New

Compliance Module



model WRC

Correct Misalignment during Robot Transfer



for Factory Automation

Compliance Module

Model WRC

Larger sizes added: model WRC0500/0750

Ultra-Smooth Action



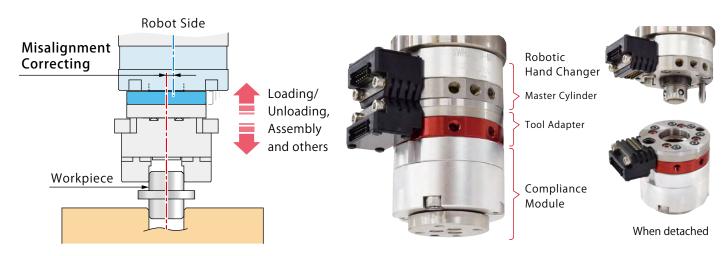
High Lock Holding Force

Quick Mount

Directly Mounted on KOSMEK Robotic Hand Changer model SWR

Compliance Module for

Misalignment Correction during Robot Transfer



Easy to Correct the Misalignment of Robot Transfer

Correct the misalignment between a robotic hand and a workpiece, or a hole and a part during transfer and assembly process with a robot.

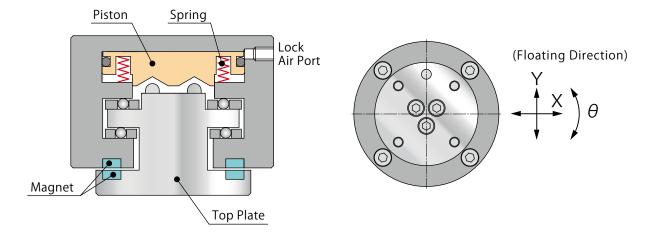
Program correction with a force sensor is not required. Mechanical floating function allows for easy setup.

Directly Mounted on Robotic Hand Changer

Compliance Module can be directly mounted on the tool adapter of Robotic Hand Changer, model SWR (Payload 7kg ~ 75kg). Using with the Robotic Hand Changer enables to change highly flexible hands equipped with the Compliance Module and high-accuracy tools not equipped with the Compliance Module, allowing for various operations.

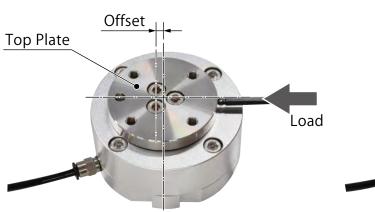
1

Cross Section • Action Description



Misalignment of Workpiece is Corrected by the Floating Top Plate

* Please keep the top plate horizontal during misalignment correction.





Floating State

Air

OFF

The top plate can be floated when not supplying lock air pressure. When not receiving a load, the top plate returns to the center with the magnet.

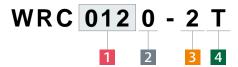
Center Locking State

Air

ON

The top plate is centered and locked by supplying lock air pressure.

Model No. Indication

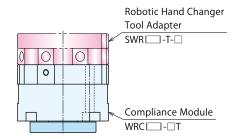


1 Directly-Mounted Robotic Hand Changer SWR Model No.

007 : SWR0070-T-□ **012** : SWR0120-T-□

025 : SWR0250-T-□ **050** : SWR0500-T-□ **075** : SWR0750-T-□

(ex.) In case of using WRC0070-2T with Robotic Hand Changer : WRC0070-2T can be directly mounted on the tool adapter of Robotic Hand Changer : SWR0070-T- \square .



2 Design No.

0 : Revision Number

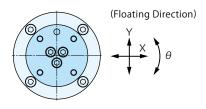
3 Offset Stroke

2 :±2mm (WRC0070, WRC0120, WRC0250)

4 :±4mm (WRC0500, WRC0750)

4 Floating Direction

T : Misalignment Correction in θ -direction



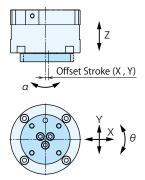
Specifications

Model No.	Model No.			WRC0120-2T	WRC0250-2T
【At 0MPa】 Floatable State	Offset Stroke (X , Y)*1 mm		±2.0		
	Top Plate Rotation	At Original Position	±9°	±8°	±6°
	Angle $(\theta)^{*1}$	At Maximum Offset	0°		
	Allowable Load (Z) N	Stretching • Compressive	70	120	250
	Maximum Load ^{**2} N	Stretching • Compressive	147	245	539
	Allowable	Bending (α)	0.6	1.0	1.6
	Moment N•m	Twisting ($ heta$)	15	25	45
	Starting Resistance N		2.1 or less	3.6 or less	7.5 or less
【At Air Lock】 Center Lock State	Repeatability	X,Y mm	0.1		
		θ	1°		
	Allowable Load (X , Y)*3 N		Refer to P.5		
	Allowable	Bending (α)	Refer to P.5		
	Moment *3 N·m Twisting (θ)		Refer to P.5		
Operating Air Pressure	Maximum Pressure	MPa	0.6		
	Minimum Pressure MPa		0.3		
	Withstanding Pressure MPa		0.9		
Cylinder Capacity	Cylinder Capacity cm ⁻³		1.0	1.3	2.2
Operating Temperature °C		0 ~ 70			
Usable Fluid	Usable Fluid		Dry Air		
Product Weight		g	About 200	About 300	About 520

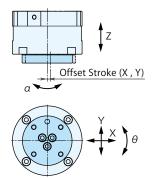
Model No.			WRC0500-4T	WRC0750-4T
【At 0MPa】 Floatable State	Offset Stroke (X , Y) ^{*1} mm		±4.0	
	Top Plate Rotation Angle $(\theta)^{*1}$	At Original Position	±9°	±6°
		At Maximum Offset	0°	
	Allowable Load (Z) N	Stretching • Compressive	500	750
	Maximum Load ^{*2} N	Stretching • Compressive	980	1470
	Allowable	Bending (α)	9.0	36.7
	Moment N•m	Twisting (θ)	80	85
	Starting Resistance	N	15 or less	22.5 or less
【At Air Lock】 Center Lock State	Repeatability	X,Y mm	0.1	
		θ	1°	
	Allowable Load (X, Y)	*3 N	Refer to P.6	
	Allowable	Bending (α)	Refer to P.6	
	Moment **3 N•m	Twisting (θ)	Refer to P.6	
Operating Air Pressure	Maximum Pressure MPa		0.6	
	Minimum Pressure MPa		0.3	
	Withstanding Pressure MPa		0.9	
Cylinder Capacity		cm ³	8.8	10.2
Operating Temperature		$^{\circ}$	0 ~ 70	
Usable Fluid			Dry Air	
Product Weight		g	About 1880	About 3300

Notes

- $\frak{\%}1$. Exceeding the operating ranges will lead to a damage to the product.
- \divideontimes 2. When used with the maximum load, the above specifications cannot be satisfied. Please use it within the allowable load.
- $\ensuremath{\%3}.$ The top plate may be moved when excessive load more than the maximum value is applied.



Allowable Load, Allowable Moment



Allowable Load (X, Y) (X, Y)

0.3

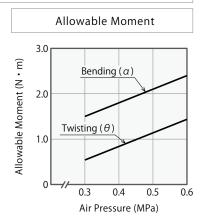
0.4

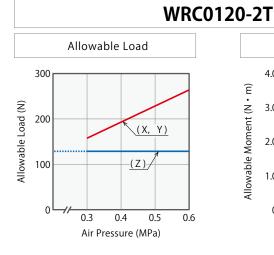
Air Pressure (MPa)

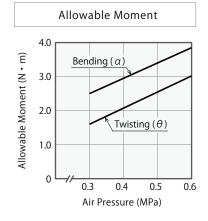
0.5

0.6

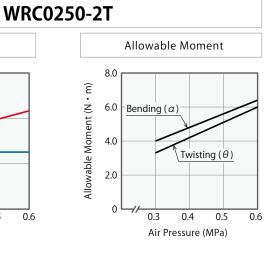
0

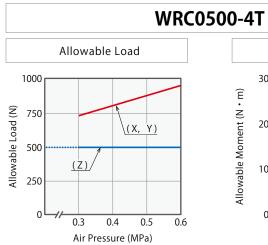


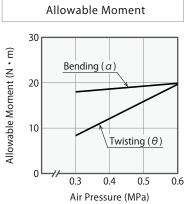


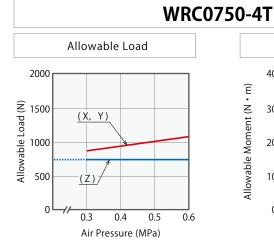


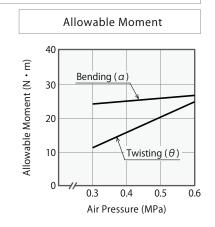
Allowable Load (X) Peo Jage 400 (X) Y) (X) Air Pressure (MPa)



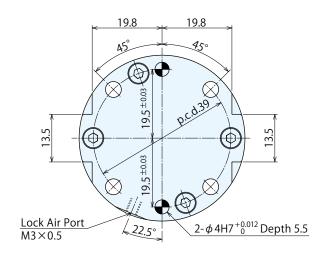


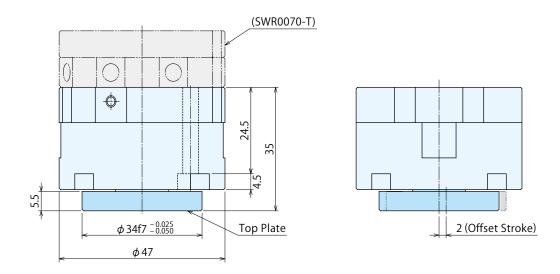


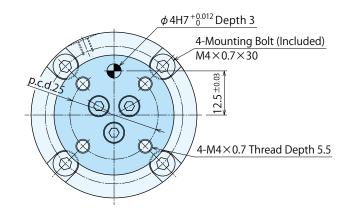




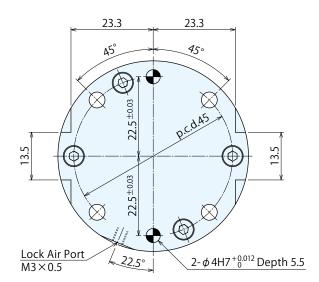
External Dimensions: WRC0070-2T

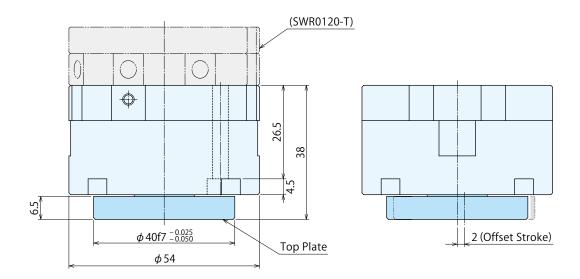


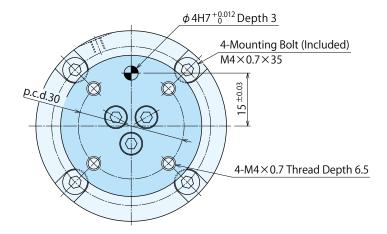




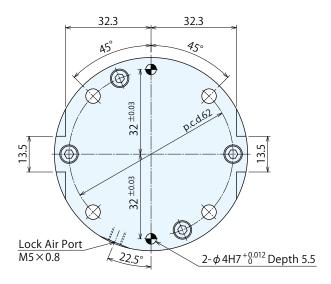
External Dimensions: WRC0120-2T

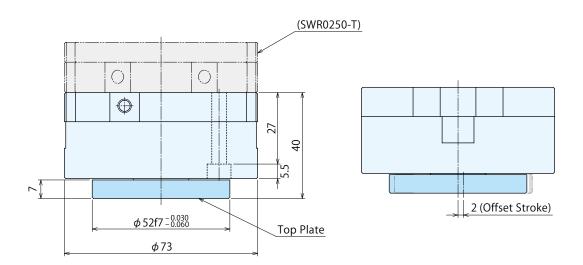


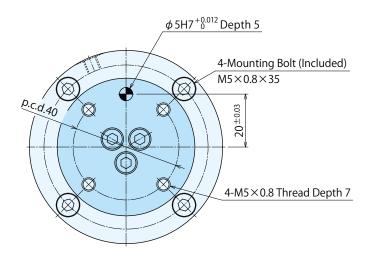




External Dimensions: WRC0250-2T



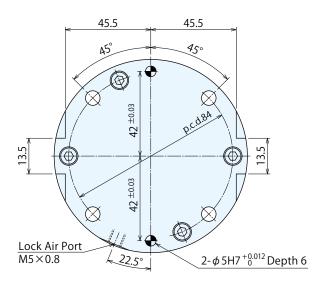


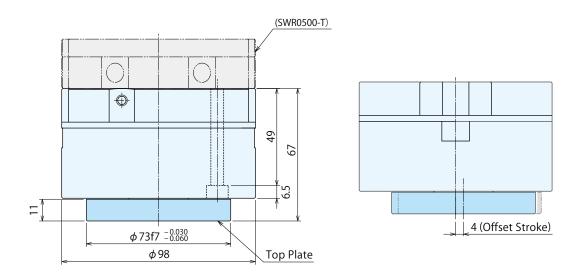


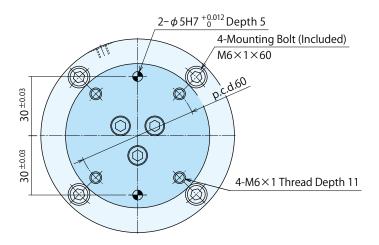
Note

1. When using SWR Robotic Hand Changer Tool Adapter (SWR0250-T) and Compliance Module (WRC0250-2T) together, external option Waterproof Electrode (V□/VX□ type) and Ground Electrode (T type) cannot be mounted.

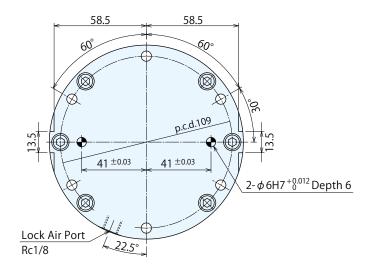
External Dimensions: WRC0500-4T

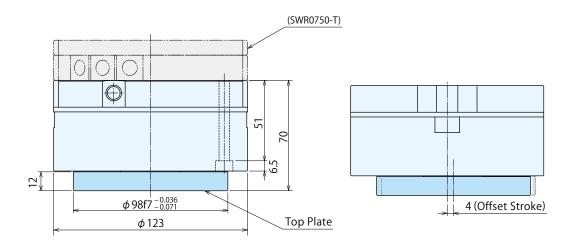


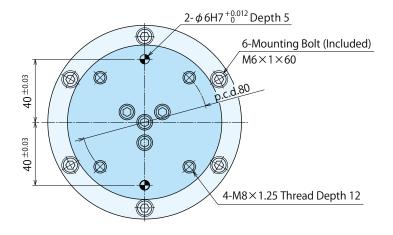




External Dimensions: WRC0750-4T







Features Cross Section Action Description Indication Specifications Performance Curve Dimensions Cautions

MEMO

Cautions

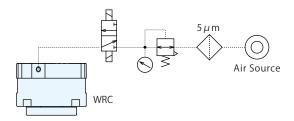
Notes for Design

1) Check Specifications

- Please use each product according to the specifications.
- Maximum Operating Pressure: 0.6MPa Minimum Operating Pressure: 0.3MPa

2) Air Pressure Circuit Reference

 WRC locks at the center with air pressure supply. Air pressure must be released at air zero state. Please use a three-way valve.



3) Operating Environment

 Do not use the product in the environment with cutting chips, coolant and others.

4) Center Lock Function

 Top plate may be slightly misaligned at air lock state (locked at the center by air supply) and at 0MPa state (returned to the center by magnet). Also, please contact us for a long-time use (locking more than 24 hours).

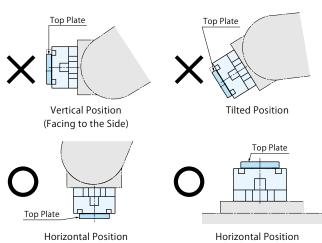
5) Magnetic Force

This product is equipped with a magnet. Please be careful with the influence of the magnet.

6) Position when in Use

Horizontal Position (Facing Down)

This product is not designed for misalignment correction in a vertical position. (The top plate in a floating state does not return to the center when used in a vertical position.) Please keep the top plate horizontal during misalignment correction.



(Facing Up)

Installation Notes

- 1) Check the Usable Fluid
- Please supply filtered clean dry air. (Install a drain removing device.)
- Oil supply with a lubricator, etc. is unnecessary.

2) Preparation for Piping

- The pipes, piping connectors and fixture circuits should be cleaned and flushed thoroughly. Dust and cutting chips in the circuit can lead to fluid leakage and malfunction.
- There is no filter provided with this product for prevention of contaminants in air circuits.

3) Applying Sealing Tape

• Wrap with tape 1 to 2 times following the screwing direction. Wrapping in the wrong direction will cause fluid leakage and malfunction. Pieces of the sealing tape can lead to fluid leakage and malfunction.

4) Installation and Setting

- For installation, tighten mounting bolts evenly to keep the compliance module level. Also, the product must be parallel to the mounting surface. Tighten the mounting bolt with the following torque.
- After the installation, make sure there is no gap between the mounting surface and the product before use.

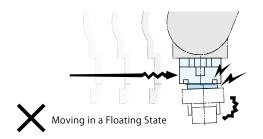
Model No.	Thread Size	Number of Bolts	Tightening Torque (N • m)
WRC0070-2T	M4×0.7	4	3.2
WRC0120-2T	M4×0.7	4	3.2
WRC0250-2T	M5×0.8	4	6.3
WRC0500-4T	M6×1.0	4	10
WRC0750-4T	M6×1.0	6	10

5) Test Run Method

 Supplying high pressure just after installation may damage the product severely. Adjust the pressure to be within the operating pressure range before test run.

6) Product State when Moving

- The product should be in a center locking state when moving. Moving in a floating state may cause damage to the product. Use it in a floating state only when correcting misalignment.
- The product should be centered and locked when not moving and within the allowable offset. Locking in a state exceeding allowable offset, such as swaying, may cause damage to the product.



Notes on Handling

- 1) It should be operated by qualified personnel.
- Hydraulic and pneumatic devices should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
- ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
- ② Before removing the product, make sure that the above-mentioned safety devices are in place. Shut off the pressure and power source, and make sure no pressure exists in the hydraulic and air circuits.
- ③ After stopping the product, do not remove until the temperature drops.
- 4 Make sure there is no trouble/issue in the bolts and respective parts before restarting the machine or equipment.
- Do not touch the compliance module while it is working.
 Your hands may be caught in the compliance module or other surrounding devices leading to injury.
- 4) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

Maintenance • Inspection

- 1) Removal of the Product and Shut-off of Pressure Source
- Before removing the product, make sure that the safety devices are in place. Shut off the pressure and power source and make sure no pressure exists in the air and hydraulic circuits.
- Make sure there is no trouble/issue in the bolts and respective parts before restarting.
- 2) Clean the Product on a Regular Basis
- Using the compliance module top plate or other parts with dirt or contaminants may lead to locating accuracy failure, malfunction and air leakage. (Do not apply grease on the product as this product is recommended to be used with no oil supply.)
- 3) Regularly examine and retighten pipes, mounting bolts and others to ensure proper use.
- 4) Make sure to supply filtered clean dry air.
- 5) Make sure there is a smooth action without air leakage.
- Especially when it is restarted after left unused for a long period, make sure it can be operated properly.
- 6) The products should be stored in the cool and dark place without direct sunshine or moisture.
- 7) Please contact us for overhaul and repair.

Cautions

Warranty

- 1) Warranty Period
- The product warranty period is 18 months from shipment from our factory or 12 months from initial use, whichever is earlier.
- 2) Warranty Scope
- If the product is damaged or malfunctions during the warranty period due to faulty design, materials or workmanship, we will replace or repair the defective part at our expense.
 Defects or failures caused by the following are not covered.
- ① If the stipulated maintenance and inspection are not carried out.
- ② Failure caused by the use of the non-confirming state at the user's discretion.
- ③ If it is used or operated in an inappropriate way by the operator. (Including damage caused by the misconduct of the third party.)
- ④ If the defect is caused by reasons other than our responsibility.
- ⑤ If repair or modifications are carried out by anyone other than Kosmek, or without our approval and confirmation, it will void warranty.
- ⑥ Other caused by natural disasters or calamities not attributable to our company.
- Parts or replacement expenses due to parts consumption and deterioration.

(Such as rubber, plastic, seal material and some electric components.)

Damages excluding from direct result of a product defect shall be excluded from the warranty.

Features Cross Section Action Description Indication Specifications Performance Curve External Dimensions Cautions Cautions

MEMO



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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-WRC002-02-G1B

2020/2 First 1Ry
Printed in Japan 2021/2 2nd 1Ry

New

Compliance Module



model WRC

Correct Misalignment during Robot Transfer

