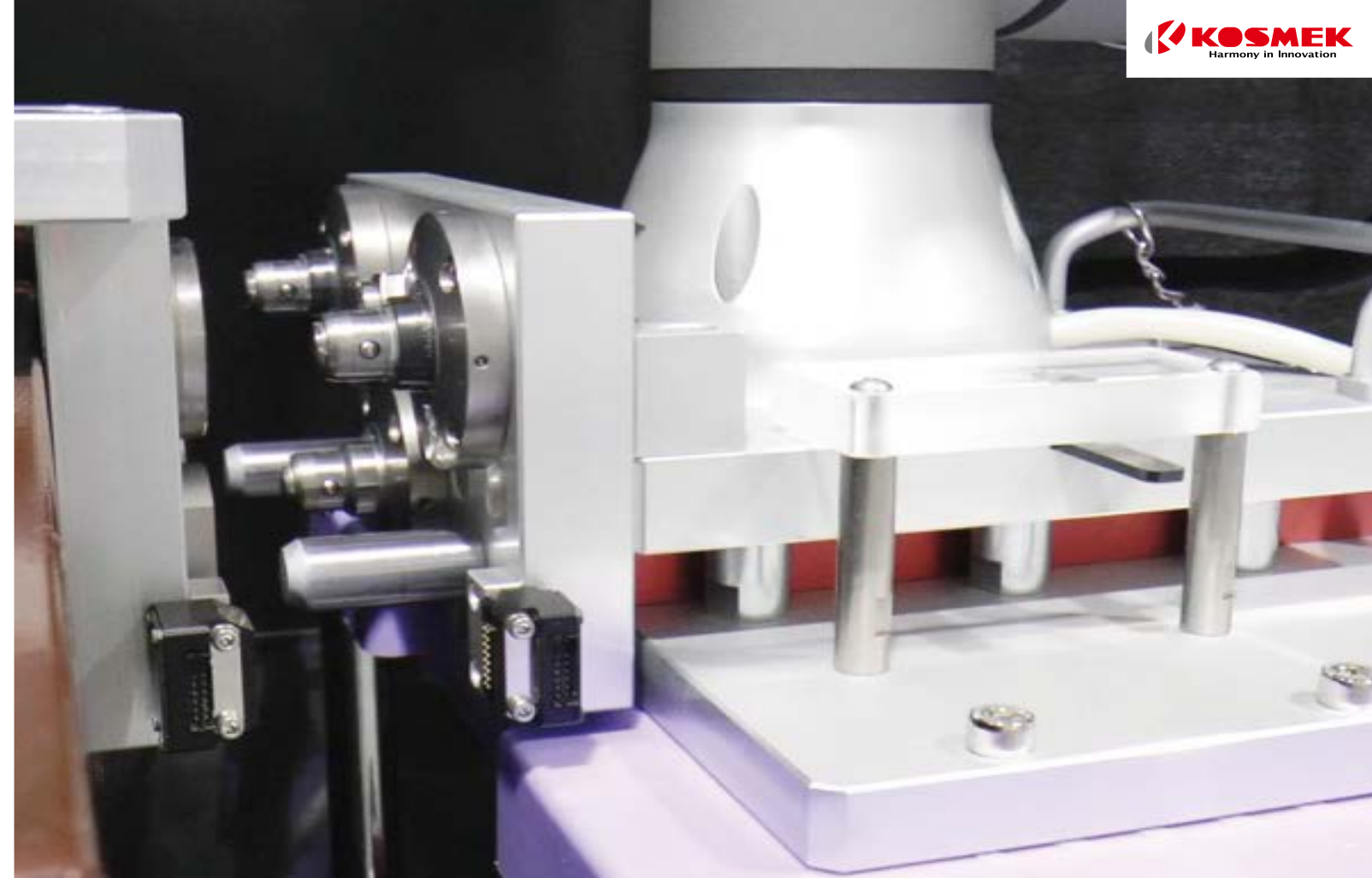
http://www.kosmek.co.jp/php_file/video_products.php?id=114&lang=2



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.





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Expansion Locating Pin

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





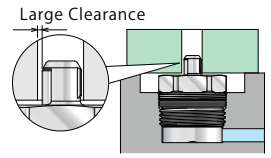
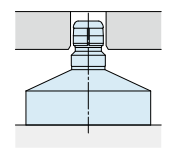
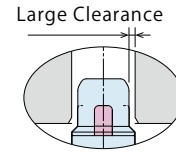
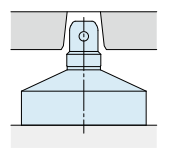
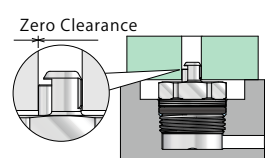
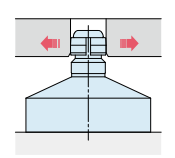
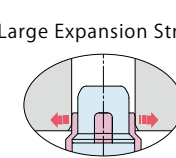
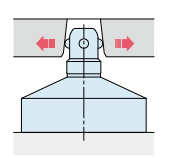
High-Accuracy Expansion Locating Pin

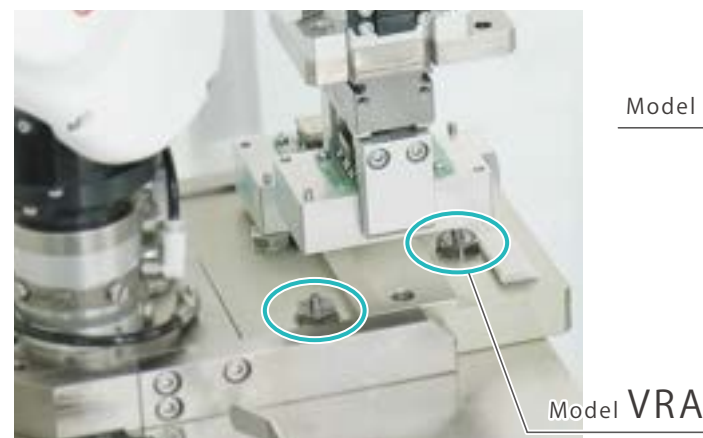
The pin expands and the clearance of workpiece hole becomes zero.

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

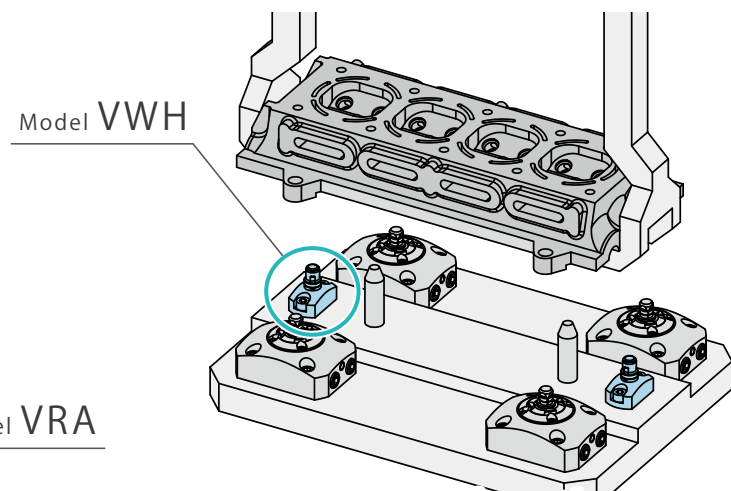
For High-Accuracy Locating, Robot Transfer and many more

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 |  | |  |  |  |
| Lock Action |  | |  |  |  |



< For Locating of Workpiece >

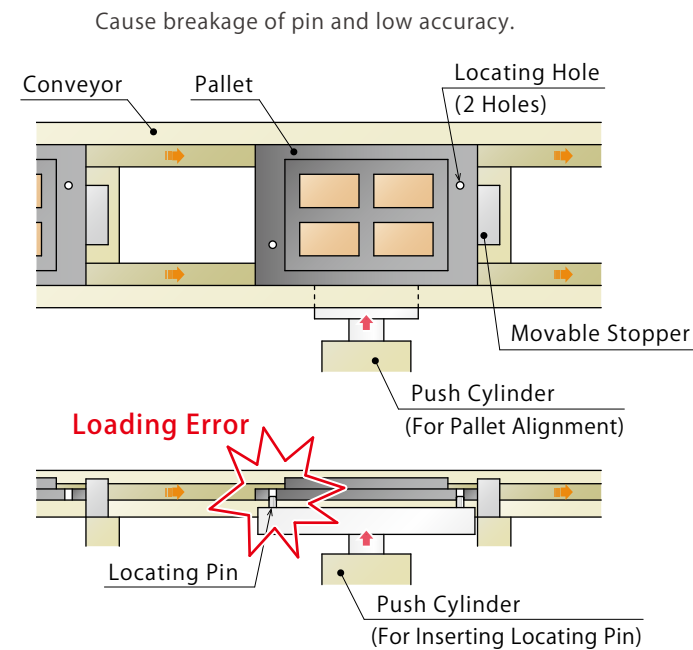


< For Knocking in from the Loader >

■ For Automation of Conveyor Transfer

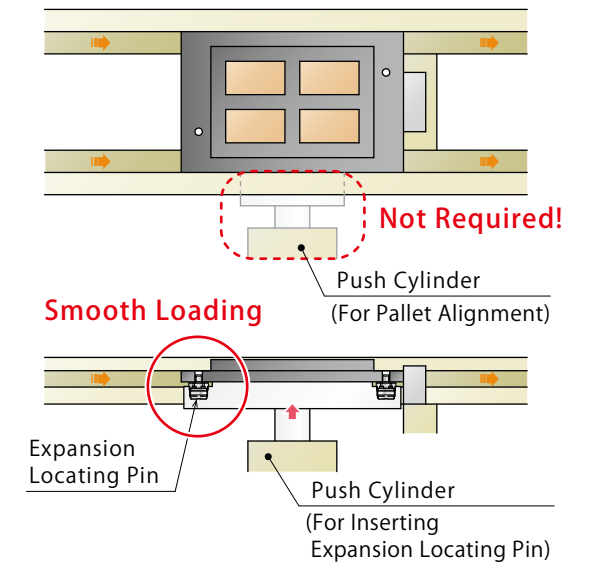
High-Accuracy Locating Enables Smooth Loading and Prevents Errors.

General Locating Pin



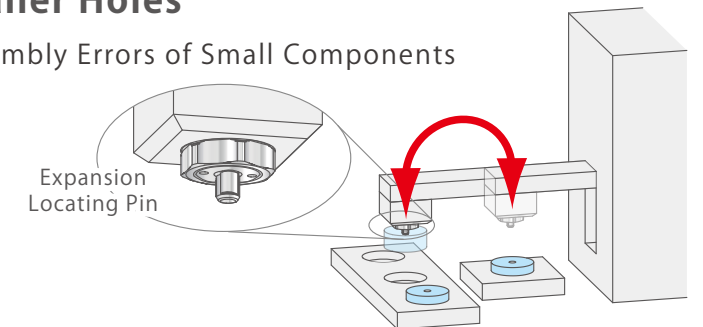
Expansion Locating Pin

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



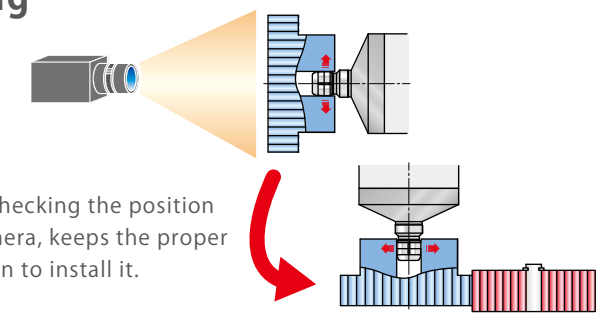
■ For Internal Chuck of Smaller Holes

High-Accuracy Locating Prevents Assembly Errors of Small Components



■ For Internal Chucking and Locating

Suitable for Workpiece Image Inspection



After checking the position by camera, keeps the proper position to install it.

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

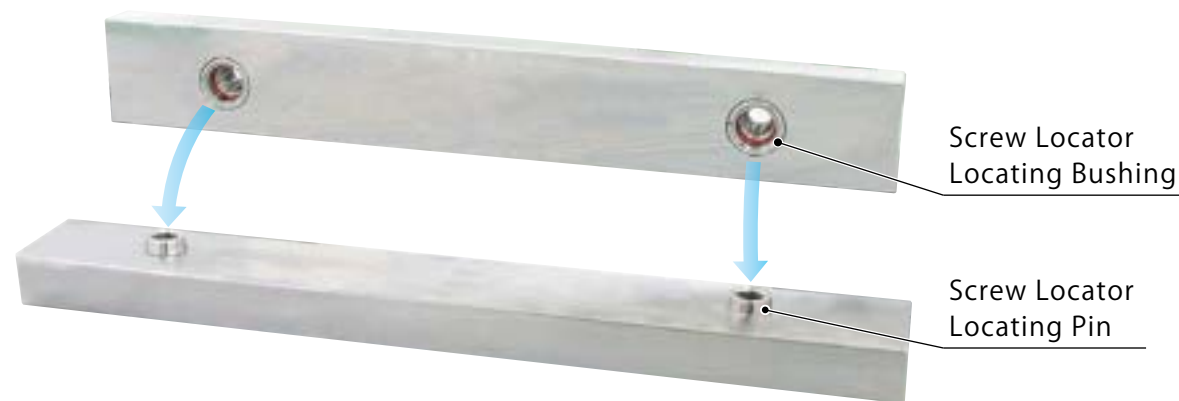
Screw Locator model **VXE/VXF**

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

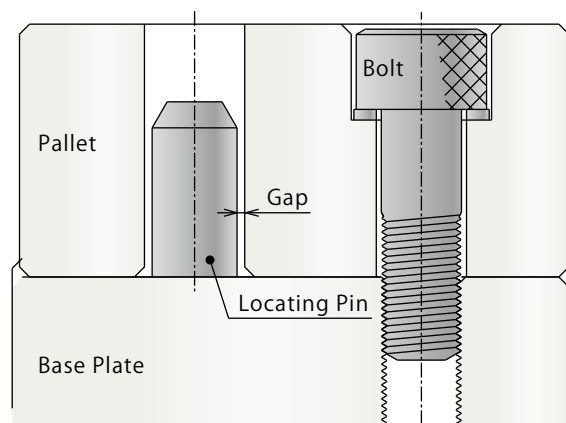
High-accuracy locating is possible just by tightening bolts.
Simple manual setup enables locating of pallets and plates.



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

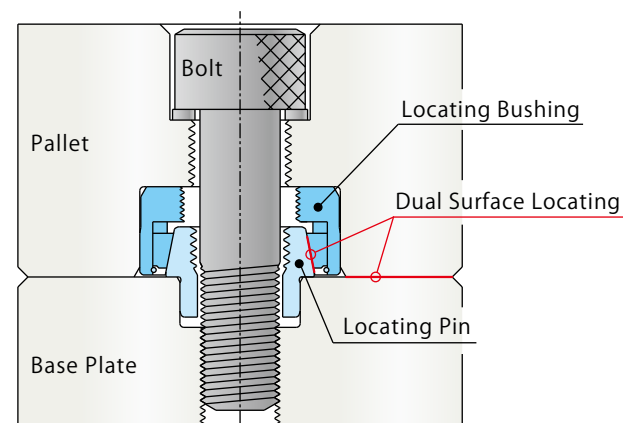
General locating pin has
a gap and poor locating repeatability.

Backlash • Low Accuracy • Space Required



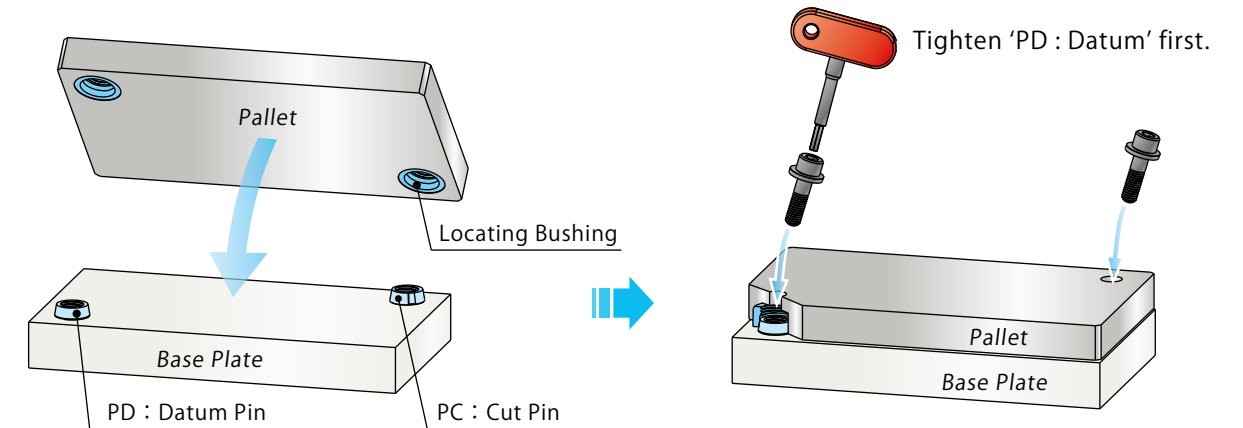
Screw Locator with Dual Surface Tightening
Locating Repeatability $3\mu\text{m}$ ($5\mu\text{m}$ for VXE)

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.

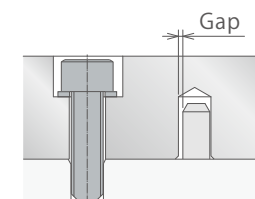


Application Example

General Fixed Pin : Manual Tightening,
Accuracy Correction Required

Table Press Machine

Upper Die (No Setup Change)

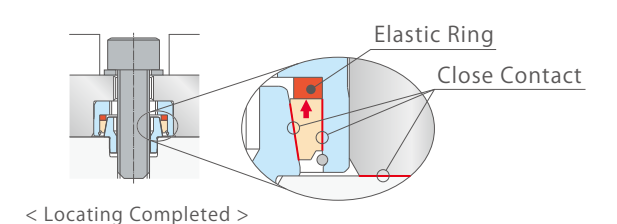


Low Accuracy and Repeatability due to Clearance
Hard to Load, Easy to Get Stuck, Manual Tightening

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

