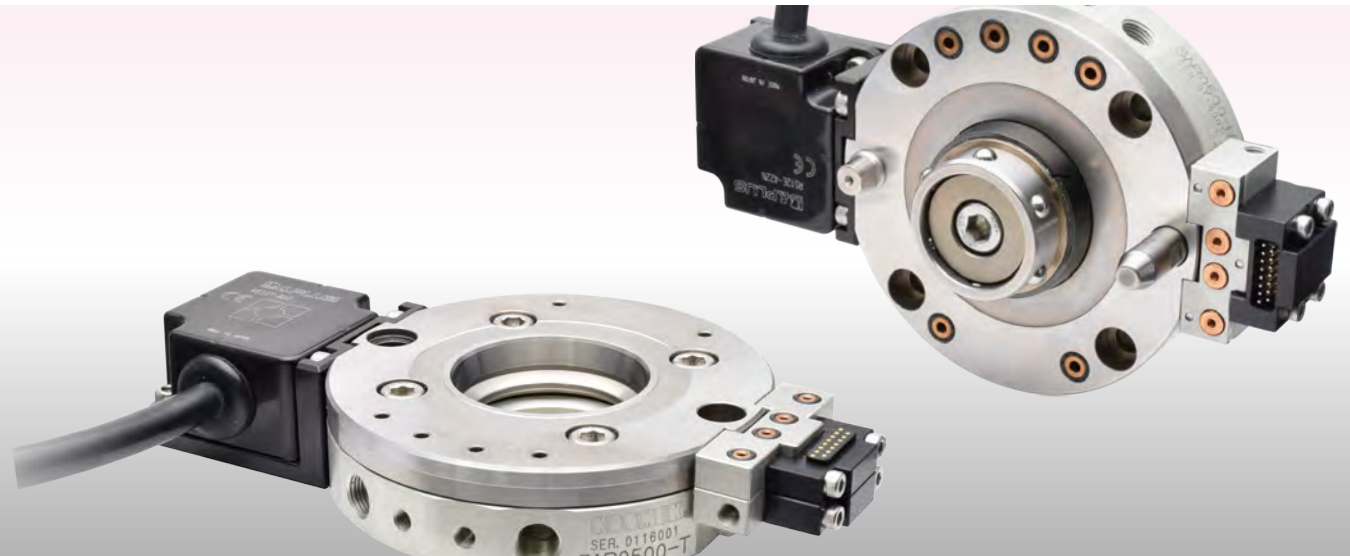
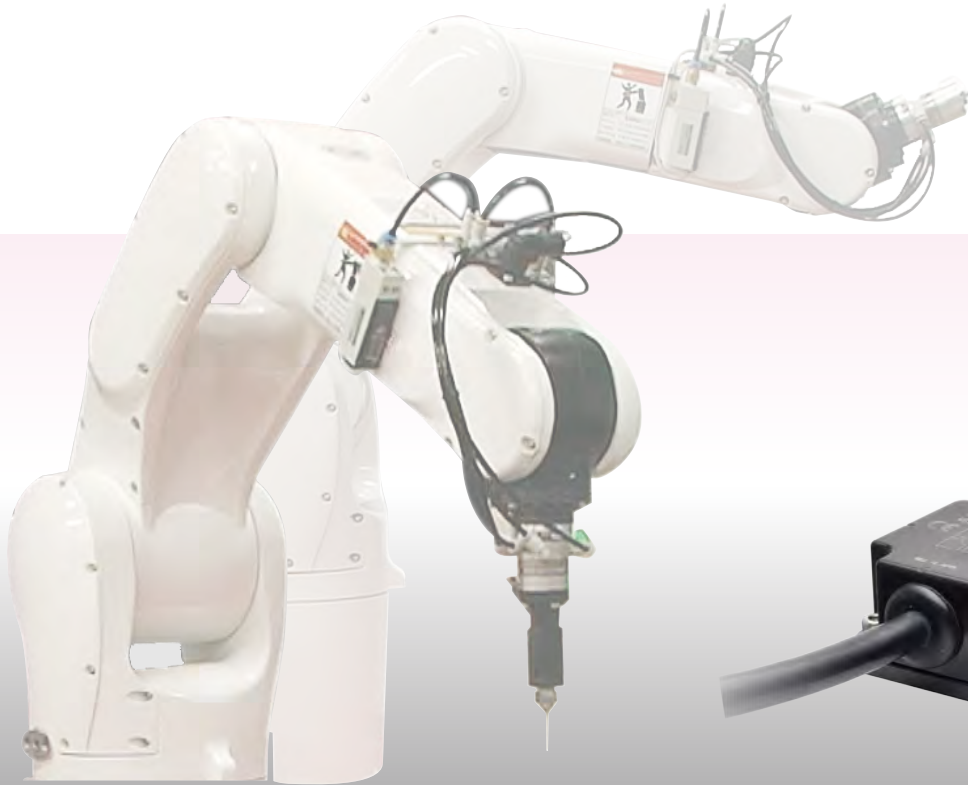


Robotic Hand Changer



The World's Only

Robotic Hand Changer With No Backlash

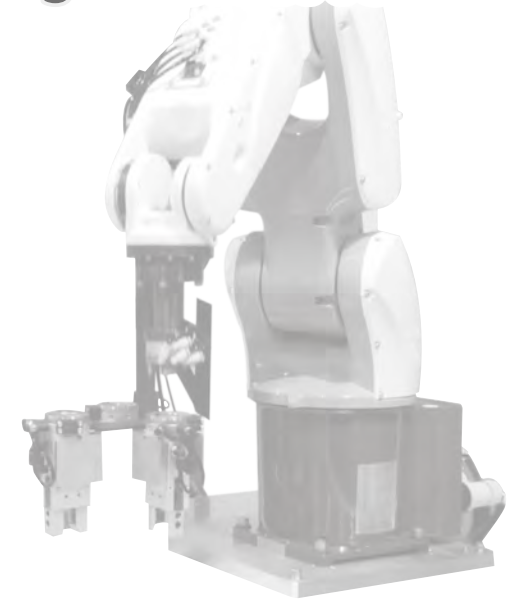
Robotic Hand Changer

model SWR





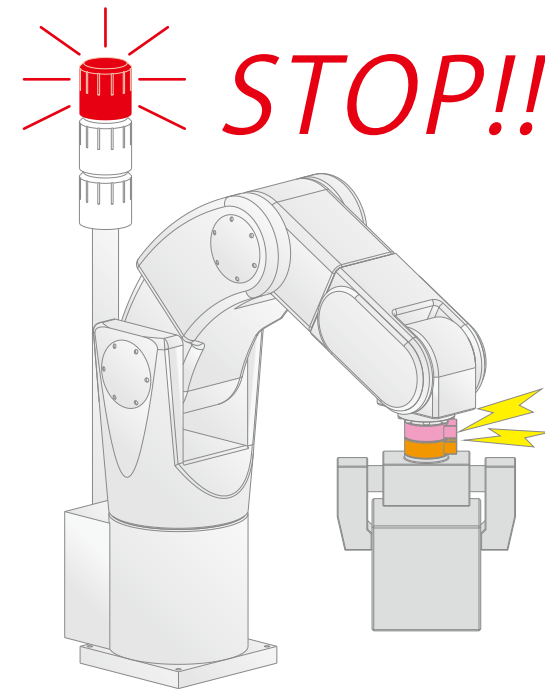
The needs of robotic hand changers have been rapidly increasing for multiproduct manufacturing and process integration of robots.



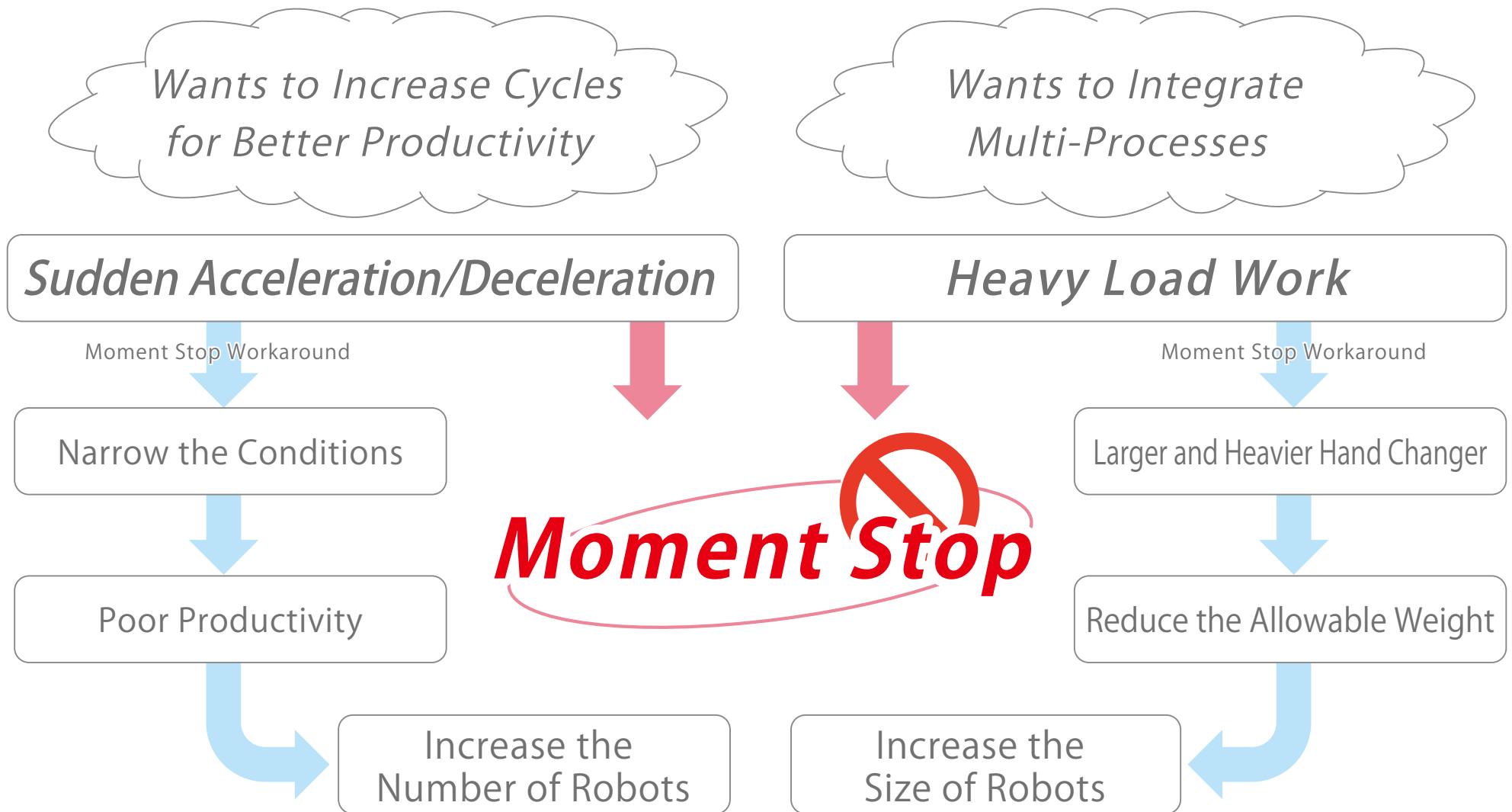
However, there are common problems for customers who adopt robotic hand changers.

Frequent Momentary Stops

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

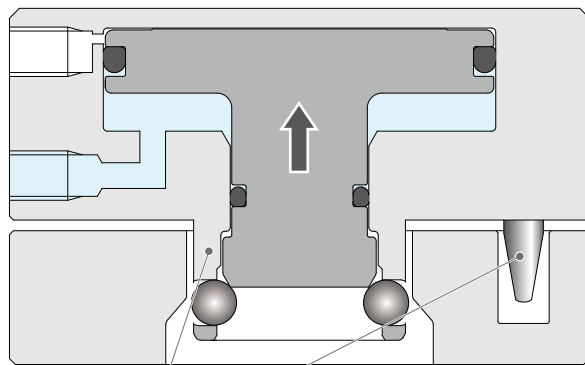


The main cause of these problems is due to the rigidity of the robotic hand changer.



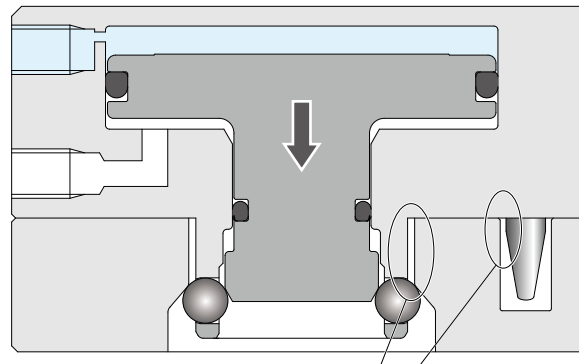
KOSMEK solves these problems and the robot exerts 100% of its ability.

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

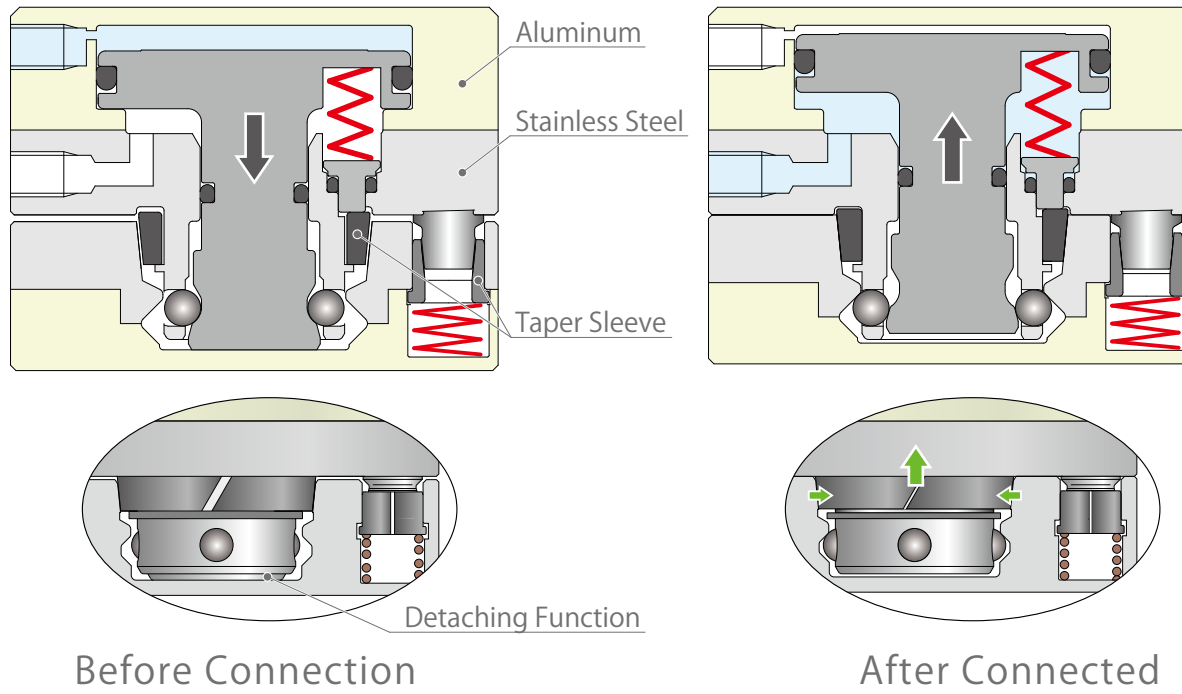
Size Up

Becomes Heavier

Uses Lots of Aluminum

Low Durability

Function Description of KOSMEK Hand Changer



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 1 million cycles.

No Backlash when Connected

High Rigidity

Compact

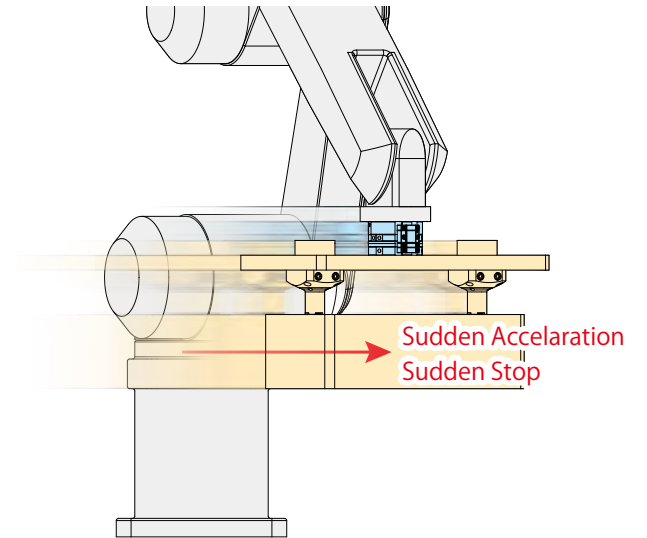
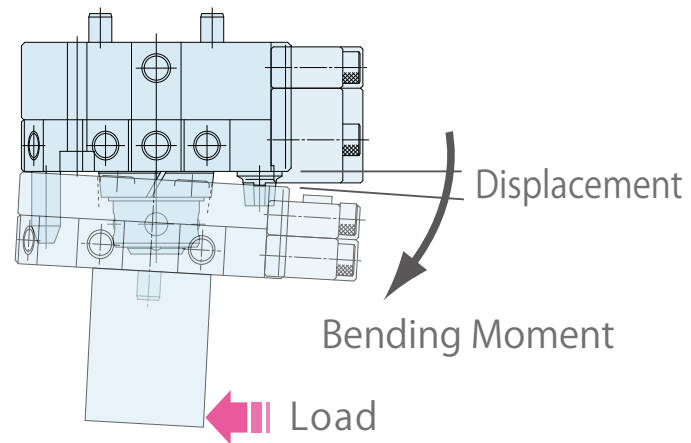
Light Weight

High Strength Material

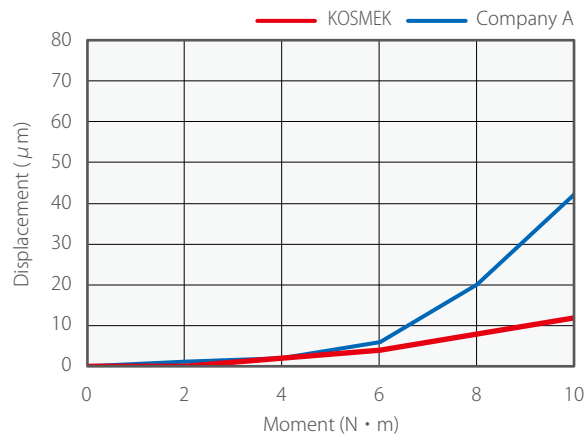
High Durability

Displacement Test under Bending Moment

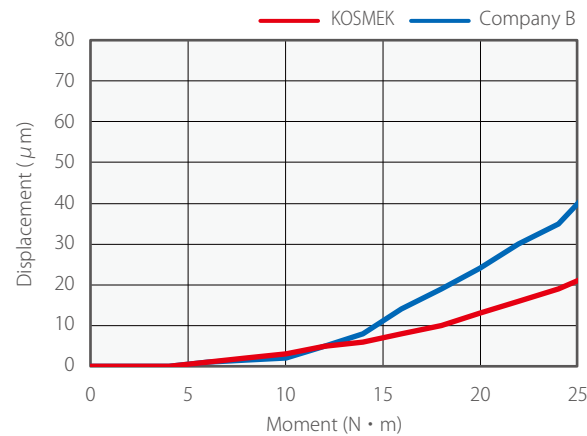
(at Air Pressure 0.5MPa)



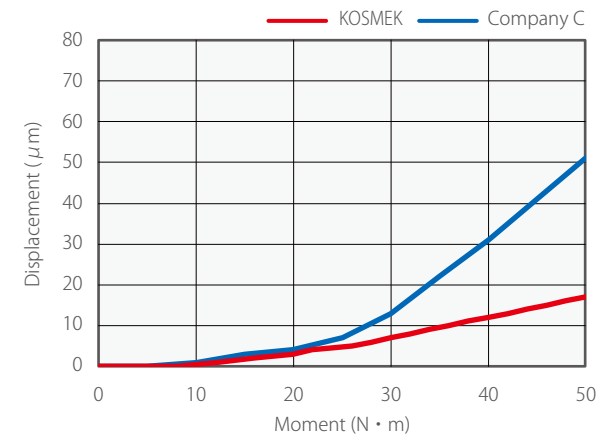
Allowable Weight 5kg



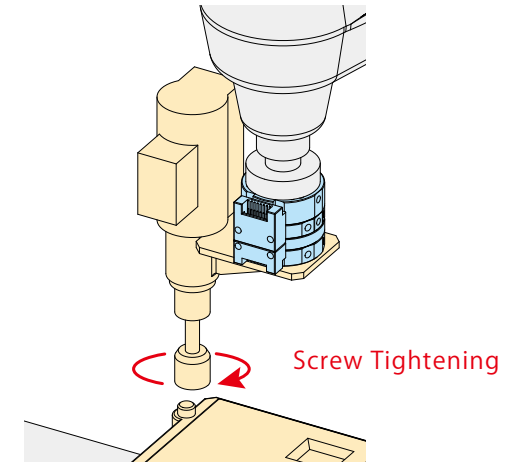
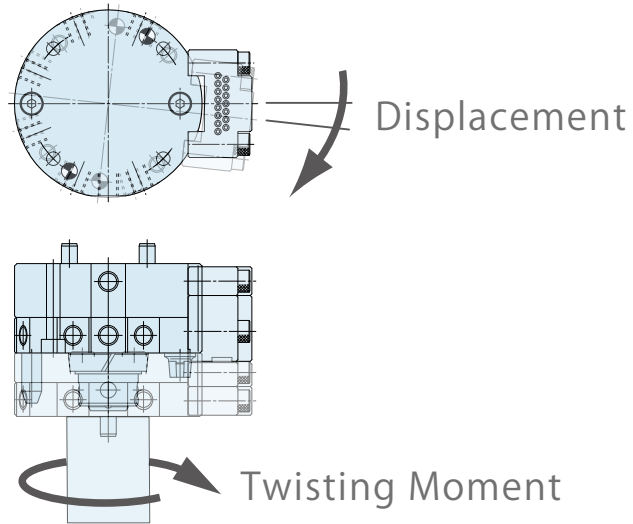
Allowable Weight 10kg



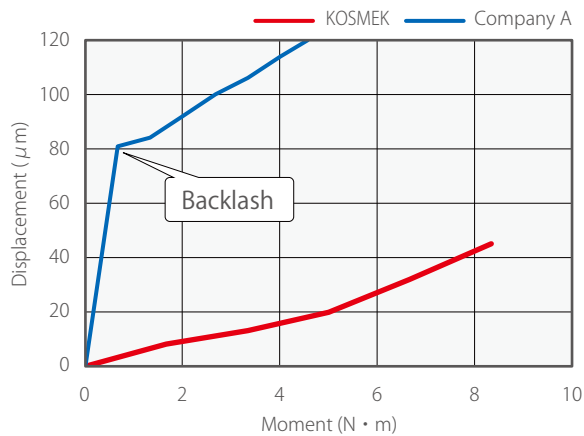
Allowable Weight 20kg



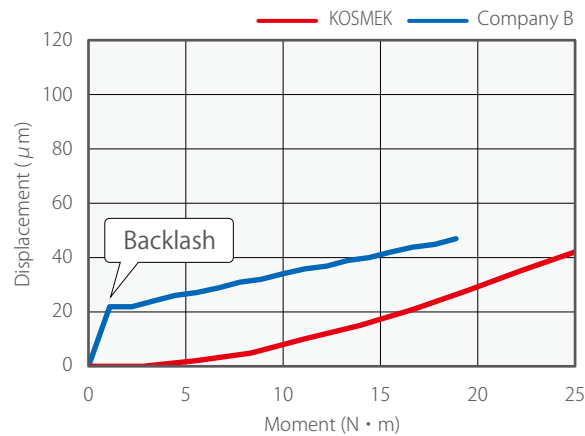
Displacement Test under Twisting Moment (at Air Pressure 0.5MPa)



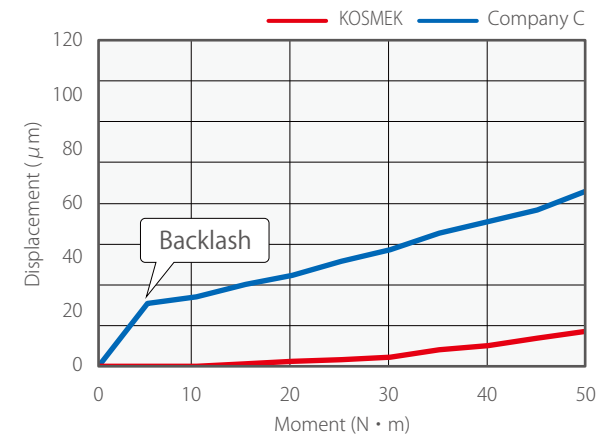
Allowable Weight 5kg



Allowable Weight 10kg



Allowable Weight 20kg

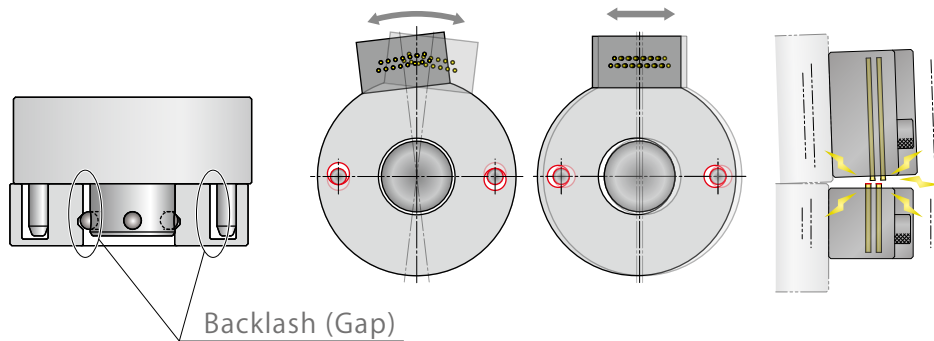


Solutions

General Hand Changer

Backlash causes low rigidity and electrode failure.

Continuity failure caused by noise and abrasion of contact probe occurs.



Continuous Failure of Electrode



Frequent Moment Stops

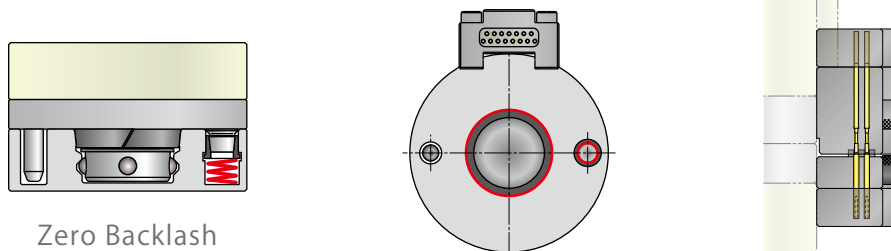


Requires Periodical
Replacement of Electrodes

KOSMEK Hand Changer

Zero backlash enables high rigidity and stable electrodes.

No noise occurs.



Zero Backlash

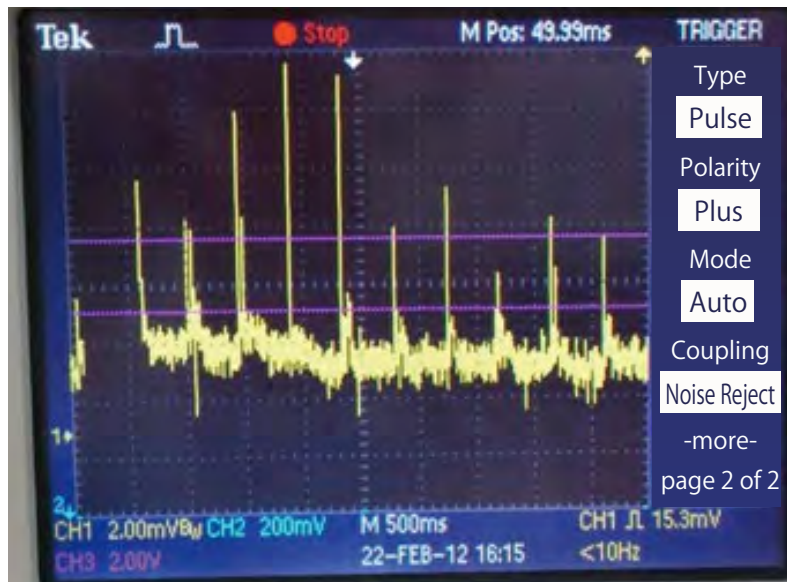
No Continuous Failure of Electrodes



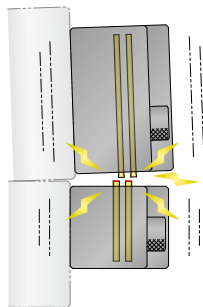
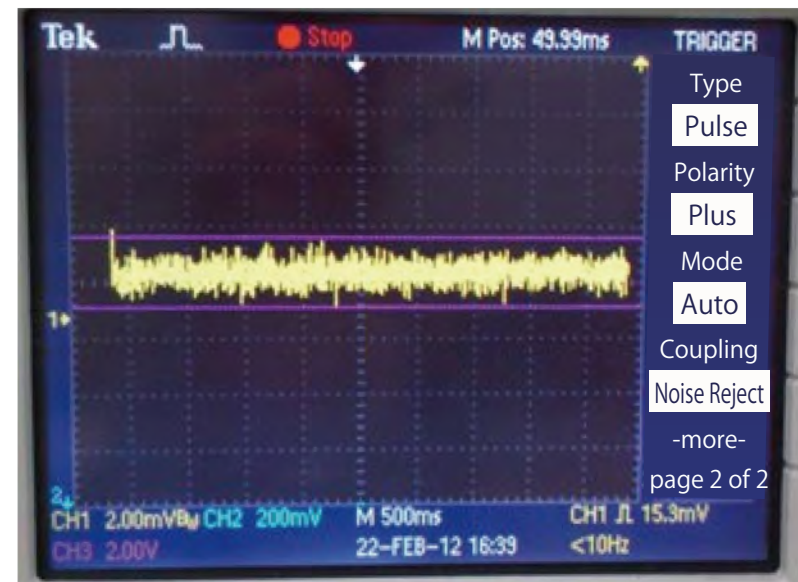
Sharp Decline of Moment Stop

Vibration Test

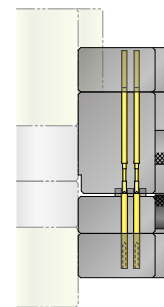
General Robotic Hand Changer



KOSMEK Robotic Hand Changer



Noise Occurs



No Noise

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.

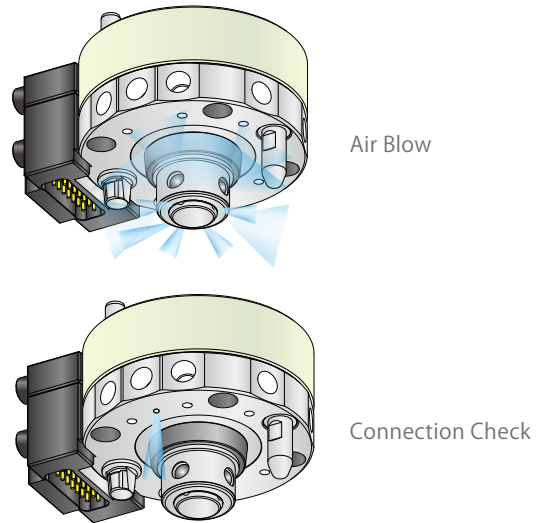
Exerts 100% of the robot's ability.

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

“The World’s Only” Product



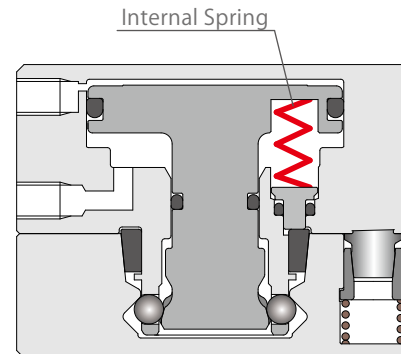
KOSMEK Robotic Hand Changer offers more safety features than any other.



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.

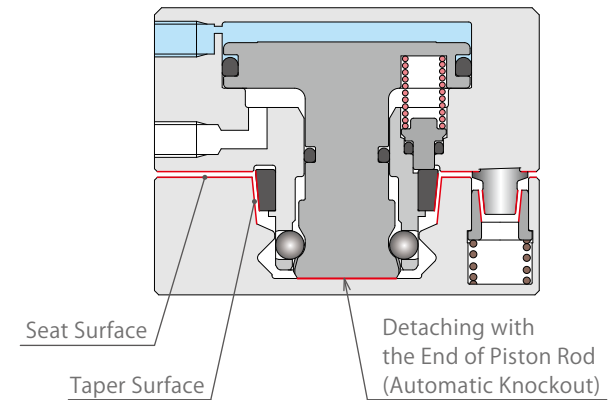
- ※ Air blow function is only for air blow port option.
- ※ Select the seat port option for connection check.



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 pneumatic pressure.



Detaching (Automatic Knockout)

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

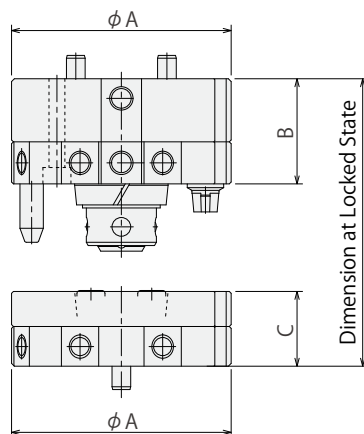
Specifications

Model No.		SWR0030	SWRY0010	SWR0070	SWR0120	SWR0250	SWR0500	SWR0750	SWR1200
Allowable Weight (At 0.5MPa) kg		3		7	12	25	50	75	120
Locating Repeatability mm		0.003							
Weight ※2	Master Cylinder g	70	85	180	250	500	1000	1650	3800
	Tool Adaptor g	45	60	120	160	300	750	1100	2600
Holding Force	Air Pressure at 0MPa ※1 kN	0.12		0.15	0.32	0.57	0.95	1.29	1.97
	Air Pressure at 0.5MPa KN	0.50		0.90	1.50	3.05	5.94	9.26	13.33
Air Port	Thread Size × Number of Port	M3×0.5×2 Port	M3×0.5×6 Port	M5×0.8 ×6 Port	M5×0.8 ×6 Port	M5×0.8 ×6 Port	M5×0.8 ×2 Port Rc1/8×4 Port	Rc1/8×9 Port	Rc1/4×9 Port
Operating Pneumatic Pressure MPa		0.4 ~ 1.0		0.35 ~ 1.0					
Operating Temperature °C		0~70							
Pressurizing Agent		Dry Air							

Notes:

1. Please refer to our catalog and website for detailed specifications.
- ※1. After connection, when the air supply is 0MPa, the holding force is only for reference.
- ※2. Product weight shows the weight of only the main part except an electrode option.

External Dimensions



	(mm)							
Model No.	SWR0030	SWRY0010	SWR0070	SWR0120	SWR0250	SWR0500	SWR0750	SWR1200
A	34	38	47	54	73	98	123	160
B	16.5	17	22.5	23	26.5	31	33	38
C	14	14	16	16.5	19	25	25.5	36
When Connected	30.5	31	38.5	39.5	45.5	56	58.5	74

※Please refer to our catalog and website for details of 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
-	-	Standard : No External Attachment	-
DC24V	3A	Solder Terminal	 15 Poles
			30 Poles (2 Sets of 15 Poles)
		Solder Terminal with Cable	 15 Poles
			30 Poles (2 Sets of 15 Poles)
		Simple Waterproof Electrode Only when connected: IP54	 16 Poles
			32 Poles (2 Sets of 16 Poles)
		D-sub Connector	 15 Poles
			30 Poles (2 Sets of 15 Poles)
		Circular Connector (Connector Based on JIS C 5432)	 15 Poles
			30 Poles (2 Sets of 15 Poles)
AC200V DC200V	5A	Power Transmission Option (Connector Based on MIL-DTL-5015)	 8 Poles
			16 Poles (2 Sets of 8 Poles)
	13A	High Current Transmission Option (Connector Based on MIL-DTL-5015)	 10 Poles
			20 Poles (2 Sets of 10 Poles)
Noncontact Waterproof Electrode IP67 			Number of Signals 12
External Options (Air Joint)			Number of Ports
Air Joint	Min. Passage Area : Equal to $\phi 4$		2 Ports
			4 Ports (2 Sets of 2 Ports)
	Min. Passage Area : Equal to $\phi 1.6$ (Solder Terminal Extensible Option)		4 Ports
			8 Ports (2 Sets of 4 Ports)

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

Related Products

Robotic Hand



Parallel Gripper
model WPH



Three-Jaw Chuck
model WPP



Two-Jaw Chuck
model WPQ

Ball Lock Cylinder

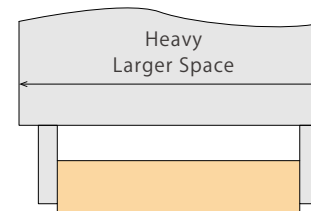
model WKA



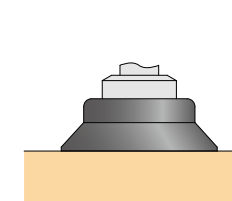
The ball lock cylinder is used for transfer pallets, plates, temporary tool stocker, etc.

The light weight and compact design allows for maximizing the robot's ability without reducing its portable weight.

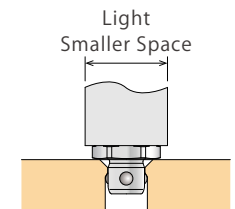
【Application Example】 For Reducing the Weight and Size of Transfer Tool



【Robotic Hand】
Heavy • Larger Space

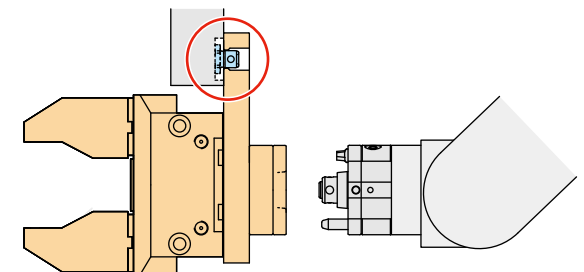


【Suction Pad】
Limited Speed • Low Suction Force



【Ball Lock Cylinder】
Light • Compact • Fast

【Application Example】
Temporary Stopper/Falling
Prevention for Stocker/Nozzle Unit



<http://www.kosmek.co.jp>



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KOSMEK (CHINA) LTD.	21/F, Orient International Technology Building, No.58, Xiangchen Rd, Pudong Shanghai 200122, P.R.China	TEL. +86-21-54253000	FAX. +86-21-54253709
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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
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P.T PANDU HYDRO PNEUMATICS	Ruko Green Garden Blok Z- II No.51 Rt.005 Rw.008 Kedoya Utara-Kebon Jeruk Jakarta Barat 11520 Indonesia	TEL. +62-21-5818632	FAX. +62-21-5814857



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