Robotic Hand Changer



Model SWR



Smaller, Lighter, and Stronger!!

PAT.

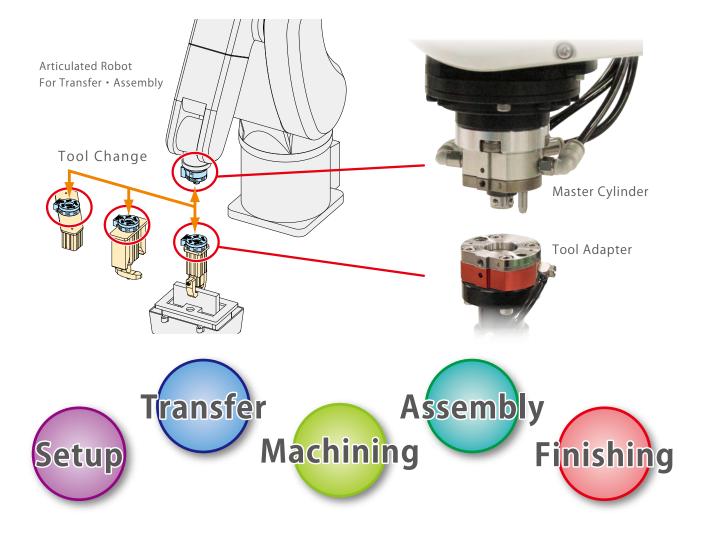
Payload: 3kg, 7kg, 12kg, 25kg, 50kg, 75kg, 120kg, 230kg

Repeatability: $3 \mu m$ High Rigidity: Zero Backlash

High Durability: More than 2 Million Cycles

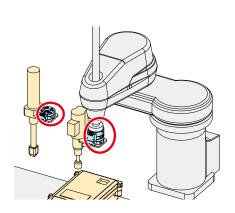
High-accuracy Robotic Hand Changer enables multiple functions of robots and setup time reduction.

It enhances the productivity of automated production line.

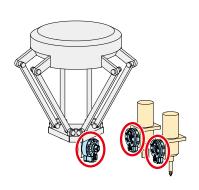


Application Examples

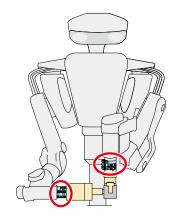
One robot performs multiple operations.



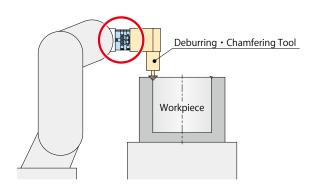
SCARA Robot For Nut Runner Tool Change



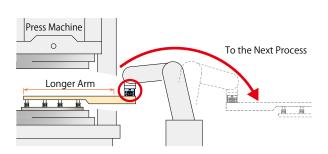
Parallel Link Robot For Screw Tightening



Humanoid Robot For Assembly



For Changing
Deburring and Machining Tools

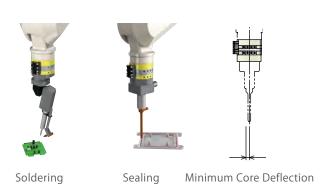


For Changing Transfer Robot Arms of Automatic Line of Press Machines

High Accurate Repeatability

Repeatability: $3 \mu \text{ m}$

High-accuracy locating with dual contact by the taper sleeve. It enables high accurate repeatability.



Minimum deflection of the tool end enables accuracy process.

Prevents Core Deflection and Chattering

No clearance or backlash with dual contact by the taper sleeve. It prevents core deflection and chattering due to the work load, and enhances productivity.



Deburring Screw Tightening

Machining (Drilling)

Suitable for the work which generates high torque.

16

Locating + Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Robotic Hand Changer

SWR Payload 3kg ~ 360k

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic Location Clamp

SWT

Compact Pneumatic Location Clamp

SWQ High-Power Pneumati Pallet Clamp

WVS

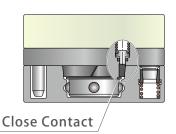
Features

Light • Compact

Suitable for robotic hands which are severe on weight limits. Light Weight yet Large Load Capacity!!

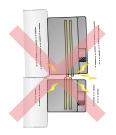
High Durability and Rigidity

Zero backlash when connecting and the durability is 2 million cycles. Even after 2 million cycles, repeatability 3μ m is maintained.



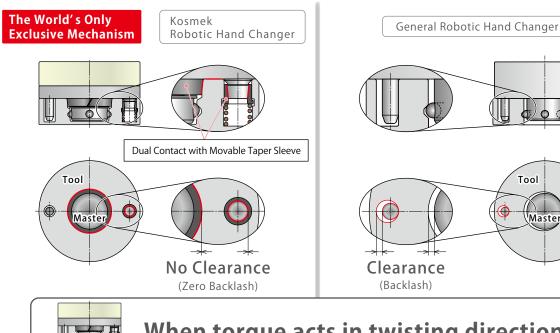
Zero backlash prevents core deflection and chattering.

No clearance or backlash with dual contact by the taper sleeve. It prevents core deflection and chattering due to the work load, and enhances productivity.



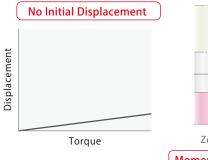
Prevents moment stops caused by electrode error.

"Zero" backlash of robotic hand changer minimizes the vibration of electrode and prevents noise and friction. Highly reliable electrode prevents moment stops caused by communication error.

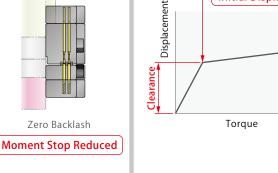




When torque acts in twisting direction







Initial Displacement



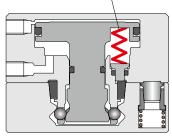
Tool

Maste

Backlash (Clearance) leads to noise • friction of a contact.

Moment Stop Occurs

Internal Spring

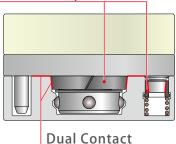


Self-Locking prevents tools from falling.

Even when pressure is at zero, self-locking function prevents tools from falling.

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

Movable Taper Sleeve



High Accuracy Repeatability 0.003mm

Repeatability is 3μ m.

Dual contact with movable taper sleeve enables high accuracy locating. Only slight fluctuation at the end of tool allowing for precise operation.

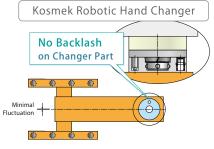
Seat Surface

Taper Surface

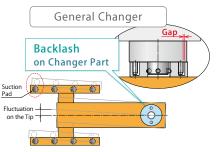
Lift up (Detaching) function protects locating part

When connecting, lift up function prevents damage of the locating function part (seat surface and taper surface). When disconnecting, the piston rod detaches tool adaptor preventing moment stop caused by adhesion and galling.

Seat Surface Lift Up with the End of Piston Rod (Detaching)



With 0.003mm Repeatability Fluctuation on the Tip 0.05mm or less *



Ex.) Repeatability = ±0.015mm

Fluctuation on the Tip

0.5mm or less*

**Reference fluctuation value when the arm length =500mm with dimension conditions of SWR0250.
The result may differ depending on dimensions of a changer. Excluding displacement caused by load.

Minimal Fluctuation even with Longer Arm

With 3 μ m repeatability, it minimizes fluctuation on the long arm tip, and prevents workpiece gripping errors or interference caused by displacement when transferring.

A Variety of Electrode/Air Joint Options

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



Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Robotic Hand Changer

> SWR Payload 3kg ~ 360k

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic Location Clamp

SWT

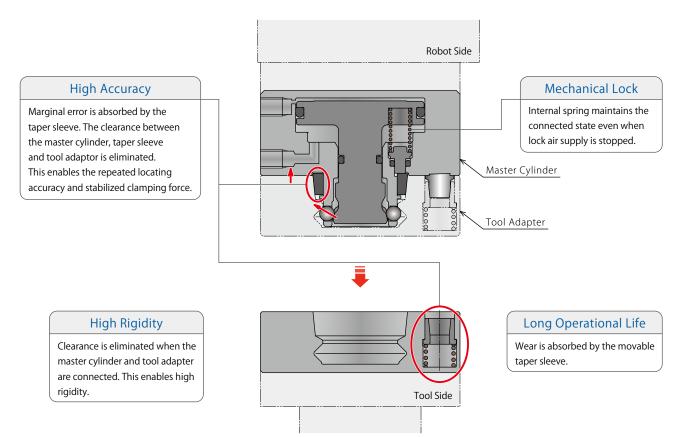
Compact Pneumatic Location Clamp SWQ

High-Power Pneumati Pallet Clamp

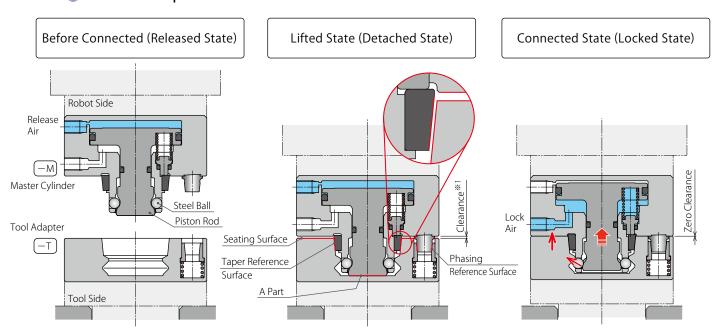
WVS

Cross Section

High Accuracy / High Rigidity / Long Operational Life



Action Description



Supply air to the release side.

The piston rod is pushed down with thrust force caused by release air. At this time the steel balls are free to move (set inside).

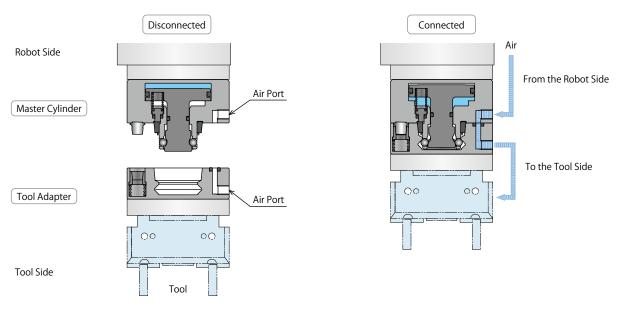
When the master cylinder is lowered and stopped at the amount of lift ~+0.5mm, it is in setting state. At this time there is a moderate gap at taper reference surface and seating surface. It prevents locating mechanism part from damage. When detached, the piston pushes out A part to prevent moment stop caused by fixation or galling.

※1. Refer to the caution "Most Suitable Gap b/w Master Cylinder and Tool Adapter Just Before Connection (When Setting)" on P.79. Stop the release air pressure and supply air to the lock port. The piston rod will be pulled up with piston thrust and an internal spring, and the tool adapter will be pulled to the seating surface by the steel balls. When the tool adapter is pulled, the taper reference surface and phasing taper sleeve are centered in a reference axis (body), and locating is completed.

Air Port Option (Joint Option)

When the master cylinder and tool adapter are connected, the air port is at the connected state. At this time, it is able to supply air from the robot side to the tool side. Air port can be used for the operation of the actuator (positive pressure) and the suction pad (negative pressure).

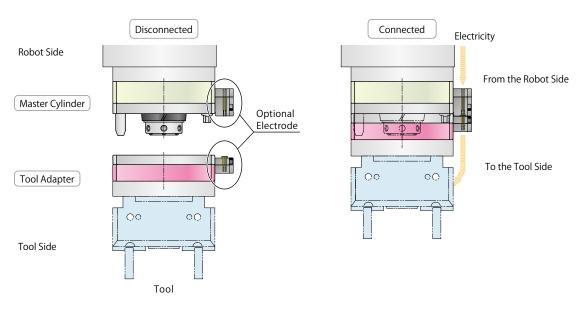
The number of air ports depends on the option. Please refer to the specifications for further information.



Selectable from two air port joint options. * Refer to P.68 for further information.

Electrode Option

When the master cylinder and tool adapter are connected, the electrode (option) is in the connected state. At this time, it is able to transmit electrical signal and supply electricity between the robot and tool.

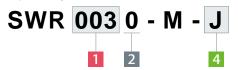


Model No. Indication

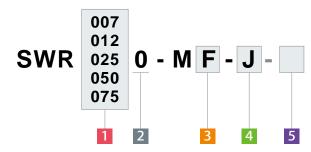


Master Cylinder (Robot Side)

Payload 3kg ** Refer to P.69 for SWRY0010 (with 6 air ports).



Payload 7kg ~ 75kg



Payload 120kg ~ 230kg (360kg)



Payload 0.5 ~ 1kg

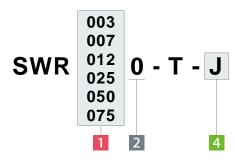
SWR0010-M-

Refer to P.83 for further information.

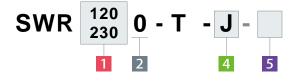


Tool Adapter (Tool Side)

Payload $3kg \sim 75kg$ % Refer to P.69 for SWRY0010 (with 6 air ports).



Payload 120kg ~ 230kg (360kg)



Payload 0.5 ~ 1kg

SWR0010-T-



Refer to P.83 for further information.

1 Payload * Payload at 0.5MPa

003 : 3 kg

Refer to P.83 for $001:0.5 \sim 1 \text{ kg Payload model}$.

007 : 7 kg

012 : 12 kg 025 : 25 kg 050 : 50 kg 075 : 75 kg

120 : 120 kg **230** : 230 kg

2 Design No.

0 : Revision Number

3 Port Option * The port option is applicable to the master cylinder only.

Blank: No Port

(Only **Blank** can be chosen for SWR0030.)

F: Standard (with Seat Check Port)

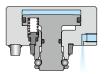
A : With Air Blow Port

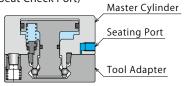
AF: With Air Blow Port + Seat Check Port

(Only $\boldsymbol{\mathsf{AF}}$ option can be chosen for SWR1200/SWR2300.)

			<u> </u>	Availa	ble Op	tion		
Doub Oution	3kg	7kg	12kg	25kg	50kg	75kg	120kg	230kg
3 Port Option Symbol	SWR 0030	SWR 0070	SWR 0120	SWR 0250	SWR 0500	SWR 0750	SWR 1200	SWR 2300
Blank	•							
F		•	•	•	•	•		
Α		•	•	•	•	•		
AF							•	•

F : Standard (with Seat Check Port)

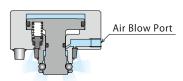




Action confirmation can be conducted by detecting differential pressure with the air catch sensor.

**Refer to P.67 for further information.

A: With Air Blow Port



Locating mechanism part can be cleaned with the air blow.

**Refer to P.67 for further information.

4 External Option Symbols (Electrode/Air Joint)

Refer to P.23 \sim P.24 for model number symbols.



5 Joint Option (Air Port Part) * Refer to P.68 for detail of the joint option.

Blank : No Check Valve (Standard)

S: With Check Valve

** Option Symbol of Tool Adapter Side: Specify with "-S" only when selecting SWR1200 / SWR2300 with check valve. Since the tool adapter of SWR0070 / SWR0750 is shared, the symbol is "Blank" regardless of the use of check valve.

					•=	Availa	ble Op	tion		
	5 Joint Or	tion Symbol	3kg	7kg	12kg	25kg	50kg	75kg	120kg	230kg
	Master	Tool	SWR 0030	SWR 0070	SWR 0120	SWR 0250	SWR 0500	SWR 0750	SWR 1200	SWR 2300
No Check Valve (Standard)	Blank	Blank	•	•	•		•	•	•	•
With Check Valve	S	Blank		•	•		•			
with check valve	S	S							•	•

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Robotic Hand Changer

> SWR Payload 3kg ~ 360kg

> Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic Location Clamp

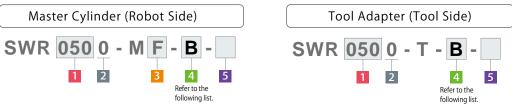
SWT

Compact Pneumatic Location Clamp SWQ

High-Power Pneumati

WVS

Model No. Indication



4 External Option Symbols (Electrode/Air Joint) *1

• EI	ect	rode						•	=	Avail	able (Optic	n	
Rated Voltage	Rated Current	External Options (Detail Pag	e)	Number o	of Poles	Option Symbol		7kg SWR 0070	SWR	SWR	SWR	SWR	120kg SWR 1200	SW
-	-	Standard: No External Attac	hment	_		Blank	•	•	•	•	•	•	•	
	*2 2A/1A	Resin Connector P.37	65	16 Poles		J	•	•	•	•	•	•	•	•
		Solder Terminal	25	15 Poles 30 Poles		B • BB /	•	•	0	•	• %	•	•	0
		P.41		I 5 POIES	oles) ible n/2m/5m	B2 C = Lead Wire Length	•	•	•	•	•	•	•	
DC24V		Solder Terminal with Cable P.43		30 Poles Ca		01:1m/02:2m/05:5m CCC =Lead Wire Length 01:1m/02:2m/05:5m In COC should be the same number.		•	•	%	%	%	%	•
	3A **2	Simple Waterproof Electrode Only when connected: IP54 P.47		16 Dolor	ible n/2m/5m	U =Lead Wire Length 01:1m/02:2m/05:5m	•	•	•	•	•	•	•	
		D-sub Connector P.51		15 Poles		D				•	•	•	•	•
		Circular Connector (Connector Based on JIS C 5432) P.52		15 Poles		G				•	•	•	•	
				4 Poles		K	•	•	•	•	•	•	*3	(
		Common at Floritis Down		4 Poles + Ele	ectrode J	• JK • JK2		•	•	96	%	%	% 3	•
		Compact Electric Power Transmission Option		4 Poles + Ele	ectrode B	BK BK2		•	•	9/6	%	9/6	*3	•
AC200V DC200V	5A **2	P.53		4 Poles + Electrode C01	/C02/C05	C□K C□K2 □=Lead Wire Length 01:1m/02:2m/05:5m		•	•	%	%	%	*3	•
JC200V		Power Transmission Option (Connector Based on MIL-DTL-5015) P.57L		8 Poles		E				•	•	•	•	(
	13A **2	High Current Transmission Option (Connector Based on MIL-DTL-5015) P.57R		10 Poles		Н				•	•	•	•	(
for Power AC/DC240V for Signal DC24V	for Power 20A for Signal 3A	Servo Electrode P.58L	28	for Power Supply 6 Poles for Signal for P 17 Poles + 1 F	unctional Ground	F □ □=Lead Wire Length 01:1m/02:2m/05:5m				•	•	•	•	
		/aterproof Electrode		Number of	NPN	W	•	•	•	•	•	•	*3	Ī
P.59	Compact	Model		Signals: 4	PNP	WX [*] 4	•	•	•	•	•	•	*3	
						Cable 2m *Tool Adapter Side : 1m				•	•	•	•	(
Nonc IP67	ontact W	/aterproof Electrode		Number of	NPN	Cable 5m V 5				0	0	•	0	(
P.61				Signals: 12	PNP	Cable 2m VX*5 Cable 5m VX5*5				0	0	0	0	
Grou	nd Elect d Capacit	rode sy 500A (Activity Ratio 50%)	5	1 Pole		T T					•	•	•	
	rnet Elec	trode		4 Poles		L				•	•	•	•	



Locating Clamp Locating

Location Clamp

SWQ

High-Power Pneumati Pallet Clamp

• Air Jo	nint											Locating
· All J	JIIIC					• •	=Ava	ilable	Opti	on		Hand • Clamp
Number of Ports		Additional	Option	3kg	7kg	12kg	25kg	50kg	75kg	120kg	230kg	Hand • Clamp
(Min. Passage Area)	External Options (Detail Page)	Electrodes	Symbol	SWR 0030		SWR 0120			SWR 0750			Support
	Air Joint (Able to extend electrodes J/B/C)	None (Air Joint Only)	R	•	•	•	•	•	•	*3	*3	Valve • Coupler
3 Ports	(vibre to externa electrodes 2/2/2)	Electrode J	• JR • JR2		•	•	%	%	%	*3	**3	Taire coupie.
Equal to φ6×1 port		Electrode B	BR BR2		•	•	%	9	%	*3	*3	Cautions • Others
Equal to ϕ 2×2 port	P.64	Electrode C01/C02/C05	C R C R2		•	•	%	%	%	*3	*3	Robotic Hand Changer
	Air Joint (Able to extend electrodes J/B/C)	None (Air Joint Only)	01:1m/02:2m/05:5m		•	•	•	•	•	*3	*3	SWR Payload 3kg ~ 360kg
	(Able to exterior electiones 3/ b/C)	Electrode J	• JP / JP2		•	•	%	%	%	*3	*3	SWR0010 Payload
4 Ports (Equal to ϕ 2)		Electrode B	BP BP2		•	•	%	%	%	*3	*3	0.5kg ~ 1kg Manual Robotic
(2944:10 \$ 2)	P.65	Electrode C01/C02/C05	C□P		•	•	%	%	%	*3	**3	Hand Changer SXR Pneumatic
2 Ports	Air Joint	None (Air Joint Only)	Q							*3	*3	Location Clamp
(Equal to ϕ 4)	P.66	TTOTIC (All Joint Offly)								5		Compact Pneumatic

【 General Cautions for Selecting External Options 】

Difference between
onumber and is mounting positions of external options, because SWR0250 ~ SWR2300 have two mounting surfaces for external options. Refer to the following example of external option model number for further information.

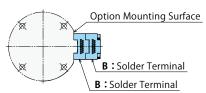
- *1. For the combination of external options, the symbols should be specified in alphabetical order. (Ex: 'JR2' and 'E', it is 'EJR2'.)
- *2. For the electrode options, check the total current capacity and contact resistance shown in the specifications of each option.
- *3. Please contact us for the options of SWR1200/SWR2300 marked with *3.
- *4. The option symbol 'WX' is only for master cylinder. The option symbol of the tool adapter is 'W' for both NPN/PNP.
- *5. The option symbol 'VX/VX5' is only for master cylinder. The option symbol of the tool adapter is 'V' for both NPN/PNP.

Option Mounting Surface and External Option Model No. Example

SWR0030 / SWR0070 / SWR0120 has Option Mounting Surface: 1 part

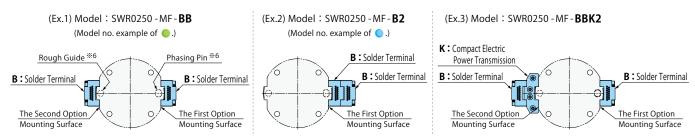
Example: Solder Terminal 30 Poles (2 sets of 15 poles)

(Ex.) Model: SWR0070 - MF - BB



SWR0250 / SWR0500 / SWR0750 / SWR1200 / SWR2300 has Option Mounting Surface: 2 parts

- (Ex. 1) When selecting 'BB' for SWR0250~SWR2300, electrode 'B' is mounted on each the first and second option mounting surface.
- (Ex. 2) When selecting 'B2' for SWR0250~SWR02300, electrode 'B' is extended to electrode 'B' on the first option mounting surface.
- (Ex. 3) When selecting 'BK2' and 'B', the symbols should be specified in alphabetical order as 'B BK2'. The arrangement is as follows: Electrode 'B' on the first option mounting surface, electrode 'BK2' ('B' extended to 'K') on the second option mounting surface.



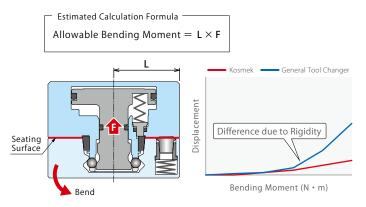
Specifications

	230 360 - 1.0 89.54 100.73 0.7 0.35 1.05
at 1MPa kg 6 12 20 45 90 140 200 Repeatability mm 0.003 Lift Stroke (Detaching Stroke) mm 0.8 0.8 1.0	1.0 89.54 100.73 0.7 0.35 1.05
Repeatability mm 0.003 Lift Stroke (Detaching Stroke) mm 0.8 0.8 0.8 1.0 1.0 1.0 1.0 Cylinder Capacity Lock cm3 0.64 1.50 2.38 6.08 14.38 22.98 38.44 Capacity Release cm3 0.72 1.72 2.69 6.68 15.39 25.45 42.76 Operating Air Pressure MPa Air Pressure Air Pressure Withstanding Pressure MPa 0.4 0.35 Withstanding Pressure MPa 1.5 1.5 Holding Force Refer to P.26 Refer to P.70 Refer to P.26	1.0 89.54 100.73 0.7 0.35 1.05
Lift Stroke (Detaching Stroke) mm 0.8 0.8 0.8 1.0 1.0 1.0 1.0 Cylinder Capacity Lock cm³ 0.64 1.50 2.38 6.08 14.38 22.98 38.44 Capacity Release cm³ 0.72 1.72 2.69 6.68 15.39 25.45 42.76 Operating Air Pressure MPa 1.0 1.0 Min. Pressure MPa 0.4 0.35 Withstanding Pressure MPa 1.5 1.5 Holding Force Refer to P.26 Refer to P.70 Refer to P.26 Refer to P.26	89.54 100.73 0.7 0.35 1.05
Cylinder Capacity Lock cm3 0.64 1.50 2.38 6.08 14.38 22.98 38.44 Capacity Release cm3 0.72 1.72 2.69 6.68 15.39 25.45 42.76 Operating Air Pressure Min. Pressure MPa 0.4 0.35 Withstanding Pressure MPa 1.5 1.5 Holding Force Refer to P.26 Refer to P.70 Refer to P.26 Refer to P.26	89.54 100.73 0.7 0.35 1.05
Capacity Release cm³ 0.72 1.72 2.69 6.68 15.39 25.45 42.76 Operating Air Pressure Max. Pressure MPa 1.0 1.0 0.35 With Pressure With Standing Pressure MPa 1.5 1.5 Holding Force Refer to P.26 Refer to P.70 Refer to P.26 Refer to P.26	0.7 0.35 1.05
Operating Air Pressure Max. Pressure MPa Mn. Pressure 1.0 1.0 Withstanding Pressure MPa	0.7 0.35 1.05
Operating Air Pressure Min. Pressure MPa 0.4 0.35 Withstanding Pressure MPa 1.5 1.5 Holding Force Refer to P.26 Refer to P.70 Refer to P.26 F	0.35 1.05
Min. Pressure MPa 0.4 0.35 Air Pressure Withstanding Pressure MPa 1.5 1.5 Holding Force Refer to P.26 Refer to P.70 Refer to P.26 F	1.05
Withstanding Pressure MPa 1.5 1.5 Holding Force Refer to P.26 Refer to P.70 Refer to P.26 F	
	D (, D34
Lifting Force (Detaching Force) Refer to P.26 Refer to P.70 Refer to P.26	Refer to P.26
	Refer to P.26
Bending (at 0.5MPa) N·m 5 14 27 74 194 380 725	1800
Allowable **1 Bending (at 1.0MPa) N·m (10) (25) (45) (135) (350) (700) (1400)	-
Static Moment Twisting N·m 15 12 23 45 100 175 300 700	1400
Max. Load **2 Bending (at 0.5MPa) N·m 10 28 54 148 388 760 1450	3600
Bending (at 1.0MPa) $N \cdot m$ (20) (50) (90) (270) (700) (1400) (2800)	-
Moment Twisting N·m 30 24 46 90 200 350 600 1400	2800
Operating Temperature $^{\circ}$ C $0 \sim 70$	
Usable Fluid Dry Air	
Weight **3 Master Cylinder g 70 85 180 250 500 1000 1650 3800	7100
Tool Adapter g 45 60 120 160 300 750 1100 2600	4800
Number of Thread Size × 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 M5×0.8×6 Ports	
Air Ports **4 Number of Ports Rc1/8×4 Ports Rc1/8×9 Ports Rc1/4×9 Ports F	Rc3/8×10 Ports
	63.6 (Equal to ϕ 9.0)
Minimum Passage Area 5 Joint Option	13.0 (Equal to <i>φ</i> 4.1)
Electrode Option Refer to P.37 ~ P.66	
Allowable Offset while Teaching Refer to P.78	

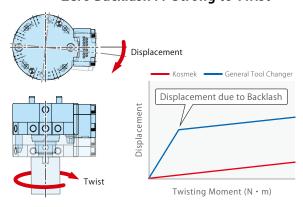
Notes:

- %1. Please consider both the payload and allowable static moment when selecting the product.
- \divideontimes 2. The product must be used within Allowable Static Moment (\divideontimes 1). Using within Max. Load Moment will not fill the specifications.
- **%3**. Weight of the body without external options.
- *4. Refer to P.20 for air port use.
- \$\infty\$5. We offer SWRY0010 with 6 air ports (see P.69) for those who require additional number of air ports for SWR0030.

Point The whole surface is a seating surface High Rigidity Possible!!



Point Kosmek Exclusive Mechanism Zero Backlash!! Strong to Twist



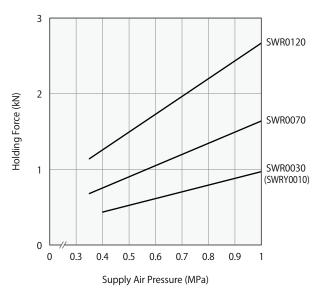
* Refer to P.17 for further explanation.

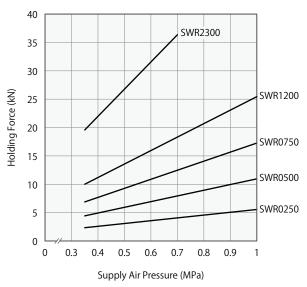
Holding Force Curve

Holding Force			SWR0030	SWRY0010	SWR0070	SWR0120	SWR0250	SWR0500	SWR0750	SWR1200	SWR2300
	At 0MPa **6	kN	0.	12	0.15	0.32	0.57	0.95	1.29	1.97	2.78
	At 0.35MPa	kN		_	0.68	1.14	2.31	4.44	6.87	9.84	19.56
Holding Force	At 0.4MPa	kN	0.	45	0.75	1.26	2.56	4.94	7.67	11.00	21.96
	At 0.5MPa	KN	0.	50	0.90	1.50	3.05	5.94	9.26	13.33	27.72
	At 1MPa	kN	0.	90	1.64	2.67	5.53	10.92	17.24	24.95	_

Note:

%6. It indicates holding force when air pressure is at OMPa after connecting and may not fill the specification.



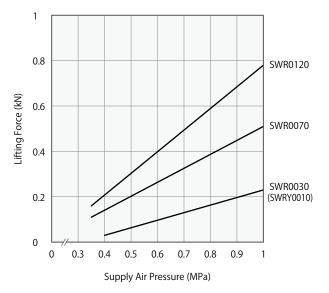


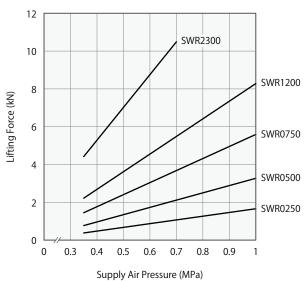
Note:

1. Tables and graphs shown are the relationship between supply air pressure (MPa) and holding force (kN).

Lifting Force (Detaching Force)

Model No.			SWR0030	SWRY0010	SWR0070	SWR0120	SWR0250	SWR0500	SWR0750	SWR1200	SWR2300
lifting Fausa	At 0.35MPa	kN	(0.03:a	t 0.4MPa)	0.11	0.16	0.38	0.77	1.45	2.22	4.53
Lifting Force	At 0.5MPa	kN	0.	08	0.20	0.30	0.68	1.34	2.41	3.62	7.18
(Detaching Force)	At 1MPa	kN	0.	23	0.51	0.78	1.66	3.27	5.59	8.28	_





Note:

1. Tables and graphs shown are the relationship between supply air pressure (MPa) and lifting force (kN).



Hand • Clamp

Support

Valve • Coupler Cautions · Others

Robotic Hand Changer

SWR0010

Payload

Manual Robotic Hand Changer

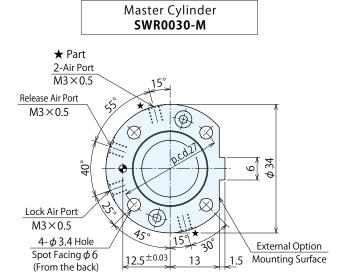
SXR Pneumatic Location Clamp

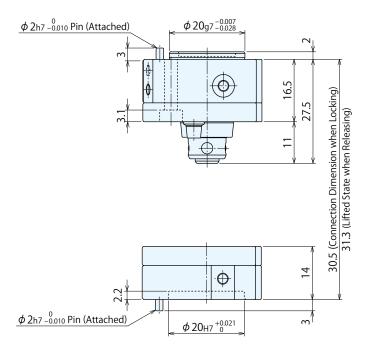
SWT Compact Pneumatic Location Clamp

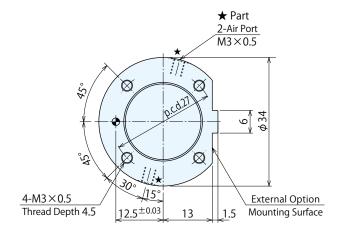
SWQ High-Power Pneumation

External Dimensions (SWR0030)

** This drawing shows the released state of SWR0030. Refer to P.71 for External Dimensions of SWRY0010.







External Dimensions (SWR0070)

* This drawing shows the released state of SWR0070.

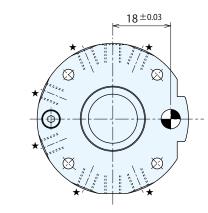
Master Cylinder (Standard)

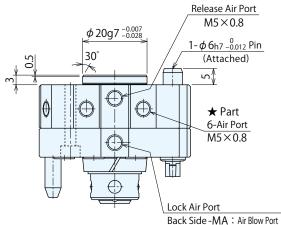
SWR0070-M□ ★ Part 6-Air Port 22.5° 22.5° M5×0.8 \boxtimes p.c.d. (ø28 $4 - \phi 3.4$ External Option Spot Facing ϕ 6 Mounting Surface (From the back) 20 $2-\phi 4_{h7}^{0}_{-0.012}$ Pin (Attached) Release Air Port $M5 \times 0.8$ φ47 2 22.5 38.5 (Connection Dimension when Locking) 39.3 (Lifted State when Releasing) 36.9 Rough Guide Lock Air Port Back Side -MA: Air Blow Port -MF: Seat Check Port $M5 \times 0.8$ 16 $\phi 47$

Master Cylinder (with Check Valve) SWR0070-M□-S

* The air port positions and mounting dimensions are different from those of the standard option.

Only the different dimensions are described below.





Locating + Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions · Others

Robotic Hand Changer

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic

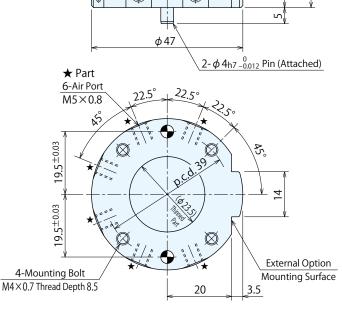
Location Clamp SWT

Compact Pneumatic Location Clamp

SWQ

High-Power Pneumati Pallet Clamp

-MF : Seat Check Port M5×0.8



External Dimensions (SWR0120)

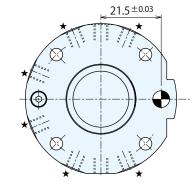
* This drawing shows the released state of SWR0120.

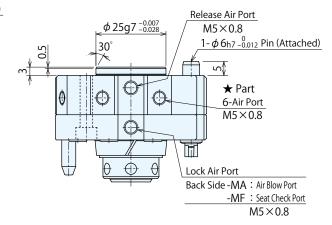
Master Cylinder (Standard) **SWR0120-M**□ ★ Part 6-Air Port M5×0.8 (ø35) External Option Mounting Surface $4 - \phi 4.5$ Spot Facing ϕ 7.5 23.5 3.5 (From the back) $2 - \phi 4_{h7} - _{-0.012}^{0}$ Pin (Attached) Release Air Port M5×0.8 ϕ 54 23 39.5 (Connection Dimension when Locking) 38 40.3 (Lifted State when Releasing) **4**55 Ή Rough Guide Lock Air Port Back Side -MA: Air Blow Port -MF: Seat Check Port M5×0.8 16.5 \bigoplus igotimes5 ϕ 54 $2-\phi 4h7_{-0.012}^{0}$ Pin (Attached) ★ Part 6-Air Port $M5 \times 0.8$ $22.5^{\pm0.03}$ E, $22.5^{\pm0.03}$ External Option Mounting Surface 4-Mounting Bolt 23.5 3.5 $M4 \times 0.7$ Depth 9

Master Cylinder (with Check Valve) **SWR0120-M**□-**S**

** The air port positions and mounting dimensions are different from those of the standard option.

Only the different dimensions are described below.





Tool Adapter SWR0120-T

External Dimensions (SWR0250)

* This drawing shows the released state of SWR0250.

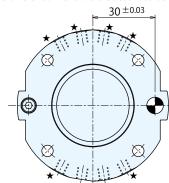
Master Cylinder (Standard) SWR0250-M

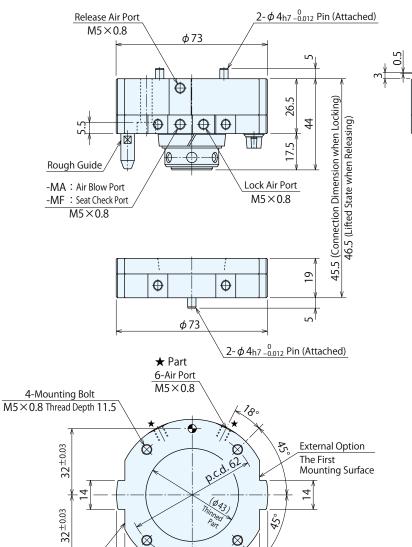
★ Part 6-Air Port **External Option** $\overline{\text{M5}\times\text{0.8}}$ The First Mounting Surface $4 - \phi 5.5$ Spot Facing ϕ 9 (From the back) p.c.d.62 (Ø50) • **External Option** The Second Mounting Surface 32.5 32.5

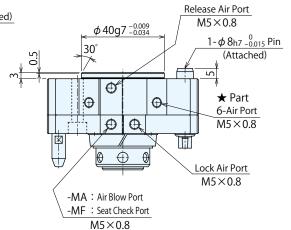
Master Cylinder (with Check Valve) SWR0250-M□-S

* The air port positions and mounting dimensions are different from those of the standard option.

Only the different dimensions are described below.







Locating + Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions · Others

Robotic Hand Changer

SWR Payload 3kg ~ 360

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Change SXR

Pneumatic Location Clamp

SWT

Compact Pneumatic Location Clamp SWQ

High-Power Pneumation

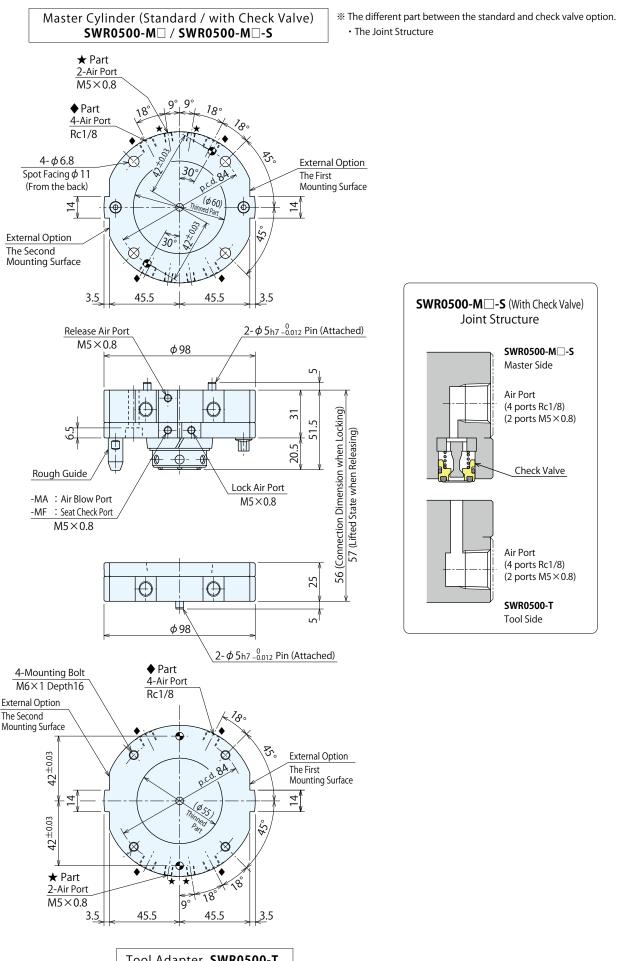
Ø

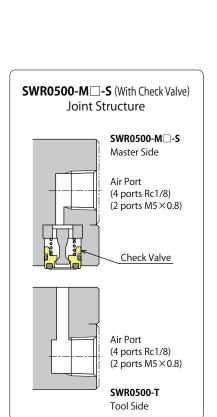
32.5

External Option The Second Mounting Surface

External Dimensions (SWR0500)

* This drawing shows the released state of SWR0500.





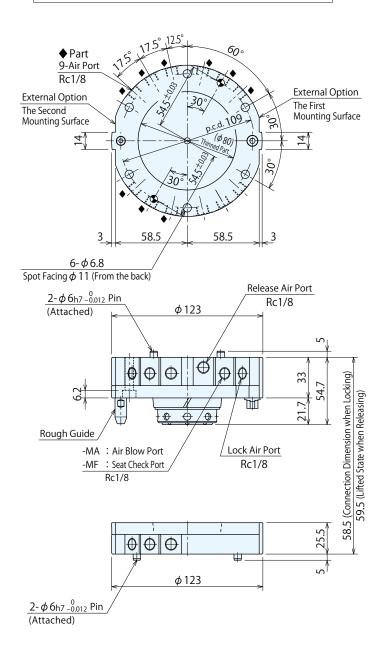
KOSMEK Harmony in Innovation

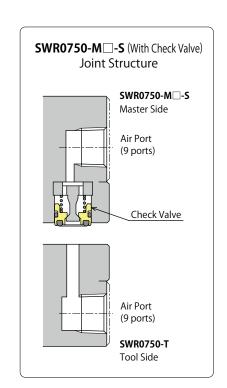
External Dimensions (SWR0750)

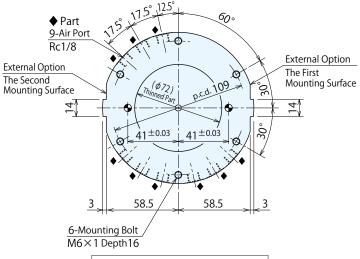
* This drawing shows the released state of SWR0750.

Master Cylinder (Standard / with Check Valve) SWR0750-M□ / SWR0750-M□-S

- ** The different part between the standard and check valve option.
 - The Joint Structure







Tool Adapter SWR0750-T

Locating
Clamp
Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Robotic Hand Changer

> SWR Payload 3kg ~ 360k

Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic Location Clamp

SWT

Compact Pneumatic Location Clamp

SWQ

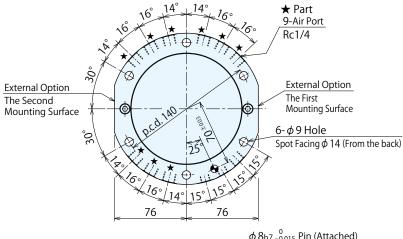
High-Power Pneumatic Pallet Clamp WVS

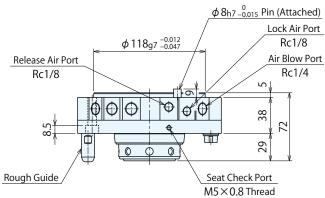
External Dimensions (SWR1200)

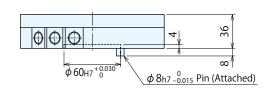
* This drawing shows the released state of SWR1200.

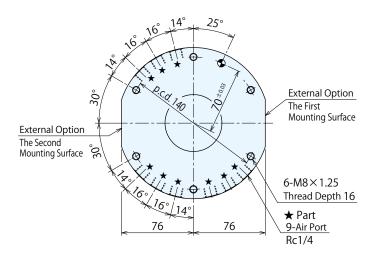
Master Cylinder (Standard / with Check Valve) SWR1200-MAF-□ / SWR1200-MAF-□-S

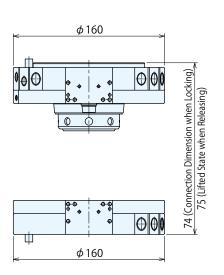
- * The different part between the standard and check valve option.
 - The Joint Structure

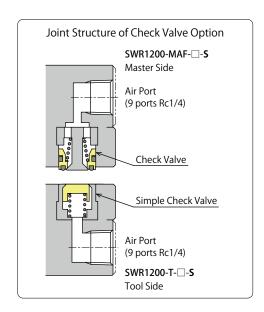












Tool Adapter (Standard / with Check Valve) $SWR1200-T-\Box / SWR1200-T-\Box-S$

- * The different part between the standard and check valve option.
- The Joint Structure (Make sure to select the same option as the master cylinder.)

External

Options

Locating

+ Clamp

Locating

Support

Hand • Clamp

Valve • Coupler

Cautions · Others

Robotic Hand Changer

SWR Payload 3kg ~ 360

Payload

Manual Robotic

SWT

Compact Pneumatic

SWQ

High-Power Pneumati Pallet Clamp

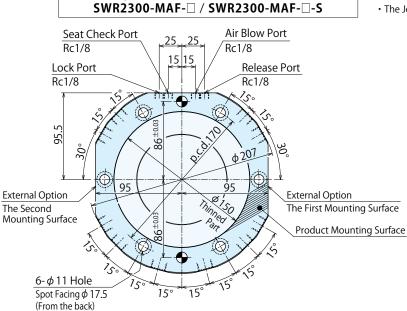
Location Clamp

Hand Change SXR Pneumatic Location Clamp

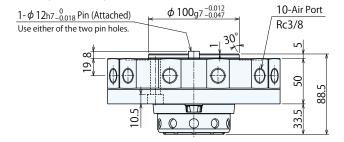
0.5kg ~ 1kg

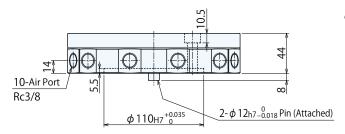
External Dimensions (SWR2300)

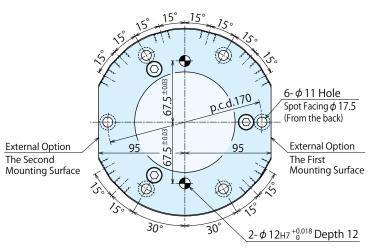
* This drawing shows the released state of SWR2300.



Master Cylinder (Standard / with Check Valve)

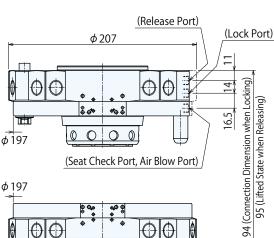




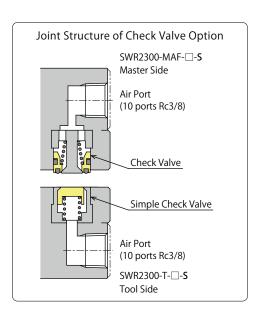


* The different part between the standard and check valve option.

• The Joint Structure



 $\phi 207$



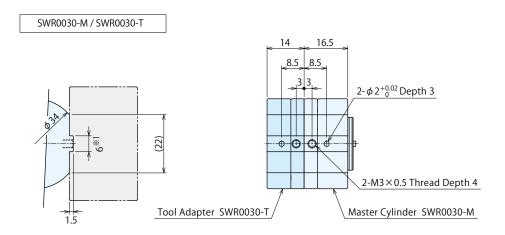
* The different part between the standard and check valve option.

· The Joint Structure (Make sure to select the same option as the master cylinder.)

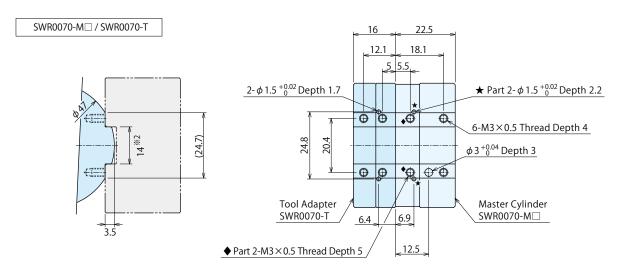
Tool Adapter (Standard / with Check Valve) **SWR2300-T-** / **SWR2300-T-** -**S**

Option Mounting Dimensions (SWR0030 ~ SWR0120)

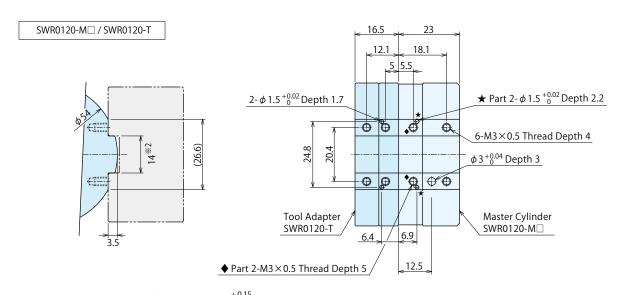
Electrodes and fixtures provided by other than Kosmek, can be mounted with option mounting bolts. This drawing shows the connected state of the master side and tool side.



%1. Recommended width of option side is 6 $^{+0.10}_{+0.05}$.



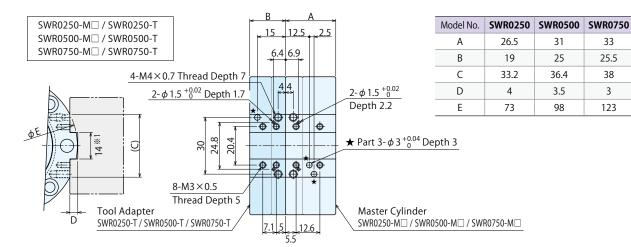
2. Recommended width of option side is 14 $^{+0.15}_{+0.05}$.



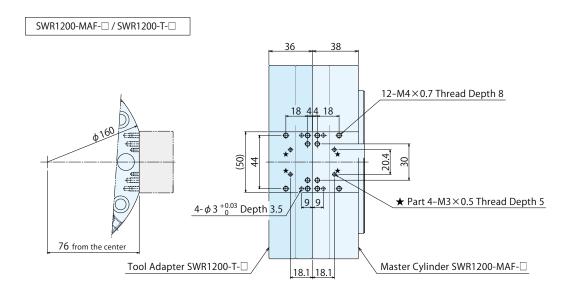
 \divideontimes 2. Recommended width of option side is 14 $^{+0.15}_{+0.05}$.

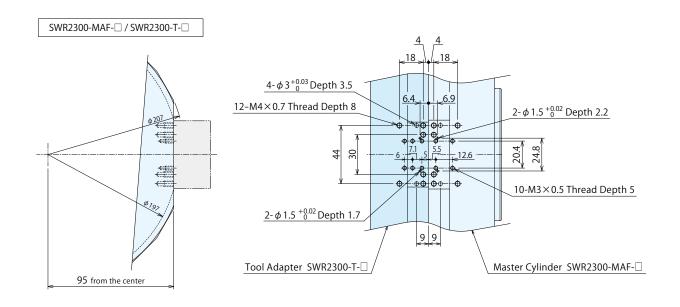
Option Mounting Dimensions (SWR0250 ~ SWR2300)

Electrodes and fixtures provided by other than Kosmek, can be mounted with option mounting bolts. This drawing shows the connected state of the master side and tool side.



 \times 1. Recommended width of option side is 14 $^{+0.15}_{+0.05}$.





Locating + Clamp

Locating

Hand • Clamp

Support

33

25.5

38

3

123

Valve • Coupler

Cautions · Others

Robotic Hand Changer

SWR Payload 3kg ~ 360

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Change SXR

Pneumatic Location Clamp

SWT

Compact Pneumatic Location Clamp

SWQ

High-Power Pneumati Pallet Clamp

External Option: Resin Connector

External Option Symbol: J



Tool Adapter
model SWR _____0-T___-J



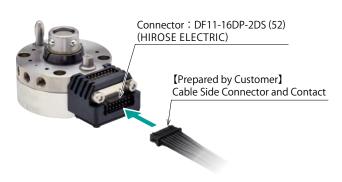


Specifications

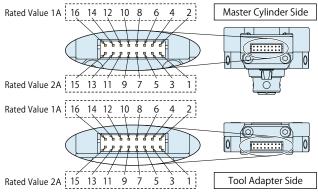
Rated Value (per contact)	_	DC 24V 2A:Pin 1,3,5,7,9,11,13,15 1A:Pin 2,4,6,8,10,12,14,16				
Resin Connector		DF11-16DP-2DS(52) (HIROSE ELECTRIC)				
Contact Resis	tance (Initial Value)	30mΩ or less				
Total Currer	nt Capacity	10A				
Number of Poles (per electrode)		16				
Connector	Pin Coating	Gold Coating				
Woight %1	Master Cylinder Side	Electrode 13g Bracket for SWR0030-M:10g Bracket for SWR1200-M:18g				
Weight ^{**1}	Tool Adapter Side	Electrode 11g Bracket for SWR0030-T:8g Bracket for SWR1200-T:16g				
Cable with Applicab	le Connector (Sold Separately)	SWZ0J0-CL□ (Refer to P.39)				

%1. Weight per electrode. Bracket weight shows the weight of SWRZ0S0- \square , SWRZ0B0-120 \square B.

Connecting Cable



Pin Number



The cable side (connecter, contact, cable) is not included.

 $Please\ prepare\ the\ cable\ with\ applicable\ connector\ (SWZ0J0-CL\square)\ on\ P.39, or\ design\ them\ yourself\ referring\ to\ the\ following\ list.$

Cable Side	Cable Side	Recommended	Protecti	Maker	
Connector Model No.	Contact Model No.	Wire Size	Manual Crimping Tool	Contact Removal Tool	- Trianci
DE11 16D6 26	DF11-22SCA	AWG22	DF11-TA22HC	DE C DO(D)	LUDOCE EL ECTRIC
DF11-16DS-2C	DF11-2428SCA	AWG24 ~ 28	DF11-TA2428HC	DF-C-PO(B)	HIROSE ELECTRIC

Notes: 1. Refer to HIROSE ELECTRIC catalogs for the detailed specifications and the rated current based on wire size.

2. The model number of connector required for the master cylinder and the tool adapter is the same.

External Dimensions (SWR0070/SWR0120/SWR0250/SWR0500/SWR0750/SWR2300)

SWR0500-M□**-J**

SWR0/50-M□ -J	SWR2300-MAF -J		
(a) (1) (a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	22	1) S	
		19.8	4

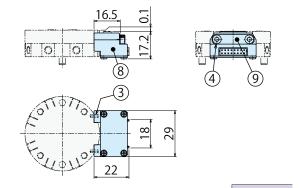
Master Cylinder Side

SWR0250-M□**-J**

SWR0120-M□**-J**

			Quantity
Model No.	No.	Name	J:16 poles
	1	Electrode (Master Side)	1
CIMPZO IO M	2	Spacer	1
SWRZ0J0-M	3	Parallel Pin ϕ 1.5×4 B Type (SUS)	2
	4	Hexagon Socket Bolt M3×0.5×20 (SUS)	2

Tool Adapter Side										
SWR0070-T -J	SWR0120-T -J	SWR0250-T -J	SWR0500-T -J							
SWR0750-T -J SWR2300-T -J										



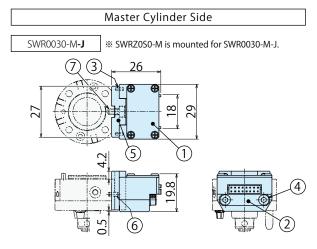
			Quantity
Model No.	No.	Name	J∶16 poles
	8	Electrode (Tool Side)	1
SWRZ0J0-T	9	Spacer	1
SWKZUJU-1	3	Parallel Pin ϕ 1.5 × 4 B Type (SUS)	2
	4	Hexagon Socket Bolt M3×0.5×20 (SUS)	2

Notes:

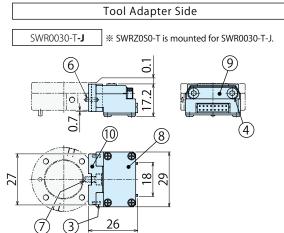
SWR0070-M□**-J**

- 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0J0- : one set is one electrode.)
- 2. Prepare additional mounting bolts by customer when extending another electrode. See $P.35 \sim P.36$ for mounting thread depth.

External Dimensions (SWR0030)



				Quantity
Model No.	No.	Name		J∶16 poles
	1	Electrode (Mast	er Side)	1
CMDZO10 M	2	Spacer		1
SWRZ0J0-M	3	Parallel Pin	ϕ 1.5 × 4 B Type (SUS)	2
	4	Hexagon Socket Bolt	M3×0.5×20 (SUS)	2
	(5)	Bracket (Master S	iide)	1
SWRZ0S0-M	6	Parallel Pin	ϕ 2×6 B Type (SUS)	1
	7	Hexagon Socket Bolt	M3×0.5×6 (SUS)	1



			Quantity
Model No.	No.	Name	J∶16 poles
	8	Electrode (Tool Side)	1
SWRZ0J0-T	9	Spacer	1
SWKZUJU-1	3	Parallel Pin φ1.5×4 B Type (SUS)	2
	4	Hexagon Socket Bolt M3×0.5×20 (SUS)	2
	10	Bracket (Tool Side)	1
SWRZ0S0-T	6	Parallel Pin ϕ 2×6 B Type (SUS)	1
	7	Hexagon Socket Bolt M3×0.5×6 (SUS)	1

Note:

1. Inform us with the model number shown above if you require an electrode only. (SWRZ0J0-: one set is one electrode.)

Locating Hand • Clamp Support Valve • Coupler Cautions · Others Robotic Hand Changer Manual Robotic Hand Changer Pneumatic Location Clamp Compact Pneumatic Location Clamp High-Power Pneumati Pallet Clamp

Locating

Payload

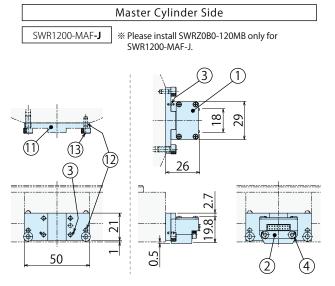
SXR

SWT

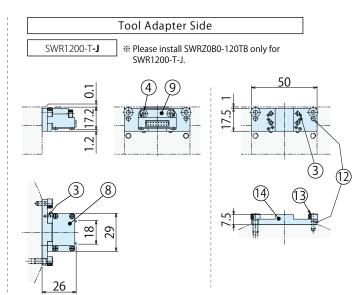
SWQ

+ Clamp

• External Dimensions (SWR1200)



			Quantity
Model No.	No.	Name	J∶16 poles
	1	Electrode (Master Side)	1
SWRZ0J0-M	2	Spacer	1
	3	Parallel Pin ϕ 1.5×4 B Type (SUS)	2
	4	Hexagon Socket Bolt M3×0.5×20 (SUS)	2
	11)	Bracket (Master Side)	1
SWRZ0B0-120MB	12	Parallel Pin ϕ 3×6 B Type (SUS)	1
	13)	Hexagon Socket Bolt $M4 \times 0.7 \times 10$ (SUS)	1



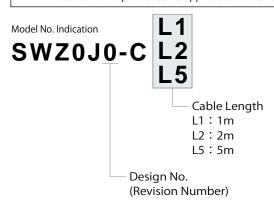
				Quantity
1	Model No.	No.	Name	J∶16 poles
1		8	Electrode (Tool Side)	1
1	CM/D7010 T	9	Spacer	1
1	SWRZ0J0-T	3	Parallel Pin ϕ 1.5×4 B Type (SUS)	2
1		4	Hexagon Socket Bolt M3×0.5×20 (SUS)	2
1		14)	Bracket (Tool Side)	1
1	SWRZ0B0-120TB	12	Parallel Pin ϕ 3×6 B Type (SUS)	2
i		13)	Hexagon Socket Bolt $M4 \times 0.7 \times 10$ (SUS)	2

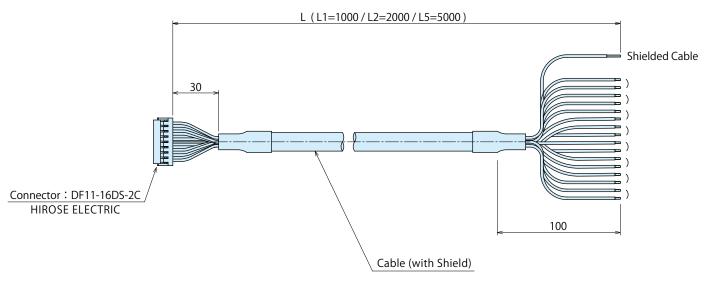
Notes:

- 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0J0- : one set is one electrode.)
- 2. Prepare additional mounting bolts by customer when extending another electrode. See P.36 for mounting thread depth.

External Option: Cable with Connector for Resin Connector

This cable is an optional cable applicable to the Resin Connector Electrode (SWR External Option Symbol: J).





[Important] Announcement of Cable Specificaton Change

The robot cable has been changed due to its performance and flexibility improvement. Please make sure to check the specifications of the current cable shown on the next page.



Scheduled to change in January, 2020. (Replacement period is subject to change due to the stock condition.)

Pin Numbers and Wire Colors

[Important] Wire colors of the current cable and the previous cable are different.

Current Cable

HIFLON SD-SB/20276 Black AWG24X8P (with Shield)

Weight: 76g/m (Weight per meter)

Conductor Cross-Sectional Area: 0.2mm² (AWG24)

Number of Cores: 16



Rated Current				2	2A			1A								
Pin Number	1	3	5	7	9	11	13	15	2	4	6	8	10	12	14	16
Wire Color	Black	White	Red	Green	Yellow	Brown	Blue	Orange	Gray	Violet	Light Blue	Pink	White/ Black	White/ Red	White/ Blue	Yellow/ Black
	Twist	ed Pair	Twist	ed Pair	Twist	ed Pair	Twist	ted Pair	Twist	ed Pair	Twiste	ed Pair	Twist	ed Pair	Twist	ed Pair

Previous Cable

ORP - 0.2SQX8P(SB) (2464) (with Shield)

Oki Electric Cable Weight: 101g/m (Weight per meter)

Conductor Cross-Sectional Area: 0.2mm² (AWG25)

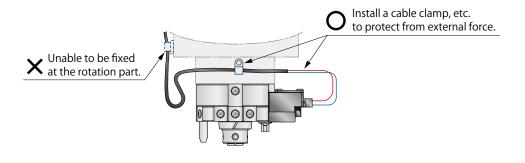
Number of Cores: 16

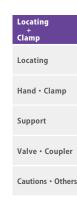


Rated Current		2A									1A						
Pin Number	1	3	5	7	9	11	13	15	2	4	6	8	10	12	14	16	
Wire Color	Blue	White	Yellow	Brown	Green	Black	Red	Gray	Violet	Orange	Blue	Brown	Yellow	Black	Green	Gray	
	Twist	ed Pair	Twist	ed Pair	Twiste	ed Pair	Twist	ed Pair	Twist	ed Pair	Twist	ed Pair	Twist	ed Pair	Twiste	ed Pair	

Note: Wire/Cable Procedure and Wiring

Make sure to fix the wire and cable so that they are not pulled while a robot is moving or turning around. External force should not be applied on the connector part since it leads to breaking of wire, detaching of connector and contact failure.







Payload Manual Robotic

Hand Changer SXR Pneumatic

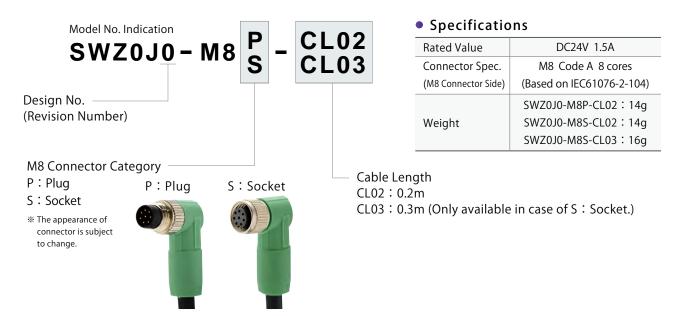
Location Clamp SWT Compact Pneumatic

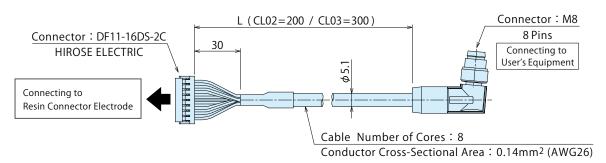
Location Clamp SWQ

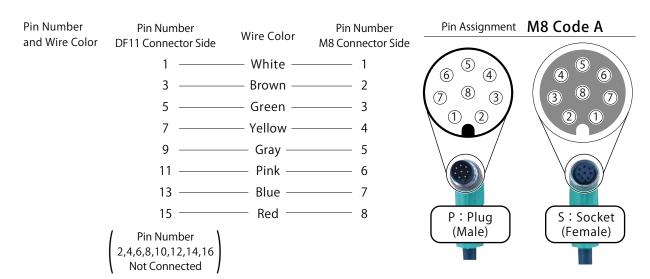
High-Power Pneumation

External Option: Cable with M8 Connector for Resin Connector

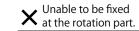
This cable is an optional cable applicable to the Resin Connector Electrode (SWR External Option Symbol: J).

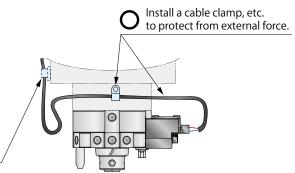






• Make sure to fix the wire and cable so that they are not pulled while a robot is moving or turning around. External force should not be applied on the connector part since it leads to breaking of wire, detaching of connector and contact failure.





Note

Features Application Examples Action Description Model No. Indication Specifications Performance Curve Port Options Joint Specifications Exclusive Cases External External Cautions Options Dimensions



KOSMEK
Harmony in Innovation

Locating Hand • Clamp Support

Locating

+ Clamp

Valve • Coupler

Cautions • Others

Robotic Hand Changer

SWR Payload 3kg ~ 360kg SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer

SXR

Pneumatic Location Clamp

SWT

Compact Pneumatic Location Clamp

SWQ

High-Power Pneumatic Pallet Clamp

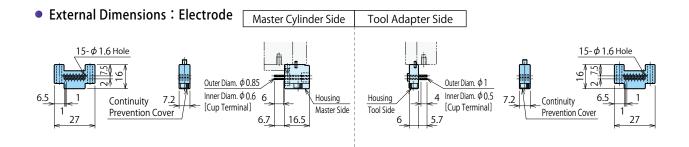
C External Option: Solder Terminal



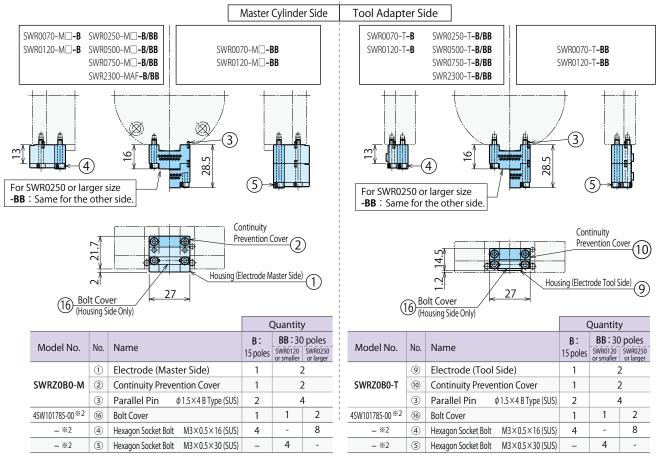
Specifications

Rated Value (per contact)	2	DC 24V 3A			
Contact Resist	ance (Initial Value)	100mΩ or less			
Total Currer	nt Capacity	10A			
Number of Po	les (per electrode)	15			
\\\a:=b+ \%1	Master Cylinder Side	Electrode 15g Bracket for SWR0030-M:10g Bracket for SWR1200-M:18g			
Weight **1	Tool Adapter Side	Electrode 11g Bracket for SWR0030-T:8g Bracket for SWR1200-T:16g			

※1. Weight per electrode. Bracket weight shows the weight of SWRZ0S0-□, SWRZ0B0-120□B.

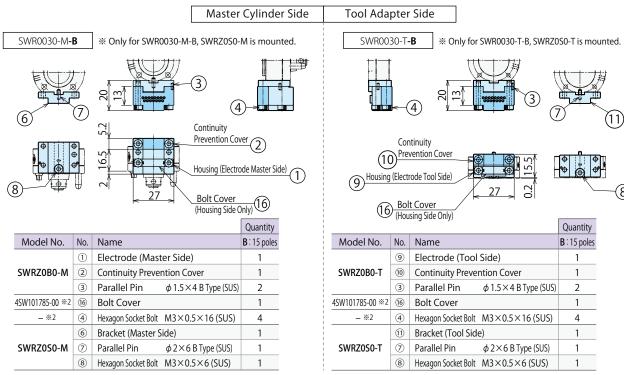


External Dimensions (SWR0070/SWR0120/SWR0250/SWR0500/SWR0750/SWR2300)



Note: 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0B0-□: one set is one electrode.) For SWRZ0B0-M/SWRZ0B0-T, the bolt and bolt cover marked with ※2 are not included.

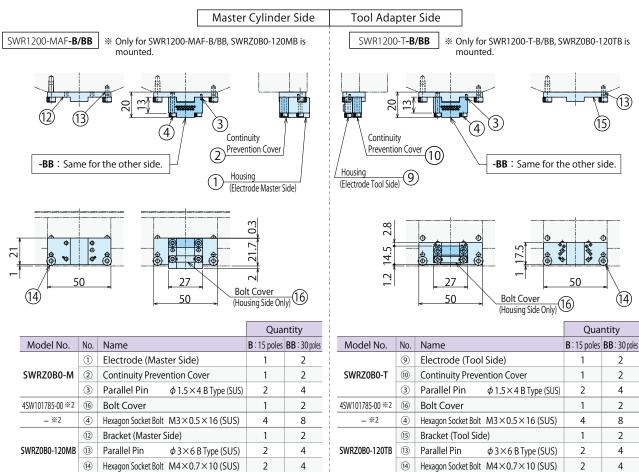
• External Dimensions (SWR0030)



Notes: 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0B0-□: one set is one electrode.) For SWRZ0B0-M/SWRZ0S0-M/SWRZ0B0-T/SWRZ0S0-T, the bolt and bolt cover marked with **2 are not included.

2. For SWRZ0B0-M/SWRZ0B0-T, the bolt and bolt cover marked with %2 are not included.

• External Dimensions (SWR1200)



Note: 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0B0- : one set is one electrode.)

For SWRZ0B0-M / SWRZ0B0-120MB / SWRZ0B0-T / SWRZ0B0-120TB, the bolt and bolt cover marked with **2 are not included.

Locating

Clamp

Locating

Support

Hand • Clamp

Valve • Coupler

Cautions • Others

Hand Changer SWR Payload 3kg ~ 360

Manual Robotic

SXR

Location Clamp

SWT

Compact Pneumatic

SWQ

High-Power Pneumati Pallet Clamp

Location Clamp

Hand Change

Pneumatic

SWR0010 Payload

0.5kg ~ 1kg

External Option: Solder Terminal with Cable

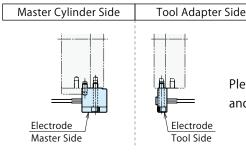
External Option Symbol: C01/C02/C05



Specifications

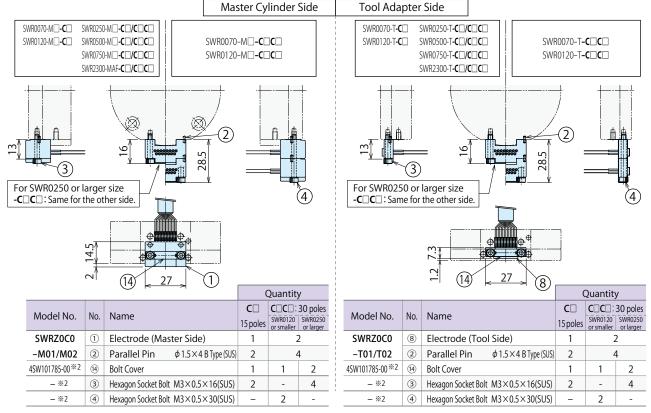
Rated Value (per contact)	2	DC 24V 3A			
Contact Resis	tance (Initial Value)	100m Ω or less			
Total Currer	nt Capacity	10A			
Number of Pole	es (per electrode)	15			
Lead Wire S	Size	Refer to P.45 and P.46			
	-C01	1m			
Lead Wire Length	-C02	2m			
Length	-C05	5m			
Weight **1	Master Cylinder Side	Electrode -C01:95g / -C02:180g / -C05:435g Bracket for SWR0030-M:10g Bracket for SWR1200-M:18g			
weight	Tool Adapter Side	Electrode -C01:85g/-C02:170g/ -C05:425g Bracket for SWR0030-T:8g Bracket for SWR1200-T:16g			

※1. Weight per electrode. Bracket weight shows the weight of SWRZ0S0-□, SWRZ0B0-120□B.



Please refer to P.45 and P.46 for the pin numbers, the wire colors and the cable specifications.

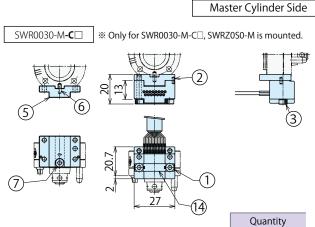
External Dimensions (SWR0070/SWR0120/SWR0250/SWR0500/SWR0750/SWR2300)



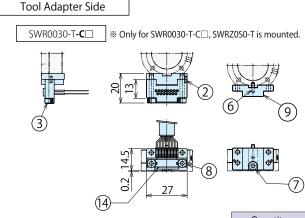
- Notes: 1. Inform us with the model number shown above if you require an electrode only. (SWRZOCO-_: one set is one electrode.)

 For SWRZOCO-M_/ SWRZOSO-M, the bolt and bolt cover marked with \%2 are not included.
 - 2. The connected part of the solder terminal and lead wire is isolated with a thermal contraction tube.
 - 3. For SWRZ0C0-\(\subseteq 01/02/05 the lead wire length is different from its shown in the specifications. \((SWRZ0C0-\(\subseteq 01 : Lead Wire Length 1m, SWRZ0C0-\(\subseteq 02 : Lead Wire Length 2m, SWRZ0C0-\(\subseteq 05 : Lead Wire Length 5m) \)

External Dimensions (SWR0030)



			Quantity
Model No.	No.	Name	C □:15 poles
SWRZ0C0	1	Electrode (Master Side)	1
-M01/M02	2	Parallel Pin ϕ 1.5×4 B Type (SUS)	2
4SW101785-00 * 2	14)	Bolt Cover	1
- *2	3	Hexagon Socket Bolt M3×0.5×16 (SUS)	2
	(5)	Bracket (Master Side)	1
SWRZ0S0-M	6	Parallel Pin $\phi 2 \times 6$ B Type (SUS)	1
	7	Hexagon Socket Bolt M3×0.5×6 (SUS)	1



			Quantity
Model No.	No.	Name	C □:15 poles
SWRZ0C0	8	Electrode (Tool Side)	1
-T01/T02	2	Parallel Pin ϕ 1.5 × 4 B Type (SUS)	2
4SW101785-00 ** 2	14)	Bolt Cover	1
- *2	3	Hexagon Socket Bolt M3×0.5×16 (SUS)	2
	9	Bracket (Tool Side)	1
SWRZ0S0-T	6	Parallel Pin ϕ 2×6 B Type (SUS)	1
	7	Hexagon Socket Bolt $M3 \times 0.5 \times 6$ (SUS)	1

- Notes: 1. Inform us with the model number shown above if you require an electrode only. (SWRZOCO- : one set is one electrode.) For SWRZ0C0-M \square / SWRZ0S0-M / SWRZ0C0-T \square / SWRZ0S0-T, the bolt and bolt cover marked with %2 are not included.
 - 2. The connected part of the solder terminal and lead wire is isolated with a thermal contraction tube.
 - 3. For SWRZ0C0-□01/02/05 the lead wire length is different from its shown in the specifications. (SWRZ0C0-□01: Lead Wire Length 1m, SWRZ0C0-□02: Lead Wire Length 2m, SWRZ0C0-□05: Lead Wire Length 5m)

High-Power Pneuma Pallet Clamp

Location Clamp

SWQ

Locating

Clamp

Locating

Support

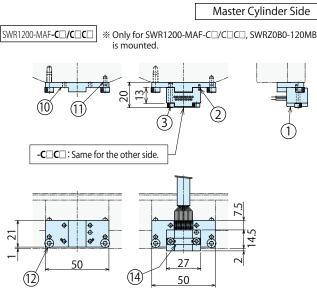
Hand • Clamp

Valve • Coupler

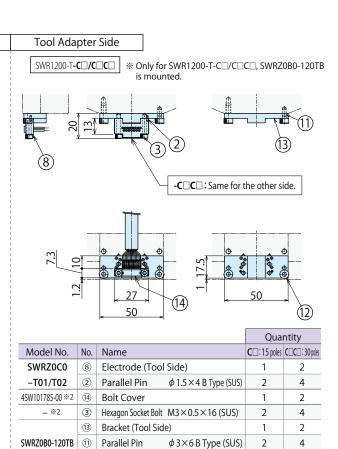
Cautions • Others

Hand Changer SWR Payload 3kg ~ 360 SWR0010 Payload 0.5kg ~ 1kg Manual Robotic Hand Change SXR Pneumatic Location Clamp SWT Compact Pneumatio

External Dimensions (SWR1200)



			Qua	ntity
Model No.	No.	Name	C □:15 poles	C □ C □:30 poles
SWRZ0C0	1	Electrode (Master Side)	1	2
-M01/M02	2	Parallel Pin ϕ 1.5 × 4 B Type (SUS)	1	4
4SW101785-00 ※2	14)	Bolt Cover	1	2
- *2	3	Hexagon Socket Bolt $M3 \times 0.5 \times 16$ (SUS)	2	4
	10	Bracket (Master Side)	1	2
SWRZ0B0-120MB	11)	Parallel Pin ϕ 3×6 B Type (SUS)	2	4
	12	Hexagon Socket Bolt M4×0.7×10 (SUS)	2	4



Hexagon Socket Bolt $M4 \times 0.7 \times 10$ (SUS)

Notes : 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0C0- \square : one set is one electrode.) For SWRZ0C0-M / SWRZ0B0-120MB / SWRZ0C0-T / SWRZ0B0-120TB, the bolt and bolt cover marked with *2 are not included.

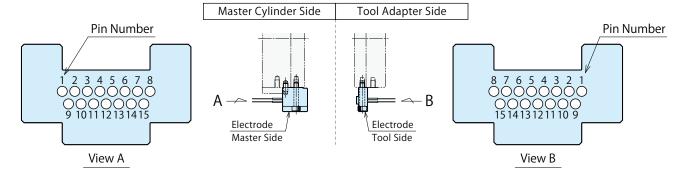
12)

- 2. The connected part of the solder terminal and lead wire is isolated with a thermal contraction tube.
- 3. For SWRZ0C0-□01/02/05 the lead wire length is different from its shown in the specifications. (SWRZ0C0-□01: Lead Wire Length 1m, SWRZ0C0-□02: Lead Wire Length 2m, SWRZ0C0-□05: Lead Wire Length 5m)

External Option : Solder Terminal with Cable (Continued)

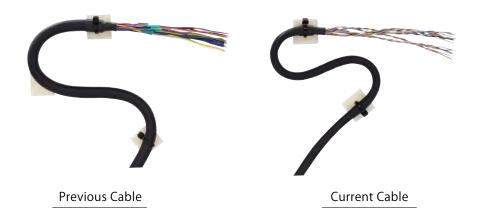


• Pin Numbers



【Important】Announcement of Cable Specification Change

The robot cable has been changed due to its performance and flexibility improvement. Please make sure to check the specifications of the current cable shown on the next page.



Scheduled to change in April, 2020. (Replacement period is subject to change due to the stock condition.)

Pin Numbers and Wire Colors

[Important] Wire colors of the current cable and the previous cable are different.

Current Cable

HIFLON SD-SB/20276 Black AWG24X8P (with Shield)

Weight: 76g/m (Weight per meter)

Conductor Cross-Sectional Area: 0.2mm² (AWG24)

Number of Cores: 16



Pin Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Not Used
Wire Color	Black	White	Red	Green	Yellow	Brown	Blue	Orange	Gray	Violet	Light Blue	Pink	White/ Black	White/ Red	White/ Blue	Yellow/ Black
							L									
	Twisted Pair		Twist	ed Pair	Twiste	ed Pair	Twist	ed Pair	Twiste	ed Pair	Twiste	ed Pair	Twist	ed Pair	Twist	ed Pair

Previous Cable

ORP - 0.2SQX8P(SB) (2464) (with Shield)

Oki Electric Cable Weight: 101g/m (Weight per meter)

Conductor Cross-Sectional Area: 0.2mm² (AWG25)

Number of Cores: 16



Pin Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Not Used	
Wire Color	Blue	White	Yellow	Brown	Green	Black	Red	Gray	Violet	Orange	Blue	Brown	Yellow	Black	Green	Gray	
	L	ed Pair	L	ed Pair	L	ed Pair	L	ed Pair	L	ed Pair	L	ed Pair	L	ed Pair	L	ed Pair	

Locating + Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Robotic Hand Changer

SWR Payload 3kg ~ 360k

SWR0010 Payload

Manual Robotic Hand Changer

SXR

Pneumatic Location Clamp SWT

Compact Pneumatic Location Clamp

SWQ High-Power Pneumation

External Option: Waterproof Electrode (Simple Waterproof Option)

External Option Symbol: U01/U02/U05







U01

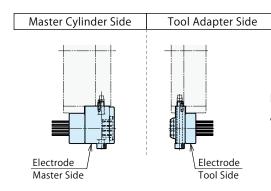
U02

U05

Specifications

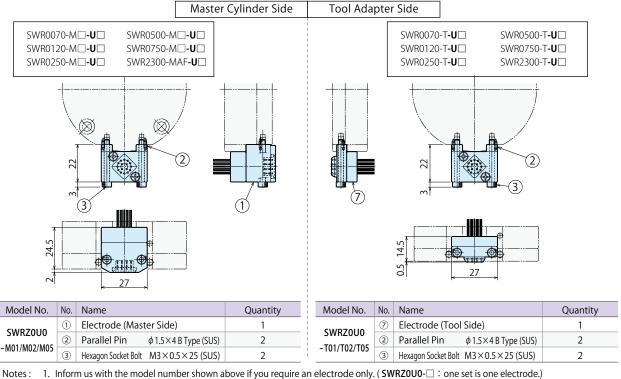
Rated Value (per contact)	2	DC 24V 3A		
Contact Resis	tance (Initial Value)	100m $Ω$ or less		
Total Currer	nt Capacity	10A		
Number of Pole	es (per electrode)	16		
Lead Wire S	iize	Refer to P.49 and P.50		
	-U01	1m		
Lead Wire Length	-U02	2m		
Length	-U05	5m		
	Master Cylinder Side	Electrode -U01:105g/-U02:190g/ -U05:445g Bracket for SWR0030-M:10g Bracket for SWR1200-M:18g		
Weight ^{※1}	Tool Adapter Side	Electrode -U01:95g / -U02:180g / -U05:435g Bracket for SWR0030-T:8g Bracket for SWR1200-T:16g		
Protection	Grade **2	Equivalent to IP54		

- %1. Weight per electrode. Bracket weight shows the weight of SWRZ0S0-□, SWRZ0B0-120□B.
- %2. The protection grade is equivalent to IP54 at connected state (fit state) of the master cylinder and tool adapter.



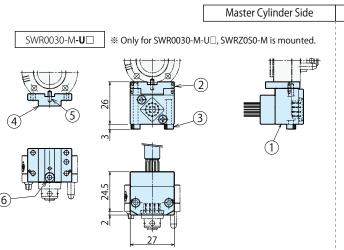
Please refer to P.49 and P.50 for the pin numbers, the wire colors and the cable specifications.

External Dimensions (SWR0070/SWR0120/SWR0250/SWR0500/SWR0750/SWR2300)

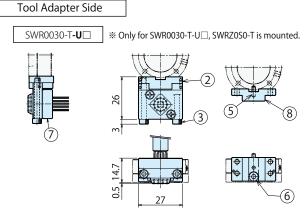


- - 2. For SWRZ0U0-□01/02/05 the lead wire length is different from its shown in the specifications. (SWRZ0U0-□01: Lead Wire Length 1m, SWRZ0U0-□02: Lead Wire Length 2m, SWRZ0U0-□05: Lead Wire Length 5m)

• External Dimensions (SWR0030)



Model No.	No.	Name	Quantity
CWDZOLIO	1	Electrode (Master Side)	1
SWRZ0U0	2	Parallel Pin ϕ 1.5×4 B Type (SUS)	2
-M01/M02/M05	3	Hexagon Socket Bolt M3×0.5×25 (SUS)	2
	4	Bracket (Master Side)	1
SWRZ0S0-M	(5)	Parallel Pin $\phi 2 \times 6$ B Type (SUS)	1
	6	Hexagon Socket Bolt M3×0.5×6 (SUS)	1



Locating

Clamp

Locating

Support

Hand • Clamp

Valve • Coupler

Cautions • Others

Hand Changer

Payload

Manual Robotic
Hand Changer

SXR

Pneumatic
Location Clamp

SWT

Compact Pneumatic
Location Clamp

SWQ

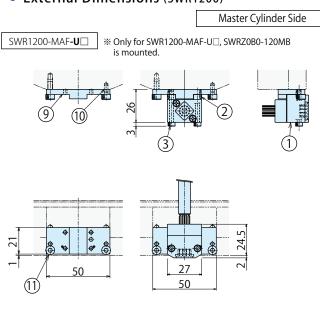
High-Power Pneumati Pallet Clamp

	Model No.	No.	Name	Quantity
	SWRZ0U0	7	Electrode (Tool Side)	1
	-T01/T02/T05	2	Parallel Pin ϕ 1.5×4 B Type (SUS)	2
	-101/102/105	3	Hexagon Socket Bolt M3×0.5×25 (SUS)	2
		8	Bracket (Tool Side)	1
	SWRZ0S0-T	(5)	Parallel Pin $\phi 2 \times 6$ B Type (SUS)	1
		6	Hexagon Socket Bolt $M3 \times 0.5 \times 6$ (SUS)	1

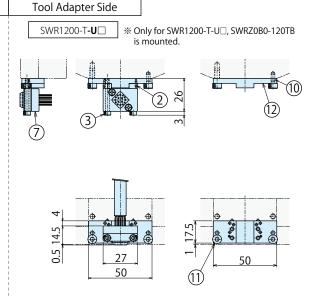
Notes : 1. Inform us with the model number shown above if you require an electrode only. ($SWRZOUO-\Box$: one set is one electrode.)

2. For SWRZ0U0-\(\subseteq 01/02/05 the lead wire length is different from its shown in the specifications. \((SWRZ0U0-\(\subseteq 01 : Lead Wire Length 1m, SWRZ0U0-\(\subseteq 02 : Lead Wire Length 2m, SWRZ0U0-\(\subseteq 05 : Lead Wire Length 5m) \)

• External Dimensions (SWR1200)



	Model No.	No.	Name		Quantity
	CMDZOLIO	1	Electrode (Mast	er Side)	1
	SWRZ0U0	2	Parallel Pin	ϕ 1.5×4 B Type (SUS)	2
	-M01/M02/M05	3	Hexagon Socket Bolt	M3×0.5×25 (SUS)	2
		9	Bracket (Master S	ide)	1
9	SWRZ0B0-120MB	10	Parallel Pin	ϕ 3×6 B Type (SUS)	2
		11)	Hexagon Socket Bolt	M4×0.7×10 (SUS)	2

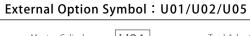


	Model No.	No.	Name	Quantity
1	CMDZOLIO	7	Electrode (Tool Side)	1
1	SWRZ0U0	2	Parallel Pin ϕ 1.5×4 B Type (SUS)	2
1	-T01/T02/T05	3	Hexagon Socket Bolt $M3 \times 0.5 \times 25$ (SUS)	2
1		12	Bracket (Tool Side)	1
1	SWRZ0B0-120TB	10	Parallel Pin ϕ 3×6 B Type (SUS)	2
1		11)	Hexagon Socket Bolt M4×0.7×10 (SUS)	2

Notes : 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0U0- \square : one set is one electrode.)

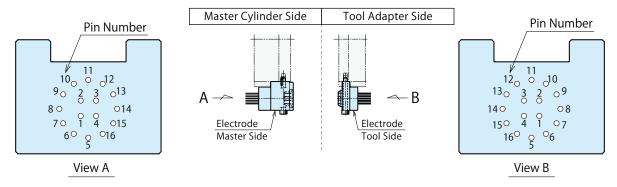
2. For SWRZ0U0-\(\subseteq 01/02/05 the lead wire length is different from its shown in the specifications. \((SWRZ0U0-\(\subseteq 01 : Lead Wire Length 1m, SWRZ0U0-\(\subseteq 02 : Lead Wire Length 2m, SWRZ0U0-\(\subseteq 05 : Lead Wire Length 5m \)

External Option: Waterproof Electrode (Simple Waterproof Option)





• Pin Numbers



【Important】Announcement of Cable Specification Change

The robot cable has been changed due to its performance and flexibility improvement.

Please make sure to check the specifications of the current cable shown on the next page.



Scheduled to change in April, 2020. (Replacement period is subject to change due to the stock condition.)

Pin Numbers and Wire Colors

[Important] Wire colors of the current cable and the previous cable are different.

Current Cable

HIFLON SD-SB/20276 Black AWG24X8P (with Shield)

Weight: 76g/m (Weight per meter)

Conductor Cross-Sectional Area: 0.2mm² (AWG24)

Number of Cores: 16



Pin Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Wire Color	Black	White	Red	Green	Yellow	Brown	Blue	Orange	Gray	Violet	Light Blue	Pink	White/ Black	White/ Red	White/ Blue	Yellow/ Black
	Twist	ed Pair	Twist	ed Pair	Twiste	ed Pair	Twist	ed Pair	Twist	ed Pair	Twiste	ed Pair	Twiste	ed Pair	Twist	ed Pair

Previous Cable

ORP - 0.2SQX8P(SB) (2464) (with Shield)

Oki Electric Cable Weight: 101g/m (Weight per meter)

Conductor Cross-Sectional Area: 0.2mm² (AWG25)

Number of Cores: 16



Pin Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Wire Color	Blue	White	Yellow	Brown	Green	Black	Red	Gray	Violet	Orange	Blue	Brown	Yellow	Black	Green	Gray
	Twisted Pair		Twist	ed Pair	Twiste	ed Pair	Twist	ed Pair	Twist	ed Pair	Twist	ed Pair	Twiste	ed Pair	Twiste	ed Pair

Locating + Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Robotic Hand Changer

SWR Payload 3kg ~ 360k

SWR0010 Payload

Manual Robotic Hand Changer SXR

Pneumatic

Location Clamp SWT

Compact Pneumatic Location Clamp

SWQ

High-Power Pneumation

External Option : D-SUB Connector

External Option Symbol: D



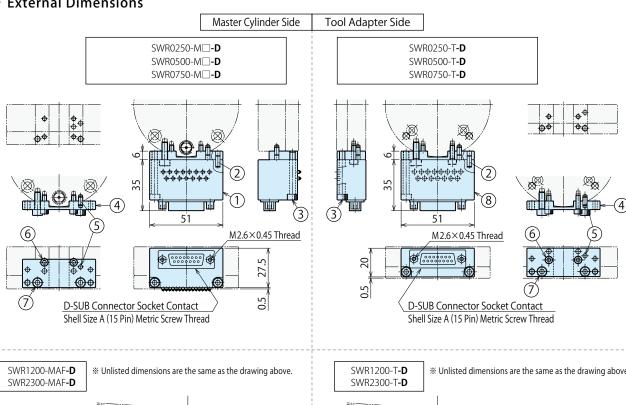
Specifications

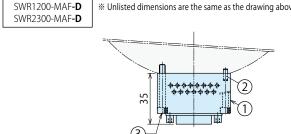
Rated Value (per contact)	2	DC 24V 3A		
Contact Resis	tance (Initial Value)	100m Ω or less		
Total Currer	nt Capacity	10A		
Number of P	oles (per electrode)	10A 15		
Waight %1	Master Cylinder Side	Electrode 80g / Bracket 17g		
Weight **1	Tool Adapter Side	Electrode 70g / Bracket 17g		

%1. Weight per electrode.

Bracket weight shows the weight of SWRZ0Z0.

External Dimensions





Model No.	No.	Name	Quantity
SWRZ0D0-M	1	Electrode (Master Side)	1
	2	Parallel Pin ϕ 3×8 B Type (SUS)	2
	3	Hexagon Socket Bolt M4×0.7×30 (SUS)	2
	4	Bracket (Common for Master/Tool Side)	1
CWDZOZO	(5)	Parallel Pin ϕ 3×8 B Type (SUS)	1
SWRZ0Z0	6	Hexagon Socket Bolt $M3 \times 0.5 \times 10$ (SUS)	2
	7	Hexagon Socket Bolt M4×0.7×12 (SUS)	2

SWR1200-T -D SWR2300-T -D	W Unlisted dimensions are the same as the drawing above.
35	2 + + + + + + + + + + + + + + + + + + +

Model No.	No.	Name	Quantity
SWRZ0D0-T	8	Electrode (Tool Side)	1
	2	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	2
	3	Hexagon Socket Bolt M4×0.7×30 (SUS)	2
	4	Bracket (Common for Master/Tool Side)	1
SWRZ0Z0	(5)	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	1
SWKZUZU	6	Hexagon Socket Bolt $M3 \times 0.5 \times 10$ (SUS)	2
	7	Hexagon Socket Bolt M4×0.7×12 (SUS)	2

Notes: 1. Inform us with the model number shown above if you require an electrode only. (SWRZODO- \square : one set is one electrode.)

2. For SWR1200/SWR2300, SWRZ0Z0 is not required.

External Option: Circular Connector (Connector Based on JIS C 5432)

External Option Symbol: G



Specifications

Rated Value (per contact)				
Contact Resis	tance (Initial Value)	100mΩ or less		
Total Currer	nt Capacity	17A		
Number of Po	oles (per electrode)	15		
Weight*1	Master Cylinder Side	Electrode 100g / Bracket 21g		
weight	Tool Adapter Side	Electrode 120g / Bracket 21g		

%1. Weight per electrode.

Bracket weight shows the weight of SWRZ0E0.

Locating + Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions · Others

Robotic Hand Changer

Payload

Manual Robotic Hand Changer SXR

Pneumatic

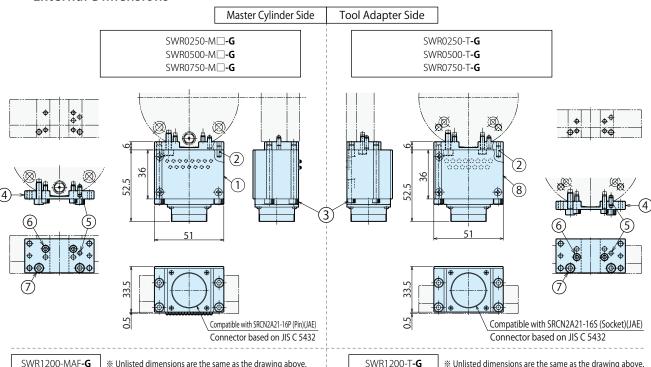
Location Clamp SWT

Compact Pneumatic Location Clamp

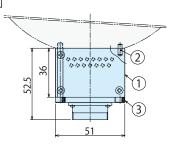
SWQ

High-Power Pneumation

External Dimensions



SWR1200-MAF-G SWR2300-MAF-G $\ensuremath{\,\%^{\circ}}$ Unlisted dimensions are the same as the drawing above.



Model No.	No.	Name	Quantity
SWRZ0G0-M	1	Electrode (Master Side)	1
	2	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	2
	3	Hexagon Socket Bolt M4×0.7×40 (SUS)	4
	4	Bracket (Common for Master/Tool Side)	1
CWDZOEO	(5)	Parallel Pin $\phi 3 \times 6$ B Type (SUS)	1
SWRZ0E0	6	Hexagon Socket Bolt M3×0.5×10 (SUS)	2
	7	Hexagon Socket Bolt M4×0.7×12 (SUS)	2

SWR1200-T -G SWR2300-T -G	* Unlisted dimensions are the same as the drawing a
52.5	© © © © © © © © © © © © © © © © © © ©

Model No.	No.	Name	Quantity
SWRZ0G0-T	8	Electrode (Tool Side)	1
	2	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	2
	3	Hexagon Socket Bolt M4×0.7×40 (SUS)	4
	4	Bracket (Common for Master/Tool Side)	1
CWDZOEO	(5)	Parallel Pin $\phi 3 \times 6$ B Type (SUS)	1
SWRZ0E0	6	Hexagon Socket Bolt M3×0.5×10 (SUS)	2
	7	Hexagon Socket Bolt M4×0.7×12 (SUS)	2

Notes: 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0G0-□: one set is one electrode.)

2. For SWR1200/SWR2300, SWRZ0E0 is not required.

External Option: Compact Electric Power Transmission

Extensible Options :
Resin Connector, Solder Terminal

External Option Symbol: K



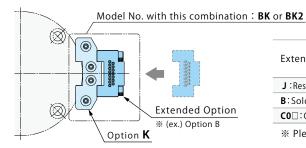
Specifications

Rated Value (per contact)	2	AC/DC 200V 5A		
Total Currer	nt Capacity	12A		
Number of Po	oles (per electrode)	4本		
	Master Cylinder Side	Electrode 17g Bracket for SWR0030-M:10g		
Weight ^{**1}	Tool Adapter Side	Electrode 13g Bracket for SWR0030-T:8g		
Cable with Ap (Sold Separat	oplicable Terminal ely)	SWZ0K0-CL□ -CL1: 1m、61g -CL2: 2m、126g -CL5: 5m、320g (Refer to P.55)		

^{*1.} Weight per electrode.

Bracket weight shows the weight of SWRZ0S0-□.

• Extensible Options Additional electrode can be extended to the option : K.



	Model No. for Extensible Option							
Extendable Electrode	SWR 0030	SWR 0070	SWR 0120	SWR 0250	SWR 0500	SWR 0750	SWR 2300	
J: Resin Connector		JK	JK	JK2	JK2	JK2	JK2	
B:Solder Terminal		BK	BK	BK2	BK2	BK2	BK2	
C0 □: Cable with Solder Terminal		C0□K	C0□K	C0□K2	C0□K2	SWR 0750 JK2	C0□K2	

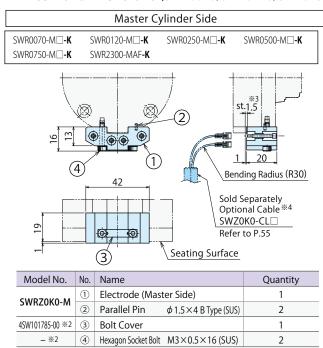
^{*} Please contact us for detailed dimensions for extensible options.

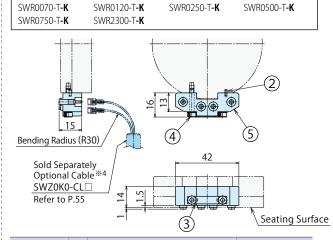
Applicable Cable

The cable with applicable terminal and applicable terminal are not included.

 $Please\ prepare\ the\ cable\ with\ applicable\ terminal\ (SWZ0K0-CL\square)\ on\ P.55\ or\ design\ it\ yourself\ referring\ to\ the\ applicable\ terminal\ on\ P.55.$

External Dimensions (SWR0070/SWR0120/SWR0250/SWR0500/SWR0750/SWR2300)





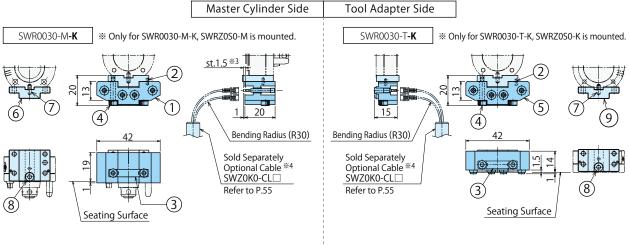
Tool Adapter Side

	Model No.	No.	Name Quantity				
9	SWRZ0K0-T	(5)	Electrode (Tool Side)	1			
	SWKZUKU-I	2	Parallel Pin ϕ 1.5 × 4 B Type (SUS)	2			
	4SW101785-00 ※2	3	Bolt Cover	1			
	- *2	4	Hexagon Socket Bolt $M3 \times 0.5 \times 16$ (SUS)	2			

Notes: 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0K0-□: one set is one electrode.) For SWRZ0K0-M / SWRZ0K0-T, the bolt and bolt cover marked with ※2 are not included.

- 2. The electrode probe on master side strokes 1.5mm (※3) when connecting with SWR. When fixing the cable, make sure there is enough space for the probe operation.
- 3. The electrode stays connected when released, because its connecting stroke requires 1.5mm which is longer than SWR lift stroke.
- *4. The optional cable and terminal are not included in the electrode. Please prepare them separately.

• External Dimensions (SWR0030)



	Model No.	No.	Name	Quantity
	SWRZ0K0-M	1	Electrode (Master Side)	1
	3WKZUKU-IVI	2	Parallel Pin ϕ 1.5 × 4 B Type (SUS)	2
	4SW101785-00 **2	3	Bolt Cover	1
	- *2	4	Hexagon Socket Bolt $M3 \times 0.5 \times 16$ (SUS)	2
		6	Bracket (Master Side)	1
	SWRZ0S0-M	7	Parallel Pin $\phi 2 \times 6$ B Type (SUS)	1
		8	Hexagon Socket Bolt M3×0.5×6(SUS)	1

Model No.	No.	Name	Name							
SWRZ0K0-T	(5)	Electrode (Tool	1							
SWKZUKU-I	2	Parallel Pin	ϕ 1.5 \times 4 B Type (SUS)	2						
4SW101785-00 **2	3	Bolt Cover	1							
- *2	4	Hexagon Socket Bolt	M3×0.5×16 (SUS)	2						
	9	Bracket (Tool Side	e)	1						
SWRZ0S0-T	7	Parallel Pin	ϕ 2×6 B Type (SUS)	1						
	(8)	Hexagon Socket Bolt	M3×05×6(SUS)	1						

Notes: 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0K0-□: one set is one electrode.) For SWRZ0K0-M / SWRZ0K0-T / SWRZ0S0-M / SWRZ0S0-T, the bolt and bolt cover marked with ※2 are not included.

- 2. The electrode probe on master side strokes 1.5mm (※3) when connecting with SWR. When fixing the cable, make sure there is enough space for the probe operation.
- 3. The electrode stays connected when released, because its connecting stroke requires 1.5mm which is longer than SWR lift stroke.
- $\pmb{\%4}. \ \ \text{The optional cable and terminal are not included in the electrode. Please prepare them separately.}$

	Locating + Clamp
	Locating
d.	Hand • Clamp
<i>‡</i>	Support
	Valve • Coupler
	Cautions • Others
]	Robotic Hand Changer
	SWR Payload 3kg ~ 360kg
	SWR0010 Payload 0.5kg ~ 1kg
	Manual Robotic Hand Changer
	SXR
	Pneumatic Location Clamp
	SWT
	Compact Pneumatic Location Clamp
	SWQ
	High-Power Pneumatic Pallet Clamp
	WVS

External Option: Cable with Terminal for Compact Electric Power Transmission

This cable is an optional cable applicable to the Compact Electric Power Transmission (SWR External Option Symbol: K). Model No. Indication SWZ0K0-C Cable Length Weiaht L1:1m L1:61g L2:2m L2: 126q L5:5m L5:320g Design No. (Revision Number) L (L1=1000/L2=2000/L5=5000) Approximately 90 ϕ 6.6 Green Red Black White 40

Kuramo Electric Co., LTD.

Conductor Cross-Sectional Area: 0.5mm² (AWG20)

Number of Cores: 4

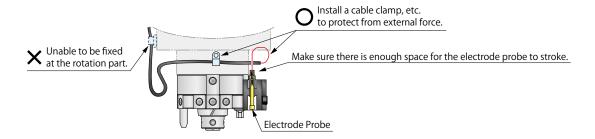
Cable: VCTF23NXX

* A crimp tool for crimping the applicable terminal (TA35T) is required when preparing a cable by yourself referring to this drawing.

[Notes on Wire/Cable Procedure and Wiring]

4-Terminal: TA35T Sankei Engineering Co., Ltd

• Make sure to fix the wire and cable so that they are not pulled while a robot is moving or turning around.
External force should not be applied on the connector part since it leads to breaking of wire, detaching of connector and contact failure.
However, the electrode probe on master side strokes 1.5mm when connecting with SWR. When fixing the cable, make sure there is enough space for the probe to stroke.



As for Compact Electric Power Transmission option, the electrode probes on both master cylinder and tool adaptor are exchangeable.
 The electrode probes will be fallen out if pushed from the cable connecting side with power stronger than a certain level.
 In case the electrode probes are pushed out after connecting the cable, make sure to push them back from the seating surface side before use.

Features Application Examples Action Description Model No. Indication Specifications Performance Curve Port Options Joint Specifications Exclusive Cases External External Cautions Options Dimensions



KOSMEK
Harmony in Innovation

Locating Hand • Clamp

Support

Locating

+ Clamp

Valve • Coupler

Cautions • Others

Robotic Hand Changer

SWR Payload 3kg ~ 360kg

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic Location Clamp

SWT

Compact Pneumatic Location Clamp

SWQ

High-Power Pneumatic Pallet Clamp

© External Option: Power Transmission Option (Connector Based on MIL-DTL-5015)

External Option Symbol: E



Specifications

Rated Value (per contact)	-	AC/DC 200V 5A			
Total Currer	nt Capacity	24A			
Number of Po	oles (per electrode)	8			
Weight **1	Master Cylinder Side	Electrode 140g / Bracket 21g			
weight	Tool Adapter Side	Electrode 150g / Bracket 21g			

%1. Weight per electrode.

Parallel Pin

SWRZ0E0

 ϕ 3×6 B Type (SUS)

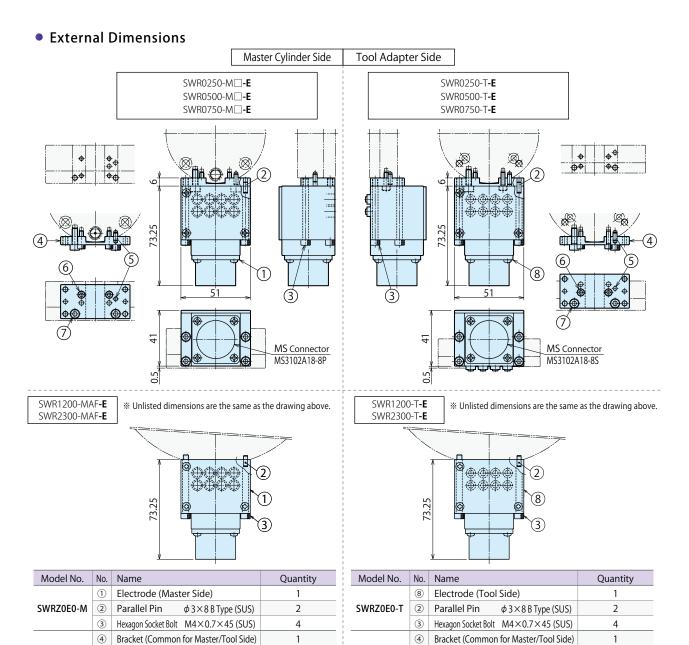
2

2

Hexagon Socket Bolt $M3 \times 0.5 \times 10$ (SUS)

Hexagon Socket Bolt $M4 \times 0.7 \times 12$ (SUS)

Bracket weight shows the weight of SWRZ0E0.



Notes: 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0E0- : one set is one electrode.)

2

2. For SWR1200/SWR2300, SWRZ0E0 is not required.

Hexagon Socket Bolt $M3 \times 0.5 \times 10$ (SUS)

Hexagon Socket Bolt $M4 \times 0.7 \times 12$ (SUS)

 ϕ 3×6 B Type (SUS)

Parallel Pin

SWRZ0E0

© External Option: High Current Transmission Option (Connector Based on MIL-DTL-5015)

External Option Symbol: H



Specifications

9	AC/DC 200V 13A				
nt Capacity	57A				
oles (per electrode)	10				
Master Cylinder Side	Electrode 280g / Bracket 24g				
Tool Adapter Side	Electrode 210g / Bracket 24g				
	nt Capacity oles (per electrode) Master Cylinder Side				

※1. Weight per electrode.

Bracket weight shows the weight of SWRZ0H0.

Clamp Locating Hand • Clamp Support Valve • Coupler Cautions • Others

Locating

Robotic Hand Changer

SWR Payload 3kg ~ 360k

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic Location Clamp

SWT

Compact Pneumatic Location Clamp

SWQ

High-Power Pneumatic Pallet Clamp

- VV V 3

• External D	Dimensions	Master Cylinder Side	Tool Adapter Side
	SWR0250-M□ -H SWR0500-M□ -H SWR0750-M□ -H	SWR1200-MAF- H SWR2300-MAF- H	SWR0250-T -H SWR1200-T -H SWR0500-T -H SWR2300-T -H SWR0750-T -H
4 6 5	25 58		3
ð	40.5	MS Connector MS3102A18-1P	MS Connector MS3102A18-1S

Model No.	No.	Name	Quantity
	1	Electrode (Master Side)	1
SWRZ0H0-M	2	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	2
	3	Hexagon Socket Bolt $M4 \times 0.7 \times 60$ (SUS)	4
	4	Bracket (Common for Master/Tool Side)	1
CMDZOLIO	(5)	Parallel Pin $\phi 3 \times 6$ B Type (SUS)	1
SWRZ0H0	6	Hexagon Socket Bolt $M3 \times 0.5 \times 10$ (SUS)	2
	(7)	Hexagon Socket Bolt $M4 \times 0.7 \times 12$ (SUS)	2

Model No.	No.	Name	Quantity
	8	Electrode (Tool Side)	1
SWRZ0H0-T	2	Parallel Pin ϕ 3×8 B Type (SUS)	1
	3	Hexagon Socket Bolt M4×0.7×60 (SUS)	4
	4	Bracket (Common for Master/Tool Side)	1
SWRZ0H0	(5)	Parallel Pin ϕ 3×6 B Type (SUS)	1
SWKZUHU	6	Hexagon Socket Bolt M3×0.5×10 (SUS)	2
	7	Hexagon Socket Bolt $M4 \times 0.7 \times 12$ (SUS)	2

Note: 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0H0- : one set is one electrode.)

External Option: Servo Electrode

External Option Symbol: F01 / F02 / F05

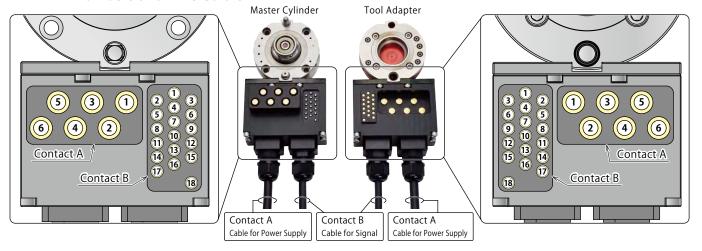


Specifications

Contact A	for Power Supply					
	Rated Value	AC / DC 240V				
	(per contact)	20A %1 %2				
	Number of Poles (per electrode)	6				
Contact B	for Signal					
	Rated Value	DC 24V				
	(per contact)	3A				
	Number of Poles	17 (for Signal) +				
	(per electrode)	1 (for Functional Ground)				
	Total Current Capacity	10A				
Cable Spec	ifications	Refer to the following table.				
Lead Wire	In case of - F01	1m				
Lead Wire	In case of - F02	2m				
	In case of – F05	5m				
	Master Cylinder Side	Electrode -F01:750g/-F02:1030g -F05:1850g Bracket:32g				
Weight **3	Tool Adapter Side	Electrode -F01 : 710g / -F02 : 990g -F05 : 1810g Bracket : 32g				

- **1. Depending on the operating environment of a customer, the cable for power supply may become hot. Refer to the following conditions, and check if the maximum temperature in the operating environment combined with the temperature rise is safe before using the product.
 - After 5 minutes of use with all 6 poles at 50% usage rate of 20A (5 sec. ON/ 5 sec. OFF), the cable temperature rise is ∆t= about 20°C.
 - After 5 minutes of use with all 6 poles at 100% usage rate of 20A and continuous current, the cable temperature rise is Δt =about 40°C.
- **2. When supplying power for more than 5 minutes, reduce the current per electrode to suppress the temperature rise.
 - Example 1. Using multiple electrodes can reduce the current per pole.
 - Example 2. Suppress the surface temperature of cable coating installed in areas easily touched by people to below 60°C.
- *3. Weight per electrode. Bracket weight shows the weight of SWRZ0F0.

Pin Numbers and Wire Colors



Contact A
Cable for
Power Supply

HIFLON SD/2586 6C×15AWG Black

NISSEI ELECTRIC

Conductor Cross-Sectional Area: 2.0 mm² (AWG15)

Number of Cores: 6

Cable Rated Value Temp: 105°C Voltage: 600V

Weight: 188g /m (Weight per meter)

Pin Number	1	2	3	4	5	6	
Wire Color	Brown	Yellow	Green	Red	White	Black	

Contact B Cable for Signal HIFLON SD-SB/20276 10P×23AWG Black (with Shield)

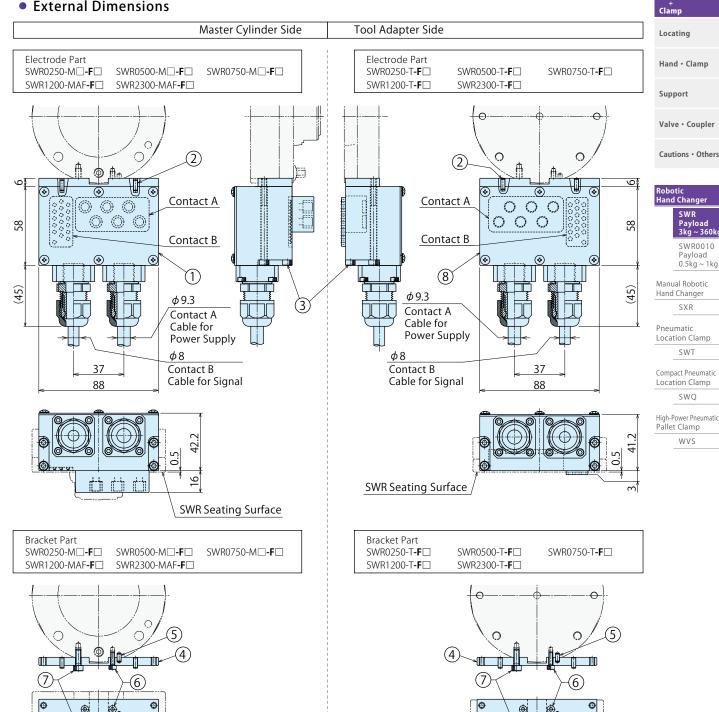
NISSEI ELECTRIC Weight: 119g /m (Weight per meter)

Conductor Cross-Sectional Area: 0.3mm² (AWG23) Number of Cores: 20

Cable Rated Value Temp: 80°C Voltage: 30V

Pin Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18(FG)	Not Used	Not Used
Wire Color	Yellow/ Blue	Yellow/ Red	Yellow/ Black	White/ Blue	White/ Red	White/ Black	Pink	Light Blue	Violet	Gray	Orange	Blue	Brown	Yellow	Green	Red	White	Black	Orange/ Black	Orange/ Blue
	Ш																		Ш	

External Dimensions



Model No.	No.	Name		Quantity
SWRZ0F0	1	Electrode (Master	· Side)	1
	2	Parallel Pin	ϕ 3×8 B type (SUS)	2
-M01/M02/M05	3	Hex. Socket Bolt	M4×0.7×60 (SUS)	4
SWRZ0F0	4	Bracket (Common f	or Master/Tool Side)	1
	(5)	Parallel Pin	ϕ 3×6 B type (SUS)	1
	6	Hex. Socket Bolt	M3×0.5×10 (SUS)	2
	7	Hex. Socket Bolt	M4×0.7×12 (SUS)	2

Model No.	No.	Name		Quantity
SWRZ0F0- -T01/T02/T05	8	Electrode (Tool Si	de)	1
	2	Parallel Pin	ϕ 3×8 B type (SUS)	2
	3	Hex. Socket Bolt	M4×0.7×60(SUS)	4
SWRZ0F0	4	Bracket (Common f	or Master/Tool Side)	1
	(5)	Parallel Pin	ϕ 3×6 B type (SUS)	1
	6	Hex. Socket Bolt	M3×0.5×10(SUS)	2
	7	Hex. Socket Bolt	M4×0.7×12(SUS)	2

Notes : 1. Inform us with the model number shown above if you require an electrode only. ($SWRZ0F0-\Box$: one set is one electrode.)

2. For SWRZ0F0- \square 01/02/05 the lead wire length is different from its shown in the specifications.

 $(SWRZ0F0- \Box 01: Lead\ Wire\ Length\ 1m,\ SWRZ0F0- \Box 02: Lead\ Wire\ Length\ 2m,\ SWRZ0F0- \Box 05: Lead\ Wire\ Length\ 5m)$

Locating

SWR Payload 3kg ~ 360

SWR0010 Payload 0.5kg ~ 1kg

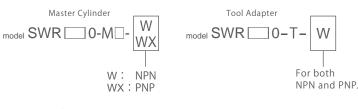
SXR

SWT

SWQ

External Option: Compact Waterproof Electrode (Noncontact Waterproof Option) IP67

External Option Symbol: W/WX







Specifications

Number of Sigr	nals (per electrode)	4
Protection G	rade ^{※1}	IP67
Calala		PUR φ 6.3
Cable		7×0.259mm ²
	Master Cylinder Side	2m
Cable Length	Tool Adapter Side	1m
		Electrode 20g
	Master Cylinder Side	Cable 60g/m ×2m
\\/a:= a+ \%2		Bracket for SWR0030 8g
Weight **2		Electrode 20g
	Tool Adapter Side	Cable 60g/m ×1m
		Bracket for SWR0030 8g

*1. Protection grade of the electrode part.

Electrode (Tool Side)

Bracket (Common for Master/Tool Side)

M3×0.5×30 (SUS) *3

 ϕ 2×6 B Type (SUS)

 $M3 \times 0.5 \times 6$ (SUS)

Hexagon Socket Bolt

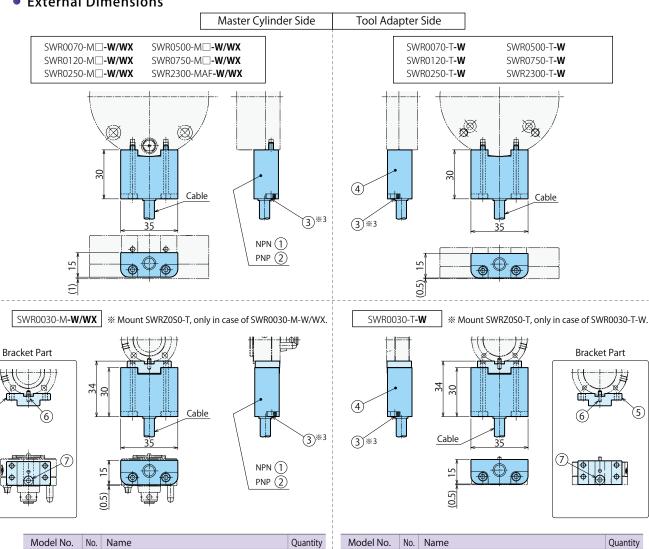
Hexagon Socket Bolt

Parallel Pin

%2. Weight per electrode.

Bracket weight shows the weight of SWRZ0S0-T.

External Dimensions



Notes ·	1	Inform us with the model number shown above if you require an electrode	only (SWR70 W \square 0- \square : one set is one electrode)

1

SWRZ0W0-T

SWRZ0S0-T

2. SWR1200 has a bracket. Please contact us for further information.

Electrode (Master Side) NPN (B & Plus)

Electrode (Master Side) PNP (B & Plus)

Bracket (Common for Master/Tool Side)

Hexagon Socket Bolt

Hexagon Socket Bolt

Hexagon Socket Bolt

Parallel Pin

※3. The tightening torque for M3 mounting bolts marked with ※3 should be 0.63 N ⋅ m.

M3×0.5×30 (SUS) *3

 $M3 \times 0.5 \times 30 \text{ (SUS)} \%3$

 ϕ 2×6 B Type (SUS)

 $M3 \times 0.5 \times 6$ (SUS)

SWRZ0W0-M

SWRZ0WX0-M

SWRZ0S0-T

Locating

Clamp

Locating

Support

Hand • Clamp

Details and Notes on External Option: Compact Noncontact Waterproof Electrode

Applicable Sensor

Supply Voltage	12V DC
Total Current Consumption	≦60mA
Residual Voltage	≦3.5V

*Total current consumption of sensors must not exceed the total rated output current.

Electrode Specifications (Tool Adapter Side)

Model No.	SWR □ 0-T □-W			
Applicable Sensor	DC 3-Wire Sensor			
Output Voltage	12V ±1.	5V DC		
No. of Input Signals	4			
Total Output Current	≦ 30mA	≦ 60mA		
Operating Distance	0~3mm	0~2mm		
Operating Temperature	0 ~ 50℃			
Protection Grade	IP67			
Material	ABS			
	PUR \$\phi\$ 6.3 7 \times 0.259 mm ²			
Cable	Hitachi Metals, Ltd.			
	RBT-VUCTF			

Electrode Specifications (Master Cylinder Side)

External

Options

Model	NPN	SWR □ 0-M□-W
No.	PNP	SWR □ 0-M□-WX
Supply Voltag	e (Input Voltage)	24V DC ±10% (Including Ripple)
Current C	onsumption	≦ 200mA
No. of Out	put Signals	4 + 1 (Inzone)
Load Cu	rrent	≦ 50mA / 1 Output
Operating	Temperature	0 ~ 50℃
Protectio	n Grade	IP67
Material		ABS
		PUR \$\phi\$ 6.3 / 7 \times 0.259 mm ²
Cable		Hitachi Metals, Ltd.
		RBT-VUCTF

3-wire

sensor

sensor

DC 2-wire (+)

DC 2-wire(+)

1~2k0

1~2kΩ

sensor

sensor

(+)

(-)

(+)3-wire (+) PNP (Output)

(-)

(Output)

SWR□0-M□-WX (PNP)

■ For DC 3-wire PNP sensor connection

Tool Adapter Side

White(+12V)

Black(POL)

Blue(0V)

Input 1(SI1)

Input 4(SI4)

■ For DC 2-wire sensor connection (when PNP is set)

White(+12V)

Black(POL)

Blue(0V)

Input 1(SI1)

Input 4(SI4)

Tool Adapter Side

■ LED Indication Status LED: Green LED Meaning 0 ON The power is supplied. OFF The power is not supplied. Blink-o-Blinks in case of abnormality

■ LED Indication Inzone LED: Orange The master cylinder and tool adapter are opposed, LED is lit when you can communicate.

Master Cylinder Side

Master Cylinder Side

White(+24V)

Black(INZONE)

Output1(SO1

Output 4(SO4)

White(+24V)

Output 1(SO1)

Output 4(SO4)

Blue(0V) Black(INZONE)

Blue(0V)

Valve • Coupler

Cautions • Others

Robotic Hand Changer SWR Payload 3kg ~ 360

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer

SXR Pneumatic

Location Clamp SWT

Compact Pneumatic Location Clamp SWQ

High-Power Pneumati Pallet Clamp

PLC side

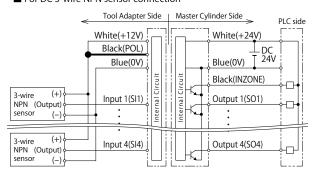
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DC 24V

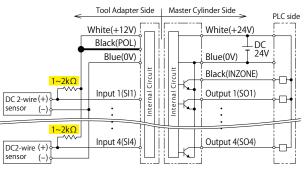
Wiring Diagram

SWR□0-M□-W (NPN)

■ For DC 3-wire NPN sensor connection



■ For DC 2-wire sensor connection (when NPN is set)



- When connecting a DC 2-wire sensor, ensure to wire a resistor of about 1 to 2 k Ω .
- POL is wiring for switching the polarity (NPN/PNP) of the sensor.

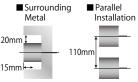
Wiring Color

- Electrode for Tool Adapter side Output + 12V White Output 0V Blue Polarity Switching POL Black Input 1 (SI1) Brown Input 2 (SI2) Red Input 3 (SI3) Yellow Input 4 (SI4) Green
- Electrode for Master Cylinder side Input +24V White Input 0V Blue INZONE Black Output 1 (SO1) Brown Output 2 (SO2) Red Output 3 (SO3) Yellow Output 4 (SO4) Green

Attention for Installation

(Read this section thoroughly before installation.)

- Ensure the power is switched off during installation or maintenance operations.
- ◆ Use a regulated power supply, e.g. switch-model type. Simpler power supplies, such as a full-wave rectification type, will cause the permissible ripple rating to be exceeded and may cause malfunction.
- ◆ Do not put metal objects between electrodes during operation. Failure to do so may cause heat generation, ignition, or malfunction.
- Ensure correct connections by referencing the wiring diagram.
- To avoid malfunction caused by induction noise, cable should be kept apart from motor or other power cable.
- ◆ The control communication device in the product may affect electronic devices and medical devices. Persons wearing pacemakers should stay away from this product.
- ◆ In order to avoid influence of surrounding metal, or to avoid mutual influence between parallel-mounted sensors, keep the minimum free zone as described on the right.



Bending Radius of Cable

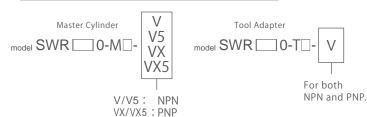
The minimum bending radius for the sensors are 50mm. * Do not pull the cable with excessive force.



The information above is quoted from B & Plus K.K. Remote System User's Guide (No.T315201G). Please contact B & Plus K.K. (TEL 81(0)-493-71-5160) for further information about electrodes (Model No. SWRZ0W0-M-

© External Option: Waterproof Electrode (Noncontact Waterproof Option) IP67

External Option Symbol: V/V5/VX/VX5





Specifications

Number of Signals (per electrode)			12	
Protection Grade **1			IP67	
			PUR φ8.6	
Cable			2×0.5mm ² +13×0.18mm ²	
	- V	Master Cylinder Side	2m	
Cable	- v	Tool Adapter Side	1m	
Length	- VX		2m	
	- V5 / VX5		5m	
	Master Cylinder Side -V / VX		Electrode + Bracket 130g Cable 210g	
Weight ^{*2}	Master Cylinder Side -V5 / VX5		Electrode + Bracket 130g Cable 525g	
	Tool <i>i</i>	Adapter Side	Electrode + Bracket 130g Cable 105g	

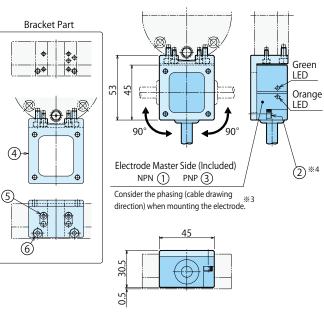
- %1. Protection grade of the electrode part.
- ※2. Weight per electrode.

External Dimensions

Master Cylinder Side	Tool Adapter Side

SWR0250-M**-V/V5/VX/VX5** SWR0500-M**-V/V5/VX/VX5** SWR0750-M**-V/V5/VX/VX5**

SWR1200-MAF-V/V5/VX/VX5 SWR2300-MAF-V/V5/VX/VX5 SWR0250-T-V SWR1200-T-V SWR0500-T-V SWR2300-T-V SWR0750-T-V



Model No.	No.	Name	Quantity
SWRZ0V0	1	Electrode (Master Side) NPN Made by B & Plus RS12E-422N-PU-02/05	1
-M/M05	2	Hexagon Socket Bolt M4×0.7×12 (SUS)*4	2
SWRZ0VX0 -M/M05	3	Electrode (Master Side) PNP Made by B & Plus RS12E-422P-PU-02/05	1
	2	Hexagon Socket Bolt M4×0.7×12 (SUS)*4	2
SWRZ0V0	4	Bracket (Common for Master/Tool Side)	1
	(5)	Hexagon Socket Bolt M3×0.5×8 (SUS)	2
	6	Hexagon Socket Bolt M4×0.7×8 (SUS)	2

1		Bracket Part
		♦ ♦
e 	90°	
1	②*4 Electrode Tool Side (Included) ⑦	• (4)
	Consider the phasing (cable drawing *3 direction) when mounting the electrode.	5
	300	6

Model No.	No.	Name	Quantity
	7	Electrode (Tool Side)	1
SWRZ0V0-T		Made by B & Plus RS12T-422-PU-01	
	8	Hexagon Socket Bolt M4×0.7×12 (SUS)	2
	4	Bracket (Common for Master/Tool Side)	1
SWRZ0V0	(5)	Hexagon Socket Bolt M3×0.5×8 (SUS)	2
	6	Hexagon Socket Bolt M4×0.7×8 (SUS)	2

- Notes: 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0 V 🗆 0- 🗆 : one set is one electrode.)
 - $2. \ \ For SWRZ0V0-M/M05 \ and \ SWRZ0VX0-M/M05, cable length \ of -M \ is \ 2m, and \ cable length \ of -M05 \ is \ 5m.$
 - **3. Even if the mounting phase of electrode on master and tool sides is different, signals can be transmitted. Determine the mounting phase of electrodes based on the cable drawing direction.
 - ※4. The tightening torque for M4 mounting bolts marked with ※4 should be 1.5 N ⋅ m.

O Details and Notes on External Option: Noncontact Waterproof Electrode

Applicable Sensor

Sup	oply Voltage	12V DC
Total	Current Consumption	≦230mA
Res	idual Voltage	≦3.5V

**Total current consumption of sensors must not exceed the total rated output current.

Electrode Specifications (Tool Adapter Side)

Model No.	SWR □ 0-T □-V
Applicable Sensor	DC 3-Wire Sensor
Output Voltage	12V ±1.5V DC
Total Output Current	≦ 230mA
No. of Input Signals	12
Operating Distance	2~5mm
Operating Temperature	0 ~ 50℃
Protection Grade	IP67
Material	ABS
Cable	PUR φ 8.6
Cable	2×0.5mm ² +13×0.18mm ²

Electrode Specifications (Master Cylinder Side)

External

Options

Model	NPN	SWR □ 0-M□-V / V5		
No.	PNP	SWR 0-M -VX / VX5		
Supply Voltage	(Input Voltage)	24V DC ±10% (Including Ripple)		
Current Co	nsumption	≦ 600mA		
No. of Output	Signals	12 +1 (INZONE)		
Load Current		≦ 50mA / 1 Output		
Operating Temperature		0 ~ 50℃		
Protection Grade		IP67		
Material		ABS		
C.I.I.		PUR φ 8.6		
Cable		$2 \times 0.5 mm^2 + 13 \times 0.18 mm^2$		

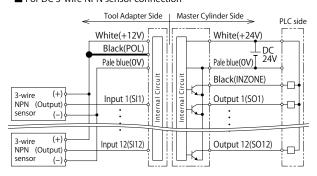
■ LED Indication Status LED: Green LED Meaning ON O The power is supplied. OFF O The power is not supplied. Blink: Blinks in case of abnormality.

■ LED Indication Inzone LED: Orange The master cylinder and tool adapter are opposed, LED is lit when you can communicate. When there is an output signal from each sensor, it flashes accordingly.

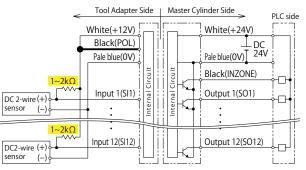
Wiring Diagram

SWR 0-M -V/V5 (NPN)

■ For DC 3-wire NPN sensor connection



■ For DC 2-wire sensor connection (when NPN is set)



- When connecting a DC 2-wire sensor, ensure to wire a resistor of about 1 to 2 k Ω .
- POL is wiring for switching the polarity (NPN/PNP) of the sensor.

Wiring Color

■ Electrode for Tool Adapter side				
Output + 12V	White			
Output 0V	Pale blue			
Polarity Switching POL	Black			
Input 1 (SI1)	Brown			
Input 2 (SI2)	Red			
Input 3 (SI3)	Orange			
Input 4 (SI4)	Yellow			
Input 5 (SI5)	Green			
Input 6 (SI6)	Blue			
Input 7 (SI7)	Violet			
Input 8 (SI8)	Gray			
Input 9 (SI9)	Brown ∗■■			
Input 10 (SI10)	Red *■■			
Input 11 (SI11)	Orange * ■ ■			
Input 12 (SI12)	Yellow * ■ ■			

■ Electrode for Ma:	■ Electrode for Master Cylinder side				
Input +24V	White				
Input 0V	Pale blue				
INZONE	Black				
Output 1 (SO1)	Brown				
Output 2 (SO2)	Red				
Output 3 (SO3)	Orange				
Output 4 (SO4)	Yellow				
Output 5 (SO5)	Green				
Output 6 (SO6)	Blue				
Output 7 (SO7)	Violet				
Output 8 (SO8)	Gray				
Output 9 (SO9)	Brown ∗■■				
Output 10 (SO10)	Red *■■				
Output 11 (SO11)	Orange * ■ ■				
Output 12 (SO12)	Yellow * ■ ■				

■ * is the line where ■ ■ is printed on the core wire of each color. The unused lines are green *, blue *, and violet *.

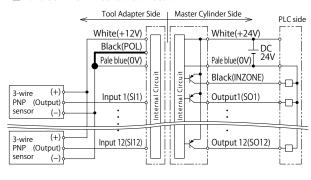
Bending Radius of Cable

The minimum bending radius for the sensors are 50mm. ** Do not pull the cable with excessive force.

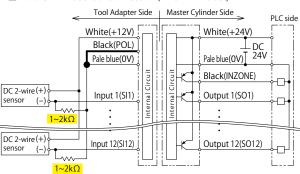


SWR 0-M-VX/VX5 (PNP)

■ For DC 3-wire PNP sensor connection



■ For DC 2-wire sensor connection (when PNP is set)

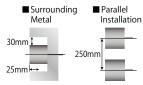


Attention for Installation

(Read this section thoroughly before installation.)

- Ensure the power is switched off during installation or maintenance operations.
- Use a regulated power supply, e.g. switch-model type.
 Simpler power supplies, such as a full-wave rectification type, will cause the permissible ripple rating to be exceeded and may cause malfunction.
- Do not put metal objects between electrodes during operation.
 Failure to do so may cause heat generation, ignition, or malfunction.
- ◆ Ensure correct connections by referencing the wiring diagram.
- To avoid malfunction caused by induction noise, cable should be kept apart from motor or other power cable.
- The control communication device in the product may affect electronic devices and medical devices. Persons wearing pacemakers should stay away from this product.

 In order to avoid influence of surrounding metal, or to avoid mutual influence between parallel-mounted sensors, keep the minimum free zone as described on the right.



The information above is quoted from B & Plus K.K. Remote System User's Guide (No.T313A01Ue). Please contact B & Plus K.K. (TEL 81(0)-493-71-5160) for further information about electrodes (Model No. RS12E-422□-PU-02/05 and RS12T-422-PU-01).

Locating

Hand · Clamp

Support

Valve • Coupler

Cautions • Others

Robotic Hand Changer

SWR Payload 3kg ~ 360k

> SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic Location Clamp SWT

Compact Pneumatic Location Clamp SWQ

High-Power Pneumati Pallet Clamp WVS

WVS

External Option : Ground Electrode

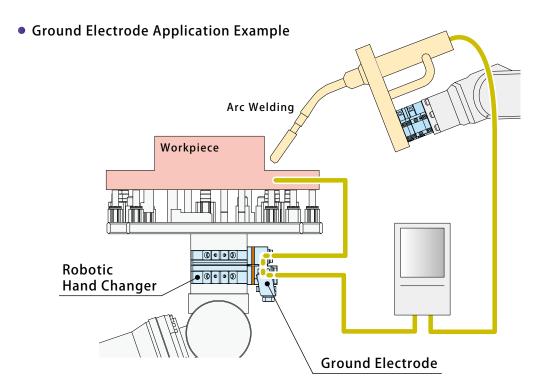
External Option Symbol: T



Specifications

Rated Capa	city	500A (Activity Ratio 50%)	
Weight **1	Master Cylinder Side	Electrode 1200g Bracket 55g	
	Tool Adapter Side	Electrode 400g Bracket 35g	

%1. Weight per electrode. Bracket weight shows the weight of SWRZOTO-MB, SWRZOTO-TB.



Activity Ratio

Activity ratio shows the ratio of load time when welding with rated capacity to the prescribed period (10 minutes in JIS standard). Make sure that the activity ratio does not exceed 50% which is the rated activity ratio of the ground electrode (SWRZ0T0).

$$Activity \ Ratio \ (\%) = \frac{\text{Welding Time (min.)}}{\text{Prescribed Period (10 min.)}} \times 100 \qquad \frac{\text{Allowable}}{\text{Activity Ratio (\%)}} = \frac{(\text{Rated Capacity 500 (A)})^2}{(\text{Operating Current(A)})^2} \times \frac{\text{Rated Activity Ratio 50 (\%)}}{\text{Activity Ratio 50 (\%)}}$$

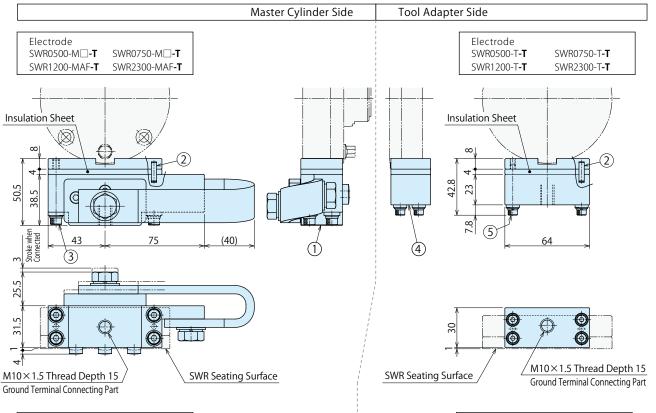
In case of Ground Electrode (SWRZ0T0):

- Ex.1) When welding with 500A, because the activity ratio is 50%, it can be operated for 5 minutes and needs to be suspended for 5 minutes in a 10-minute period.
- Ex.2) When welding with 390A, the activity ratio is 78% so it can be operated for about 8 minutes and needs to be suspended for about 2 minutes in a 10-minute period.
- Ex.3) Unable to be operated when exceeding the rated capacity 500A. Please contact us.

Notes for Usage

The stroke of the ground electrode (SWRZ0T0) is larger than the lifting stroke (detaching stroke) of SWR. When not pressing with a robot, SWR tilts during connecting operation so that connection may not be completed. Press not to tilt until SWR reaches the released (lifted) position by using a robot, etc.

External Dimensions



Bracket
SWR0500-M□-T
SWR0750-M□-T
SWR0750-T-T
SWR0750-T-T
SWR0750-T-T

Bracket
SWR0200-MAF-T
SWR2300-MAF-T
SWR2300-MAF-T
SWR2300-T-T
SWR2300-T-T

Model No.	No.	Name	Quantity
	1	Electrode (Master Side) ※Including Insulation Sheet	1
SWRZ0T0-M	2	Parallel Pin $\phi 4 \times 15$ (Resin)	2
	3	Hexagonal Socket Bolt M5×0.8×45 (SUS)	4
SWRZ0T0-MB	6	Bracket (Master Side)	1
	7	Parallel Pin $\phi 3 \times 6$ B Type (SUS)	2 (1*2)
	8	Hexagonal Socket Bolt M3×0.5×8 (SUS)	2
	9	Hexagonal Socket Bolt M4×0.7×10 (SUS)	2

(9

0

ф ф (8)

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Model No.	No.	Name	Quantity
	4	Electrode (Tool Side) **Including Insulation Sheet	1
SWRZ0T0-T	2	Parallel Pin $\phi 4 \times 15$ (Resin)	2
	(5)	Hexagon Socket Bolt M4×0.7×35 (SUS)	4
SWRZ0T0-TB	10	Bracket (Tool Side)	1
	7	Parallel Pin $\phi 3 \times 6$ B Type (SUS)	2 (1*2)
	8	Hexagonal Socket Bolt M3×0.5×8 (SUS)	2
	9	Hexagonal Socket Bolt M4×0.7×10 (SUS)	2

000

Notes : 1. Inform us with the model number shown above if you require an electrode only. (SWRZ0T0- : one set is one electrode.)

 $\fint 2$. In case of SWR0500/0750, only one parallel pin ($\fint 3$) is used.

Locating

Locating

Support

Hand • Clamp

Valve • Coupler

Cautions · Others

Robotic Hand Changer

SWR Payload 3kg ~ 360

SWR0010

0.5kg ~ 1kg

Payload

Manual Robotic Hand Changer

SXR Pneumatic

SWT

Compact Pneumatic Location Clamp

SWQ

High-Power Pneumation Pallet Clamp

(10)

(8)

+ Clamp

External Option: Ethernet Electrode

External Option Symbol: L

 $\begin{array}{c} \text{Master Cylinder} \\ \text{model SWR} \; \boxed{\hspace{-0.5cm} 0\text{-}M} \; \boxed{\hspace{-0.5cm} -L} \end{array}$

Tool Adapter model SWR ____0-T-L





Specifications

Rated Value (per contact)	•	DC 30V 0.5A	
Number of P	oles (per electrode)	4	
Connector		M12 D-code 4 poles (female) (based on IEC61076-2-101)	
Ethernet App	licable Standard	100BASE-TX **3	
Transmissio	n Speed	100Mbps **3	
Category		CAT5	
		EtherNet/IP	
		EtherCAT	
Applicable	Fieldbus	PROFINET	
		Modbus TCP	
		CC-Link IE Field Network Basic *2	
	Master Cylinder	Electrode: 106g	
1 🚜 عاما د	Side	Bracket: 16g	
Weight ^{※1}	Tool Adapter	Electrode: 96g	
	Side	Bracket: 16g	

%1. Weight per electrode. Bracket weight shows the weight of SWRZ0E0.

Tool Adapter Side

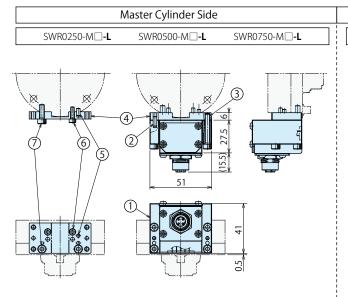
SWR0500-T**-L**

SWR0750-T**-L**

SWR0250-T**-L**

- *2. Cannot be used with a fieldbus that requires a communication speed of 1Gbps such as CC-Link IE.
- ※3. In the case transmission speed of Ethernet applicable standard 1000BASE-T (transmission speed: 1 Gbps) is required, please contact us.

• External Dimensions (SWR0250/SWR0500/SWR0750)



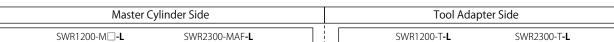
Model No.	No.	Name	Quantity
	1	Electrode (Master Side)	1
SWRZ0L0-M	2	Parallel Pin ϕ 3×8 B Type (SUS)	2
	3	Hexagon Socket Bolt M4×0.7×25 (SUS)	4
SWRZ0E0	4	Bracket (Common for Master/Tool Side)	1
	(5)	Parallel Pin ϕ 3×6 B Type (SUS)	1
	6	Hexagon Socket Bolt M3×0.5×10 (SUS)	2
	7	Hexagon Socket Bolt M4×0.7×12 (SUS)	2

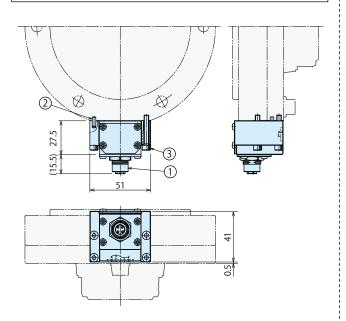
	2 × × × × × × × × × × × × × × × × × × ×	4	65
2 35			((((((((((

Model No.	No.	Name	Quantity
	8	Electrode (Tool Side)	1
SWRZ0L0-T	2	Parallel Pin ϕ 3×8 B Type (SUS)	2
	3	Hexagon Socket Bolt M4×0.7×25 (SUS)	4
	4	Bracket (Common for Master/Tool Side)	1
SWRZ0E0	(5)	Parallel Pin $\phi 3 \times 6$ B type (SUS)	1
SWKZUEU	6	Hexagon Socket Bolt M3×0.5×10 (SUS)	2
	7	Hexagon Socket Bolt M4×0.7×12 (SUS)	2

Notes: 1. Inform us with the model number shown above if you require an electrode only. (SWRZOLO-□: one set is one electrode.)

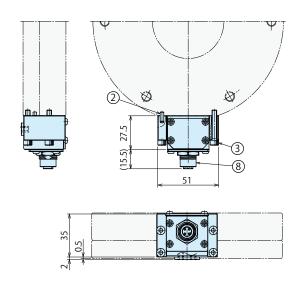
External Dimensions(SWR1200/SWR2300)





Model No.	No.	Name	Quantity
SWRZ0L0-M	1	Electrode (Master Side)	1
	2	Parallel Pin ϕ 3×8 B Type (SUS)	2
	3	Hexagon Socket Bolt M4×0.7×25 (SUS)	4
	3	Hexagon Socket Bolt M4 \times 0.7 \times 25 (SUS)	4

Notes: 1. For SWR1200/SWR2300, SWRZ0E0 is not required.



Model No.	No.	Name	Quantity
	8	Electrode (Tool Side)	1
SWRZ0L0-T	2	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	2
	3	Hexagon Socket Bolt M4 \times 0.7 \times 25 (SUS)	4

Locating + Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Robotic Hand Changer

SWR Payload 3kg ~ 360kg

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic Location Clamp

SWT

Compact Pneumatic Location Clamp

SWQ

High-Power Pneumatic Pallet Clamp WVS

External Option: Air Joint (3-Port Option (1 Port Rc1/8))

Extensible Options: Resin Connector, Solder Terminal

External Option Symbol: R



Specifications

Port Size		Rc1/8	M5	
Number of	Ports	1	2	
Operating	SWR0070 or larger	max. 0.7MPa (Vacuum Available)		
Pressure	SWR0030	max. 0.5MPa (Va	max. 0.5MPa (Vacuum Available)	
Withstandi	ng Pressure	1.11	1.1MPa	
Min. Passag	je Area	28.3mm ²	3.1mm ²	
Operating	Temperature	0 ~ 70℃		
Usable Flui	d	Dry Air		
	Pressure at 0.7 MPa	0.13 kN	0.04kN	
Reaction Force (per port)	Pressure at 0.5 MPa	0.10 kN	0.03kN	
(pc. po.t)	Pressure at P MPa	0.154×P+0.019 kN	0.047×P+0.008 kN	
	Master Cylinder Side	Air Joint 51g Bracket for SWR0030-M:1		
Weight **1	Tool Adapter Side	Air Joint 25g Bracket for SWR0030-T: 8		

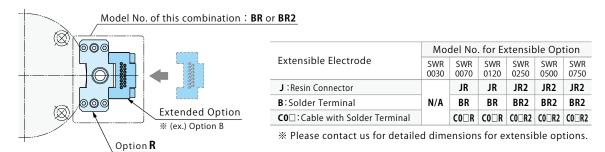
%1. Weight per joint.

Bracket weight is the weight of SWRZ0S0- \square .

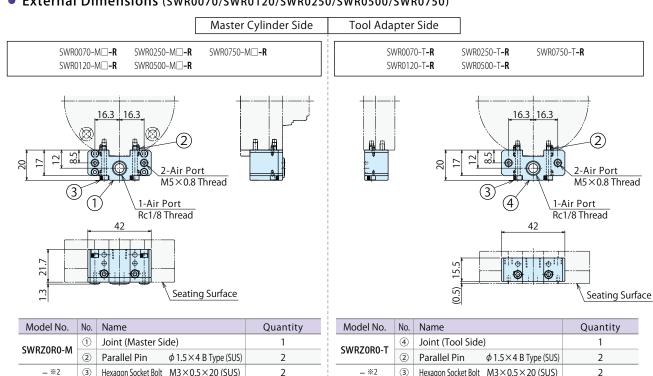
Hexagon Socket Bolt $M3 \times 0.5 \times 20$ (SUS)

2

• Extensible Options Additional electrode can be extended to the option: R.



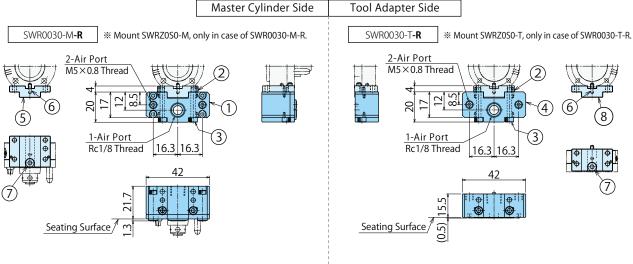
External Dimensions (SWR0070/SWR0120/SWR0250/SWR0500/SWR0750)



1. Inform us with the model number shown above if you require an air joint only. (SWRZORO-: one set is one air joint.) Note: For SWRZ0R0-M / SWRZ0R0-T, the bolt marked with 32 is not included.

Hexagon Socket Bolt $M3 \times 0.5 \times 20$ (SUS)

• External Dimensions (SWR0030)



Model No.	No.	Name	Quantity
SWRZ0R0-M	1	Joint (Master Side)	1
3WKZUKU-IVI	2	Parallel Pin ϕ 1.5 × 4 B Type (SUS)	2
- *2	3	Hexagon Socket Bolt $M3 \times 0.5 \times 20$ (SUS)	2
	(5)	Bracket (Master Side)	1
SWRZ0S0-M	6	Parallel Pin $\phi 2 \times 6$ B Type (SUS)	1
	7	Hexagon Socket Bolt $M3 \times 0.5 \times 6$ (SUS)	1

Мо	del No.	No.	Name		Quantity
CWI	SWRZ0R0-T		Joint (Tool Side)		1
3441	SWKZUKU-I	2	Parallel Pin ϕ 1.5×	4 B Type (SUS)	2
	- *2	3	Hexagon Socket Bolt M3×0.	.5×20 (SUS)	2
			Bracket (Tool Side)		1
SWI	SWRZ0S0-T	6	Parallel Pin $\phi 2 \times 6$	B Type (SUS)	1
		7	Hexagon Socket Bolt M3×0.	.5×6 (SUS)	1

Note: 1. Inform us with the model number shown above if you require an air joint only. (SWRZORO-□: one set is one air joint.) For SWRZORO-M / SWRZORO-T / SWRZOSO-M / SWRZOSO-T, the bolt marked with ※2 is not included.

Locating + Clamp Locating Hand • Clamp Support Valve • Coupler Cautions · Others Robotic Hand Changer SWR Payload 3kg ~ 360 SWR0010 Payload 0.5kg ~ 1kg Manual Robotic Hand Changer SXR Pneumatic Location Clamp SWT Compact Pneumatic

Location Clamp SWQ

© External Option: Air Joint (4-Port, Solder Terminal Extensible Option)

Extensible Options: Resin Connector, Solder Terminal

External Option Symbol: P

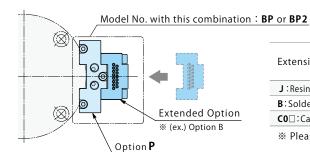


Specifications

Number of	Ports	4				
Operating I	Pressure	max. 1.0MPa (Vacuum Available)				
Withstandi	ng Pressure	1.5MPa				
Min. Passag	je Area	3.1mm ² (Equal to ϕ 2)				
Operating ⁻	Temperature	0 ~ 70℃				
Usable Flui	d	Dry Air				
	Pressure at 1 MPa	0.03 kN				
Reaction Force (per port)	Pressure at 0.5MPa	0.02 kN				
(per port)	Pressure at P MPa	0.027×P+0.004 kN				
\\\a:=\b* \%1	Master Cylinder Side	Joint 43g				
Weight **1	Tool Adapter Side	Joint 26g				

%1.Weight per joint.

Extensible Options Additional electrode can be extended to the option : \boldsymbol{P} .



	Model No. for Extensible Option					
Extensible Electrode	SWR 0070	SWR 0120	SWR 0250	SWR 0500	SWR 0750	
J: Resin Connector	JP	JP	JP2	JP2	JP2	
B: Solder Terminal	RP	BP	RP2	RP2	BP2	
D. Joider Terrininar	, Di	٠.	D	D		

Tool Adapter Side

 $\mathsf{SWR0070}\text{-}\mathsf{T}\textbf{-}\mathsf{P}$

SWR0120-T**-P**

* Please contact us for detailed dimensions for extensible options.

• External Dimensions						
External	Cylinder Side					
	070-M□ -P SWR0250 120-M□ -P SWR0500		M □-P			
4- Air Port M5×0.8 Thread Depth 4						
42 Seating Surface						
Model No.	No. Name		Quantity			
SWRZ0P0-M	① Joint (Master Si	de)	1			
3WNZUFU-IVI	② Parallel Pin	ϕ 3×6 B Type (SUS)	1			
_ *2	③ Hexagon Socket Bolt	M3×0.5×16 (SUS)	4			

311110120 1 1	511110500 1 1
577 3 11.5	4 - Air Port M5 x 0.8 Thread Depth 4
	42 Seating Surface

SWR0250-T**-P**

SWR0500-T**-P**

SWR0750-T**-P**

Model No.	No.	Name	Quantity
SWRZ0P0-T	4	Joint (Tool Side)	1
- *2	3	Hexagon Socket Bolt M3×0.5×16 (SUS)	4

Notes: 1. Inform us with the model number shown above if you require an air joint only. (SWRZ0P0- : one set is one air joint.) For SWRZ0P0-M / SWRZ0P0-T, the bolt marked with %2 is not included.

2. Please contact us for SWR1200.

External Option: Air Joint

External Option Symbol: Q



Specifications

Number of	Ports	2	
Operating I	Pressure	max. 1.0MPa (Vacuum Available)	
Withstandi	ng Pressure	1.5MPa	
Min. Passag	je Area	12.6mm ² (Equal to φ4)	
Operating 7	Гетрегаture	0 ~ 70℃	
Usable Flui	d	Dry Air	
D 5	Pressure at 1 MPa	0.13 kN	
Reaction Force (per port)	Pressure at 0.5MPa	0.07 kN	
(1-1-1-1)	Pressure at P MPa	0.117×P +0.01 kN	
Weight *1	Master Cylinder Side	Joint 70g / Bracket 17g	
weight *	Tool Adapter Side	Joint 60g / Bracket 17g	

%1.Weight per joint.

Bracket weight is the weight of SWRZ0Z0.

Clamp Locating Hand • Clamp Support Valve • Coupler Cautions • Others

Locating

Robotic Hand Changer

SWR Payload 3kg ~ 360

Payload 0.5kg ~ 1kg Manual Robotic Hand Changer

SXR

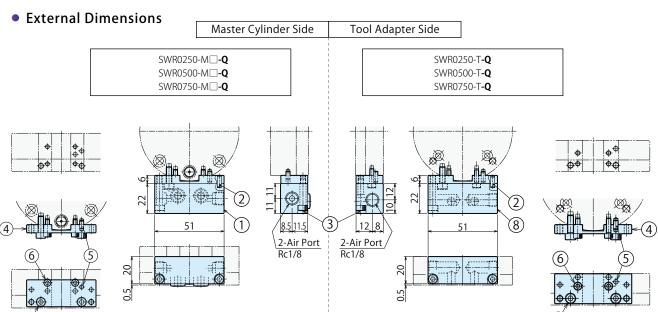
Pneumatic Location Clamp SWT

Compact Pneumatic Location Clamp

Location Clamp SWQ

High-Power Pneumation

WVS



Model No.	No.	Name	Quantity
	1	Joint (Master Side)	1
SWRZ0Q0-M	2	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	2
	3	Hexagon Socket Bolt M4×0.7×20 (SUS)	2
	4	Bracket (Common for Master/Tool Side)	1
SWRZ0Z0	(5)	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	1
2MVZ0Z0	6	Hexagon Socket Bolt M3×0.5×10 (SUS)	2
	7	Hexagon Socket Bolt M4×0.7×12 (SUS)	2

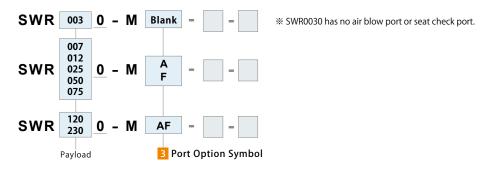
	Model No.	No.	Name	Quantity
	SWRZ0Q0-T	8	Joint (Tool Side)	1
		2	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	2
		3	Hexagon Socket Bolt M4×0.7×20 (SUS)	2
	SWRZ0Z0	4	Bracket (Common for Master/Tool Side)	1
		(5)	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	1
		6	Hexagon Socket Bolt M3×0.5×10 (SUS)	2
		7	Hexagon Socket Bolt $M4 \times 0.7 \times 12$ (SUS)	2

Notes: 1. Inform us with the model number shown above if you require an air joint only. (SWRZ0Q0-□: one set is one air joint.)

2. Please contact us for SWR1200.

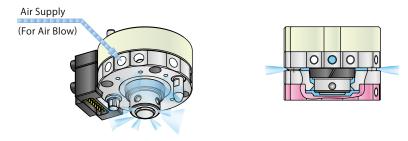
Port Option

Master Cylinder Model No.

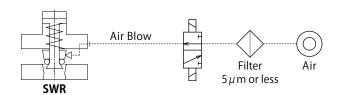


• Port Option Symbol | A | : With Air Blow Port

When connecting, there is moderate clearance between the taper reference surface and seating surface that enables high accuracy. This allows for effective cleaning with air blow, contamination prevention and longer operational life.



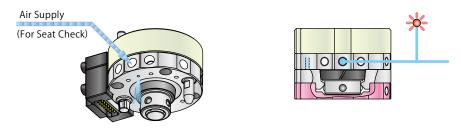
Circuit Reference



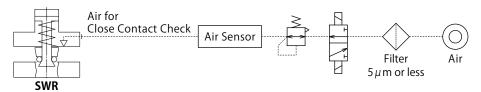
Port Option Symbol | F | : With Seat Check Port

Close contact check detects secure connection of the master cylinder and the tool adapter. This prevents a connection error of robotic hand changer.

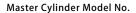
*Air sensor must be installed separately.

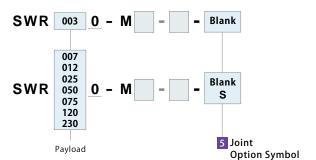


Circuit Reference

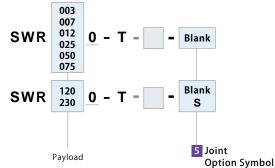


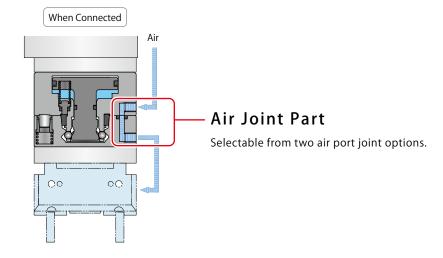
Joint Option (Air Port Part)





Tool Adapter Model No.





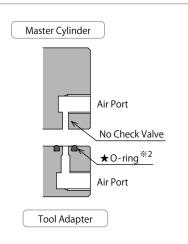
+ Clamp Locating Hand • Clamp Support Valve • Coupler Cautions · Others Robotic Hand Changer SWR Payload 3kg ~ 360 SWR0010 Payload Manual Robotic Hand Change SXR Pneumatic Location Clamp SWT Compact Pneumatic Location Clamp SWQ High-Power Pneumati Pallet Clamp

Locating

Without Check Valve [Standard]

Joint Option Symbol

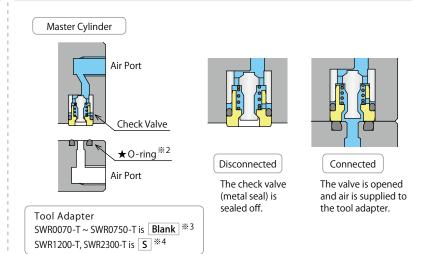
Blank



With Check Valve (No check valve option for SWR0030)

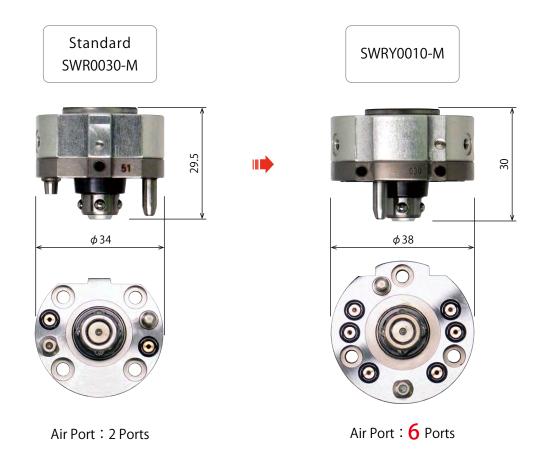
Joint Option Symbol





Notes: ※2. For SWR0500/0750/1200/2300, ★O-ring is installed to the master cylinder side. Refer to the Joint Structure on External Dimensions (P.31 \sim P.34) for the structure of the check valve option.

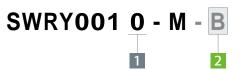
- ※3. For SWR0070 ~ SWR0750, a check valve is installed to the master cylinder side only. Since there is no check valve for the tool adapter side, the joint option symbol of SWR0030-T ~ SWR0750-T is Blank.
- *4. For SWR1200, SWR2300 with the check valve option, since the master cylinder has a check valve and the tool adapter side has a simple check valve, the joint option symbol of SWR1200-T, SWR2300-T is **S** .



Slight increase in size enables to install 6 air ports in 3kg payload robotic hand changer.



Model No. Indication: Master Cylinder



Model No. Indication: Tool Adapter



1 Design No.

: Revision Number

2 External Options (Electrode • Air Joint) Refer to P.37 ~ P.64 for the specifications of the external options.

Blank: No Electrode (Standard) : Solder Terminal (15 Poles)

C01 : Solder Terminal with Cable (15 Poles • Cable Length 1m) **C02** : Solder Terminal with Cable (15 Poles • Cable Length 2m) **C05** : Solder Terminal with Cable (15 Poles • Cable Length 5m)

: Resin Connector (16 Poles)

: Compact Electric Power Transmission (4 Poles)

: Air Joint (3 Ports)

U01: Simple Waterproof Electrode (16 Poles • Cable Length 1m) **U02**: Simple Waterproof Electrode (16 Poles • Cable Length 2m) **U05** : Simple Waterproof Electrode (16 Poles • Cable Length 5m)

: Noncontact Waterproof Electrode Compact Model (Number of Signals: 4•NPN) WX : Noncontact Waterproof Electrode Compact Model (Number of Signals: 4⋅PNP) ^{※1}

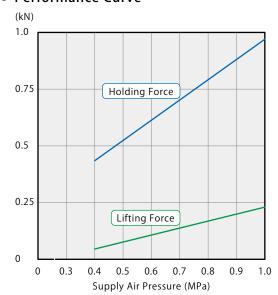
*1. The option symbol 'WX' is only for master cylinder. The option symbol of the tool adapter is 'W' for both NPN/PNP.

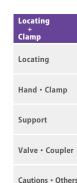
Specifications

Payload	kg	3
Repeatability	mm	0.003
Lift Stroke (Detaching Stroke) mm		0.8
Allowable Static Bending		5
Moment N∙m	Twisting	12
	Max.	1.0
Air Pressure	Min.	0.4
MPa	Withstanding Pressure	1.5
Operating Temp	oerature ℃	0 ~ 70
Usable Fluid		Dry Air
Weight Master Side		85
(Main Body) g Tool Side		60
Air Port		M3×0.5×6 Ports

※ Refer to P.37 ~ P.64 for the specifications of the external options.

Performance Curve







SWR0010 Payload

Manual Robotic Hand Changer SXR

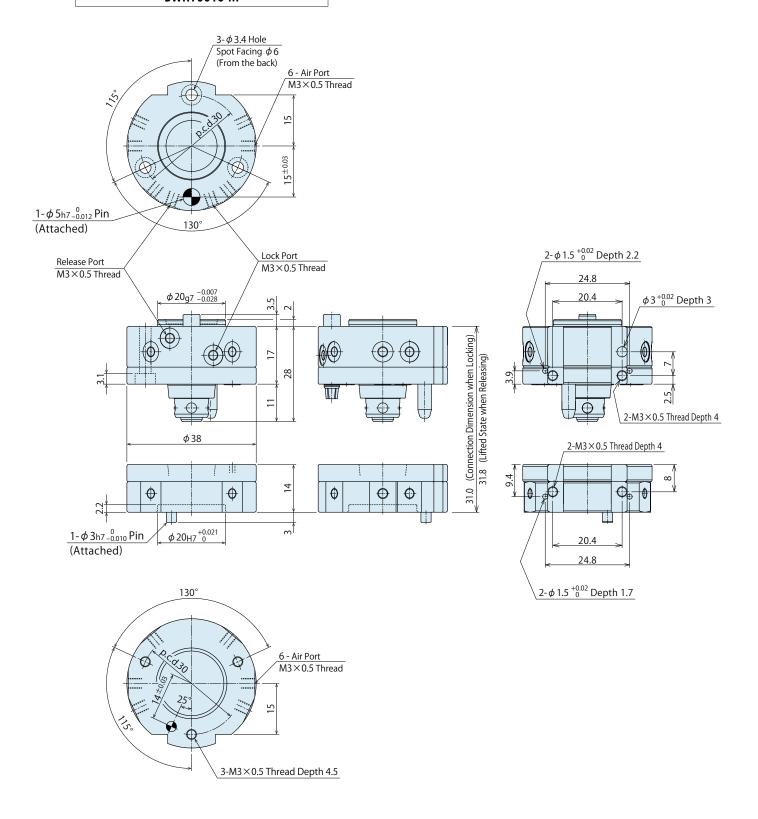
Pneumatic Location Clamp SWT

Compact Pneumatic Location Clamp

SWQ High-Power Pneumati Pallet Clamp

- SWRY0010 External Dimensions
- External Dimensions (without External Option)

Master Cylinder **SWRY0010-M**



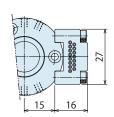
Tool Adapter SWRY0010-T

External Dimensions of External Options

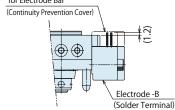
* Refer to P.71 for unlisted dimensions.

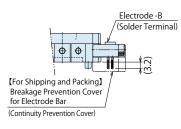


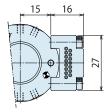
 $\ensuremath{\%}$ Refer to P.41 for the detailed electrode specifications.



[For Shipping and Packing]
Breakage Prevention Cover
for Electrode Bar

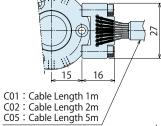


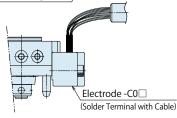


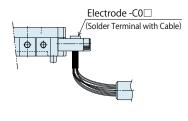


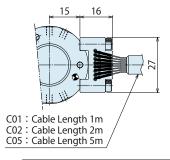
Tool Adapter SWRY0010-T-B

Master Cylinder SWRY0010-M-CO□ ** Refer to P.43 for the detailed electrode specifications.



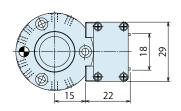


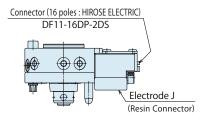


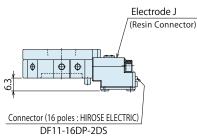


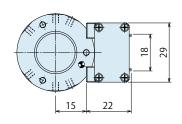
Tool Adapter SWRY0010-T-C0□

Master Cylinder SWRY0010-M-J









Tool Adapter SWRY0010-T-J

Locating + Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Robotic Hand Changer

SWR Payload 3kg ~ 360k

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic Location Clamp

SWT

Compact Pneumatic Location Clamp SWQ

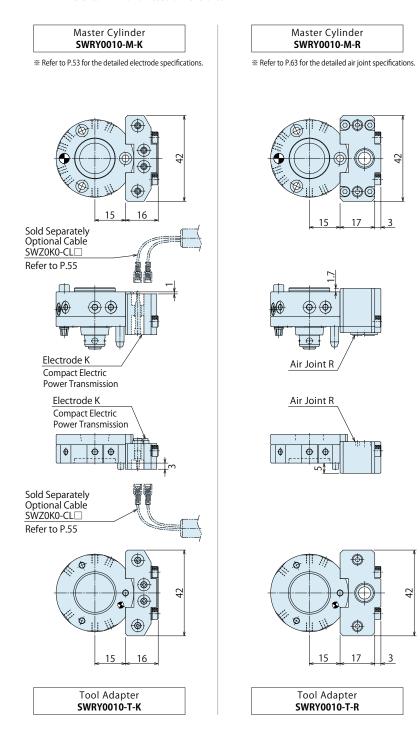
High-Power Pneumation

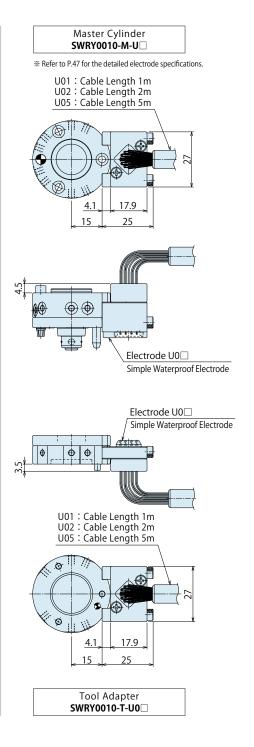
WVS

SWRY0010 External Dimensions

External Dimensions of External Options

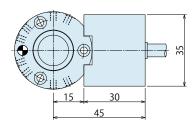
※ Refer to P.71 for unlisted dimensions.

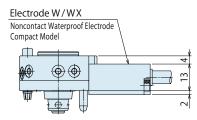


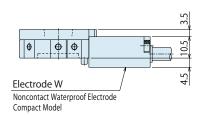


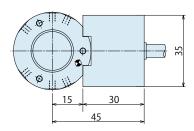
Master Cylinder SWRY0010-M-W

 $\ensuremath{\ensuremath{\%}}$ Refer to P.59 for the detailed electrode specifications.









Tool Adapter SWRY0010-T-W

Locating + Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Robotic Hand Changer

SWR Payload 3kg ~ 360kg

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer

SXR

Pneumatic Location Clamp

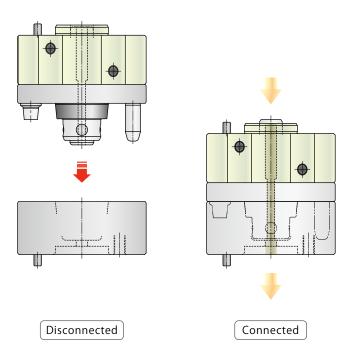
SWT

Compact Pneumatic Location Clamp

SWQ

High-Power Pneumatic Pallet Clamp

- **Exclusive Cases** * A Part of Exclusive Case Examples. Please contact us for further information.
- With Center Hole

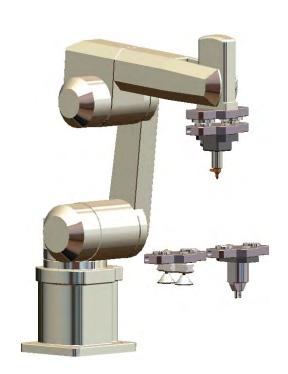


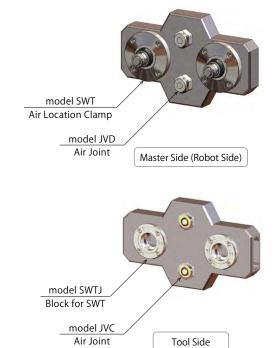


Center hole is provided for photoelectric detection and various purposes.

- **Exclusive Cases** * A Part of Exclusive Case Examples. Please contact us for further information.
- Increase in Payload with SWT Air Locating Clamp

By using Kosmek Air Locating Clamp SWT, Robotic Hand Changer can be used for larger robots. It is able to install Kosmek Air Joint as well.







Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Robotic Hand Changer

SWR Payload 3kg ~ 360k

SWR0010 Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic Location Clamp

SWT

Compact Pneumatic Location Clamp

SWQ

High-Power Pneumatic Pallet Clamp

WVS

Cautions

Notes for Design

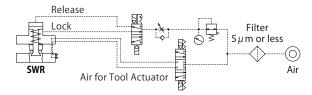
- 1) Check Specifications
- Please use each product according to the specifications.
- Operating Air Pressure as follows :

SWR0030, SWRY0010 : Max. 1.0 MPa and Min. 0.4MPa SWR0070 ~ SWR1200 : Max. 1.0 MPa and Min. 0.35MPa SWR2300 : Max. 0.7 MPa and Min. 0.35MPa

2) Air Pressure Circuit Reference

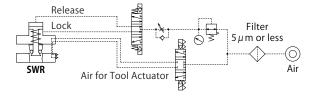
 During normal use, make sure to supply air pressure to the lock circuit. Even if the air pressure becomes zero due to power failure, the self-lock function with a spring prevents the tool from falling.
 [When using a 2-Position Solenoid Valve]

Please use a 2-position double solenoid valve. In case of using a 2-position single solenoid valve, for safety, connect the piping so that air is supplied to the lock side when the power is turned off. If air is supplied to the release side, it is dangerous as it may cause the tool (hand) to drop. Also, in the case of 2-position single, please note that if the power is turned off in the release state, it will lock.



[When Using a 3-Position Solenoid Valve]

Please use the valve with a 3-position exhaust center. When the power is turned off due to emergency stop, please be aware that the robotic hand changer will perform locking operation even in the released state due to the fall prevention function.

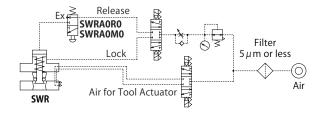


[When Selecting Other Valves]

When using a 3-position closed-center solenoid valve for controlling the robotic hand changer, which is the same as the tool actuator, please use the fall prevention valve (SWRA).

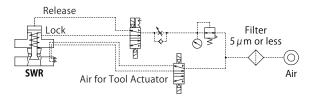
**** SWRA0R0** Fall Prevention Valve

It supplies air to the release side only at a designated position. Refer to the **SWRA** catalog for detailed specifications and cautions.



[Solenoid Valve for Tool Actuator]

When using a 2-position solenoid valve for the control valve of the tool actuator, select the joint option **S** (with check valve) for the robotic hand changer.



- 3) Operating Environment (External Option (Electrode))
- Do not use the product in the environment with water vapor liquid scattering of chemicals explosion gas with causticity. Also, using in the environment with cutting chips cutting fluid dust spatter scattering may lead to continuity error of electrode. We offer IP67-Compatible Noncontact Waterproof Electrode for the environment with water vapor liquid cutting chips.
- 4) Electrification of Electrodes while Connecting/Disconnecting (External Option (Electrode))
- If connecting/disconnecting robotic hand changer while energized (hot swapping), there will be a discharge phenomenon (spark phenomenon) between the electrodes opposing each other. The tips of contact probes and electrode bars will be severely worn down due to the phenomenon, and the basis metal might be melted due to oxidation or abrasion of gold-plating leading to conduction failure. Electricity should be shut off while connecting/disconnecting the robotic hand changer.

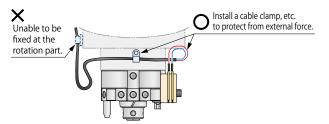
In case of continuous electrification with more than 40 \sim 60% of rated current, it is recommended to use multiple electrodes in a line. (In order to improve durability of contact probes.)

- 5) Note for Single Use of SWR Robotic Hand Changer
- Applying withstanding pressure without mounting on a robot or a plate leads to damage on the product. Make sure to supply air after setting SWR on a robot or a plate.
- 6) Hand Changing (Attaching/Detaching) in a Horizontal Position
- When connecting/disconnecting the Robotic Hand Changer in a horizontal position, make sure not to apply excessive moment on master cylinder. Please select an appropriate size of model cosidering robot payload with allowance fully taken into consideration. When connecting, make sure the tool side has no lifting or tilting that is larger than the allowable position offset range. Also, do not fix it completely on the tool stand, and make a margin (clearance) within the allowable position offset range. Otherwise, this will affect repeatability.

Model No. Specifications Port Options Cross Section Exclusive Features External External Cautions Action Description Options Application Examples Indication Performance Curve Dimensions Joint Specifications Cases

Installation Notes

- 1) Please supply filtered clean dry air.
- Make sure to supply filtered clean dry air.
- Oil supply with a lubricator etc. is unnecessary.
- 2) Preparation for Piping
- The pipeline, piping connector and fixture circuits should be cleaned and flushed thoroughly.
 - The dust and cutting chips in the circuit may lead to fluid leakage and malfunction.
- There is no filter provided with this product for prevention of contaminants in the air circuit.
- 3) Applying Sealing Tape
- When using sealing tape, wrap with it 1 to 2 times following the screwing direction.
 - When piping, be careful that contaminant such as sealing tape does not enter in products. Pieces of the sealing tape can cause air leaks and malfunction.
- 4) Notes on Wire/Cable Procedure and Wiring (External Options (Electrode))
- Make sure to fix the wire and cable so that they are not pulled while a robot is moving or turning around.
 - External force should not be applied on the connector part since it leads to breaking of wire, detaching of connector and contact failure.



 When allocating each electric signal, imperceptible signal and power signal should be apart. Otherwise noise will be propagated from power signal to imperceptible signal. Also it is the same for wire and cable of external options (electrode). Make sure to keep imperceptible signal from power signal.

- Please follow the tightening torque below. When mounting, use the attached pins and tighten them with

Model No.		Bolt Size	No. of Bolts	Tightening Torque (N⋅m)
	SWR0030-M	$M3 \times 0.5$	4	1.3
	SWRY0010-M	$M3 \times 0.5$	3	1.3
der	SWR0070-M	$M3 \times 0.5$	4	1.3
ļ	SWR0120-M	$M4 \times 0.7$	4	3.2
Ç.	SWR0250-M	$M5 \times 0.8$	4	6.3
Master Cylinder	SWR0500-M	$M6 \times 1$	4	10
Ma	SWR0750-M	$M6 \times 1$	6	10
	SWR1200-M	M8 × 1.25	6	25
	SWR2300-M	$M10 \times 1.5$	6	50
	SWR0030-T	$M3 \times 0.5$	4	1.3
	SWRY0010-T	$M3 \times 0.5$	3	1.3
ē	SWR0070-T	$M4 \times 0.7$	4	3.2
Adapter	SWR0120-T	$M4 \times 0.7$	4	3.2
Adi	SWR0250-T	$M5 \times 0.8$	4	6.3
Tool	SWR0500-T	$M6 \times 1$	4	10
۲	SWR0750-T	M6 × 1	6	10
	SWR1200-T	M8 × 1.25	6	20
	SWR2300-T	$M10 \times 1.5$	6	50

Do not lose attached pins for installation/removal of the master cylinder/tool adapter.

If not using attached pins, moment quality may not be secured.

6) Installation of Optional Electrode

For electrode installation, apply screw lock glue (equivalent to 1401 made by ThreeBond) on the tip of the mounting bolt and tighten it with the tightening torque shown below.

• M3 Hexagon Socket Bolt: 0.5N • m • M4 Hexagon Socket Bolt: 1.5N • m

- 7) Test Run Method
- If supplying a large amount of air just after installation, action time will be extremely fast leading to severe damage on robotic hand changer. Set the speed controller (Meter-in) and gradually supply air pressure.

5) Installation/Removal of Master Cylinder/Tool Adapter

bolts evenly not to incline the master cylinder and tool adapter.

MIOGETTAO.	DOIT SIZE	INO. OI DOILS	rigiticining rollque (iv iii)
SWR0030-M	M3 × 0.5	4	1.3
SWRY0010-M	M3 × 0.5	3	1.3
SWR0070-M	M3 × 0.5	4	1.3
SWR0120-M	$M4 \times 0.7$	4	3.2
SWR0250-M	$M5 \times 0.8$	4	6.3
SWR0500-M	M6 × 1	4	10
SWR0750-M	M6 × 1	6	10
SWR1200-M	M8 × 1.25	6	25
SWR2300-M	M10 × 1.5	6	50
SWR0030-T	M3 × 0.5	4	1.3
SWRY0010-T	$M3 \times 0.5$	3	1.3
SWR0070-T	$M4 \times 0.7$	4	3.2
SWR0120-T	$M4 \times 0.7$	4	3.2
SWR0250-T	$M5 \times 0.8$	4	6.3
SWR0500-T	M6 × 1	4	10
SWR0750-T	M6 × 1	6	10
SWR1200-T	M8 × 1.25	6	20
SWR2300-T	M10 × 1.5	6	50
	SWR0030-M SWRY0010-M SWR0070-M SWR0120-M SWR0250-M SWR0500-M SWR0750-M SWR1200-M SWR2300-M SWR030-T SWRY0010-T SWR0070-T SWR0250-T SWR0500-T SWR0500-T SWR0750-T SWR1200-T	SWR0030-M M3 × 0.5 SWRY0010-M M3 × 0.5 SWR0070-M M3 × 0.5 SWR0120-M M4 × 0.7 SWR0250-M M5 × 0.8 SWR0500-M M6 × 1 SWR0750-M M6 × 1 SWR1200-M M8 × 1.25 SWR2300-M M10 × 1.5 SWR0030-T M3 × 0.5 SWR0010-T M4 × 0.7 SWR070-T M4 × 0.7 SWR0250-T M5 × 0.8 SWR0500-T M6 × 1 SWR1200-T M8 × 1.25	SWR0030-M M3 × 0.5 4 SWRV0010-M M3 × 0.5 3 SWR0070-M M3 × 0.5 4 SWR0120-M M4 × 0.7 4 SWR0250-M M5 × 0.8 4 SWR0500-M M6 × 1 4 SWR0750-M M6 × 1 6 SWR1200-M M8 × 1.25 6 SWR0300-M M10 × 1.5 6 SWR0300-T M3 × 0.5 4 SWR0010-T M3 × 0.5 3 SWR070-T M4 × 0.7 4 SWR0250-T M5 × 0.8 4 SWR0500-T M6 × 1 4 SWR0750-T M6 × 1 6 SWR1200-T M8 × 1.25 6

Valve · Coupler Cautions • Others Robotic Hand Changer Payload

Locating Clamp Locating

Hand • Clamp

Support

Manual Robotic Hand Change SXR

Pneumatic Location Clamp SWT

Compact Pneumatic Location Clamp SWQ

High-Power Pneumati Pallet Clamp

Continuing "Installation Notes" on the Next Page

Cautions

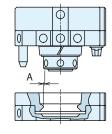
- Installation Notes (Continued)
- 8) Allowable Offset while Teaching

the range of allowable offset.

 Allowable offset of the master cylinder and tool adapter while teaching should be within the range shown below.
 Tool adapter and tool placing stand should have space within

① Allowable Position Offset in Horizontal Direction

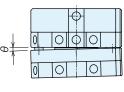
Model No.	Allowable Offset Amm
SWR0030	±0.8 mm
SWRY0010	±0.8 mm
SWR0070	±0.8 mm
SWR0120	±0.8 mm
SWR0250	±1.0 mm
SWR0500	±1.3 mm
SWR0750	±1.3 mm
SWR1200	±2.0 mm
SWR2300	±2.0 mm



① Horizontal Position Offset

2 Allowable Position Offset in Tilt Direction

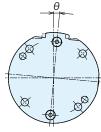
Model No.	Allowable Offset θ
SWR0030	θ = 1.5 deg
SWRY0010	θ = 1.5 deg
SWR0070	θ = 1.5 deg
SWR0120	θ = 1.5 deg
SWR0250	θ = 1.2 deg
SWR0500	θ = 1.0 deg
SWR0750	θ = 1.0 deg
SWR1200	θ = 0.9 deg
SWR2300	θ = 0.6 deg



② Tilt Position Offset

3 Allowable Position Offset in Rotation Direction

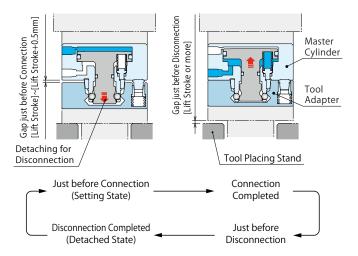
Model No.	Allowable Offset $ heta$
SWR0030	$\theta = \pm 3 \deg$
SWRY0010	$\theta = \pm 3 \deg$
SWR0070	$\theta = \pm 3 \deg$
SWR0120	$\theta = \pm 3 \deg$
SWR0250	$\theta = \pm 2 \deg$
SWR0500	$\theta = \pm 2 \deg$
SWR0750	$\theta = \pm 2 \deg$
SWR1200	$\theta = \pm 2 \deg$
SWR2300	$\theta = \pm 1.5 \deg$



3 Rotation Position Offset

- Most Suitable Gap between Master Cylinder and Tool Adapter
 Just Before Connection (When Setting)
- The gap between master cylinder and tool adapter when connecting should be within the range of [Lift Stroke]~[Lift Stroke+0.5mm] shown on P.25. It may not be able to connect with more than the lift stroke + 0.5mm.
- 10) Most Suitable Gap between Tool Adapter and Tool Placing Stand Just Before Disconnection
- The gap between the tool adapter and tool stand when detaching should be more than [Lift Stroke] shown on P.25.
 Tool adapter is forcibly detached with detaching (lifting) function of the master cylinder.

It is recommended to install cushioning mechanism between the tool adapter and tool stand.

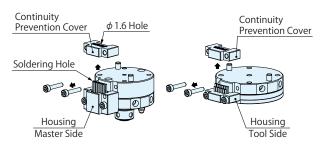


- 11) Connection Method for -D/E/G/H/J/L: Connector (External Option (Electrode))
- A Connector must be fully inserted into the electrode. As for -D/E/ G/H/L options, make sure to screw up the connector. If a connector is not fully inserted or screwed up, it will cause contact failure.
- 12) Notes for using -K: Compact Electric Power Transmission (External Option (Electrode))
- As for Compact Electric Power Transmission option, the electrode probes on both master cylinder and tool adaptor are exchangeable. The electrode probes will be fallen out if pushed from the cable connecting side with power stronger than a certain level. In case the electrode probes are pushed out after connecting the cable, make sure to push them back from the seating surface side before use.

Specifications Port Options Cross Section Model No. Exclusive Features External External Cautions Application Fxamples Action Description Indication Performance Curve Dimensions Ontions Joint Specifications Cases

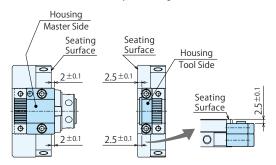
Cautions

- 13) Connection Method for -B: Solder Terminal (External Option (Electrode))
- For solder terminal option, the electric signal pin, wire and cable of both master cylinder and tool adapter are connected with soldering. Remove the continuity prevention cover before soldering. At this time, if removing the press-fitted housing of the electric signal pin, install it as shown in the following drawing [Mounting Height] considering the height from seating surface.



[Mounting Height]

 $\label{eq:Model:www.survey.com} Model: SWR0030/0070/0120/0250/0500/0750/1200/2300 \\ \% \ Make sure not to tilt, and adjust the height of both ends of the housing.$



Soldering condition should be : 280°C, within 3 seconds. Make sure the outer diameter is ϕ 1.6mm after soldering. If it exceeds ϕ 1.6mm the continuity prevention cover cannot be installed.

【Recommended Wire Diameter】

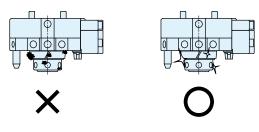
Use wires with AWG26 size or smaller diameter. If you need electric current more than allowable flowing current of AWG26, use wires within the rated value of electrode. At this time, soldering hole and attached continuity prevention cover cannot be used. If required, insulate them with a thermal contraction tube etc.

Before installing the continuity prevention cover, apply screw lock glue (equivalent to 1401 made by ThreeBond) on the tip of M3 hexagon socket bolt.

• Tightening Torque of M3 Hexagon Socket Bolt : 0.5N • m

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) Cleaning of Master Cylinder Tool Adapter
- If using the product when the taper reference surface or seat check surface of master cylinder/tool adapter are contaminated with dirt, it may lead to locating accuracy failure, malfunction or air leakage. (Do not apply grease on the taper reference surface.)



- 3) Regularly examine and retighten piping, mounting bolts and wires to ensure proper use.
- 4) Make an inspection before use and regularly.
- If there is dirt or dust on the electric contact part, electric signal is hard to conduct. Wipe it out with a cloth soaked in an organic solvent such as IPA.
- If there is a contact failure while in use, make an inspection mainly of the electricity connection part and clean it out.
 If the contact probe of master cylinder has abnormality, it has to be replaced. When installing an electrode after removing it, check the mounting height of -B: Solder Terminal connection method on P.79.



- 5) Make sure to supply filtered clean dry air.
- 6) Make sure there is smooth action and no air leaks.
- Especially when it is restarted after left unused for a long period, make sure it can be operated properly.
 If there is air leak while connecting, please contact us for overhaul and repair.
- The products should be stored in the cool and dark place without direct sunshine or moisture.
- 8) Please contact us for overhaul and repair.

Support

Hand • Clamp

Locating

Clamp

Valve • Coupler

Cautions • Others

Robotic Hand Changer

SWR Payload 3kg ~ 360k SWR0010

Payload 0.5kg ~ 1kg

Manual Robotic Hand Changer SXR

Pneumatic Location Clamp SWT

Compact Pneumatic

SWQ

High-Power Pneumati Pallet Clamp WVS

Cautions

Notes on Handling

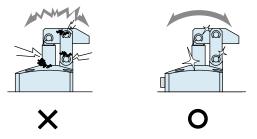
- 1) It should be operated by qualified personnel.
- The hydraulic machine and air compressor should be operated and maintained by qualified personnel.
- 2) Do not operate or remove the product unless the safety protocols are ensured.
- ① The machine and equipment can only be inspected or prepared when it is confirmed that the safety devices are in place.
- ② Before the product is removed, 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 air and hydraulic 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 a clamp (cylinder) while it is working.
 Otherwise, your hands may be injured.



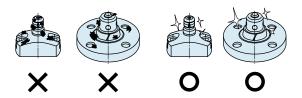
- 4) Do not disassemble or modify.
- If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

Maintenance and Inspection

- 1) Removal of the Machine 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) Regularly clean the area around the piston rod and plunger.
- If it is used when the surface is contaminated with dirt, it may lead to packing seal damage, malfunctioning, fluid leakage.



- Regularly clean the reference surfaces (taper reference surface and seating surface) of locating products (SWT/SWQ/SWP/VRA/ VRC/VX/VXE/VXF/WVS/VWH/VWM/VWK).
- Locating products (except VRA/VRC/VX/VXE/VXF and SWR without air blow port) can remove contaminants with the cleaning function. When installing a workpiece or a pallet, make sure there are no contaminants such as thick sludge.
- Continuous use with dirt on components will lead to locating failure, fluid leakage and malfunction.



- 4) Regularly tighten pipe, mounting bolt, nut, snap ring, cylinder and others to ensure proper use.
- 5) Make sure the hydraulic fluid has not deteriorated.
- 6) Make sure there is a smooth action without an irregular noise.
- Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.
- 7) The products should be stored in the cool and dark place without direct sunshine or moisture.
- 8) Please contact us for overhaul and repair.





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.

Locating + Clamp

Locating

Hand • Clamp

Support

Valve • Coupler

Cautions • Others

Cautions

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Company Profile

Our Products

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Alphabetical Order

Sales Offices



Sales Offices

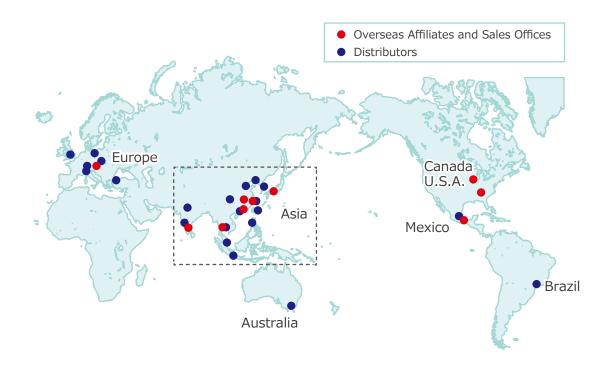
Sales Offices across the World

Japan	KOSMEK LTD. HEAD OFFICE	TEL. +81-78-991-5162 FAX. +81-78-991-8787 1-5, 2-chome, Murotani, Nishi-ku, Kobe-city, Hyogo, Japan 651-2241
USA	KOSMEK (USA) LTD. Overseas Affiliate	TEL. +1-630-620-7650 FAX. +1-630-620-9015 650 Springer Drive, Lombard, IL 60148 USA
USA	KOSMEK (USA) LTD. Atlanta Branch Office	TEL. +1-630-620-7650 303 Perimeter Center North, Suite 300, Atlanta, GA 30346 USA
Mexico	KOSMEK (USA) LTD. Mexico Branch Office	TEL. +52-442-851-1377 Av. Santa Fe 103, Int. 59, col. Santa Fe Juriquilla, Queretaro, QRO, 76230, Mexico
Europe	KOSMEK EUROPE GmbH Overseas Affiliate	TEL. +43-463-287587 FAX. +43-463-287587-20 Schleppeplatz 2 9020 Klagenfurt am Wörthersee Austria
	KOSMEK (CHINA) LTD. Overseas Affiliate	TEL.+86-21-54253000 FAX. +86-21-54253709 Room601, RIVERSIDE PYRAMID No.55, Lane21, Pusan Rd, Pudong Shanghai China
China	KOSMEK (CHINA) LTD. Dongguan Office Overseas Affiliate (Sales Office)	TEL.+86-769-85300880 Room301,AcerBuilding No.15,Dezheng(W)Road,Changan Town Dongguan Guangdong 523843,,P.R.China
	KOSMEK (CHINA) LTD. Wuhan Office Overseas Affiliate (Sales Office)	TEL.+86-27-59822303 A-502 Jingkai Future City,Zhuankou Economic Development Zone Wuhan Huibei
India	KOSMEK LTD INDIA	TEL. +91-9880561695 4A/Old No:649, Ground Floor, 4th D cross, MM Layout, Kavalbyrasandra, RT Nagar, Bangalore -560032 India
Thailand	KOSMEK Thailand Representative Office Representative Office	TEL. +66-2-300-5132 FAX. +66-2-300-5133 67 Soi 58, RAMA 9 Rd., Phatthanakan, Suanluang, Bangkok 10250, Thailand
Taiwan	FULL LIFE TRADING CO., LTD. Taiwan Exclusive Distributor	TEL. +886-2-82261860 FAX. +886-2-82261890 16F-4, No.2, Jian Ba Rd., Zhonghe District, New Taipei City Taiwan 23511
Philippines	G.E.T. Inc, Phil. Philippines Exclusive Distributor	TEL.+63-2-310-7286 FAX. +63-2-310-7286 Victoria Wave Special Economic Zone Mt. Apo Building, Brgy. 186, North Caloocan City, Metro Manila, Philippines 1427
Indonesia	PT. Yamata Machinery Indonesia Exclusive Distributor	TEL. +62-21-29628607 FAX. +62-21-29628608 Delta Commercial Park I, Jl. Kenari Raya B-08, Desa Jayamukti Kec. Cikarang Pusat Kab. Bekasi 17530 Indonesia

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Tokyo Sales Office TEL. 048-652-8839 81, 4-chome, Onari-ch		FAX. 048-652-8828 ku, Saitama City, Saitama, 331-0815, Japan
Nagoya Sales Office	TEL. 0566-74-8778 FAX. 0566-74-8808 10-1, 2-chome, Misono-cho, Anjo City, Aichi, 446-0076, Japan	
Fukuoka Sales Office	TEL. 092-433-0424 8-10-101, 1-chome, Kamimut	FAX. 092-433-0426 a, Hakata-ku, Fukuoka City, Fukuoka, 812-0006, Japan

Global Network



Asia Detailed Map





