FA • Robotic Automation Products

Application Examples

For Automotive • Semiconductor • LCD Panel Electronics • Precision Equipment Industries



More Automation Solutions



Harmony in Innovation

Product Line-Up



Workpiece Hole Diameter : $\phi 8 / \phi 10 / \phi 12 / \phi 16 / \phi 20$

Manual Lock / Manual Release





ACTUATES MUITIPIE AIT ACTUATORS (CIRCUITS) IN SEQUENCE WITHOUT ELECTRIC Delay Time : 1~10sec Most Suitable for Electricity-Free Environments

Kosmek works to meet the needs of every customer, developing and producing innovative products.



Model WKA





Application Examples

Category

Welding

Washing
Assembly
Press Fitting
Testing



Clamp Automation ※ Spatter measurement is required.

Model WHA WCA



Clamps the workpiece with holding force. Scratches on the workpiece will be minimized.

Model WHE WCE

Washing

Washing Machine Automation with Automatic Clamps







Model WKA



High accuracy locating facilitates precision work.

Model VRA/VRC VWM



Cost Reduction in Adjustment Equipment with High Accuracy Locating



Assembly

Assembly



Improves locating accuracy during pallet change.

Model VWM VX VXF

Assembly



Without backlash, robotic tool changer facilitates screw tightening and reduces defects.



Clamps the workpiece by holding its holes. Smooth Assembly with No Interferes





No Backup

Load

-

Supports and backups the workpiece from the bottom

preventing deformation caused by various kinds of loads.



Locates with Electric Cylinder • Withstands the Load with Lock Cylinder

Model WNA

Model WDC WNC

Assembly



Press Fit Automation with **Automatic Clamps**





deformation caused by press fit.



Press Fitting

With Backup Load

Supports the thin walled part, preventing By supporting the deep part with longer stroke, it prevents deformation caused by press fit.

Model WNA



Improves accuracy of the semiconductor test device. Locates cassette with high accuracy.





Engine Test Device Tool Change Standardization of Test Device





Securely holds the pressure container for leak test with clamping force and holding force.





Application Examples

Robot Standardization Examples

High-accuracy Robotic Hand Changer enables multiple functions of robots and setup time reduction. It enhances the productivity of automated production line.



Articulated Robot Standardized Tool Change

Model SWR



Humanoid Robot End of Arm Tool Change





Parallel Link Robot Screw Tightening Tool Change Model SWR



Scara Robot Nut Runner Tool Change

Model SWR



2-Axis Cartesian Coordinate Robot Testing Device Tool Change

Model SWR



3-Axis Cartesian Coordinate Robot Tool Change

Model SWR



Press Machine Transfer Arm Change





Large Robot Design Various Hands with Products





Articulated Robot Unloading Workpieces of Machine Tool





Injection Molding Machine Take-Out Robot

Model SWR



Temporal Tacking and Fall Prevention of Stocker





Application **Examples**

Setup Improvement Examples



Cartesian Coordinate Robot **High-Accuracy Pallet Setup**

Model VRA/VRC VWM



Cartesian Coordinate Robot High-Accuracy Light Tool Setup

Model VWM



Table Robot High-Accuracy Pallet Setup Model VWM



Ink-Jet Device Head Change





During Pallet Change Locates with VXF, connects circuits with JVA/B

Model VXF JVA/B



Circuit Connection Automation



Semiconductor Testing Device High-Accuracy Cassette Setup







Production Line of LCD Panels





Pallet Change on a Single-Axis Robot



Model JV



Die Coater Setup During Washing





Coating and Coater Head

Model SWT



Bit Change / Tool Change





Model SWR

Kosmek Robotic Hand Changer is used for

Humanoid Robot Tool Change



6 Reasons to Choose KOSMEK



Safe • Anti-Falling of Tool

Even without air supply, built-in spring maintains mating condition which prevents tool from falling.



Light Weight • Compact

Suitable for robotic hands which are near the weight limit. Light Weight yet Large Load Capacity!! % It shows the weight of SWR0030 without the electrode.



Enhances Work Efficiency

No backlash on mating part. Highly reliable electrode prevents momentary stop caused by communication error.



No Backlash

No backlash (clearance) on mating part and suitable for high-load and high-accuracy operation.



Connect Air/Electricity to the Tool

Able to connect air and electricity to the tool side through air port and electrode. A variety of air port and electrode options are available.



Prevents Fluctuation

Locating repeatability of tool change is 0.003mm. Reduces the fluctuation of hand tool and conducts high-accuracy operation.

Kosmek Robotic Hand Changer is used for both

Transfer Robots and **Pallet Locating**



For Transfer Robot

For Locating Pallets

High Accuracy Locating Repeatability : within 3μ m

No backlash on mating part with the dual surface contact of movable taper sleeve.



Pallet Fall Prevention

Mechanical-locking system maintains mating condition with built-in spring.





High-Accuracy Locating with Dual Contact

Built-in spring maintains the locked state.



Kosmek Robotic Hand Changer is used for

Deburring • Chamfering Robots for Aircraft Engine Components

Model SWR









Kosmek hand changer has no backlash on electrode with dual surface contact.

Air blow function is for cleaning the taper reference surface and seat surface.



Model SWR

Kosmek Robotic Hand Changer is used for

Transfer Arm Change of Press Machine Automatic Line



Kosmek robotic hand changer minimizes fluctuation of the longer arm.



With low locating accuracy, fluctuation of the arm end becomes larger. Clearance on the hand changing part may result in gap due to the moment of robot movement. When suction pad is off-position, the pad may not adsorb products, or it cannot place products properly after transferring them. With high locating accuracy (3 μ m), fluctuation of the arm end is minimal. Since there is no clearance or backlash, the moment of robot movement does not affect attaching and detaching products. Prevent errors on attaching and detaching with high accuracy locating.

 $\ensuremath{\ll}$ Drawings do not show actual dimensions.



Pneumatic Location Clamp is used for

Locating and Clamping of **Pallet/Tray Change**

Model SWT



Application Example for Vacuum Facility

We are able to accomodate a fixture that does not supply air in a vacuum environment with SWTY which has the same function as SWT. *Please contact us for use in this environment.

Example

Release with an external actuator (prepared by customer) (Release action by lifting up a piston from the bottom of SWTY), and lock with spring. SWTY on the fixture operates without air supply.





Model JVE

Pneumatic Location Clamp and Auto Coupler are used for

Automatic Setup of Engine Cold Testing Device

In an engine cold test (engine function test in non-fired state), every time an engine model changes, testing device had to be exchanged due to the design of the testing device.

Applying pneumatic location clamp to a part (the joint part of an engine and testing device.) of testing device enables the **automatic setup exchange (time reduction in setup)** by the robot.





High-Accuracy Locating for Pallet/Tray Change

Screw Locator is used for



Screw Locator performs high-accuracy locating simply by fastening the bolts.



General Locating Pin

Mechanical pins have clearance creating

unreliable accuracy and repeatability.

Less accuracy due to backlash Space is required for mounting pins.



After

Screw Locator

With Dual Contact of Screw Locator Locating Repeatability is 3 μ m

High locating accuracy makes less defective parts. More Compact and Space-Saving



% Screw locator consists of the locating pin and locating bush.



Locating Pallets • Setup Change with Screw Locator Circuit Connection with Auto Coupler



Screw Locator is used for

High-Accuracy Locating of Lower Die of Table Press Machine







Expansion Locating Pin is used for

High Accuracy Locating for Pallet Change of

Table Robot (Equipped with Camera Module Lens etc.)



Accuracy improvement of locating pin leads to high accuracy operation and cost reduction in adjustment equipment.

Improvement in Locating Accuracy of the Machine

Adjustment Equipment

Model VRA

Expansion Locating Pin is used for

Automatic Loading • High Accuracy Locating of Pallets with

Conveyor Transfer (Assembly Process for Smart Phone Components)





Auto Backup Pin is used for

Chattering Prevention of HDD Parts Assembly





Auto backup pin contacts workpiece softly and holds it instantly (3N). No clearance between the workpiece and pin since it follows the height of workpiece.



Model WNC



High-Power Pneumatic Work Support is used for

Chattering/Deformation Prevention for Finishing Process of Resin-made Components

Model WNC

High-quality resin-made electronic component requires machining for finishing process. Kosmek work support **prevents deformation or chattering on thin components** and **enables high quality machining**. It also provides **shorter setup time**.





High-power pneumatic clamp has compact body yet **exerts equivalent clamping force** to our conventional model. By reducing the weight of fixture, the load to equipment will be minimized.



Strong Clamping Force with Mechanical Lock

Exerts approximately 3 times higher clamping force than the same size comparison pneumatic cylinder.



Holding Force

Holding force is the force that endures reaction force (load), not the force that presses a workpiece. The high holding force enables **heavy load machining and high accurate machining**. ***** Comparison





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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.



CAT.NO. SBR-FA0001-02-GB Printed in Japan

2014/09 First 2Ry 2020/07 2nd 0Ry