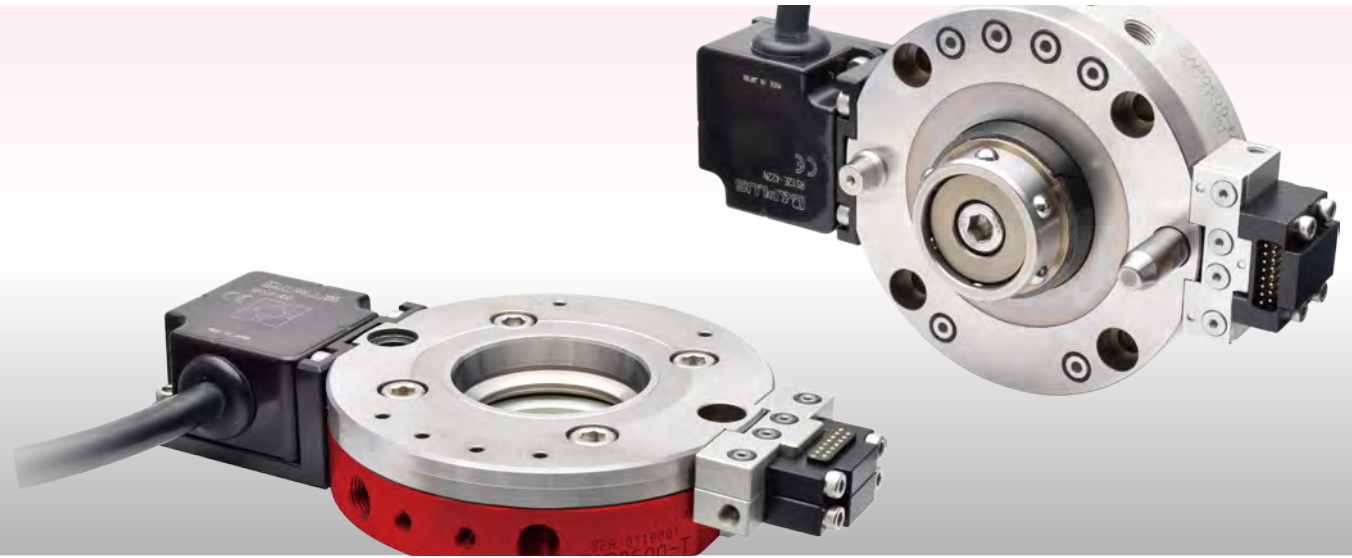
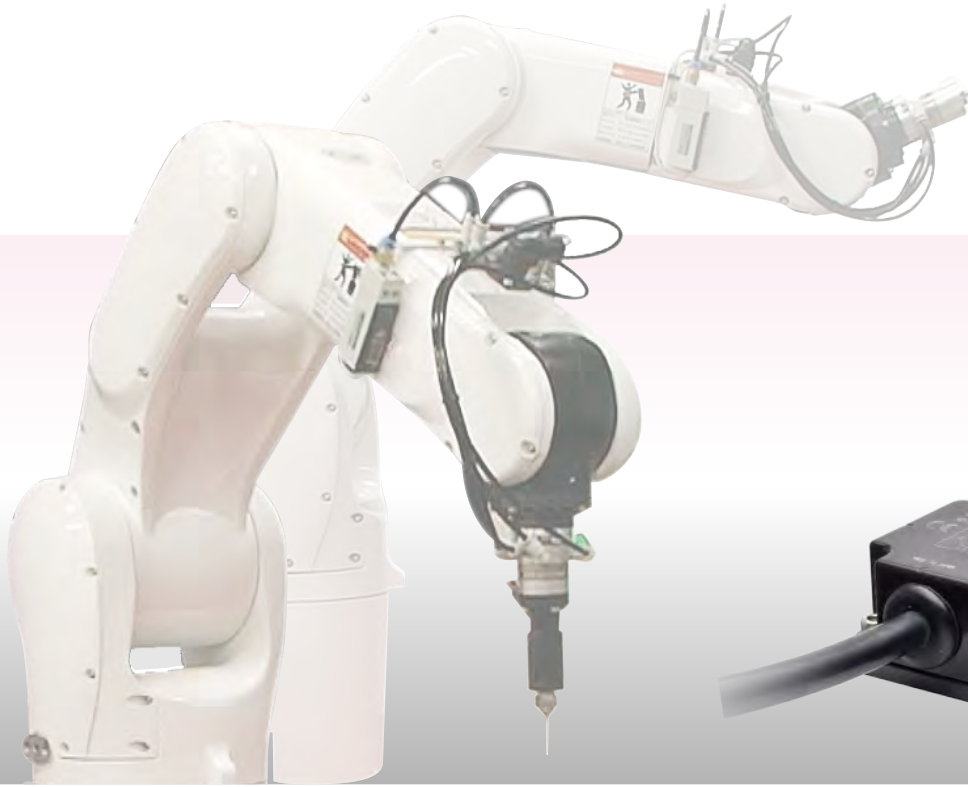


Robotic Hand Changer

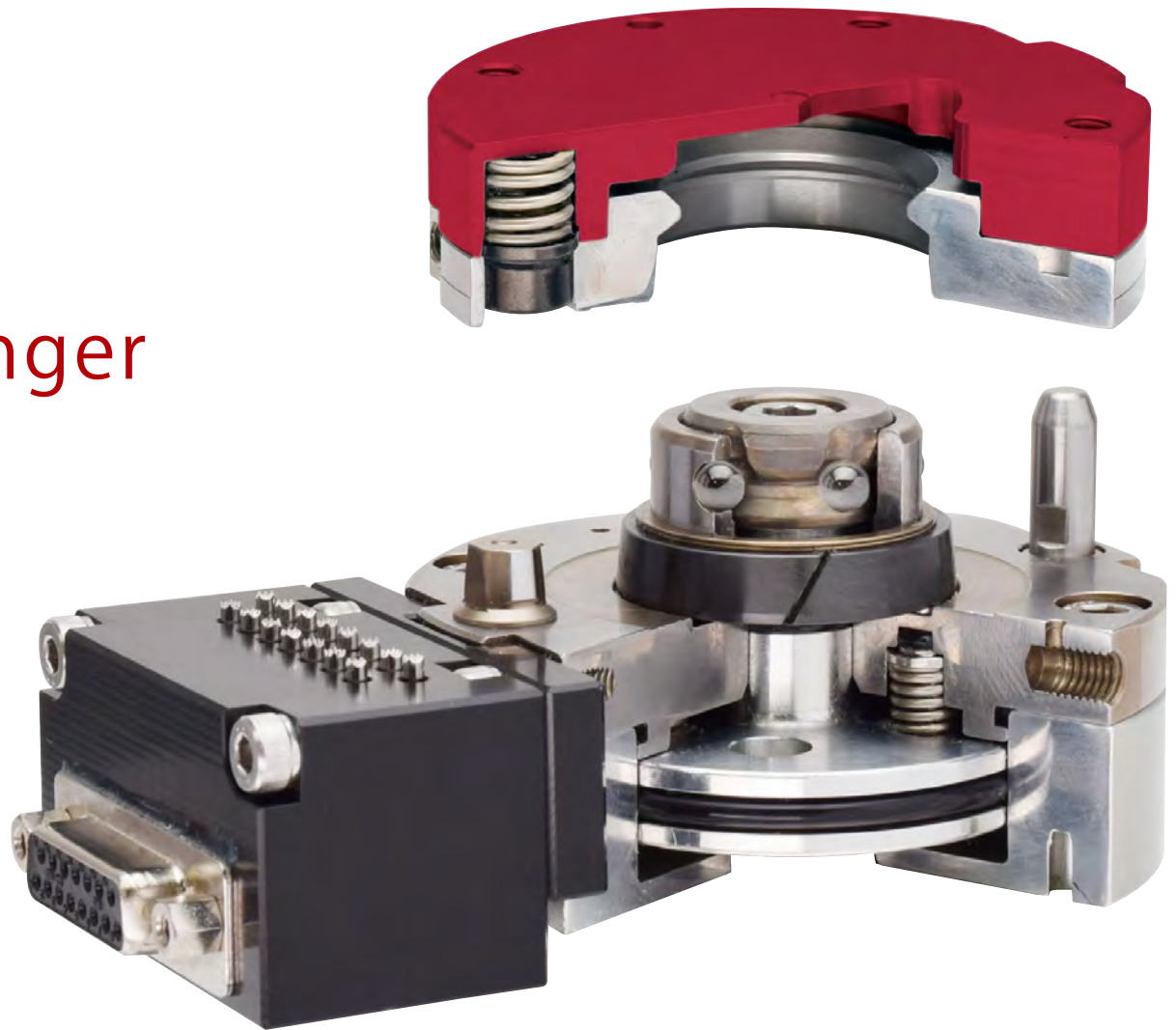


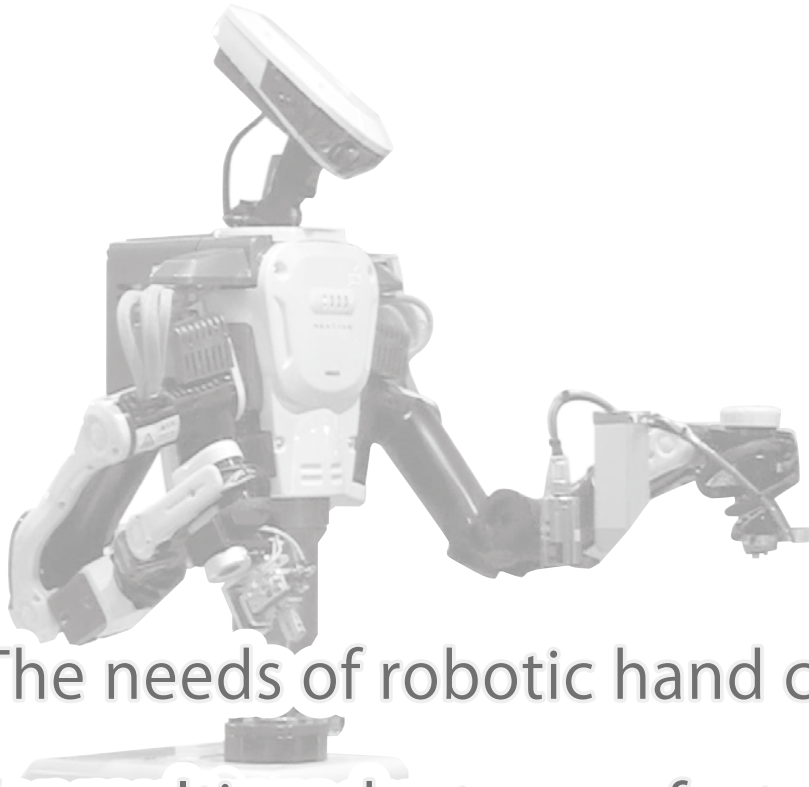
The World's Only

Robotic Hand Changer With No Backlash

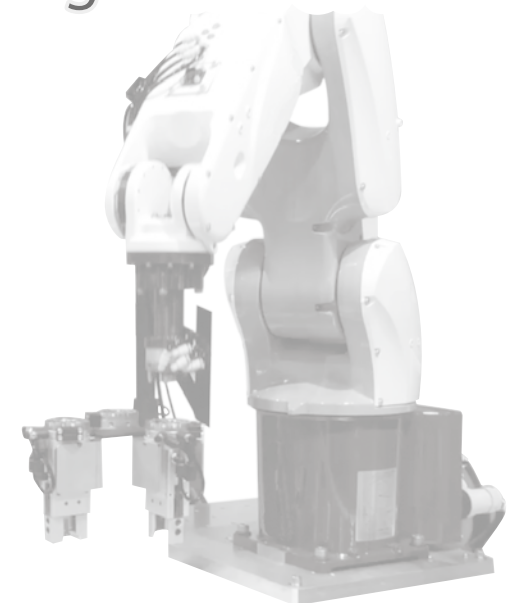
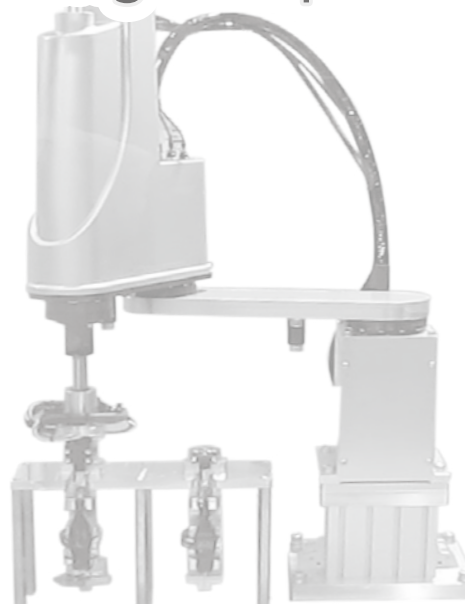
Robotic Hand Changer

model SWR





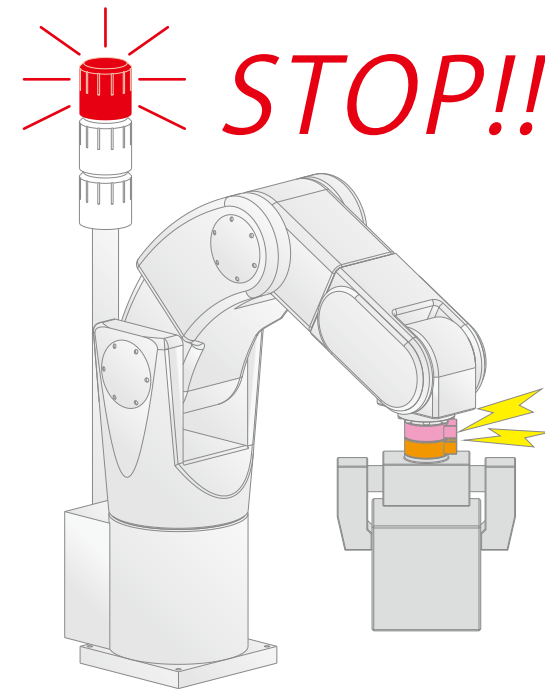
The needs of robotic hand changers have been rapidly increasing for multiproduct manufacturing and process integration of robots.



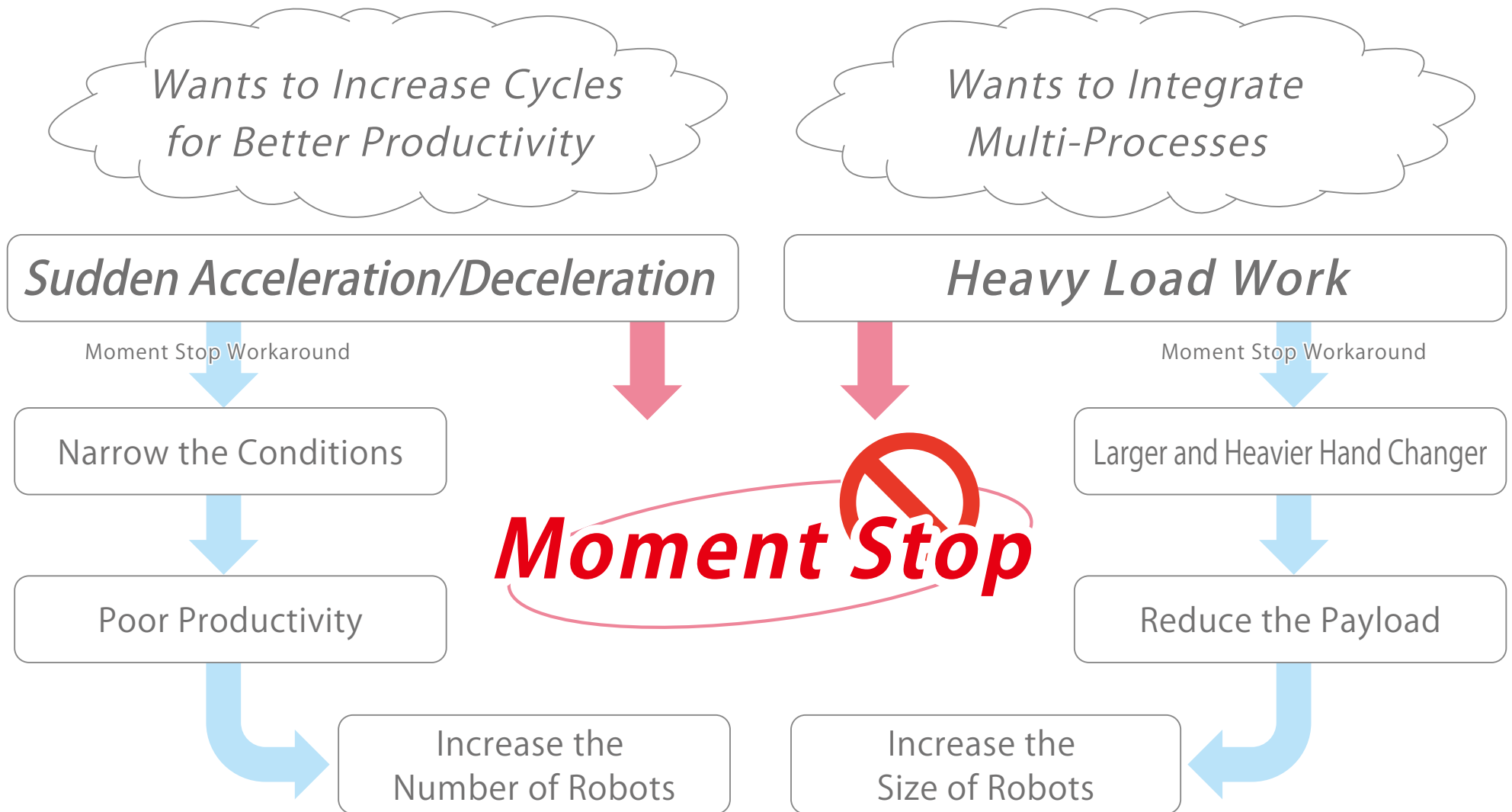
However, there are common problems for customers who adopt robotic hand changers.

Frequent Momentary Stops

- Unable to Increase the Action Speed
- Not Suitable for Heavy Load Work

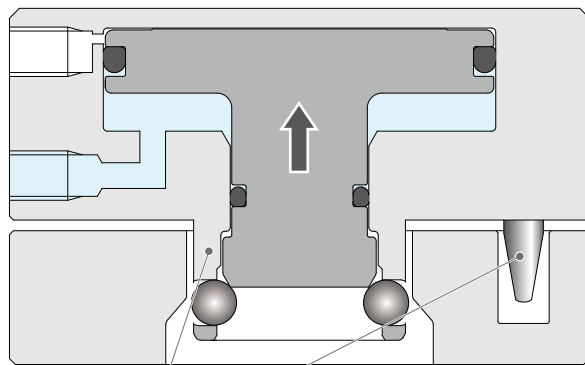


The main cause of these problems is due to the rigidity of the robotic hand changer.



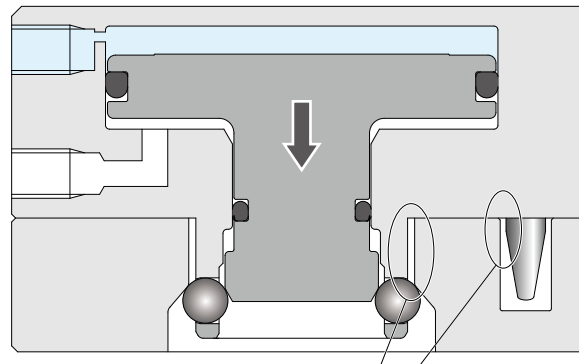
KOSMEK solves these problems and the robot exerts 100% of its ability.

Function Description of General Hand Changer



Fixed Pin

Before Connection



Backlash (Gap)

After Connected

Large Backlash when Connected

There are large backlashes when inserting a straight pin into the straight hole which requires a gap in between. The backlashes become larger due to abrasion.

Large Backlash when Connected

Low Rigidity

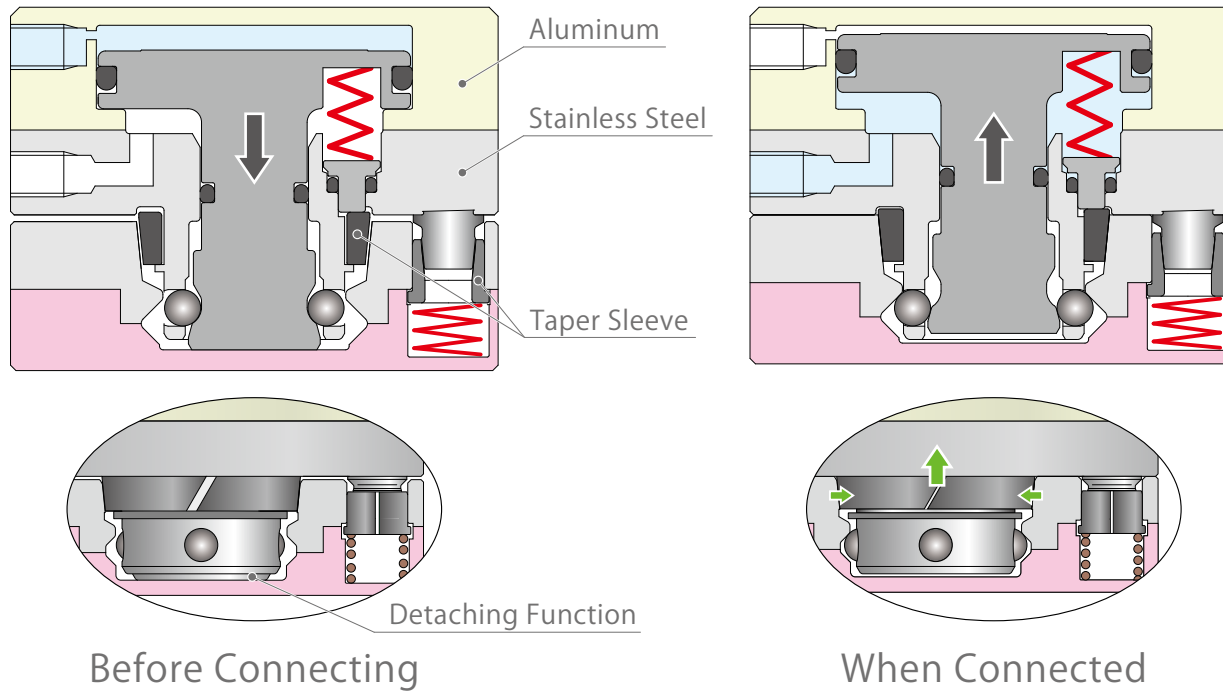
Size Up

Become Heavier

Use Lots of Aluminum

Low Durability

Function Description of KOSMEK Hand Changer



No Backlash when Connected

High Rigidity

Compact

Light Weight

High Strength Material

High Durability

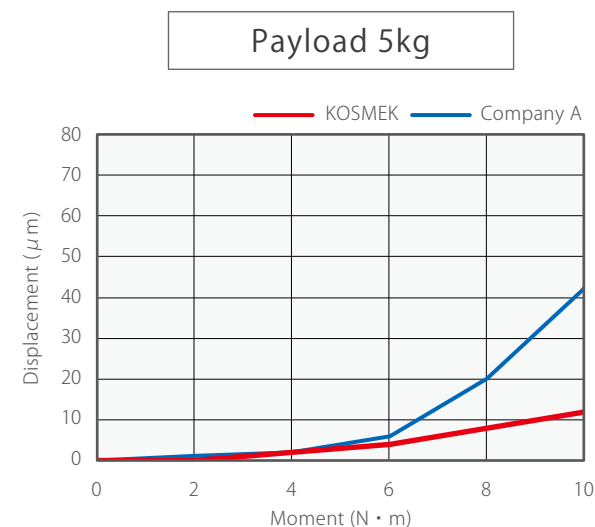
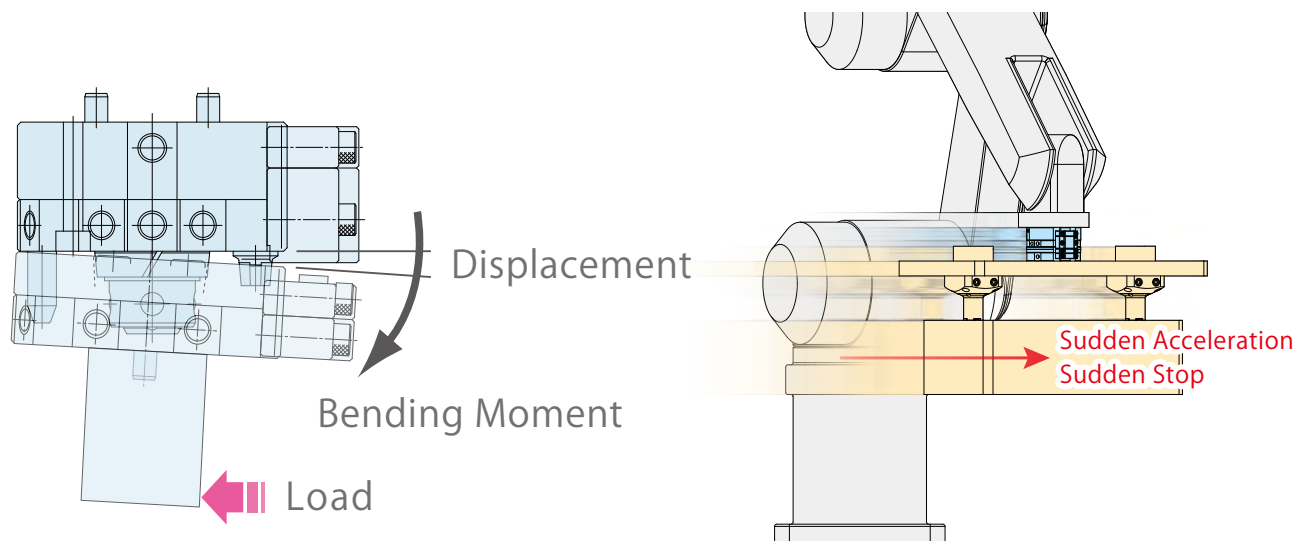
Connect with Zero Backlash

The sleeve with taper moves X,Y and Z directions.

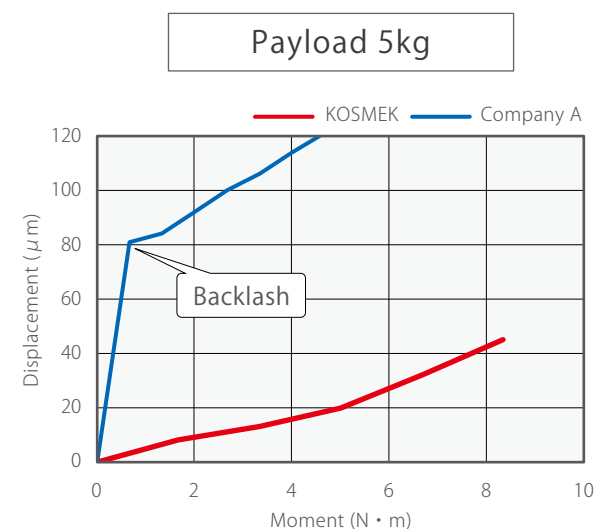
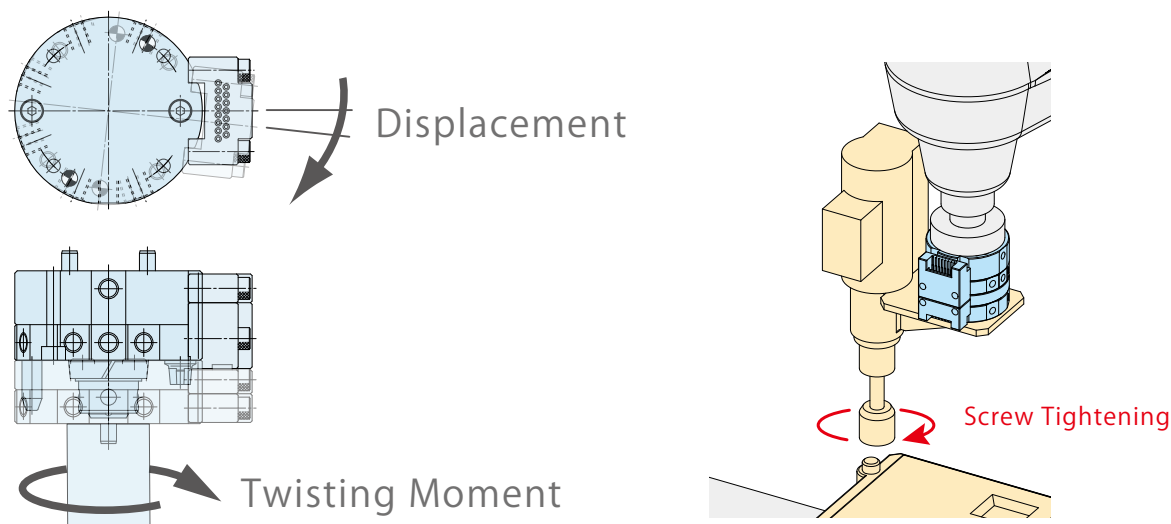
This enables to eliminate the gap with complete contact.

Regardless of the number of hands per robot or the abrasion,
the locating repeatability at connected state is 0.003mm even after use of 2 million cycles.

Displacement Test under Bending Moment (at Air Pressure 0.5MPa)



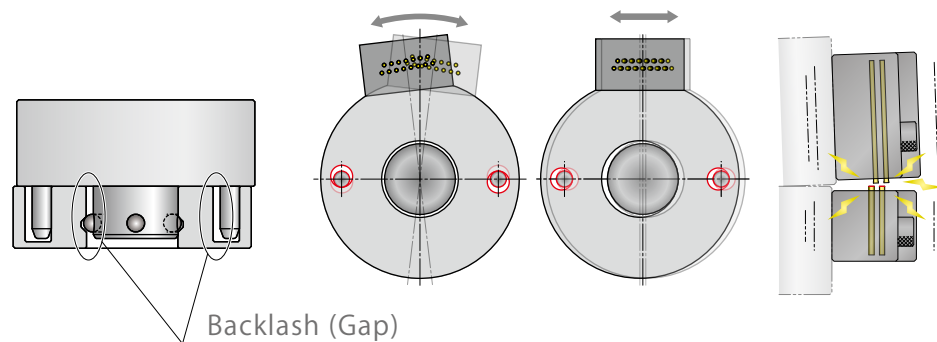
Displacement Test under Twisting Moment (at Air Pressure 0.5MPa)



General Robotic Hand Changer

Backlash causes low rigidity and electrode failure.

Causes continuous failure due to noise and abrasion of contact probe.

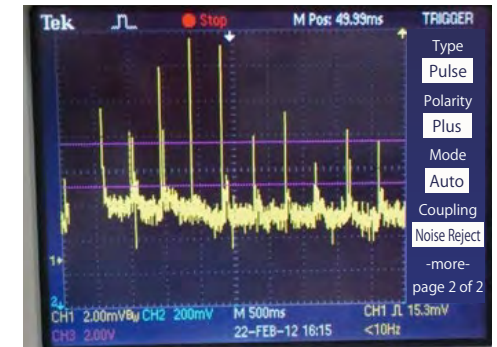


Continuous Failure of Electrodes

Frequent Moment Stops

Requires Periodical Replacement of Electrodes

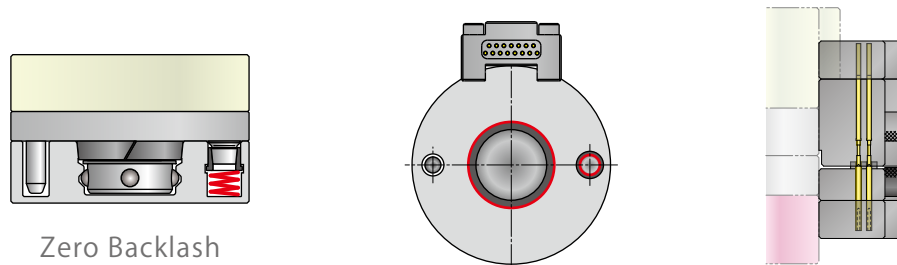
Vibration Test



KOSMEK Robotic Hand Changer

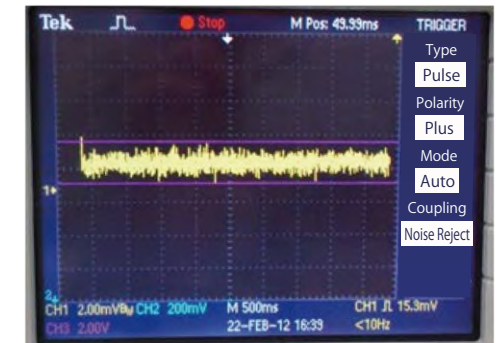
Zero backlash enables high rigidity and stable electrodes.

No noise occurs.



No Continuous Failure of Electrodes

Sharp Decline of Moment Stop



Summary

With low rigidity, connection part of the changer is bottlenecked.

Changers limit the robot's ability.

With high rigidity, connection part of the changer is not bottlenecked.

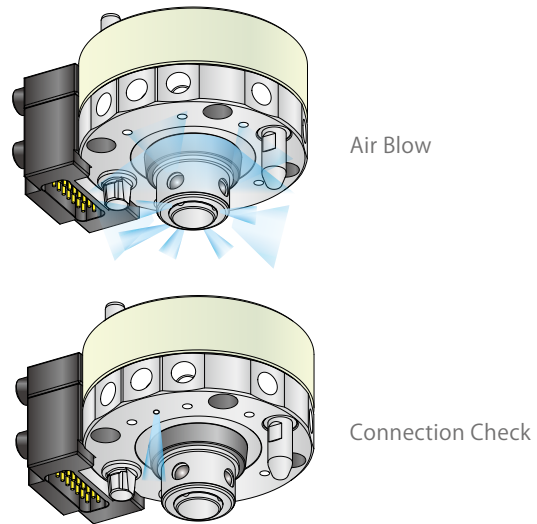
Exerts 100% of the robot's ability.

KOSMEK Robotic Hand Changer, with our own techniques,
meets the needs of every customer.

“The World’s Only” Product



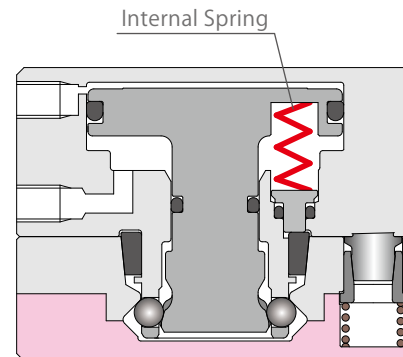
KOSMEK Robotic Hand Changer offers more safety features than any other.



Air Blow/Connection Check

Air blow function is done by air purging from inside of the master cylinder. Also, when changing tools, it is able to clean the tool side of the cylinder. For connection check, it is performed when the contact between the master side and the tool side is mated and the check port is closed back to the air sensor.

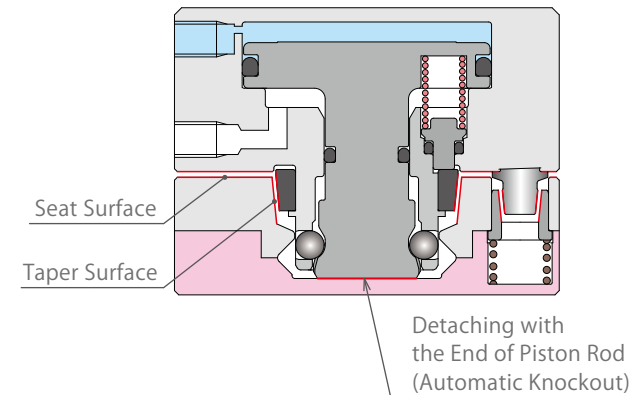
- ※ Air blow function is only for air blow port option.
- ※ Select the seat port option for connection check.



Self-Locking

Even when air pressure is at zero, it will stay locked with mechanical lock. Holding force with spring prevents backlash on tool side.

- ※ Usually it should be connected with spring force and air pressure.



Detaching (Automatic Knockout)

Free from adhesion and galling. Prevents the error that "tool side cannot be pulled out."

Specifications

Model No.		SWR0010	SWR0030	SWRY0010	SWR0070	SWR0120	SWR0250	SWR0500	SWR0750	SWR1200	SWR2300		
Payload (at 0.5MPa)		kg	0.5 ~ 1	3		7	12	25	50	75	120	230	
Repeatability		mm	0.003										
Product	Master Cylinder	g	40	70	85	180	250	500	1000	1650	3800	7100	
Weight※2	Tool Adapter	g	23	45	60	120	160	300	750	1100	2600	4800	
Holding Force	Air Pressure at 0MPa※1	kN	0.05	0.12		0.15	0.32	0.57	0.95	1.29	1.97	2.78	
	Air Pressure at 0.5MPa	KN	0.37	0.50		0.90	1.50	3.05	5.94	9.26	13.33	27.72	
Air Port	Thread Size × Port Qty.	M3×0.5×2 Ports	M3×0.5×2 Ports	M3×0.5×6 Ports	M5×0.8×6 Ports	M5×0.8×6 Ports	M5×0.8×6 Ports	M5×0.8×2 Ports					
								Rc1/8×4 Ports	Rc1/8×9 Ports	Rc1/4×9 Ports	Rc3/8×10 Ports		
Operating Air Pressure		MPa	0.35 ~ 0.7	0.4 ~ 1.0		0.35 ~ 1.0							0.35 ~ 0.7
Operating Temperature		℃	0 ~ 70										
Usable Fluid			Dry Air										

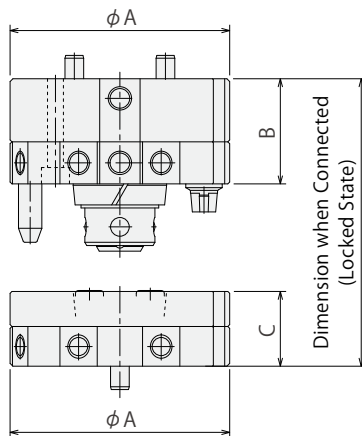
Notes :

1. Please refer to the product catalog on our website for detailed specifications.

※1. It shows the holding force when air pressure drops to 0MPa after connection. The above number of holding force is just a reference value.

※2. It shows the product weight of the main body without an electrode option.

External Dimensions






Model No.	SWR0010	SWR0030	SWRY0010	SWR0070	SWR0120	SWR0250	SWR0500	SWR0750	SWR1200	SWR2300
A	30	34	38	47	54	73	98	123	160	207
B	14	16.5	17	22.5	23	26.5	31	33	38	50
C	9	14	14	16	16.5	19	25	25.5	36	44
Dimension when Connected	23	30.5	31	38.5	39.5	45.5	56	58.5	74	94

※ Please refer to the product catalog on our website for detailed specifications, dimensions and cautions.

External Options We offer a wide variety of options to meet your needs.

Rated Voltage	Rated Current	External Options (Electrode)	Number of Poles
DC24V	2A/1A	Resin Connector 	16 Poles
	3A	Solder Terminal 	15 Poles
		Solder Terminal with Cable 	30 Poles (2 Sets of 15 Poles)
		Simple Waterproof Electrode Only when connected : IP54 	15 Poles
		D-sub Connector 	16 Poles
		Circular Connector (Connector Based on JIS C 5432) 	15 Poles
AC200V DC200V	5A	Compact Electric Power Transmission Option 	4 Poles
		Power Transmission Option (Connector Based on MIL-DTL-5015) 	4 Poles + Additional Electrode
	13A	High Current Transmission Option (Connector Based on MIL-DTL-5015) 	8 Poles
		Compact Waterproof Electrode (Noncontact Waterproof Option) IP67 	10 Poles
		Waterproof Electrode (Noncontact Waterproof Option) IP67 	Number of Signals : 4
		Ground Electrode Rated Capacity 500A (Activity Ratio 50%) 	Number of Signals : 12
			1 Pole

※ Some external options cannot be installed depending on the model number of SWR.
Please refer to the product catalog on our website for further information.

External Options (Air Joint)		Number of Ports (Min. Passage Area)
Air Joint	Air Joint (Able to extend electrodes) 	3 Ports (Equal to $\phi 6 \times 1$ port Equal to $\phi 2 \times 2$ ports)
	Air Joint (Able to extend electrodes) 	4 Ports (Equal to $\phi 1.6$)
	Air Joint Only 	2 Ports (Equal to $\phi 4$)
—	Standard : No External Attachment	—

※ Some external options cannot be installed depending on the model number of SWR.
Please refer to the product catalog on our website for further information.

Related Products

FA Pneumatic Hole Clamp

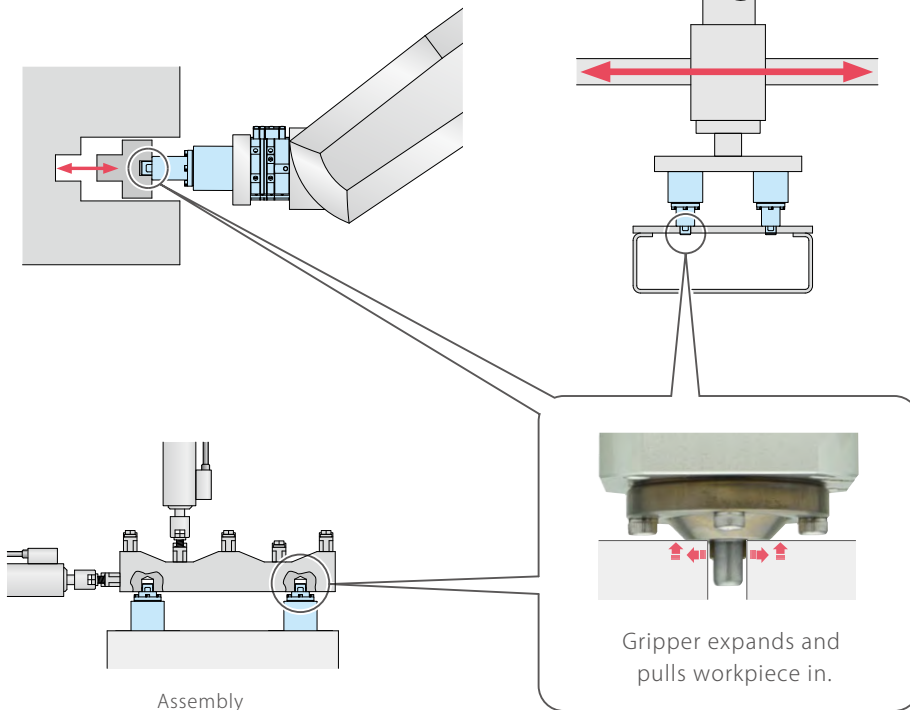
model WKH



Gripper expands and pulls workpiece in. Clamps the workpiece by holding its holes, allowing for 5 face accessibility. The light weight and compact design allows for maximizing the robot's ability without reducing the robot's payload.

Transfer•Assembly with Robots

Material Transfer



Assembly

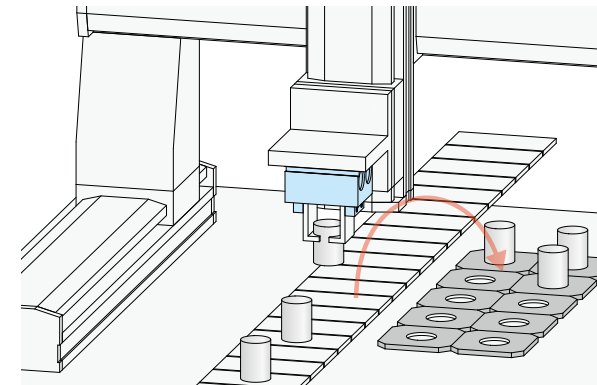
Robotic Hands

External Chuckings



Compact Robotic Hand with High Gripping Force
Reduction in height allows for less interference and optimal space utilization.
Most Suitable for Using with Robotic Hand Changer

Long-stroke robotic hand allows for transferring various kinds of workpieces.



model WPS
High-Power
Parallel Gripper

model WPA
Compact
Parallel Gripper

model WPE
Wide Angular Gripper

model WPF
Parallel Gripper

model WPH
Parallel Gripper

model WPJ
Angular Gripper

model WPP
Three-Jaw Chuck

model WPQ
Two-Jaw Chuck

model WPW
Parallel Hand with
Auto-Grip Changer

Related Products

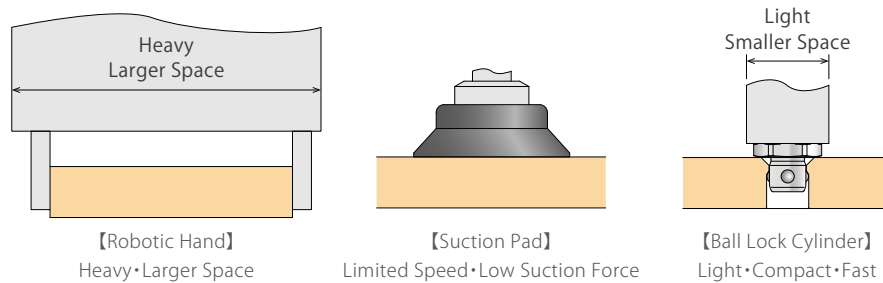
Ball Lock Cylinder

model WKA



The ball lock cylinder is used for transferring pallets, plates, temporary tool stocker, etc.
The light weight and compact design allows for maximizing the robot's ability without reducing its payload.

For Reducing the Weight and Size of Transfer Tool



Manual Robotic Hand Changer

model SXR

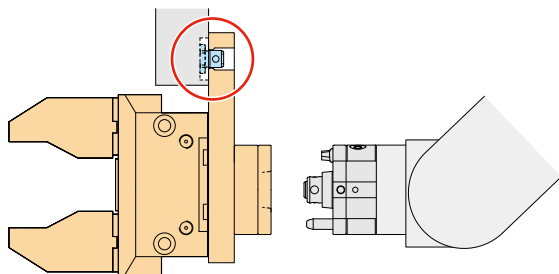


Easily operated by anyone, the manual robotic hand changer is best suitable for collaborative robots.
It enables an operator to change robotic hands and tools by hand.

Manual Quick Change of Robotic Hands and Tools



Temporary Stopper/Falling Prevention for Stocker/Nozzle Unit



Collaborative Robot Installation Examples



<http://www.kosmek.com>



KOSMEK LTD.

▶ <http://www.kosmek.com/>

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G.E.T. Inc, Phil.	Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427	TEL. +63-2-310-7286	FAX. +63-2-310-7286
PT. Yamata Machinery	Delta Commercial Park I, Jl. Kenari Raya B-08, Desa Jayamukti Kec. Cikarang Pusat Kab. Bekasi 17530 Indonesia	TEL. +62-21-5818632	FAX. +62-21-5814857



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