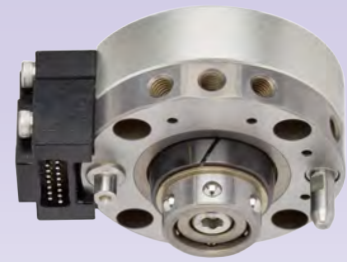


Robotic Hand Changer

Model **SWR**



Smaller, Lighter, and Stronger!!

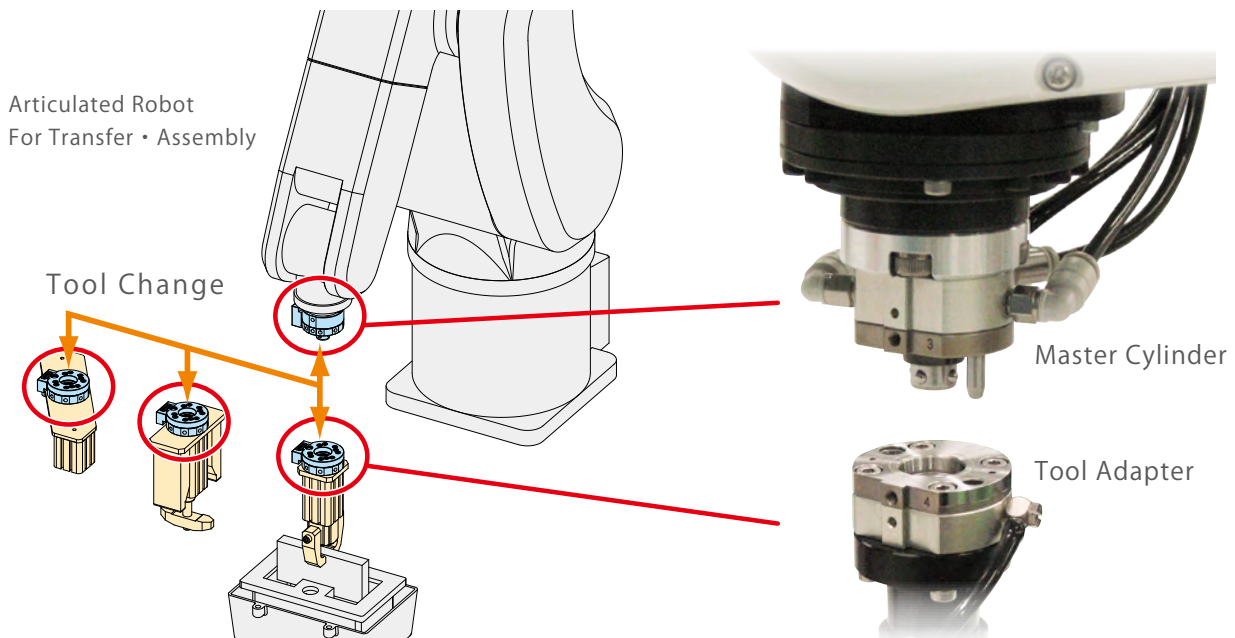
Allowable Weight : 3kg, 7kg, 12kg, 25kg, 50kg, 75kg, 120kg PAT.

Locating Repeatability : 3 μ m High Rigidity : Zero Backlash

Long Life : Durability of more than One Million Cycles

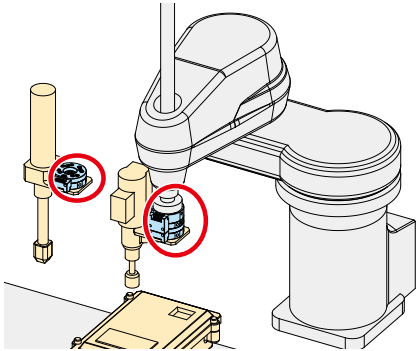
High-precision Robotic Hand Changer enables multiple functions of robots and setup time reduction.

It enhances the productivity of automated production line.

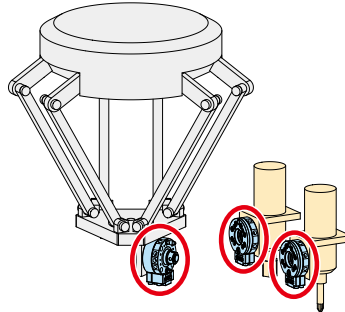


Application Examples

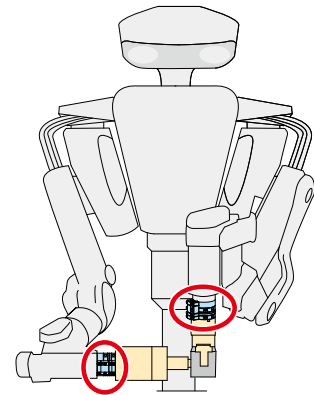
One robot performs multiple operations.



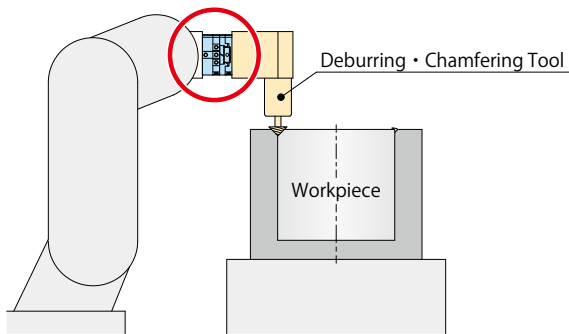
SCARA Robot
For Nut Runner Tool Change



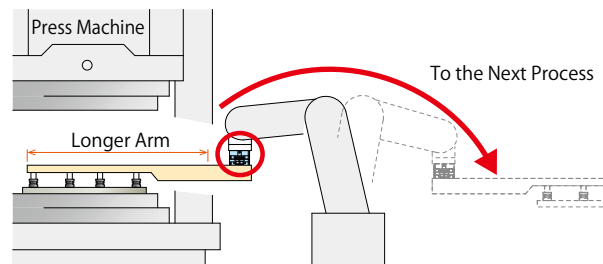
Parallel Link Robot
For Screw Tightening



Humanoid Robot
For Assembly



For Changing
Deburring and Machining Tools



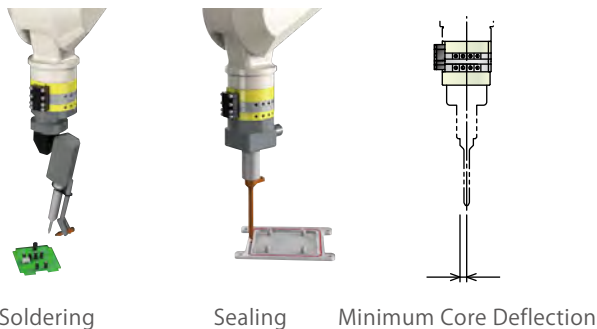
For Changing Transfer Robot Arms of
Automatic Line of Press Machines

High Accuracy Locating Repeatability

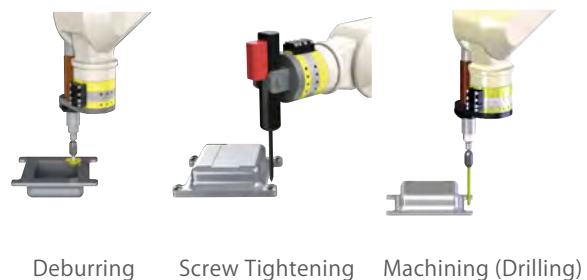
Locating Repeatability : 3 μm
High accuracy locating with dual contact by the taper sleeve. It enables the repeated locating accuracy.

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.



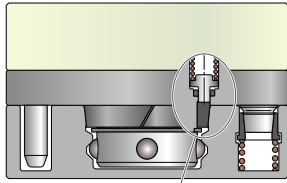
Minimum deflection of the tool end enables accuracy process.



Suitable for the work which generates high torque.

- Locating + Clamp
- Locating
- Clamp
- Support
- Valve · Coupler
- Cautions · Others
- Robotic Hand Changer
 - SWR
 - Pneumatic Location Clamp
 - SWT
 - High-Power Pneumatic Pallet Clamp
 - WVS

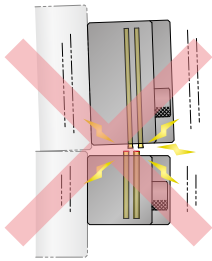
Features



Close Contact

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.

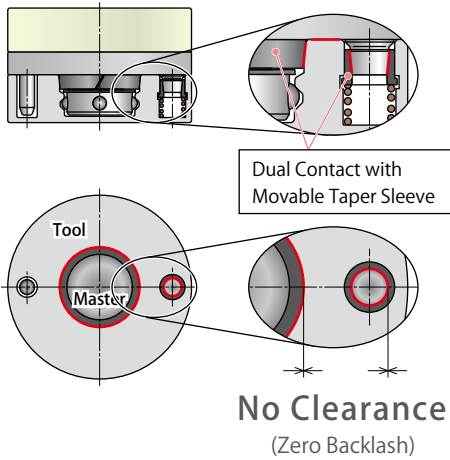


Prevents Errors

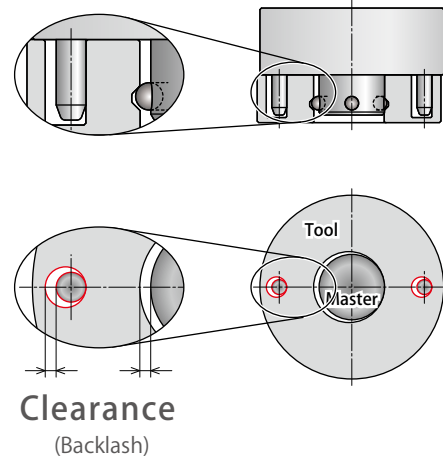
Prevents moment stops caused by electrode error.

"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.

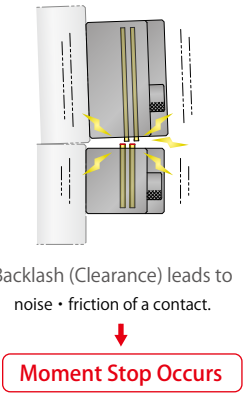
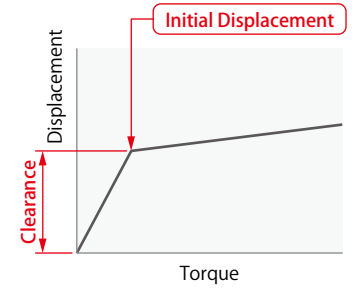
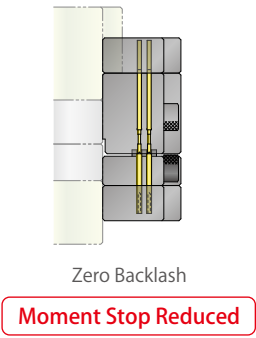
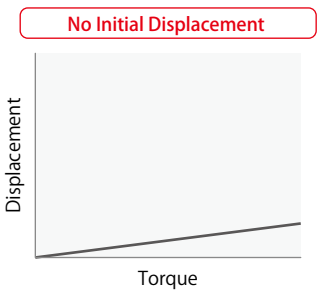
Kosmek Robotic Hand Changer



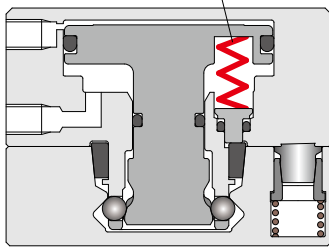
General Robotic Hand Changer



When torque acts in twisting direction,



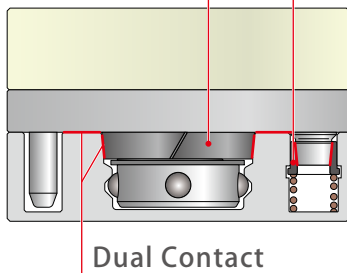
Internal Spring



Self-Locking prevents falling of tools.

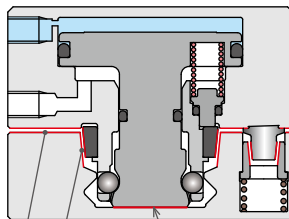
Even when pressure is at zero, self-locking function prevents falling of tools.
※ Usually it should be connected with spring force and pneumatic pressure.

Movable Taper Sleeve



High Accuracy Locating Repeatability 0.003mm

Locating repeatability is 3 μm.
Dual contact with movable taper sleeve enables high accuracy locating. There is only slight fluctuation at the end of tool allowing for accuracy process.



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

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.

Light • Compact

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

Long Life and High Rigidity

Zero backlash when connecting and the durability is 1 million cycles. Even after 1 million cycles, locating repeatability 3 μm is maintained.

A Variety of Electrode/Air Joint Options

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

- Solder Terminal
- Solder Terminal with Cable
- Waterproof Electrode (Simple Waterproof)
Only when connected: IP54
- D-sub Connector
- Circular Connector (Connector Based on JIS C 5432)
- Power Transmission Option (Connector Based on MIL-DTL-5015)
- High Current Transmission Option (Connector Based on MIL-DTL-5015)
- Waterproof Electrode (Noncontact Waterproof) IP67
- Air Joint (2 Port Option)
- Air Joint (4 Port • Solder Terminal Extensible Option)



Locating
+
Clamp

Locating

Clamp

Support

Valve • Coupler

Cautions • Others

Robotic
Hand Changer

SWR

Pneumatic
Location Clamp

SWT

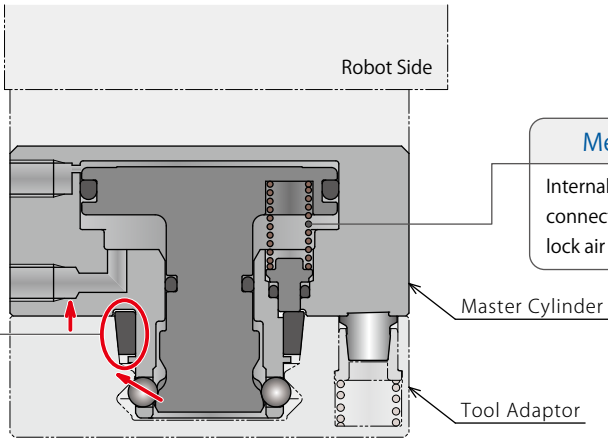
High-Power Pneumatic
Pallet Clamp

WVS

● Cross Section

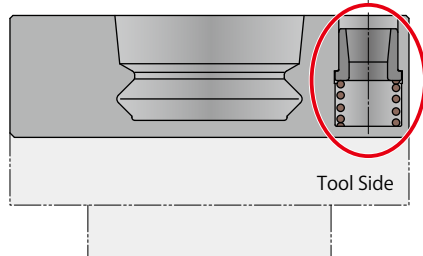
High Accuracy / High Rigidity / Long Life

High Accuracy
Marginal error is absorbed by the taper sleeve. The clearance between the master cylinder, taper sleeve and tool adaptor is eliminated. This enables the repeated locating accuracy and stabilized clamping force.



Mechanical Lock
Internal spring maintains the connected state even when lock air supply is stopped.

High Rigidity
Clearance is eliminated when the master cylinder and tool adapter are connected. This enables high rigidity.



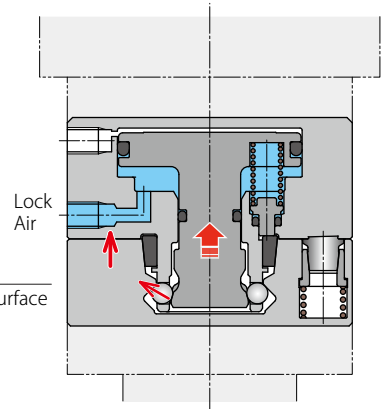
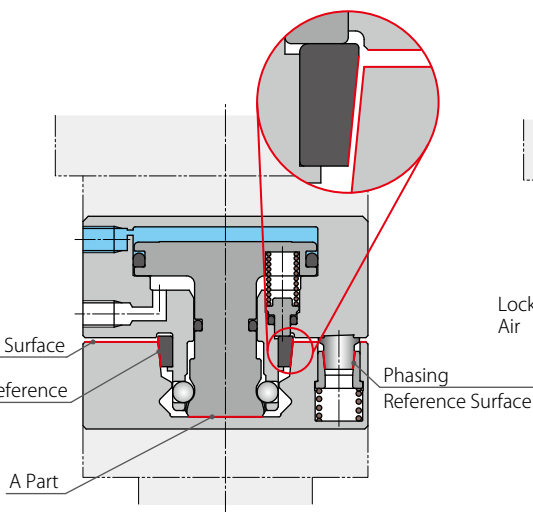
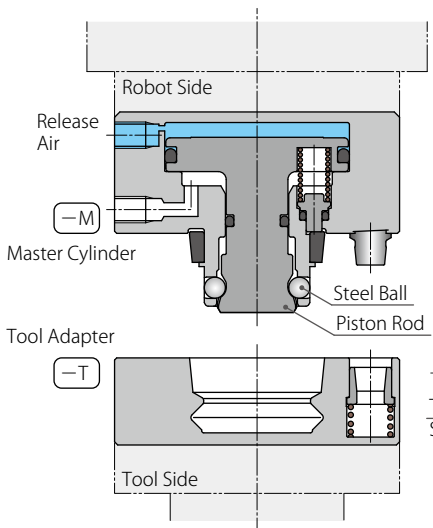
Long Life
Wear is absorbed by the movable taper sleeve.

● Action Description

Before Connected (Released State)

Lifted State (Detached State)

Connected State (Locked State)



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 $\sim +0.5\text{mm}$, 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.

Supply air to the lock port. The piston rod will be pulled up with piston thrust and an internal spring, and the block on tool side will be pushed to the seating surface by the steel balls. When the block is pushed, the taper reference surface and phasing taper sleeve is centered in a reference axis (body), and locating is completed.

- Locating + Clamp
- Locating
- Clamp
- Support
- Valve - Coupler
- Cautions - Others

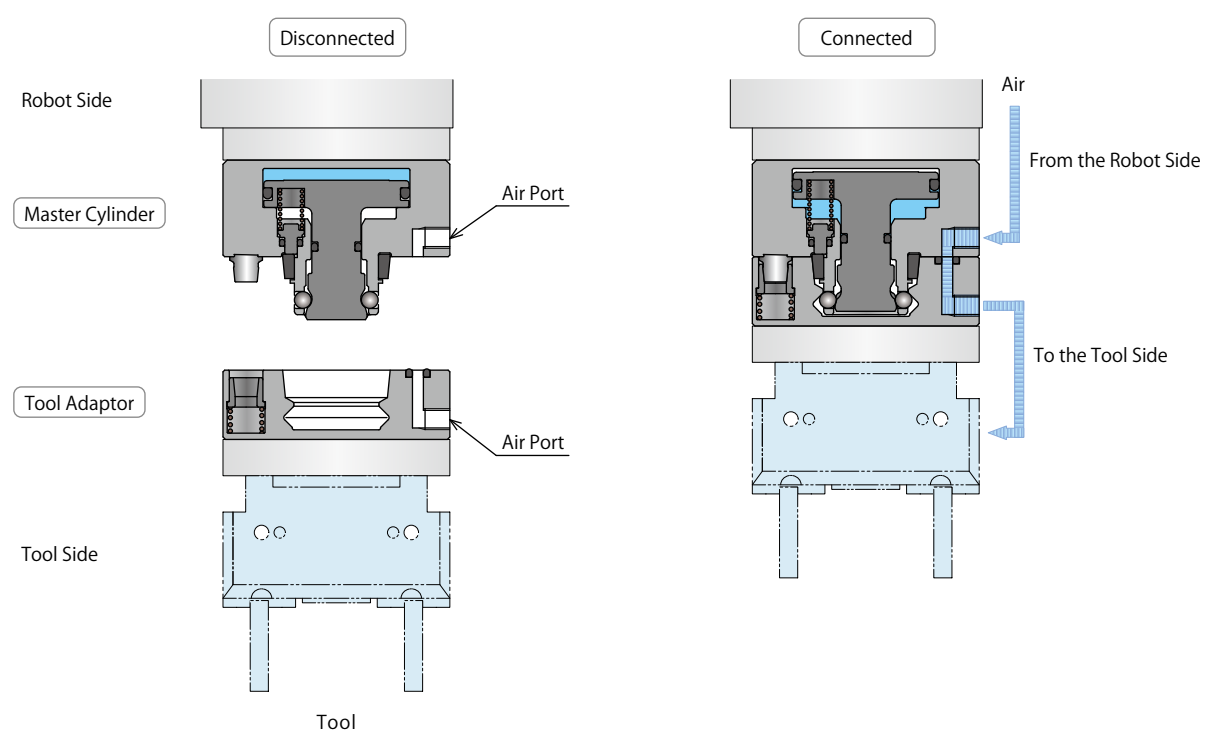
Robotic Hand Changer

- SWR
- Pneumatic Location Clamp
- SWT
- High-Power Pneumatic Pallet Clamp
- WVS

● Air Port Option

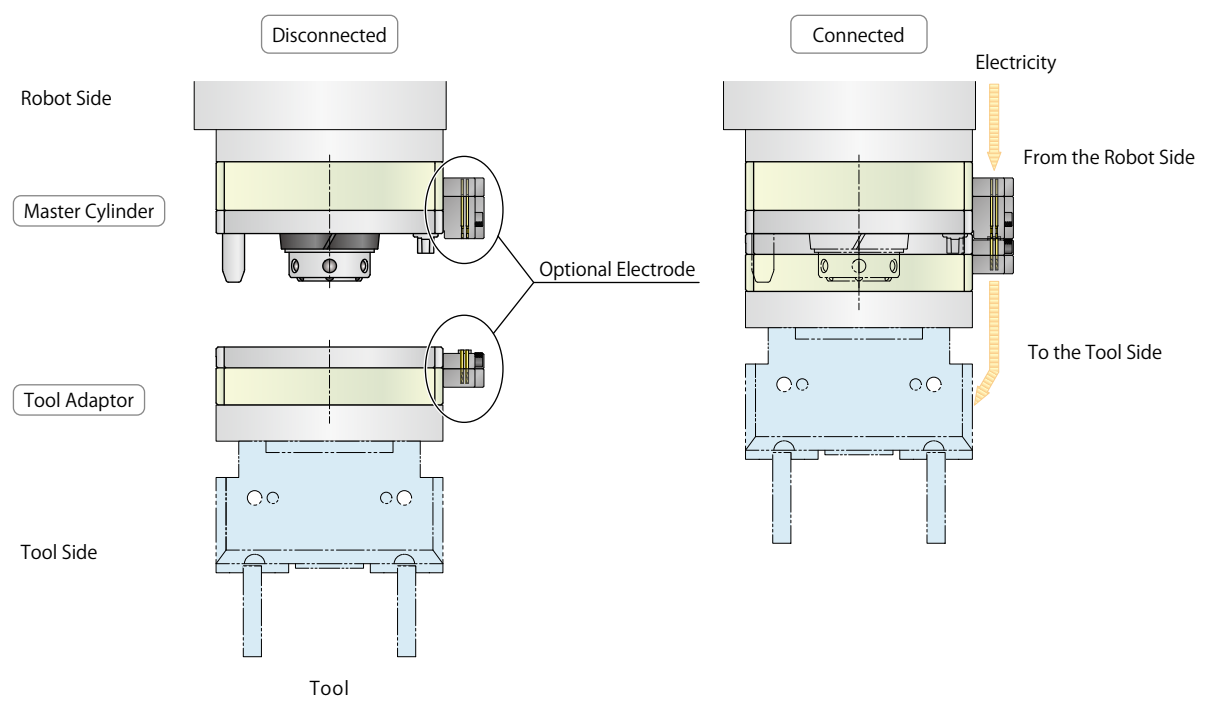
When the master cylinder and tool adaptor are connected, the air port is at the connected state. At this time, it is able to supply air from the robot side to the tool side. Air port can be used for the operation of the actuator (positive pressure) and the suction pad (negative pressure).

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



● Electrode Option

When the master cylinder and tool adaptor 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)

SWR **050** **0** - **M** **F** - **B** -

1 2 3 4 5

Tool Adapter (Tool Side)

SWR **050** **0** - **T** - **B** -

1 2 4 5

1 Allowable Weight ※ Allowable Weight at 0.5MPa Supply Air Pressure

- 003** : 3 kg
- 007** : 7 kg
- 012** : 12 kg
- 025** : 25 kg
- 050** : 50 kg
- 075** : 75 kg
- 120** : 120 kg

2 Design No.

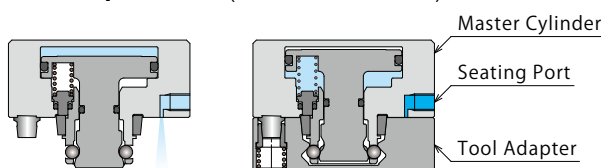
0 : Revision Number

3 Port Option ※ Port option is only for the master cylinder.

- Blank** : No Port
(Only blank option 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 AF option can be chosen for SWR1200.)

		● = Available Option						
3	Option Symbol	3kg	7kg	12kg	25kg	50kg	75kg	120kg
		SWR 0030	SWR 0070	SWR 0120	SWR 0250	SWR 0500	SWR 0750	SWR 1200
	Blank	●						
	F		●	●	●	●	●	
	A		●	●	●	●	●	
	AF							●

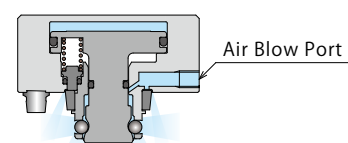
F : Standard (With Seat Check Port)



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

※ Please refer to P.38 for the circuit reference.

A : With Air Blow Port



Locating mechanism part can be cleaned with the air blow.

4 External Option Symbols (Electrode/Air Joint) ^{※1}

Please select from the list below. ※ (Ex.) Circular Connector 15 poles : G

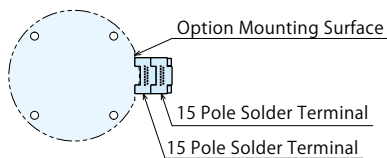
● = Available Option

Rated Voltage	Rated Current	External Options (Electrode/Air Joint)	Number of Poles (Number of Ports)	Option Symbol	3kg SWR 0030	7kg SWR 0070	12kg SWR 0120	25kg SWR 0250	50kg SWR 0500	75kg SWR 0750	120kg SWR 1200		
-	-	Standard : No External Attachment	-	Blank	●	●	●	●	●	●	●		
DC24V	3A ^{※2}	Solder Terminal P.25	15 Poles	B	●	●	●	●	●	●	● ^{※3}		
			30 Poles (2 Sets of 15 Poles)	BB		●	●	●	●	●	● ^{※3}		
		Solder Terminal with Cable P.26	15 Poles	Cable 1m C01 Cable 2m C02	●	●	●	●	●	●	●	● ^{※3}	
			30 Poles (2 Sets of 15 Poles)	Cable 1m C01C01 Cable 2m C02C02		●	●	●	●	●	●	● ^{※3}	
		Simple Waterproof Electrode Only when connected: IP54 P.27	16 Poles	Cable 1m U01 Cable 2m U02	●	●	●	●	●	●	●	● ^{※3}	
			32 Poles (2 Sets of 16 Poles)	Cable 1m U01U01 Cable 2m U02U02					●	●	●	● ^{※3}	
		D-sub Connector P.28	15 Poles	D					●	●	●	●	
			30 Poles (2 Sets of 15 Poles)	DD					●	●	●	●	
		Circular Connector (Connector Based on JIS C 5432) P.29	15 Poles	G						●	●	●	
			30 Poles (2 Sets of 15 Poles)	GG						●	●	●	
		AC200V DC200V	5A ^{※2}	Power Transmission Option (Connector Based on MIL-DTL-5015) P.30	8 Poles	E				●	●	●	●
			16 Poles (2 Sets of 8 Poles)		EE					●	●	●	●
13A ^{※2}	High Current Transmission Option (Connector Based on MIL-DTL-5015) P.31	10 Poles	H					●	●	●	●		
		20 Poles (2 Sets of 10 Poles)	HH					●	●	●	●		
Noncontact Waterproof Electrode IP67 P.35		Number of Signals : 12	NPN	V				●	●	●	●		
			PNP	VX ^{※4}					●	●	●	●	
Air (Negative Pressure Connectable)	Air Joint P.32	2 Ports	Q					●	●	●	●		
		4 Ports (2 Sets of 2 Ports)	QQ					●	●	●	●		
	Air Joint (Solder Terminal Extensible Option) P.33	4 Ports	Air Joint Only P With Solder Terminal BP/BP2	●	●	●	●	●	●	●	● ^{※3}		
		8 Ports (2 Sets of 4 Ports)	Air Joint Only PP With Solder Terminal BP2BP2					●	●	●	● ^{※3}		

- Notes
- ※1. For the combination of electrode options, the symbols should be in alphabetical order. (Ex.: For 'VX' and 'P', it is 'PVX'.)
 - ※2. For the electrode options, check the total current capacity and contact resistance shown in the specifications of each options.
 - ※3. Please contact us separately for the options of SWR1200 marked with ※3.
 - ※4. The option symbol 'VX' is only for master cylinder. The option symbol of the tool adapter is 'V' for both NPN/PNP.
 - ※5. 'BP2' for SWR0250, SWR0500, SWR0750: The solder terminal 'B' is extended after mounting the air joint 'P' on the option mounting surface. For 'BP', the solder terminal 'B' is mounted on the first option mounting surface and the air joint 'P' on the second.
 - ※6. 'BP' for SWR0070 and SWR0120: The solder terminal 'B' is extended on the air joint 'P'.

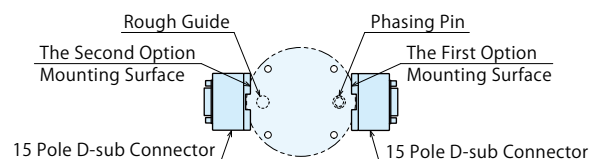
Electrode Mounting Example

SWR0070, SWR0120
Ex. Solder Terminal 30 Poles (2 Sets of 15 Poles)



SWR0250, SWR0500, SWR0750, SWR1200

Ex. D-sub Connector 30 Poles (2 Sets of 15 Poles)
(When selecting one set of option, the external attachment is mounted on "The First Option Mounting Surface" shown in the external dimensions.)



5 Joint Option (Air Port Part)

Blank : No Check Valve (Standard)

S : With Check Valve (Selectable only for SWR1200)

※ Please contact us separately when you request the check valve option for other than SWR1200.

Locating + Clamp

Locating

Clamp

Support

Valve · Coupler

Cautions · Others

Robotic Hand Changer

SWR

Pneumatic Location Clamp

SWT

High-Power Pneumatic Pallet Clamp

WVS

● Specifications

Model No.			SWR0030	SWR0070	SWR0120	SWR0250	SWR0500	SWR0750	SWR1200
Allowable Weight ※1	At 0.5MPa	kg	3	7	12	25	50	75	120
	At 1MPa	kg	6	12	20	45	90	140	200
Locating 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	cm ³	0.64	1.50	2.38	6.08	14.38	22.98	38.44
	Release	cm ³	0.72	1.72	2.69	6.68	15.39	25.45	42.76
Air Pressure	Max. Operating Pressure MPa		1.0						
	Min. Operating Pressure MPa		0.4	0.35					
	Withstanding Pressure MPa		1.5						
Holding Force			Refer to P.20						
Lifting Force (Detaching Force)			Refer to P.20						
Allowable Static Moment ※1	Bending (At 0.5MPa)	N·m	5	14	27	74	194	380	725
	Bending (At 1.0MPa)	N·m	(10)	(25)	(45)	(135)	(350)	(700)	(1400)
	Twisting	N·m	15	23	45	100	175	300	700
Operating Temperature		°C	0~70						
Usable Fluid			Dry Air						
Weight ※2	Master Cylinder	g	70	180	250	500	1000	1650	3800
	Tool Adapter	g	45	120	160	300	750	1100	2600
Air Port ※3	Thread Size ×		M3×0.5×2 Ports	M5×0.8×6 Ports	M5×0.8×6 Ports	M5×0.8×6 Ports	M5×0.8×2 Ports		
	Number of Ports		※4				Rc1/8×4 Ports	Rc1/8×9 Ports	Rc1/4×9 Ports
Electrode Option			Refer to P.25~P.37						

Notes

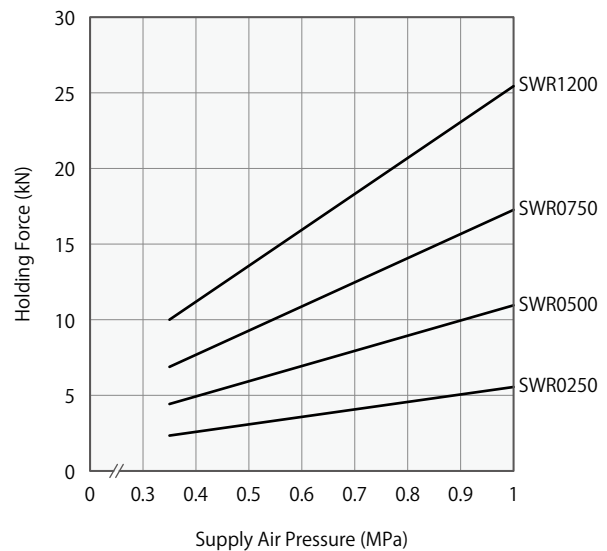
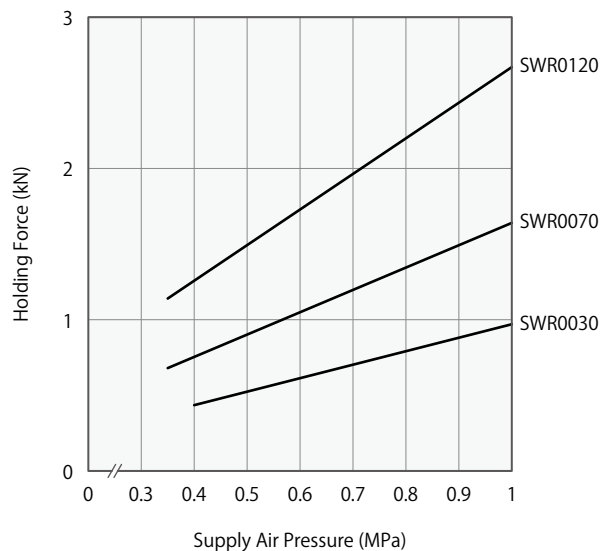
- ※1. Please consider the allowable weight and allowable static moment when selecting the product.
- ※2. Weight of the body without external options.
- ※3. Refer to P.16 for air port use.
- ※4. If the number of air port of SWR0030 is insufficient, we offer SWRY0010 with 6 air ports (Refer to P.39 Exclusive Use).

● Holding Force Curve

Model No.		SWR0030	SWR0070	SWR0120	SWR0250	SWR0500	SWR0750	SWR1200	
Holding Force	At 0MPa ^{※5}	kN	0.12	0.15	0.32	0.57	0.95	1.29	1.97
	At 0.35MPa	kN	-	0.68	1.14	2.31	4.44	6.87	9.84
	At 0.4MPa	kN	0.45	0.75	1.26	2.56	4.94	7.67	11.00
	At 0.5MPa	kN	0.50	0.90	1.50	3.05	5.94	9.26	13.33
	At 1MPa	kN	0.90	1.64	2.67	5.53	10.92	17.24	24.95

Note

※5. It indicates holding force when air pressure is at 0MPa after connecting and may not satisfy the specification as connecting force.

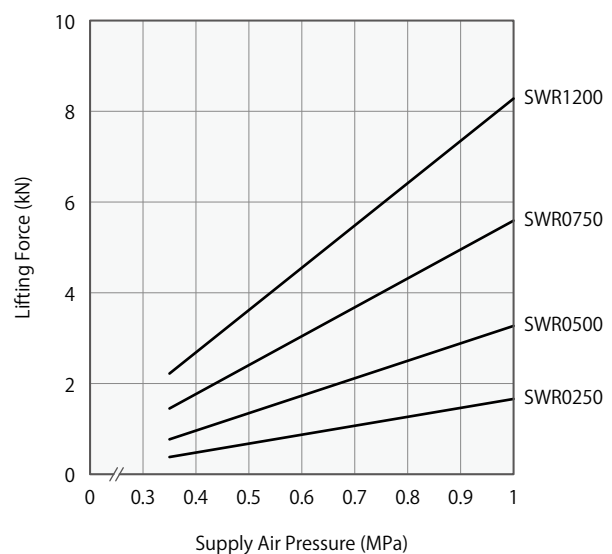
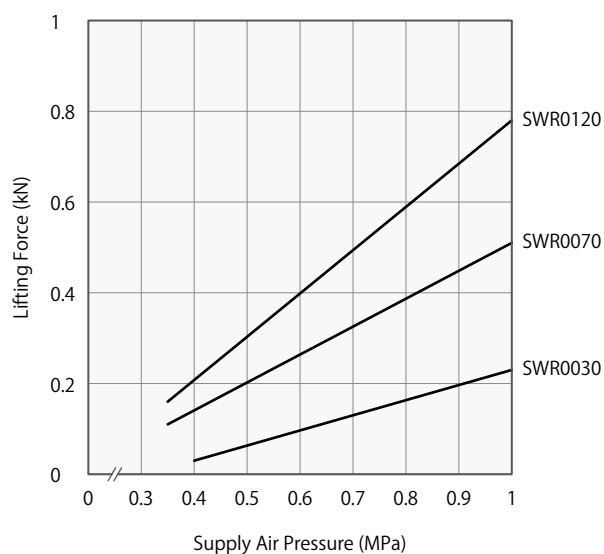


Note

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

● Lifting Force (Detaching Force)

Model No.		SWR0030	SWR0070	SWR0120	SWR0250	SWR0500	SWR0750	SWR1200	
Lifting Force (Detaching Force)	At 0.35MPa	kN	(0.03:At 0.4MPa)	0.11	0.16	0.38	0.77	1.45	2.22
	At 0.5MPa	kN	0.08	0.20	0.30	0.68	1.34	2.41	3.62
	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).

Locating
+
Clamp

Locating

Clamp

Support

Valve · Coupler

Cautions · Others

Robotic
Hand Changer

SWR

Pneumatic
Location Clamp

SWT

High-Power Pneumatic
Pallet Clamp

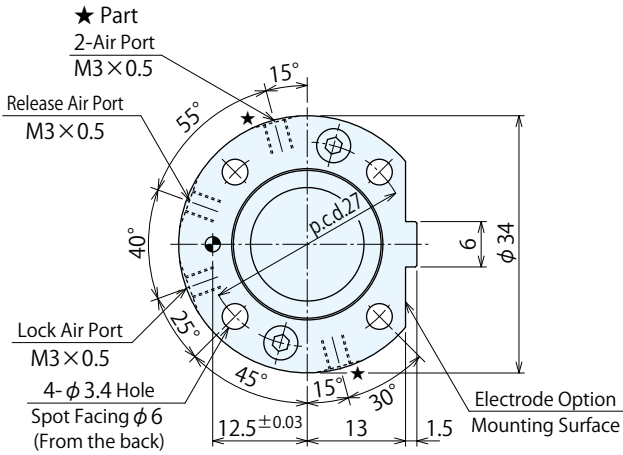
WVS

External Dimensions

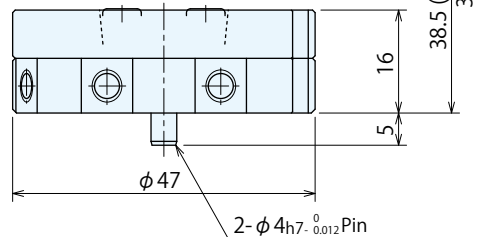
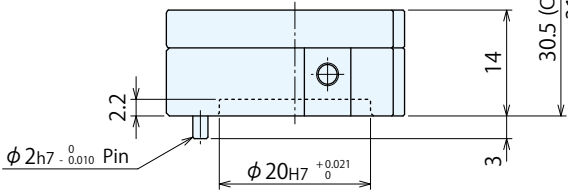
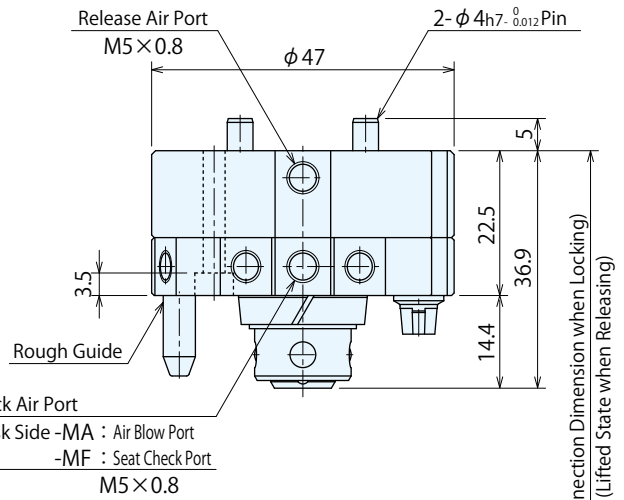
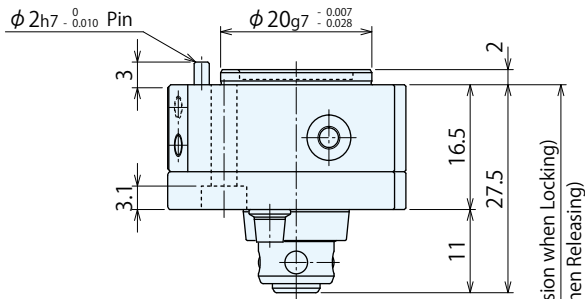
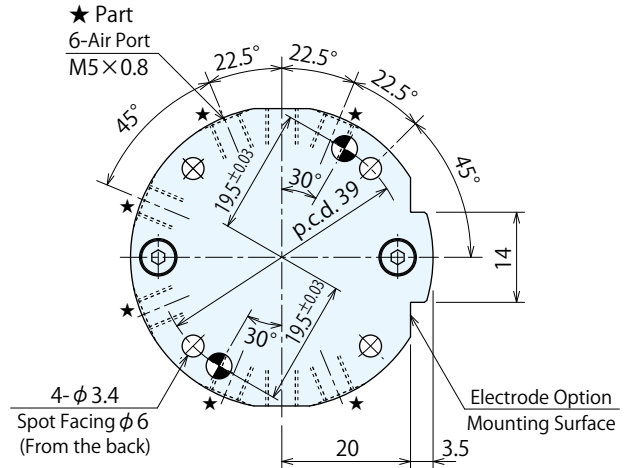
※ This drawing shows the released state of SWR0030.

※ This drawing shows the released state of SWR0070.

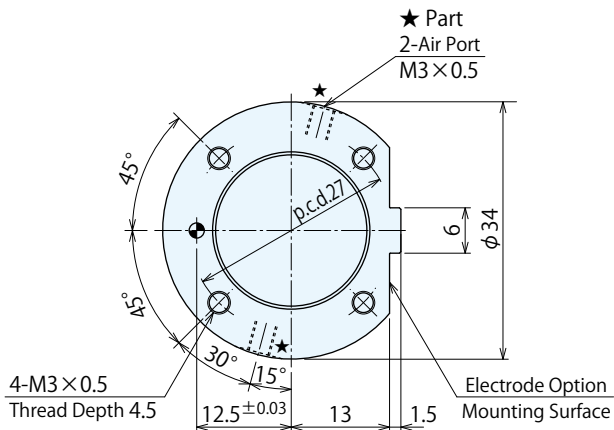
Master Cylinder
SWR0030-M



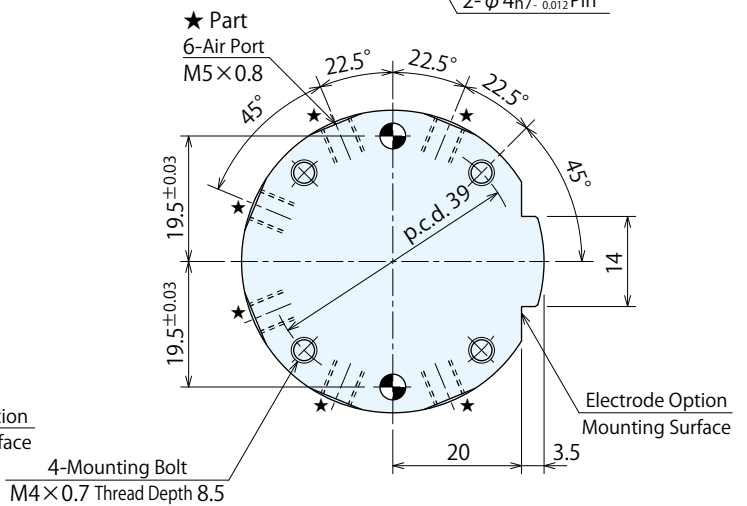
Master Cylinder
SWR0070-M



Tool Adapter
SWR0030-T



Tool Adapter
SWR0070-T

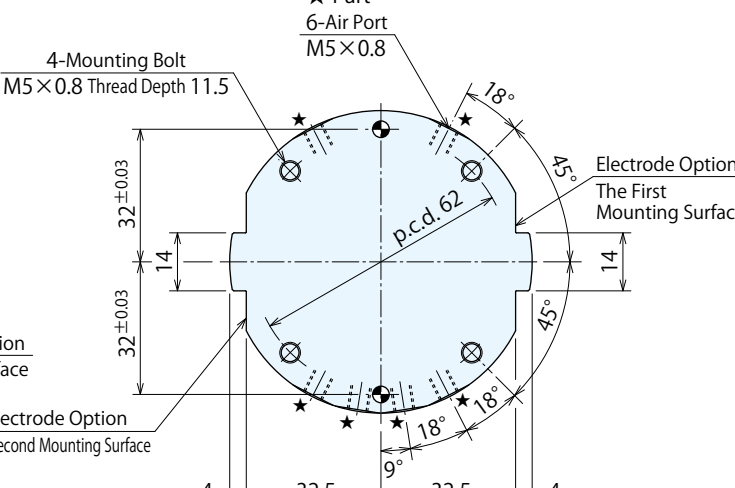
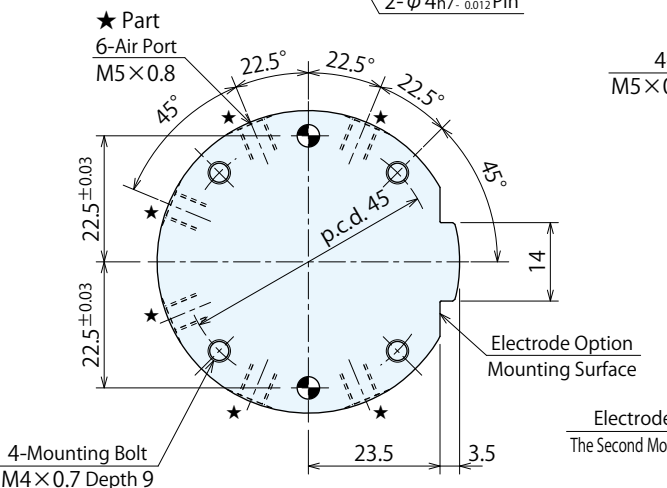
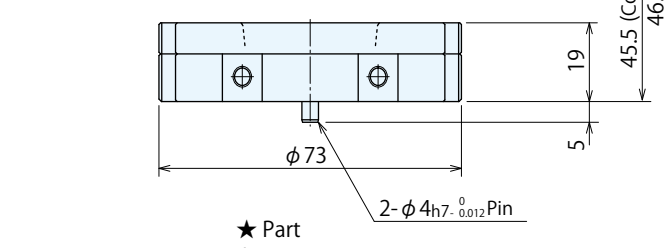
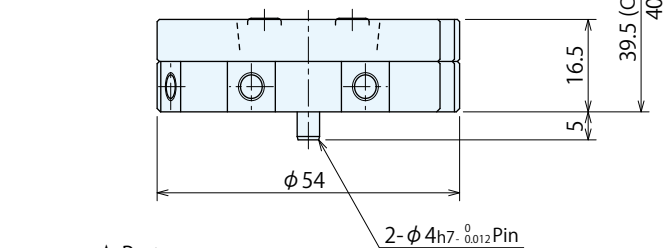
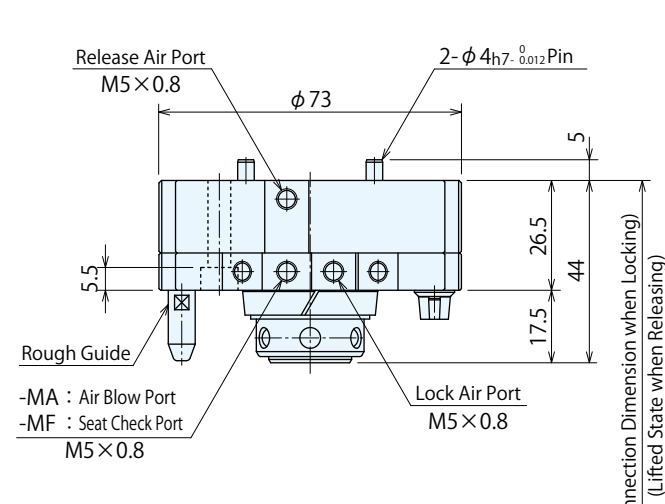
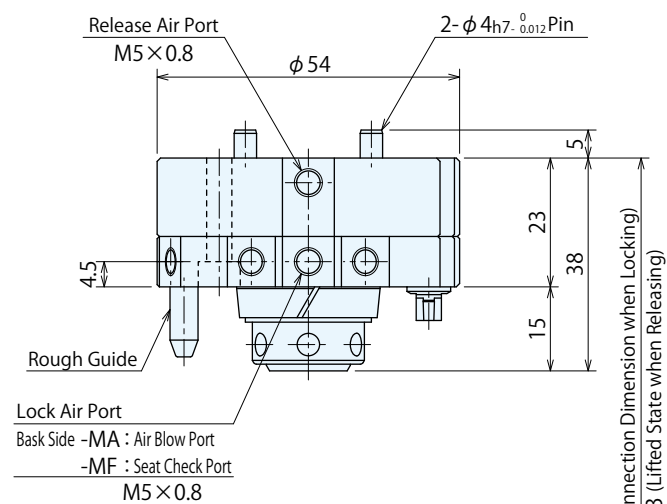
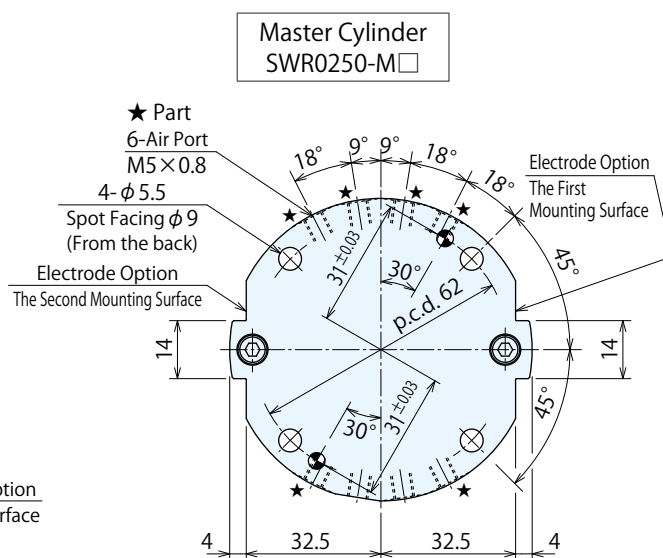
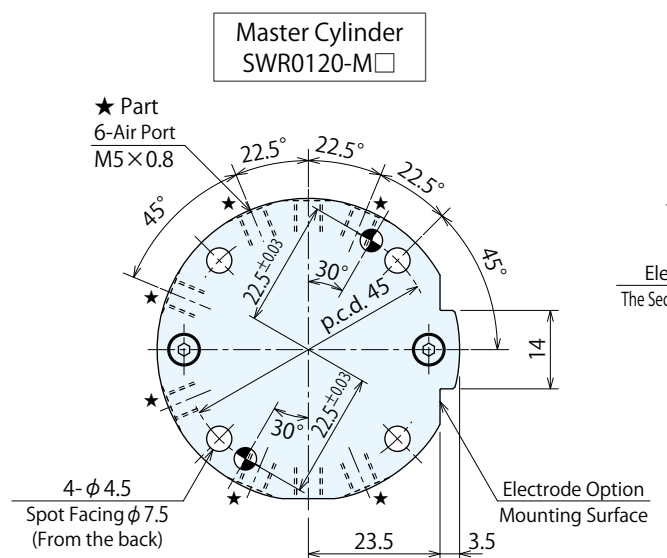


Locating + Clamp
Locating
Clamp
Support
Valve · Coupler
Cautions · Others
Robotic Hand Changer
SWR
Pneumatic Location Clamp
SWT
High-Power Pneumatic Pallet Clamp
WVS

External Dimensions

※ This drawing shows the released state of SWR0120.

※ This drawing shows the released state of SWR0250.



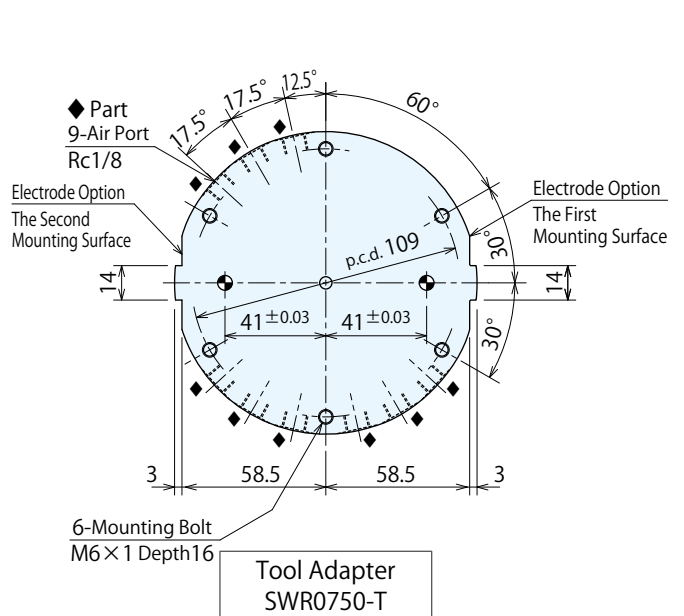
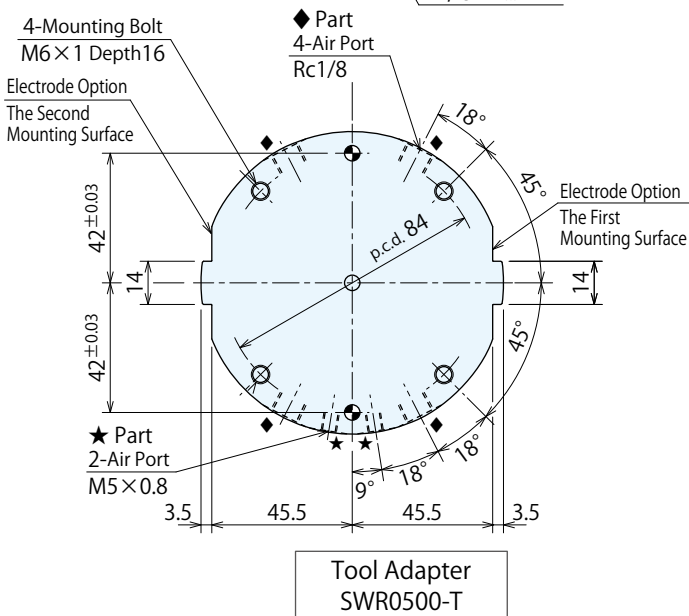
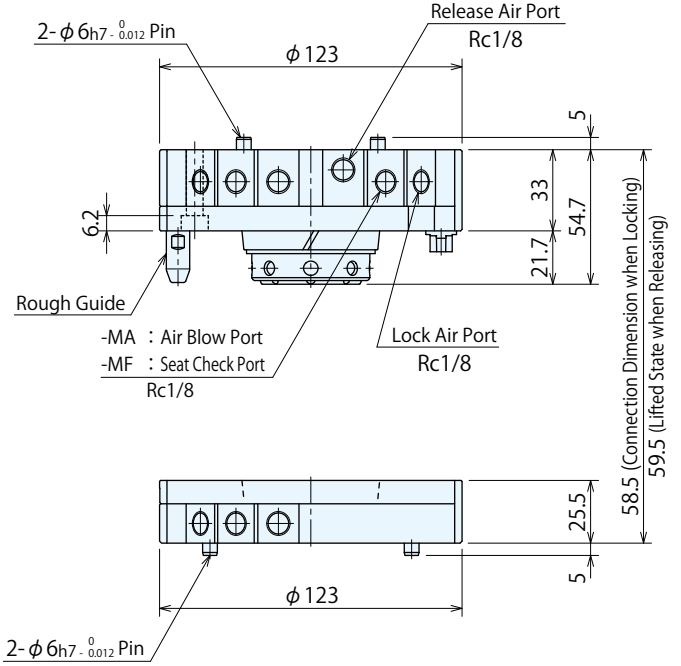
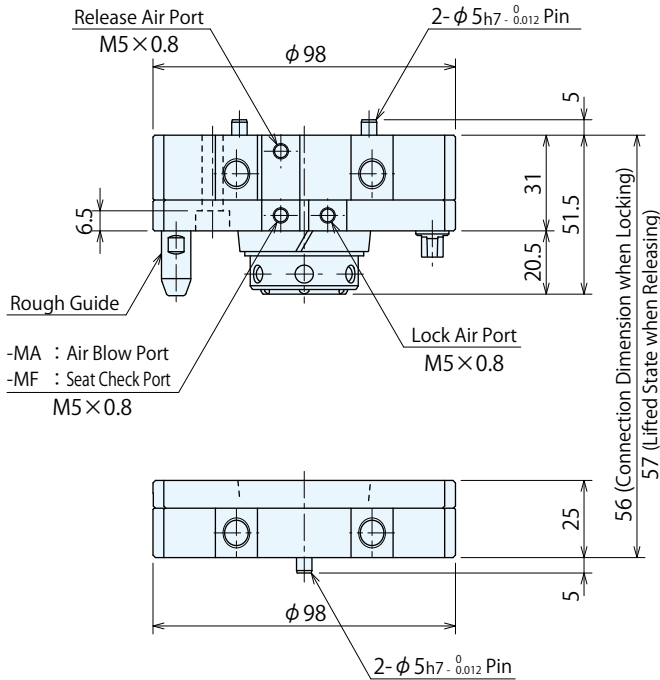
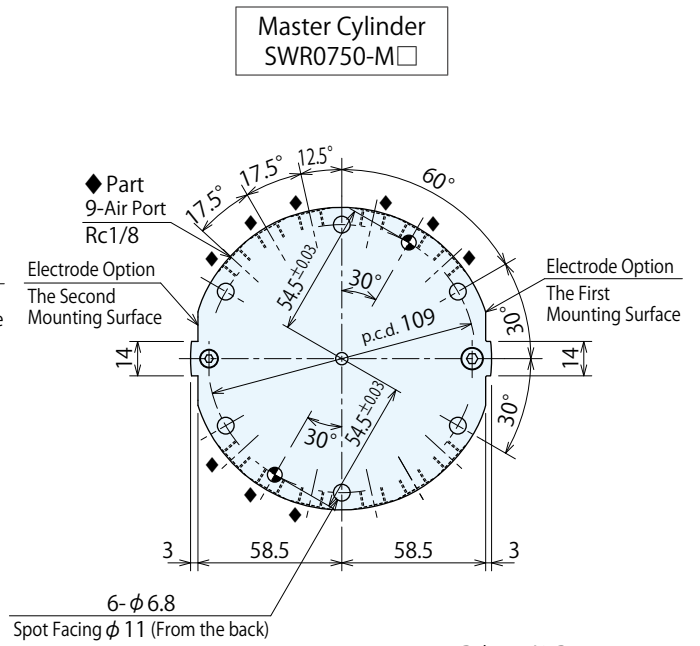
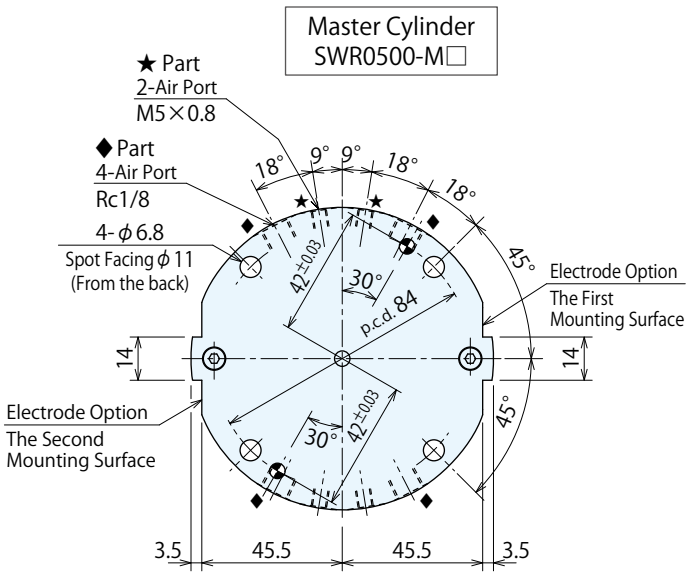
Tool Adapter SWR0120-T

Tool Adapter SWR0250-T

External Dimensions

※ This drawing shows the released state of SWR0500.

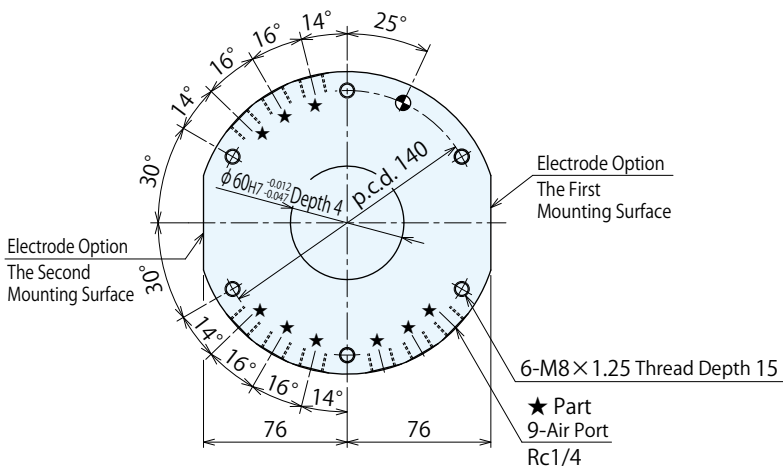
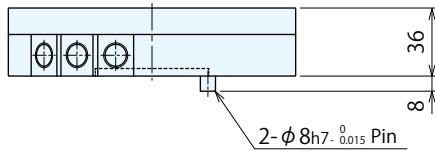
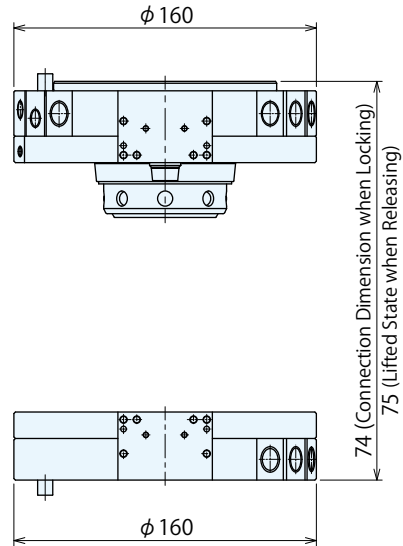
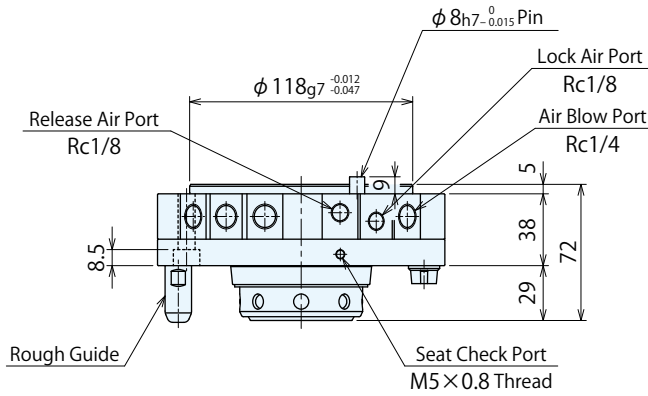
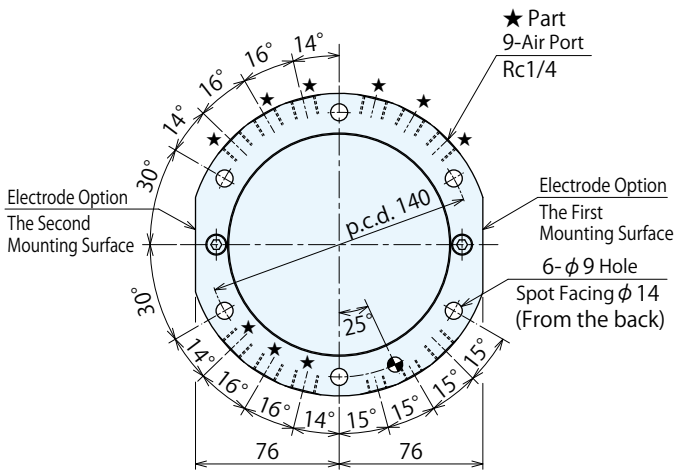
※ This drawing shows the released state of SWR0750.



● External Dimensions

※ This drawing shows the released state of SWR1200.

Master Cylinder
SWR1200-MAF-□



Tool Adapter
SWR1200-T-□

Locating + Clamp
Locating
Clamp
Support
Valve · Coupler
Cautions · Others

Robotic Hand Changer
SWR
Pneumatic Location Clamp
SWT
High-Power Pneumatic Pallet Clamp
WVS

External Option : Solder Terminal

External Option Symbol : B

Master Cylinder
model SWR □ 0-M □ -B



Tool Adapter
model SWR □ 0-T □ -B

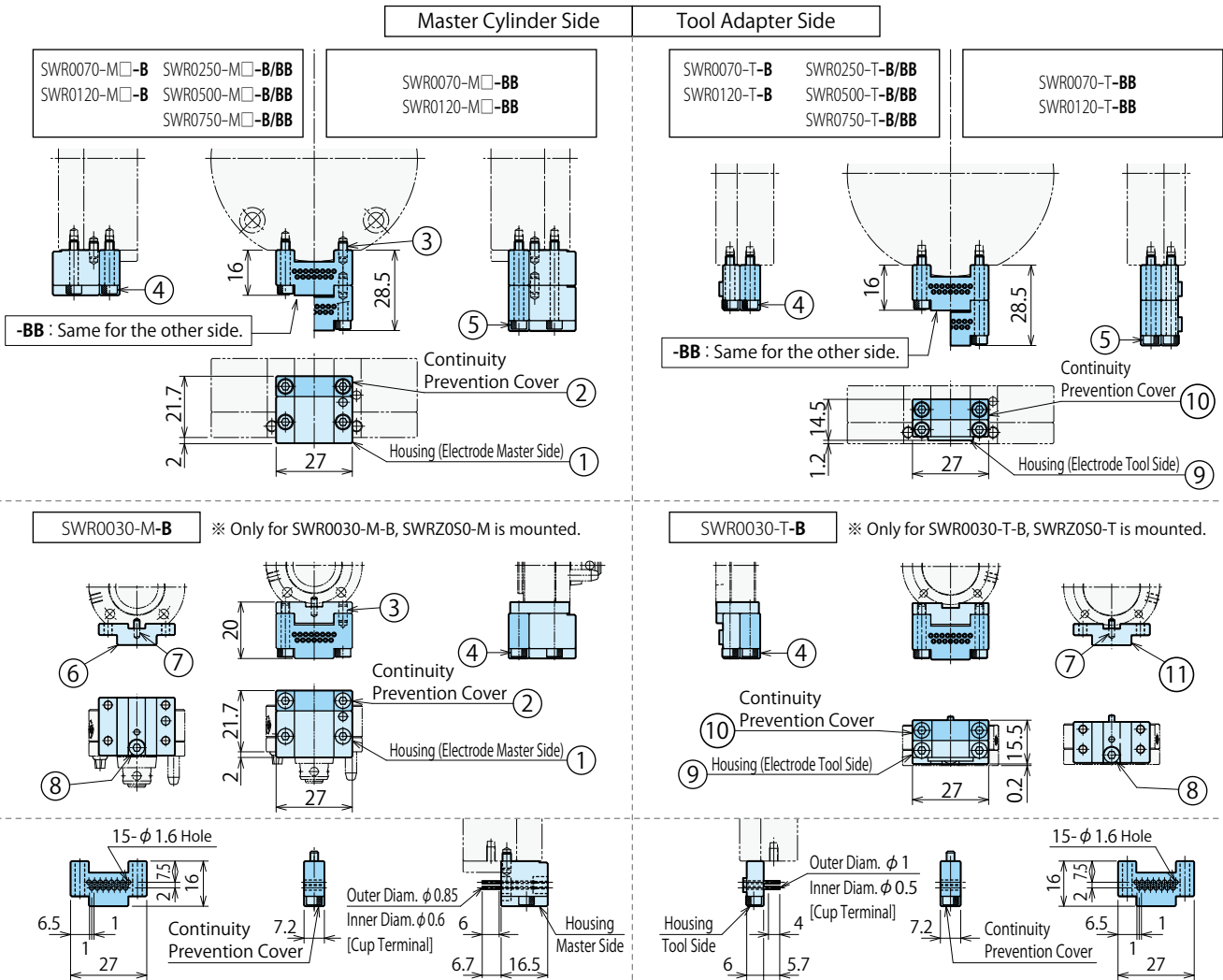


Specifications

Rated Value (per one contact)	DC 24V 3A
Contact Resistance (Initial Value)	100mΩ or less
Number of Poles (per one electrode)	15
Weight ※1	Master Cylinder Side Electrode 15g / Bracket 9g
	Tool Adapter Side Electrode 11g / Bracket 6g

※1. Weight per one electrode.
Bracket weight is the weight of SWRZ0S0-□.

External Dimensions



Model No.	No.	Name	Quantity	
			B : 15 poles	BB : 30 poles
SWRZ0B0-M	①	Electrode (Master Side)	1	2
	②	Continuity Prevention Cover	1	2
	③	Parallel Pin φ3×6 B Type (SUS)	1	2
	※2	Hexagon Socket Bolt M3×0.5×16 (SUS)	4	8
	※2	Hexagon Socket Bolt M3×0.5×30 (SUS)	-	4
SWRZ0S0-M	⑥	Bracket (Master Side)	1	-
	⑦	Parallel Pin φ2×6 B Type (SUS)	1	-
	⑧	Hexagon Socket Bolt M3×0.5×6 (SUS)	1	-

Model No.	No.	Name	Quantity	
			B : 15 poles	BB : 30 poles
SWRZ0B0-T	⑨	Electrode (Tool Side)	1	2
	⑩	Continuity Prevention Cover	1	2
	※2	Hexagon Socket Bolt M3×0.5×16 (SUS)	4	8
SWRZ0S0-T	※2	Hexagon Socket Bolt M3×0.5×30 (SUS)	-	4
	⑪	Bracket (Tool Side)	1	-
	⑦	Parallel Pin φ2×6 B Type (SUS)	1	-
	⑧	Hexagon Socket Bolt M3×0.5×6 (SUS)	1	-

Notes 1. Inform us with the model number shown above if you require electrodes only. (SWRZ0B0-□ : one set is one electrode.)
For SWRZ0B0-M/SWRZ0S0-M/SWRZ0B0-T/SWRZ0S0-T, the bolt marked with ※2 is not included.
2. Please contact us for SWR1200.

● External Option : Solder Terminal with Cable

External Option Symbol : C01/C02



● Specifications

Rated Value (per one contact)	DC 24V 3A	
Contact Resistance (Initial Value)	100mΩ or less	
Number of Poles (per one electrode)	15	
Lead Wire Size	AWG25	
Lead Wire	-C01	1m
Length	-C02	2m
Weight ※3	Master Cylinder Side	-C01 Electrode 120g (Bracket 9g)
		-C02 Electrode 230g (Bracket 6g)
	Tool Adapter Side	-C01 Electrode 110g (Bracket 9g)
		-C02 Electrode 220g (Bracket 6g)

※3. Weight per one electrode.
Bracket weight is the weight of SWRZ050-□.

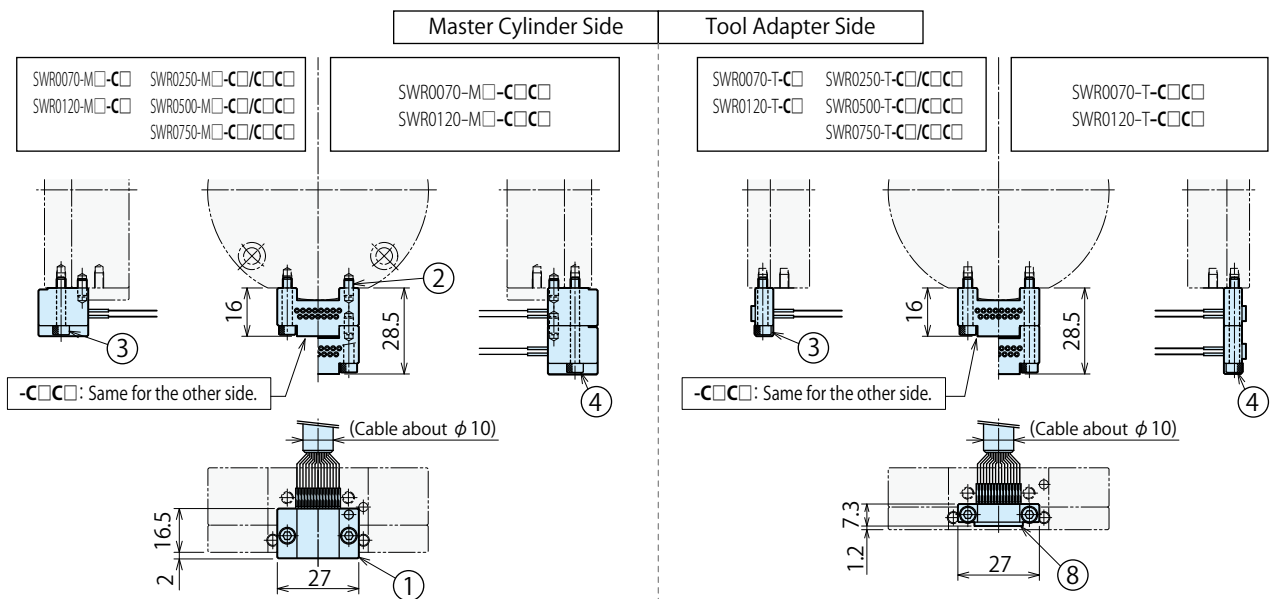
Locating + Clamp
Locating
Clamp
Support
Valve · Coupler
Cautions · Others

Robotic Hand Changer
SWR

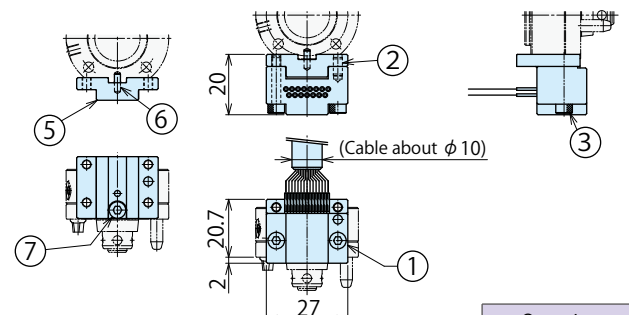
Pneumatic Location Clamp
SWT

High-Power Pneumatic Pallet Clamp
WVS

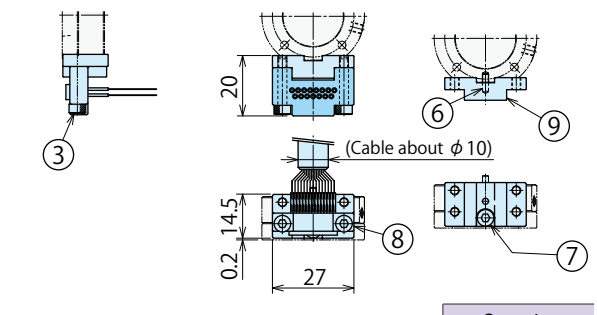
● External Dimensions



SWR0030-M-□ ※ Only for SWR0030-M-□, SWRZ050-M is mounted.



SWR0030-T-□ ※ Only for SWR0030-T-□, SWRZ050-T is mounted.



Model No.	No.	Name	Quantity	
			C□: 15 poles	C□□: 30 poles
SWRZ0C0 -M01/M02	①	Electrode (Master Side)	1	2
	②	Parallel Pin φ3×6 B Type (SUS)	1	2
	-※4	Hexagon Socket Bolt M3×0.5×16 (SUS)	2	4
	-※4	Hexagon Socket Bolt M3×0.5×30 (SUS)	-	2
SWRZ050-M	⑤	Bracket (Master Side)	1	-
	⑥	Parallel Pin φ2×6 B Type (SUS)	1	-
	⑦	Hexagon Socket Bolt M3×0.5×6 (SUS)	1	-

Model No.	No.	Name	Quantity	
			C□: 15 poles	C□□: 30 poles
SWRZ0C0 -T01/T02	⑧	Electrode (Tool Side)	1	2
	-※4	Hexagon Socket Bolt M3×0.5×16 (SUS)	2	4
	-※4	Hexagon Socket Bolt M3×0.5×30 (SUS)	-	2
	⑨	Bracket (Tool Side)	1	-
SWRZ050-T	⑥	Parallel Pin φ2×6 B Type (SUS)	1	-
	⑦	Hexagon Socket Bolt M3×0.5×6 (SUS)	1	-

Notes

1. Inform us with the model number shown above if you require electrodes only. (SWRZ0C0-□ : one set is one electrode.)
For SWRZ0C0-M□ / SWRZ050-M / SWRZ0C0-T□ / SWRZ050-T, the bolt marked with ※4 is not included.
2. Please contact us for SWR1200.
3. The connected part of the solder terminal and lead wire is isolated with a thermal contraction tube.
4. For SWRZ0C0-□01/02 the lead wire length is different from its shown in the specifications.
(SWRZ0C0-□01: Lead Wire Length 1m, SWRZ0C0-□02: Lead Wire Length 2m)

External Option : Waterproof Electrode (Simple Waterproof Option)

External Option Symbol : U01/U02

Master Cylinder
model SWR □ 0-M □ -

U01
U02

Tool Adapter
model SWR □ 0-T □ -

U01
U02



Specifications

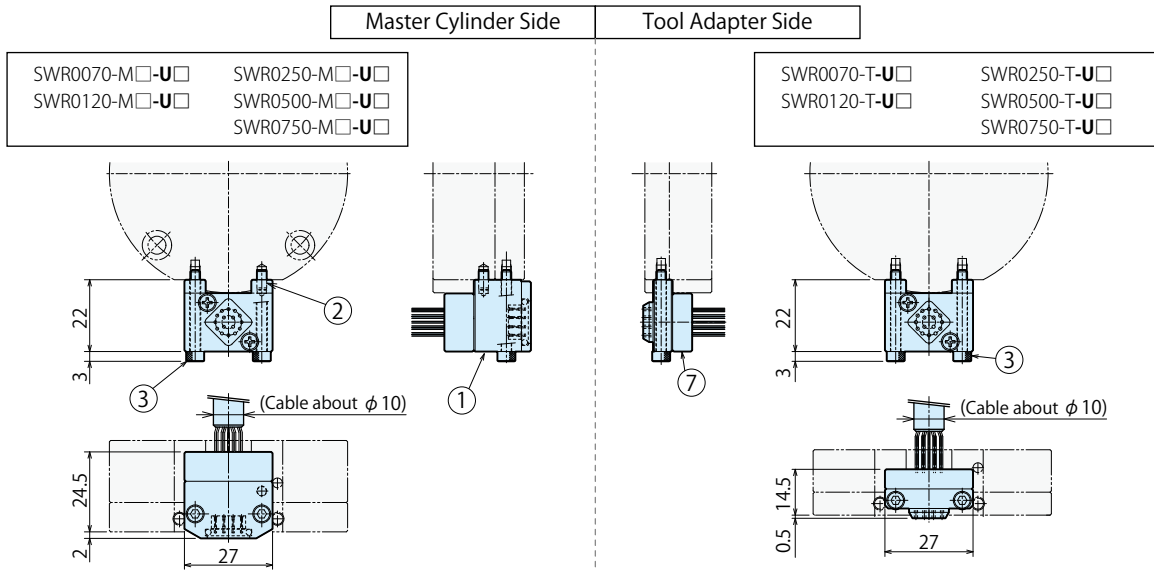
Rated Value (per one contact)	DC 24V 3A	
Contact Resistance (Initial Value)	100mΩ or less	
Number of Poles (per one electrode)	16	
Lead Wire Size	AWG25	
Lead Wire	-U01	1m
Length	-U02	2m
Weight ※1	Master Cylinder Side	-U01 Electrode 140g / Bracket 9g
		-U02 Electrode 260g / Bracket 6g
	Tool Adapter Side	-U01 Electrode 140g / Bracket 9g
		-U02 Electrode 250g / Bracket 6g
Protection Grade ※2	Equivalent to IP54	

※1. Weight per one electrode.

Bracket weight is the weight of SWRZ050-□.

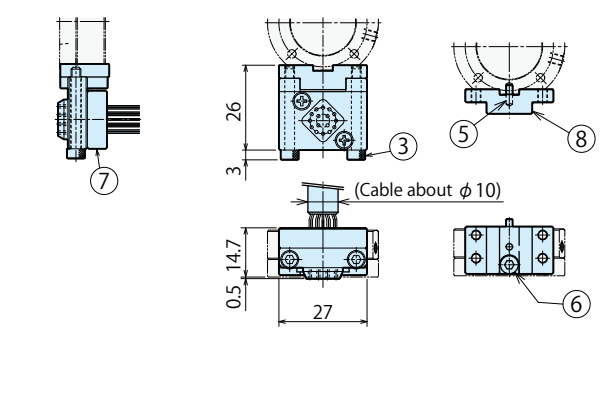
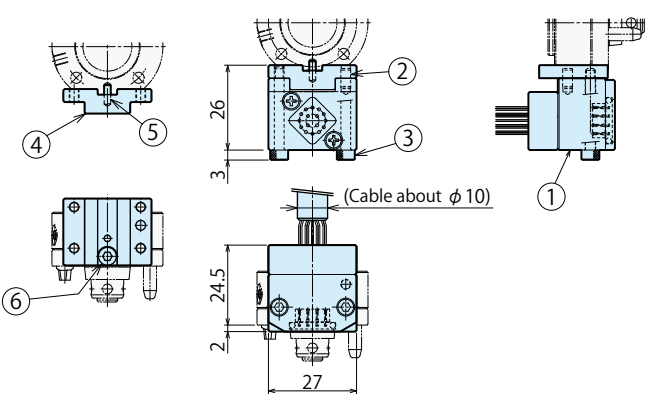
※2. The protection grade is equivalent to IP54 at connected state (fit state) of the master cylinder and tool adapter.

External Dimensions



SWR0030-M-U □ ※ Only for SWR0030-M-U □, SWRZ050-M is mounted.

SWR0030-T-U □ ※ Only for SWR0030-T-U □, SWRZ050-T is mounted.



Model No.	No.	Name	Quantity
SWRZ0U0 -M01/M02	①	Electrode (Master Side)	1
	②	Parallel Pin φ3×6 B Type (SUS)	1
	③	Hexagon Socket Bolt M3×0.5×25 (SUS)	2
	④	Bracket (Master Side)	1
SWRZ050-M	⑤	Parallel Pin φ2×6 B Type (SUS)	1
	⑥	Hexagon Socket Bolt M3×0.5×6 (SUS)	1

Model No.	No.	Name	Quantity
SWRZ0U0 -T01/T02	⑦	Electrode (Tool Side)	1
	③	Hexagon Socket Bolt M3×0.5×25 (SUS)	2
	⑧	Bracket (Tool Side)	1
SWRZ050-T	⑤	Parallel Pin φ2×6 B Type (SUS)	1
	⑥	Hexagon Socket Bolt M3×0.5×6 (SUS)	1

- Notes
1. Inform us with the model number shown above if you require electrodes only. (SWRZ0U0-□ : one set is one electrode.)
 2. Please contact us for SWR1200.
 3. For SWRZ0U0-□01/02 the lead wire length is different from its shown in the specifications. (SWRZ0U0-□01 : Lead Wire Length 1m, SWRZ0U0-□02 : Lead Wire Length 2m)

● External Option : D-SUB Connector

External Option Symbol : D

Master Cylinder
model SWR□0-M□-D

Tool Adapter
model SWR□0-T□-D



● Specifications

Rated Value (per one contact)	DC 24V 3A
Contact Resistance (Initial Value)	100mΩ or less
Number of Poles (per one electrode)	15
Weight ※1	Master Cylinder Side Electrode 90g / Bracket 17g
	Tool Adapter Side Electrode 70g / Bracket 17g

※1. Weight per one electrode.
Bracket weight is the weight of SWR20Z0.

Locating
+
Clamp

Locating

Clamp

Support

Valve · Coupler

Cautions · Others

Robotic
Hand Changer

SWR

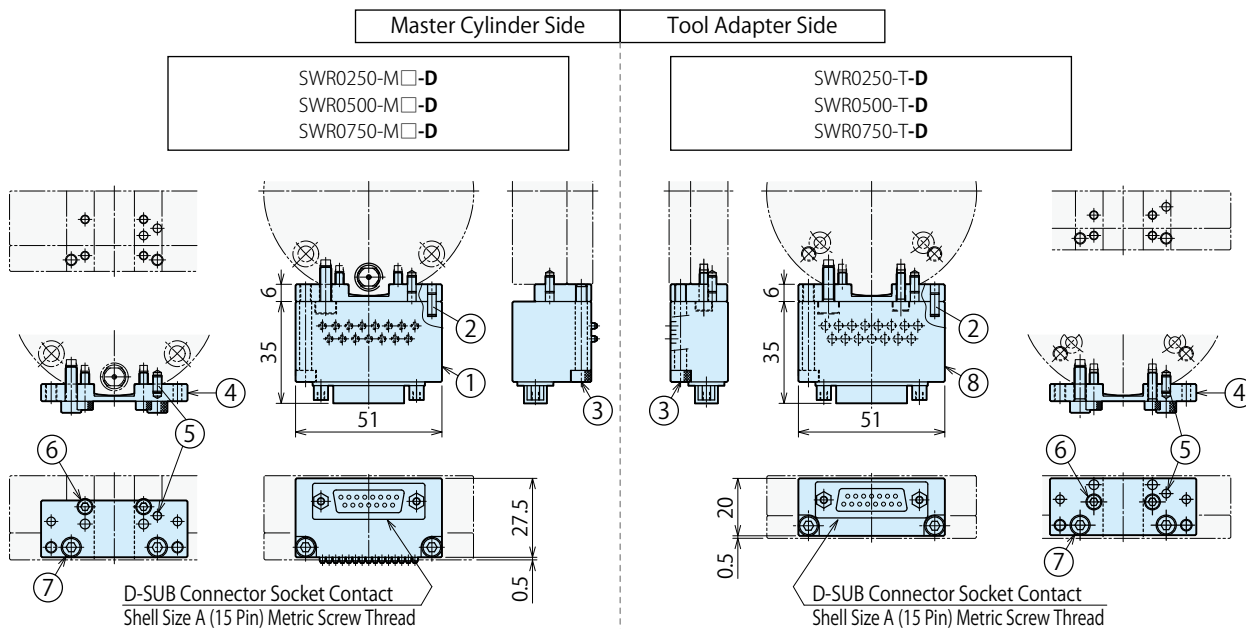
Pneumatic
Location Clamp

SWT

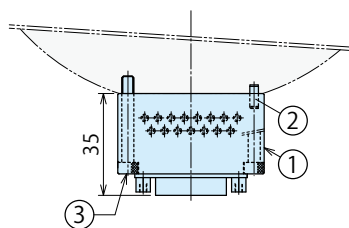
High-Power Pneumatic
Pallet Clamp

WVS

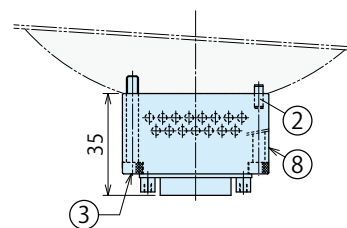
● External Dimensions



SWR1200-MAF-D-□ ※ Dimensions not shown are the same as the drawing above.



SWR1200-T-D-□ ※ Dimensions not shown are the same as the drawing above.



Model No.	No.	Name	Quantity
SWRZ0D0-M	①	Electrode (Master Side)	1
	②	Parallel Pin φ3×8 B Type (SUS)	2
	③	Hexagon Socket Bolt M4×0.7×30 (SUS)	2
SWRZ0Z0	④	Bracket (Common for Master/Tool Side)	1
	⑤	Parallel Pin φ3×8 B Type (SUS)	1
	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
SWRZ0D0-T	⑧	Electrode (Tool Side)	1
	②	Parallel Pin φ3×8 B Type (SUS)	2
	③	Hexagon Socket Bolt M4×0.7×30 (SUS)	2
SWRZ0Z0	④	Bracket (Common for Master/Tool Side)	1
	⑤	Parallel Pin φ3×8 B Type (SUS)	1
	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 electrodes only. (SWRZ0D0-□ : one set is one electrode.)
2. For SWR1200, SWRZ0Z0 is not required.

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

External Option Symbol : G

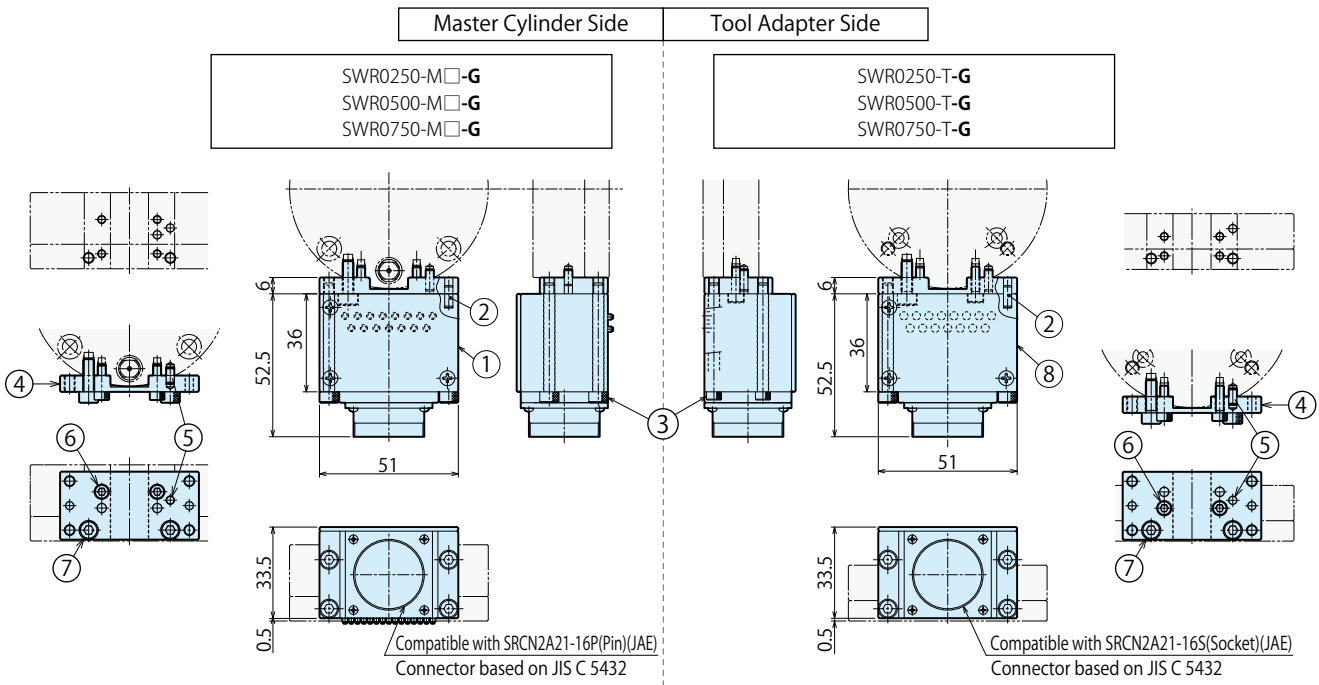


Specifications

Rated Value (per one contact)	DC 24V 3A
Contact Resistance (Initial Value)	100mΩ or less
Total Current Capacity	17A
Number of Poles (per one electrode)	15
Weight ※1	Master Cylinder Side Electrode 100g / Bracket 21g
	Tool Adapter Side Electrode 120g / Bracket 21g

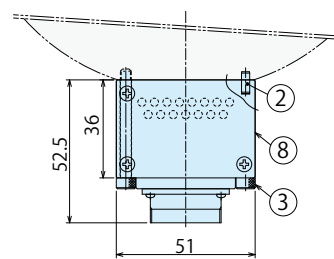
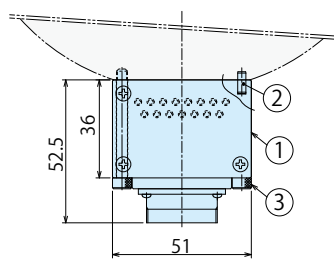
※1. Weight per one electrode.
Bracket weight is the weight of SWRZ0E0.

External Dimensions



SWR1200-MAF-G □ ※ Dimensions not shown are the same as the drawing above.

SWR1200-T-G □ ※ Dimensions not shown are the same as the drawing above.



Model No.	No.	Name	Quantity
SWRZ0G0-M	①	Electrode (Master Side)	1
	②	Parallel Pin φ3×8 B Type (SUS)	2
	③	Hexagon Socket Bolt M4×0.7×40 (SUS)	4
SWRZ0E0	④	Bracket (Common for Master/Tool Side)	1
	⑤	Parallel Pin φ3×6 B Type (SUS)	1
	⑥	Hexagon Socket Bolt M3×0.5×10 (SUS)	2
	⑦	Hexagon Socket Bolt M4×0.7×12 (SUS)	2

Model No.	No.	Name	Quantity
SWRZ0G0-T	⑧	Electrode (Tool Side)	1
	②	Parallel Pin φ3×8 B Type (SUS)	2
	③	Hexagon Socket Bolt M4×0.7×40 (SUS)	4
SWRZ0E0	④	Bracket (Common for Master/Tool Side)	1
	⑤	Parallel Pin φ3×6 B Type (SUS)	1
	⑥	Hexagon Socket Bolt M3×0.5×10 (SUS)	2
	⑦	Hexagon Socket Bolt M4×0.7×12 (SUS)	2

Notes 1. Inform us with the model number shown above if you require electrodes only. (SWRZ0G0-□ : one set is one electrode.)
2. For SWR1200, SWRZ0E0 is not required.

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

External Option Symbol : E



Specifications

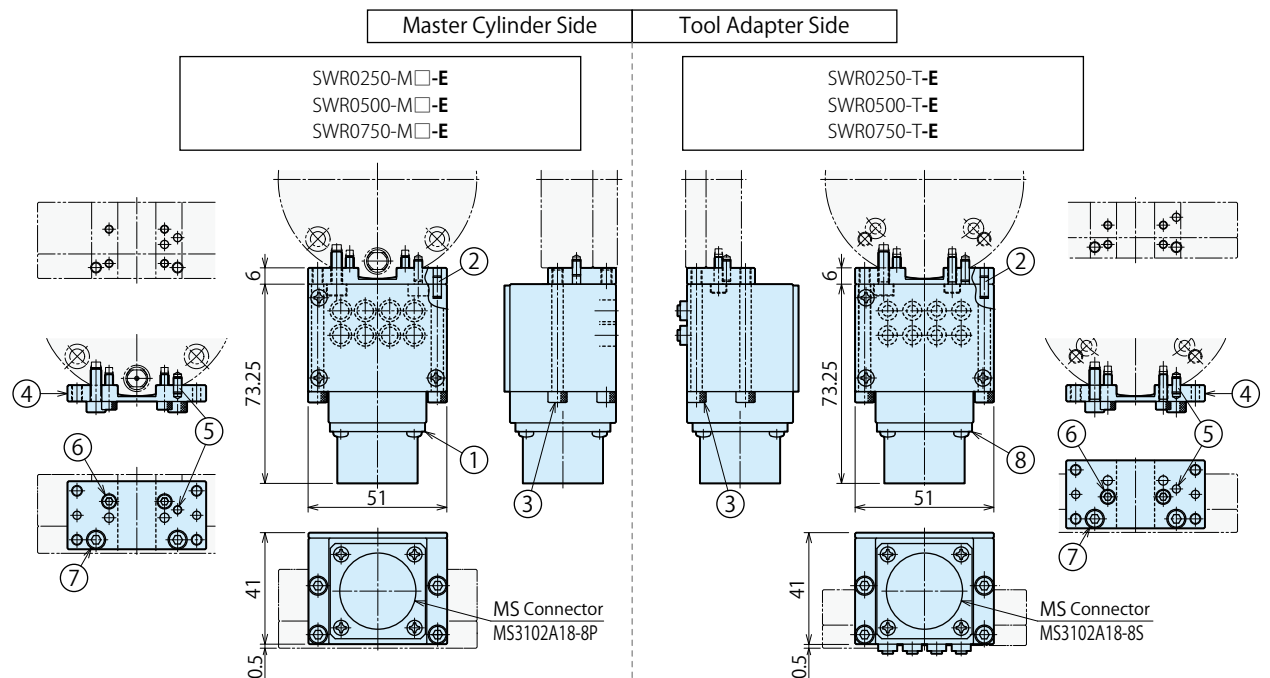
Rated Value (per one contact)	AC/DC 200V 5A
Contact Resistance (Initial Value)	24A
Number of Poles (per one electrode)	8
Weight ※1	Master Cylinder Side Electrode 140g / Bracket 21g
	Tool Adapter Side Electrode 150g / Bracket 21g

※1. Weight per one electrode.
Bracket weight is the weight of SWRZ0E0.

- Locating + Clamp
- Locating
- Clamp
- Support
- Valve · Coupler
- Cautions · Others

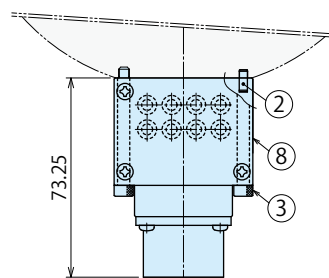
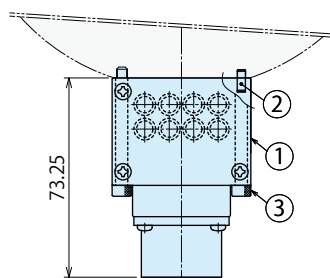
- Robotic Hand Changer
 - SWR
- Pneumatic Location Clamp
 - SWT
- High-Power Pneumatic Pallet Clamp
 - WVS

External Dimensions



SWR1200-MAF-E-□ ※ Dimensions not shown are the same as the drawing above.

SWR1200-T-E-□ ※ Dimensions not shown are the same as the drawing above.



Model No.	No.	Name	Quantity
SWRZ0E0-M	①	Electrode (Master Side)	1
	②	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	2
	③	Hexagon Socket Bolt M4 \times 0.7 \times 45 (SUS)	4
SWRZ0E0	④	Bracket (Common for Master/Tool Side)	1
	⑤	Parallel Pin $\phi 3 \times 6$ B Type (SUS)	1
	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
SWRZ0E0-T	⑧	Electrode (Tool Side)	1
	②	Parallel Pin $\phi 3 \times 8$ B Type (SUS)	2
	③	Hexagon Socket Bolt M4 \times 0.7 \times 45 (SUS)	4
SWRZ0E0	④	Bracket (Common for Master/Tool Side)	1
	⑤	Parallel Pin $\phi 3 \times 6$ B Type (SUS)	1
	⑥	Hexagon Socket Bolt M3 \times 0.5 \times 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 electrodes only. (SWRZ0E0-□ : one set is one electrode.)
 2. For SWR1200, SWRZ0E0 is not required.

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

External Option Symbol : H

Master Cylinder
model SWR □ 0-M □ -H

Tool Adapter
model SWR □ 0-T □ -H

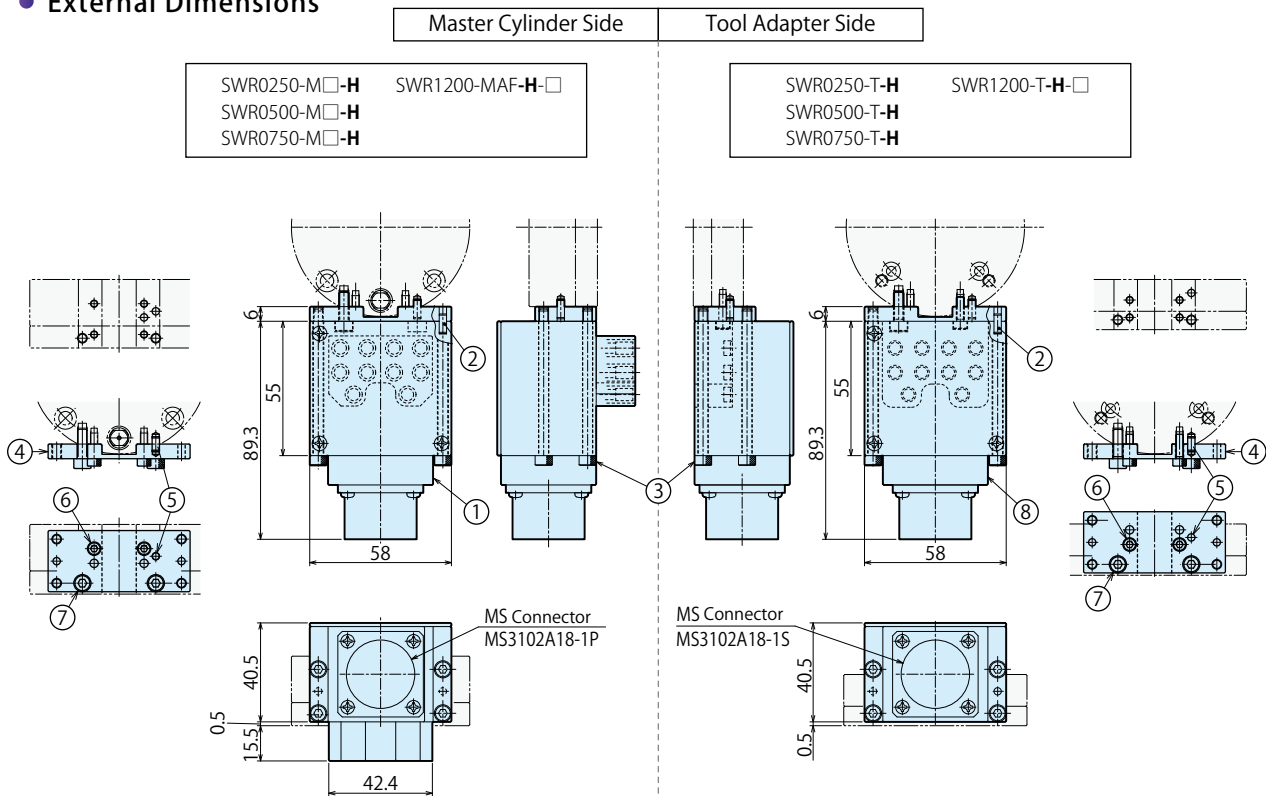


Specifications

Rated Value (per one contact)	AC/DC 200V 13A
Total Current Capacity	57A
Number of Poles (per one electrode)	10
Weight ※1	Master Cylinder Side Electrode 280g / Bracket 24g
	Tool Adapter Side Electrode 210g / Bracket 24g

※1. Weight per one electrode.
Bracket weight is the weight of SWRZ0H0.

External Dimensions



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

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

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

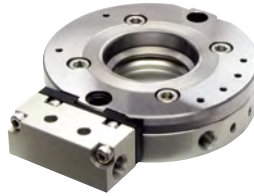
● External Option : Air Joint

External Option Symbol : Q

Master Cylinder
model SWR□□0-M□-Q



Tool Adapter
model SWR□□0-T□-Q



● Specifications

Number of Ports	2	
Operating Pressure	max. 1.0MPa (Vacuum Available)	
Withstanding Pressure	1.5MPa	
Min. Passage Area	12.6mm ² (Equal to φ4)	
Operating Temperature	0 ~ 70°C	
Usable Fluid	Dry Air	
Reaction Force (per one port)	Pressure at 1 MPa	0.13 kN
	Pressure at 0.5MPa	0.07 kN
	Pressure at P MPa	0.117×P +0.01 kN
Weight ※1	Master Cylinder Side	Joint 70g / Bracket 17g
	Tool Adapter Side	Joint 60g / Bracket 17g

※1. Weight per one joint.

Bracket weight is the weight of SWRZ0Z0.

Locating
+
Clamp

Locating

Clamp

Support

Valve · Coupler

Cautions · Others

Robotic
Hand Changer

SWR

Pneumatic
Location Clamp

SWT

High-Power Pneumatic
Pallet Clamp

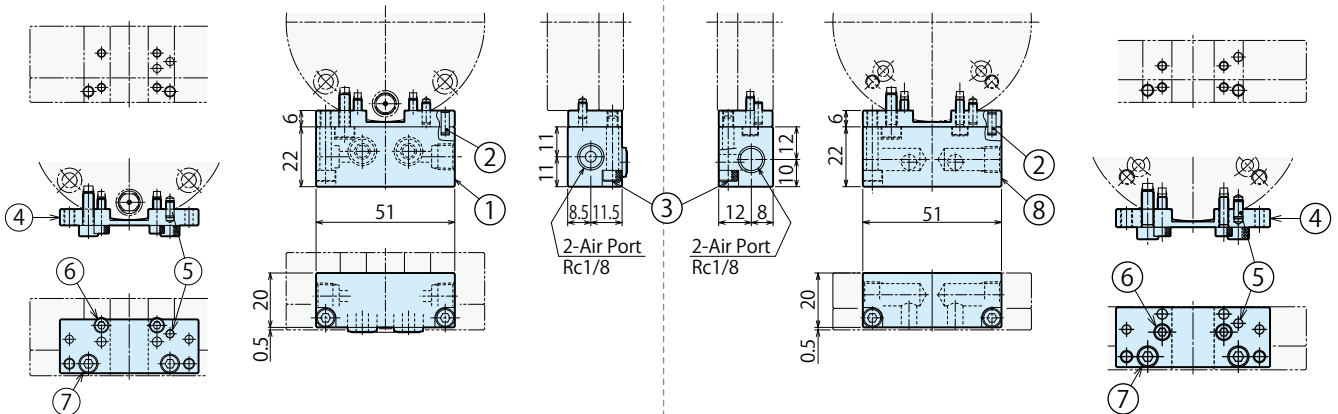
WVS

● External Dimensions

Master Cylinder Side Tool Adapter Side

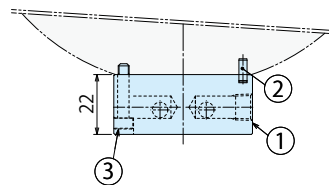
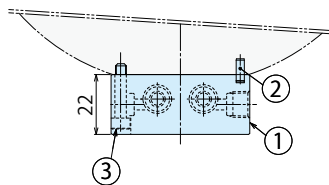
SWR0250-M□-Q
SWR0500-M□-Q
SWR0750-M□-Q

SWR0250-T-Q
SWR0500-T-Q
SWR0750-T-Q



SWR1200-MAF-Q-□ ※ Dimensions not shown are the same as the drawing above.

SWR1200-T-Q-□ ※ Dimensions not shown are the same as the drawing above.



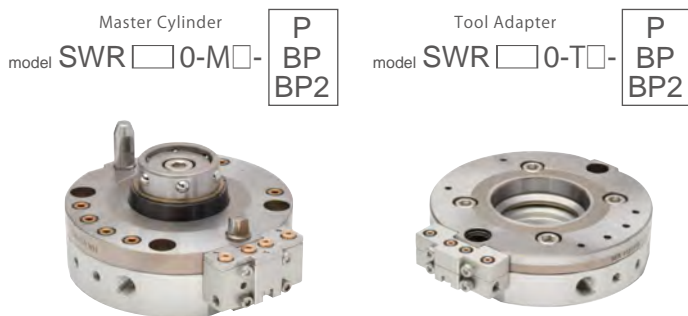
Model No.	No.	Name	Quantity
SWRZ0Q0-M	①	Joint (Master Side)	1
	②	Parallel Pin φ3×8 B Type (SUS)	2
	③	Hexagon Socket Bolt M4×0.7×20 (SUS)	2
SWRZ0Z0	④	Bracket (Common for Master/Tool Side)	1
	⑤	Parallel Pin φ3×8 B Type (SUS)	1
	⑥	Hexagon Socket Bolt M3×0.5×10 (SUS)	2
	⑦	Hexagon Socket Bolt M4×0.7×12 (SUS)	2

Model No.	No.	Name	Quantity
SWRZ0Q0-T	⑧	Joint (Tool Side)	1
	②	Parallel Pin φ3×8 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 φ3×8 B Type (SUS)	1
	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 air joint only. (SWRZ0Q0-□ : one set is one air joint.)
2. For SWR1200, SWRZ0Z0 is not required.

External Option : Air Joint (4 Port • Solder Terminal Extensible Option)

External Option Symbol : P/BP2

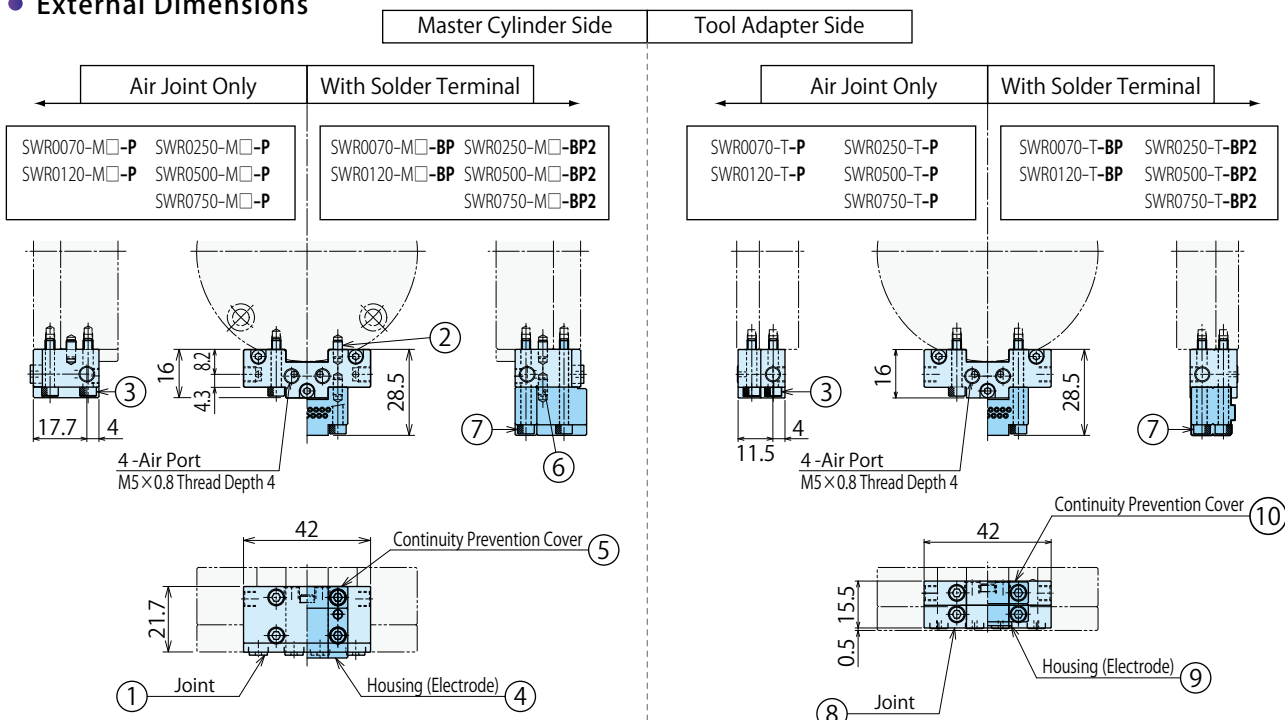


Specifications

Number of Ports	4	
Operating Pressure	max. 1.0MPa (Vacuum Available)	
Withstanding Pressure	1.5MPa	
Min. Passage Area	2.0mm ² (Equal to φ 1.6)	
Operating Temperature	0 ~ 70°C	
Usable Fluid	Dry Air	
Reaction Force (per one port)	Pressure at 1 MPa	0.03 kN
	Pressure at 0.5MPa	0.02 kN
	Pressure at P MPa	0.027 × P + 0.004 kN
Weight ※1	Master Cylinder Side	Joint 43g
	Tool Adapter Side	Joint 26g

※1. Weight per one joint (without the solder terminal part).

External Dimensions



Model No.	No.	Name	Quantity	
			-P	-BP/BP2
SWRZ0P0-M	①	Joint (Master Side)	1	1
	②	Parallel Pin φ3×6 B Type (SUS)	1	1
	③	Hexagon Socket Bolt M3×0.5×16 (SUS)	4	(4)
SWRZ0B0-M	④	Electrode (Master Side)	-	1
	⑤	Continuity Prevention Cover	-	1
- ※2	⑥	Parallel Pin φ3×6 B Type (SUS)	-	1
	⑦	Hexagon Socket Bolt M3×0.5×30 (SUS)	-	4

Model No.	No.	Name	Quantity	
			-P	-BP/BP2
SWRZ0P0-T	⑧	Joint (Tool Side)	1	1
	③	Hexagon Socket Bolt M3×0.5×16 (SUS)	4	(4)
SWRZ0B0-T	⑨	Electrode (Tool Side)	-	1
	⑩	Continuity Prevention Cover	-	1
- ※2	⑦	Hexagon Socket Bolt M3×0.5×30 (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 SWRZ0B0-M/SWRZ0B0-T, the bolt marked with ※2 is not included.
 2. The solder terminal of solder terminal extensible option is the same product as 'B' option.
For the specification of electrode part, please refer to 'B' (P.25).
 3. Please contact us for SWR1200.

 **MEMO**

**Locating
+
Clamp**

Locating

Clamp

Support

Valve · Coupler

Cautions · Others

**Robotic
Hand Changer**

SWR

Pneumatic
Location Clamp

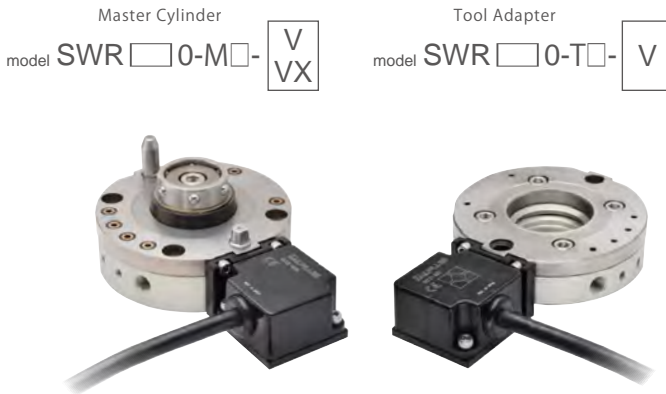
SWT

High-Power Pneumatic
Pallet Clamp

WVS

External Option : Waterproof Electrode (Noncontact Waterproof Option) IP67

External Option Symbol : V/VX



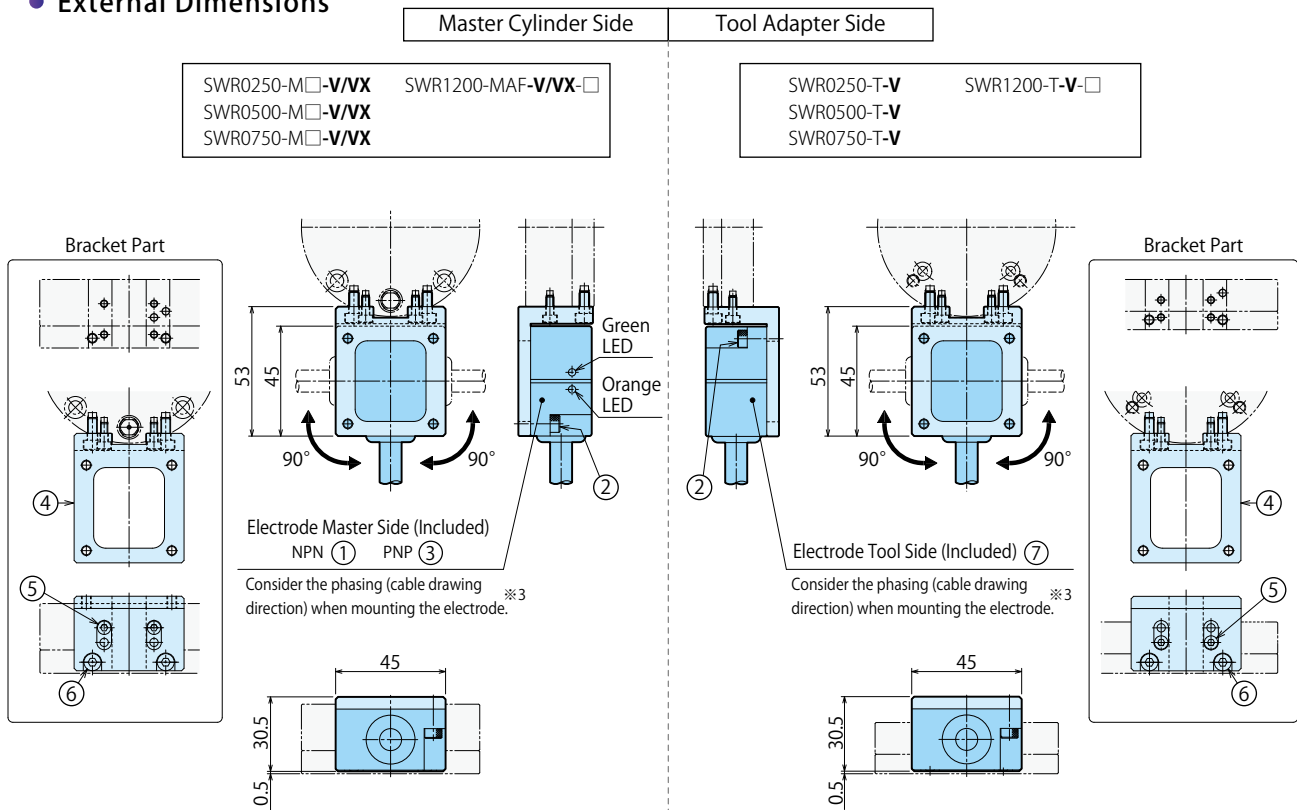
Specifications

Number of Signals (per one electrode)	12	
Protection Grade ※1	IP67	
Cable	PUR φ 8.6 2×0.5mm ² +13×0.18mm ²	
Cable Length	Master Cylinder Side	2m
	Tool Adapter Side	1m
Weight ※2	Master Cylinder Side	Electrode+Bracket 130g Cable 105g/m ×2m
	Tool Adapter Side	Electrode+Bracket 130g Cable 105g/m ×1m

※1. Protection grade of the electrode part.

※2. Weight per one electrode.

External Dimensions



Model No.	No.	Name	Quantity
SWRZ0V0-M	①	Electrode (Master Side) NPN Made by B & Plus RS12E-422N-PU-02	1
	②	Hexagon Socket Bolt M4×0.7×12(SUS)	2
SWRZ0VX0-M	③	Electrode (Master Side) PNP Made by B & Plus RS12E-422P-PU-02	1
	②	Hexagon Socket Bolt M4×0.7×12(SUS)	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

Model No.	No.	Name	Quantity
SWRZ0V0-T	⑦	Electrode (Tool Side) Made by B & Plus RS12T-422-PU-01	1
	⑧	Hexagon Socket Bolt M4×0.7×12(SUS)	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

Notes 1. Inform us with the model number shown above if you require electrodes only. (SWRZ0 V □ 0- □ : one set is one electrode.)

※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.

Details and Notes on External Option : Noncontact Waterproof Electrode

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 exceed and may cause malfunction.
- ◆ Ensure correct connections by reference to the wiring diagram.
- ◆ To avoid malfunction caused by induction noise, cable should be kept apart from motor or other power cable.

Electrode Specifications (Tool Adapter Side)

Model No.	SWR□□0-T□-V
Applicable Sensor	DC 3-Wire Sensor
Drive Voltage	12V ±1.5V DC
Drive Current	≤ 230mA
No. of Input Signals	12
Operating Distance	2~5mm
Center Offset	± 3mm
Operating Temperature	0~+50°C
Protection Class	IP67
Material	ABS

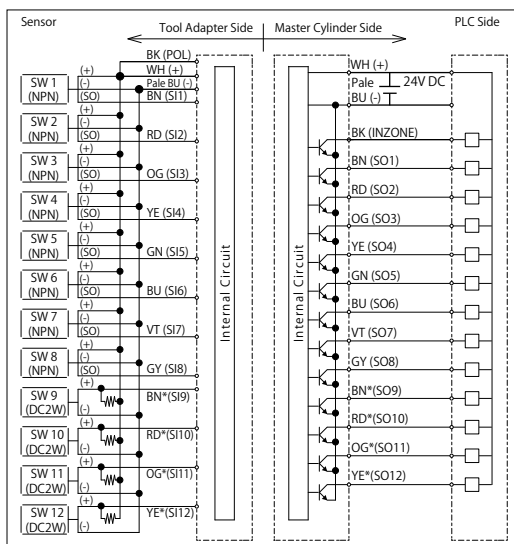
Electrode Specifications (Master Cylinder Side)

Model No.	NPN	SWR□□0-M□-V
	PNP	SWR□□0-M□-VX
Supply Voltage	24V	DC ± 10% (Including Ripple)
Current Consumption	≤ 600mA	
No. of Output Signals	12 + 1 (Status)	
Loading Current	≤ 50mA/1 Output	
LED Indication	Status (Green), Signal (Orange)	
Circuit Protection	Short Circuit Protection, High Temperature Protection, Converse Protection, Surge Suppression	
Operating Temperature	0~+50°C	
Protection Class	IP67	
Material	ABS	

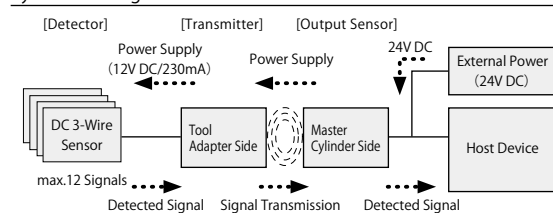
- Total current consumption of detectors must not exceed the rated drive current.
- Reduce the switches when the total current consumption exceeds the drive current.

Wiring Diagram

SWR□□0-M□-V : NPN



System Configuration



【Function of Each Component】

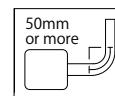
- Detector** : Connects Detector Sensor (max. 12) and transmits the detected signals to Transmitter.
- Transmitter** : Provides power for Detector, also passes detected signals from Detector to Output Sensor.
- Output Sensor** : Puts out detected signal to external controller, also sends power for operating of Detector and Transmitter.

Applicable Sensor

Supply Voltage	12V DC
Total Current Consumption	≤ 230mA
Residual Voltage	≤ 3.5V
Load Current	—

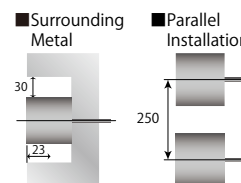
Bending Radius of Cable

The minimum bending radius for the sensors are 50mm.



Installation Notes

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



- Locating + Clamp
- Locating
- Clamp
- Support
- Valve · Coupler
- Cautions · Others

Robotic Hand Changer

SWR

Pneumatic Location Clamp

SWT

High-Power Pneumatic Pallet Clamp

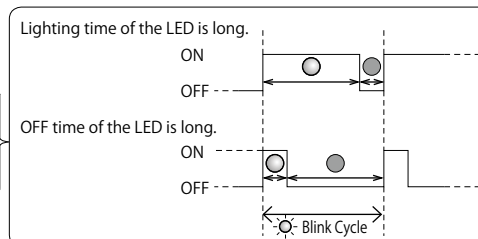
WVS

- SW9~12 of the wiring diagram is an example of the DC-2 wire sensor wiring (Recommend resistance is 1~2KΩ). DC-3 wire sensor can also be used.
- Cable GN* and BU* and VT* is not used.

LED Indication

■ Status LED (Green)

LED	Blinking	Pattern	Meaning
ON	○	—	The power supply is supplied.
OFF	●	—	The power supply is not supplied.
Blink	○	Slow (1.5 sec.)	OFF time of the LED is long. Anomalous Temperature
Blink	○	Mid. Speed (0.6 sec.)	Lighting time of the LED is long. Oscillation Circuit Overcurrent
Blink	○	High Speed (0.2 sec.)	OFF time of the LED is long. Supply voltage is high.
Blink	○	High Speed (0.2 sec.)	Lighting time of the LED is long. Supply voltage is low.
Blink	○	High Speed (0.2 sec.)	The LED flashes at the same interval. Short Circuit Protection

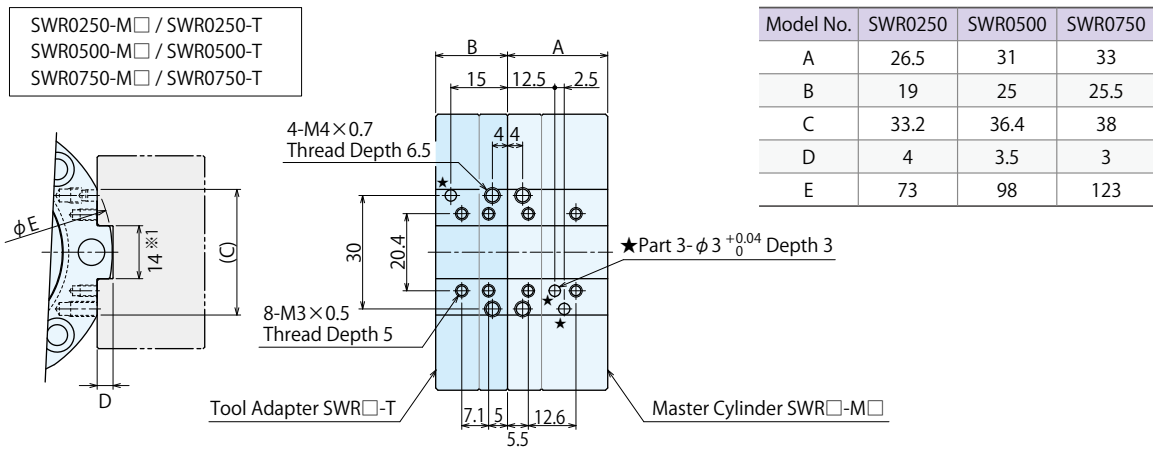


- Status LED (Orange) The master cylinder and tool adapter are opposed, LED is lit when you can communicate. When the output signal from each sensor and flash accordingly.

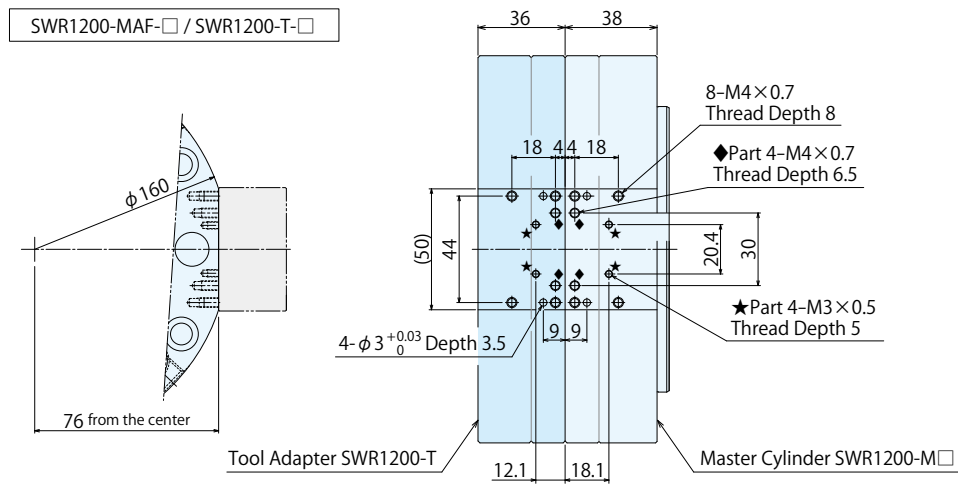
The information above is quoted from B & Plus K.K. Remote System User's Guide (No.T313A01E). Please contact B & Plus K.K. (TEL 81(0)-493-65-5771) for further information about electrodes (Model No. RS12E-422□-PU-02 / RS12T-422-PU-01).

Option Mounting Dimensions

Electrodes and jigs provided by other than Kosmek, can be mounted with option mounting bolts.
 Please contact us separately for SWR0030 / SWR0070 / SWR0120.
 This drawing shows the connected state of master side and tool side.



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

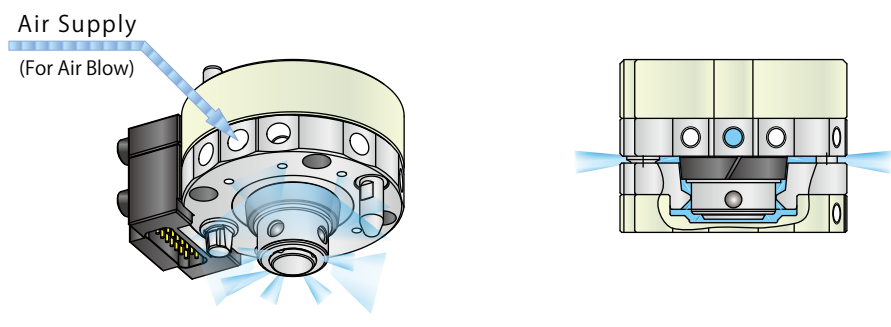


Locating + Clamp
Locating
Clamp
Support
Valve · Coupler
Cautions · Others

Robotic Hand Changer
SWR
Pneumatic Location Clamp
SWT
High-Power Pneumatic Pallet Clamp
WVS

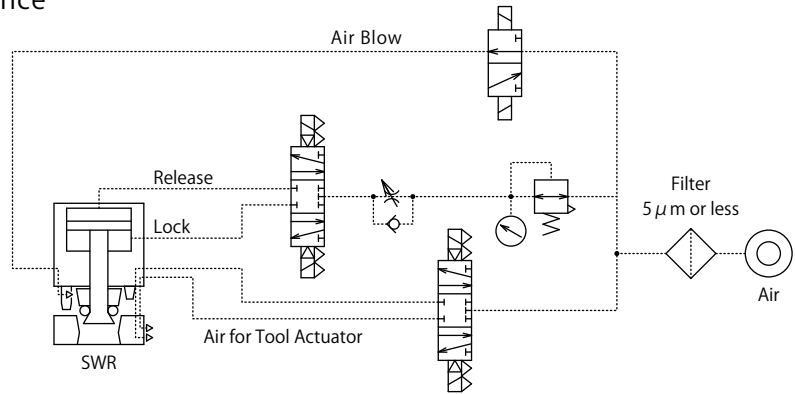
Port Options

A : With Air Blow Port

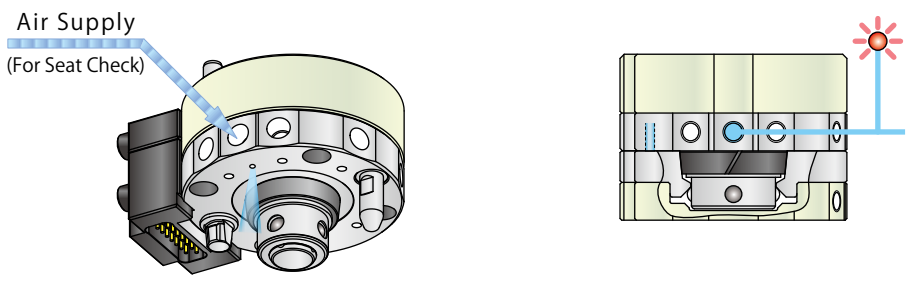


When connecting, there is moderate clearance between the taper reference surface and seating surface that enables high accuracy. This allows for effective cleaning with air blow, foreign substance prevention and longer life.

Circuit Reference

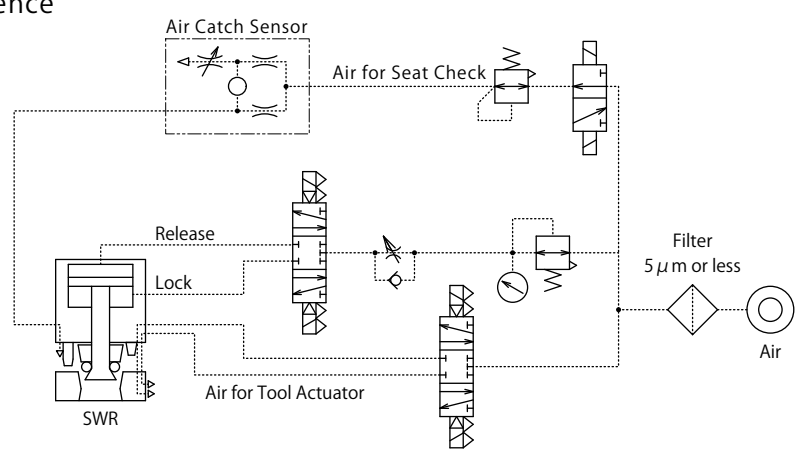


F : With Seat Check Port



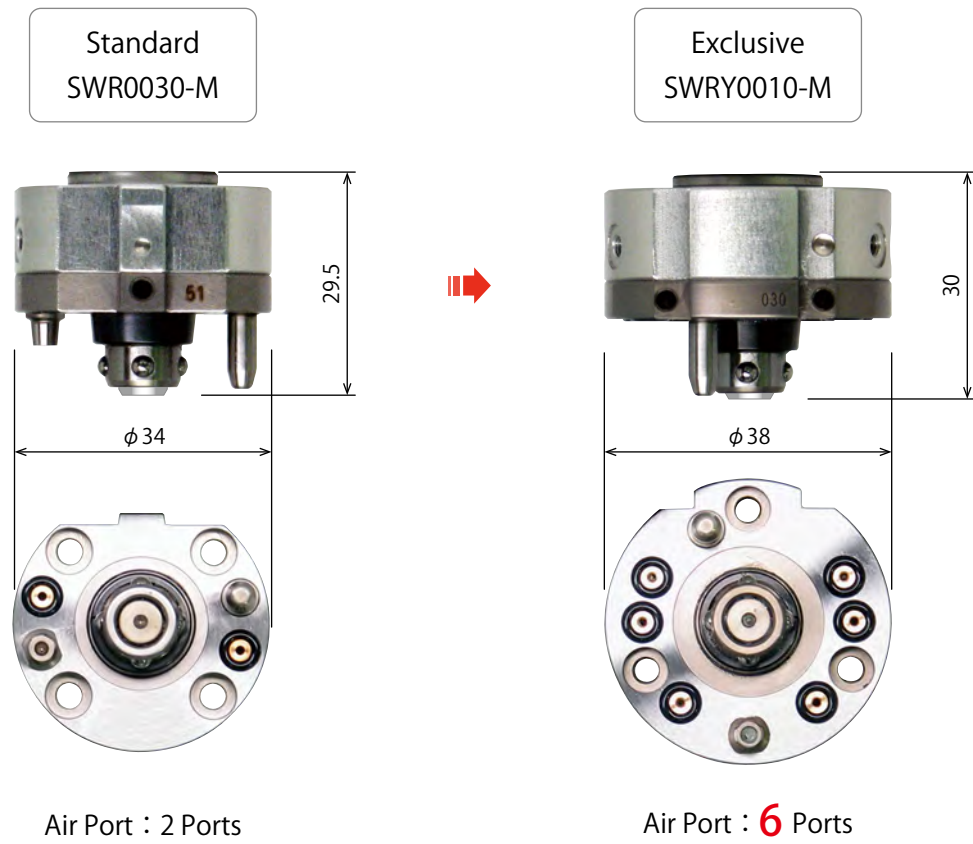
Close contact check detects secure connection of the master cylinder and tool adapter. This prevents connection error of robotic hand changer. Close contact check is conducted with the air catch sensor. (Air catch sensor must be installed separately.)

Circuit Reference



● **Exclusive Cases** ※ A Part of Exclusive Case Examples. Please contact us for further information.

● **Allowable Weight 3kg • 6 Air Ports**



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

● Model No. Indication : Master Cylinder

SWRY001 0 - M - B

1 2

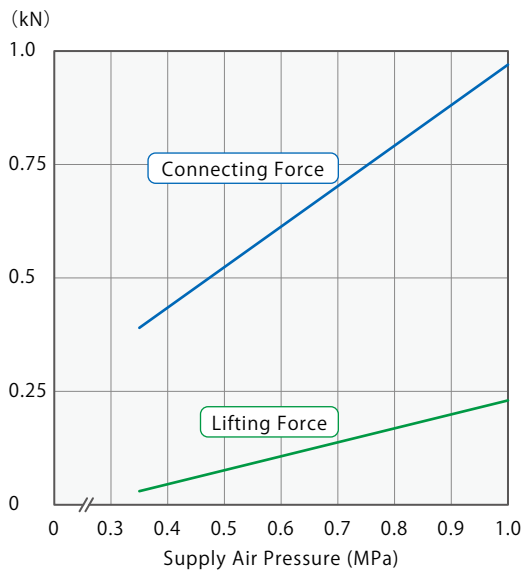
1 Design No.

0 : Revision Number

● Specifications

Allowable Weight	kg	3
Locating Repeatability	mm	0.003
Lift Stroke (Detaching Stroke)	mm	0.8
Allowable Static	Bending	5
	Twisting	12
Moment N·m	Max.	1.0
	Min.	0.4
Air Pressure MPa	Withstanding Pressure	1.5
	Operating Temperature	°C
Usable Fluid		Dry Air
Weight (Main Body) g	Master Side	About 85
	Tool Side	About 60
Air Port		M3×6 Port

● Performance Curve



● Model No. Indication : Tool Adapter

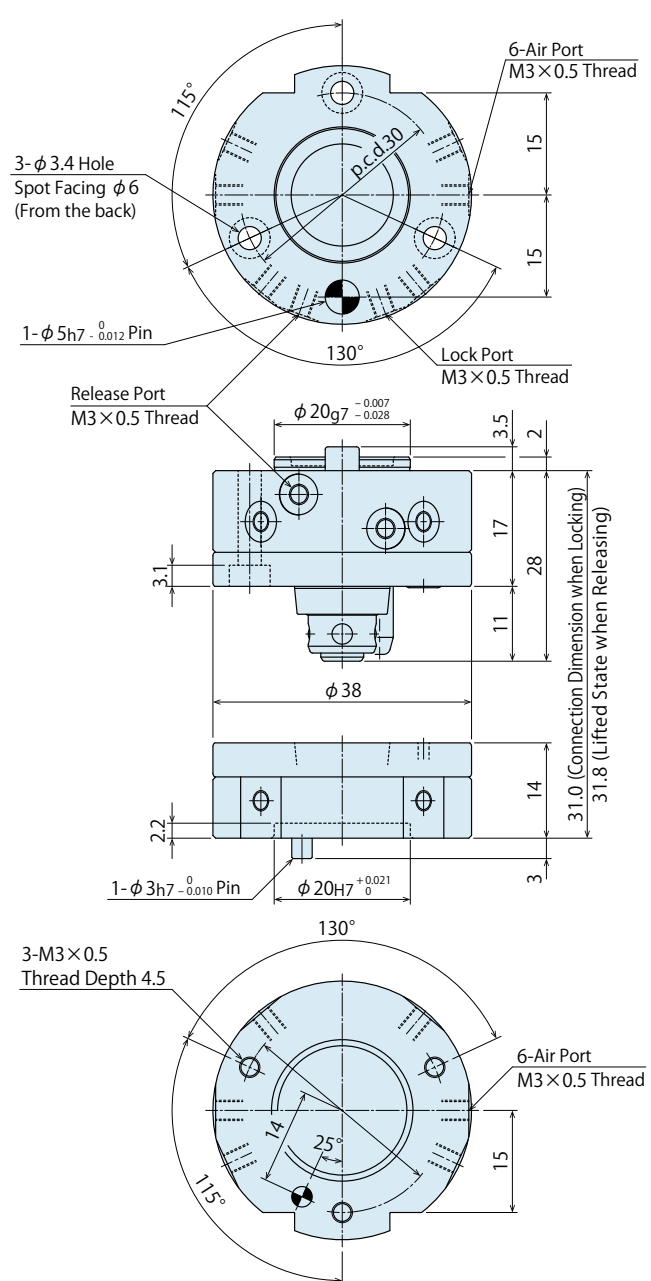
SWRY001 0 - T - B

1 2

2 External Options (Electrode)

- Blank** : No Electrode (Standard)
- B** : Solder Terminal (15 Poles)
- C01** : Solder Terminal with Cable (15 Poles·Cable Length 1m)
- C02** : Solder Terminal with Cable (15 Poles·Cable Length 2m)

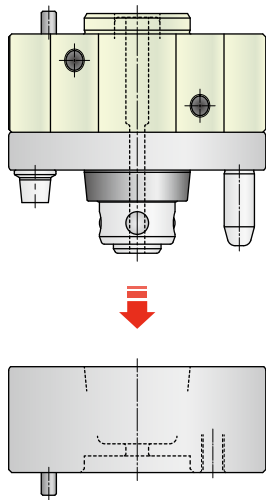
● External Dimensions



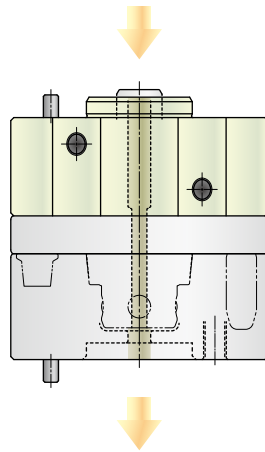
Note
1. Please contact us separately for the adaptation of external options.

● **Exclusive Cases** ※ A Part of Exclusive Case Examples. Please contact us for further information.

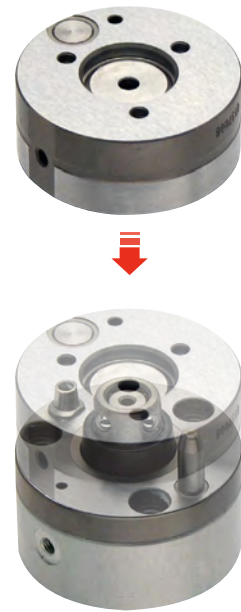
● **With Center Hole**



Disconnected

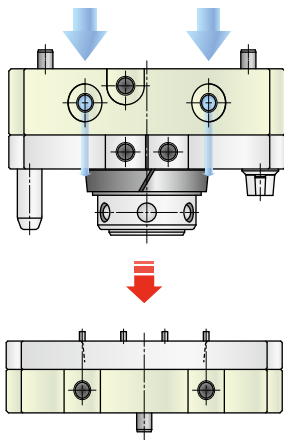


Connected

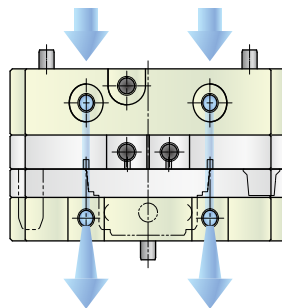


Center hole is provided for photoelectric detection and various purposes.

● **With Check Valve Air Port**



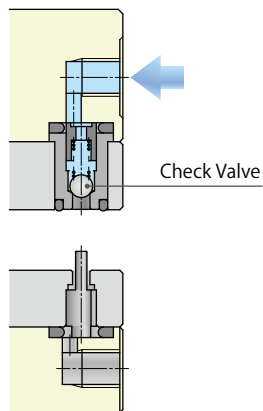
The check valve minimizes air leak.



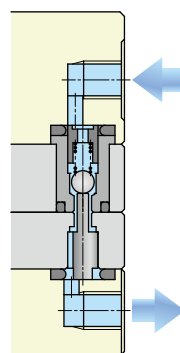
Check valve opens when connected, and it secures air passage.



Minimize air leak when using 2-position air solenoid valve.
Able to install external options (electrode).



Disconnected

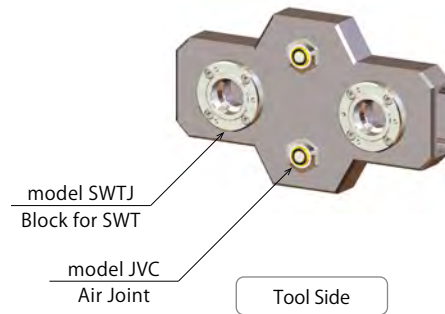
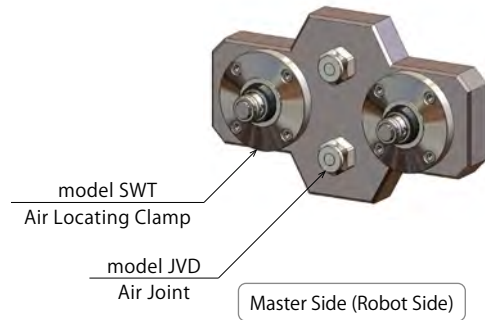
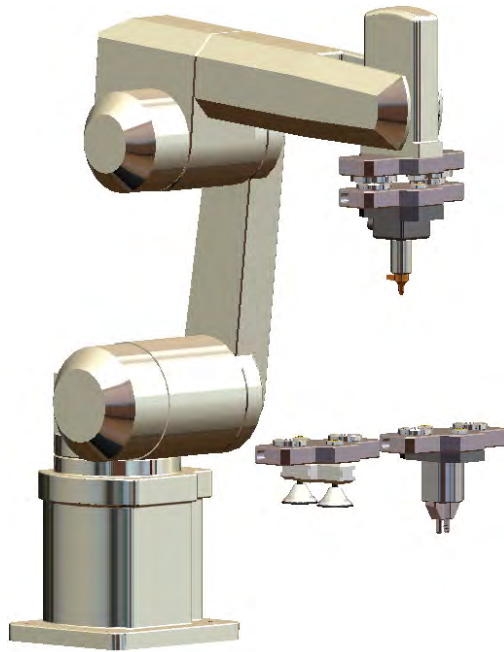


Connected

● **Exclusive Cases** ※ A Part of Exclusive Case Examples. Please contact us for further information.

● **Increase in Allowable Weight 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.



- Locating + Clamp
- Locating
- Clamp
- Support
- Valve · Coupler
- Cautions · Others

- Robotic Hand Changer
 - SWR
- Pneumatic Location Clamp
 - SWT
- High-Power Pneumatic Pallet Clamp
 - WVS

Cautions

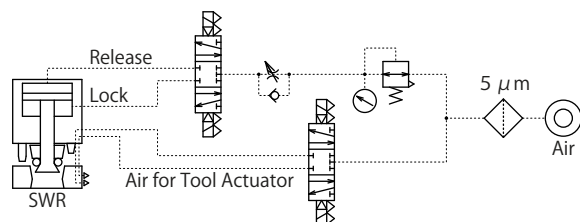
Notes for Design

- 1) Check Specifications
 - Please use each product according to the specifications.
 - Maximum Air Pressure : 1.0MPa, Minimum Air Pressure : 0.35MPa
Minimum Air Pressure of SWR0030 : 0.4MPa

2) Air Pressure Circuit Reference

- SWR maintains clamping tools with mechanical lock (spring for maintain). However, for safety, when using 2-position solenoid valve, select the solenoid valve for SWR actuation that supplies air to the lock port when it is not energized.

If air is supplied to the release port when the switch of solenoid valve is turned off, it is very dangerous since SWR may drop the tool (hand).



3) Operating Environment (External Option (Electrode))

- Do not use the product in the environment with water · vapor · liquid · scattering of chemicals · accidental discharge · gas with causticity. Also, using in the environment with cutting chips · cutting fluid · dust · spatter scattering may lead to continuity error of electrode.

4) Electrification of Electrodes while Connecting/Disconnecting (External Option (Electrode))

- If connecting/disconnecting robotic hand changer while energized, the tip of spring contact probe will be severely worn down. Electricity should be shut off while connecting/disconnecting robotic hand changer.

5) Note for Single Use of SWR Robotic Hand Changer

- Applying withstanding pressure leads to damage on the product. Make sure to supply air after setting SWR on a robot or plate.

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) Procedure before 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 soldered/connector part since it leads to breaking of wire 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.

5) Installation/Removal of Master Cylinder/Tool Adapter

- Please follow the tightening torque below. When mounting, use attached pins and tighten them with bolts evenly not to incline the master cylinder and tool adapter.

	Model No.	Bolt Size	No. of Bolts	Tightening Torque (N·m)
Master Cylinder	SWR0030-M	M3 × 0.5	4	1.3
	SWR0070-M	M3 × 0.5	4	1.3
	SWR0120-M	M4 × 0.7	4	3.2
	SWR0250-M	M5 × 0.8	4	6.3
	SWR0500-M	M6 × 1	4	10
	SWR0750-M	M6 × 1	6	10
Tool Adapter	SWR0030-T	M3 × 0.5	4	1.3
	SWR0070-T	M4 × 0.7	4	3.2
	SWR0120-T	M4 × 0.7	4	3.2
	SWR0250-T	M5 × 0.8	4	6.3
	SWR0500-T	M6 × 1	4	10
	SWR0750-T	M6 × 1	6	10
	SWR1200-T	M8 × 1.25	6	20

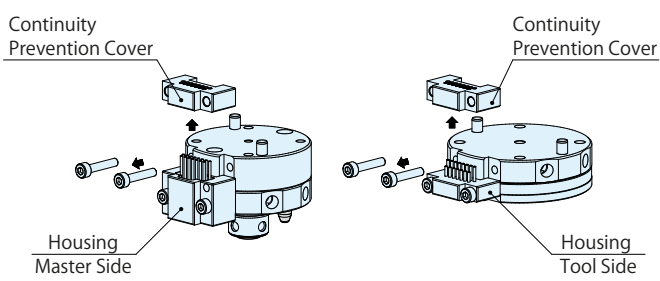
Do not lose attached pins for installation/removal of the master cylinder/tool adapter.

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

6) 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. Do not remove the press-fitted housing of the electric signal pin. 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

7) Connection Method of Connector (External Options (Electrode))

- Insert connectors completely in the master cylinder and tool adapter, and screw in the cable side connector. Without screwing, there may be contact failure.

8) Test Run Method

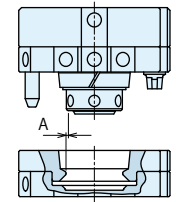
- If supplying a large amount of air just before installation, action time will be extremely fast leading to severe damage on robotic hand changer. Set the speed controller (Meter-in) and gradually supply air pressure.

9) Allowable Offset while Teaching

- 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 the range of allowable offset.

① Allowable Position Offset in Horizontal Direction

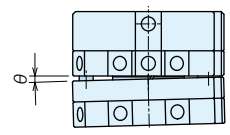
Model No.	Allowable Offset Amm
SWR0030	± 0.8 mm
SWR0070	± 0.8 mm
SWR0120	± 0.8 mm
SWR0250	± 1.0 mm
SWR0500	± 1.3 mm
SWR0750	± 1.3 mm
SWR1200	± 2.0 mm



① Horizontal Position Offset

② Allowable Position Offset in Tilt Direction

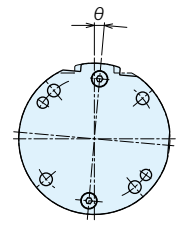
Model No.	Allowable Offset θ
SWR0030	$\theta = 1.5$ deg
SWR0070	$\theta = 1.5$ deg
SWR0120	$\theta = 1.5$ deg
SWR0250	$\theta = 1.2$ deg
SWR0500	$\theta = 1.0$ deg
SWR0750	$\theta = 1.0$ deg
SWR1200	$\theta = 0.9$ deg



② Tilt Position Offset

③ Allowable Position Offset in Rotation Direction

Model No.	Allowable Offset θ
SWR0030	$\theta = \pm 3$ 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



③ Rotation Position Offset

10) Most Suitable Gap between Master Cylinder and Tool Adapter when Connecting

- When connecting, the gap between master cylinder and tool adapter should be within the range of [Lift Stroke]~[Lift Stroke+0.5mm] shown on P.19. It may not be able to connect with more than the lift stroke + 0.5mm.

11) Most Suitable Gap between Tool Adapter and Tool Stand when Detaching

- When detaching, the gap between the tool adapter and tool stand should be more than [Lift Stroke] shown on P.19. 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.

※ Please refer to P.363 for common cautions. • Notes on Handling • Maintenance/Inspection • Warranty

Cautions

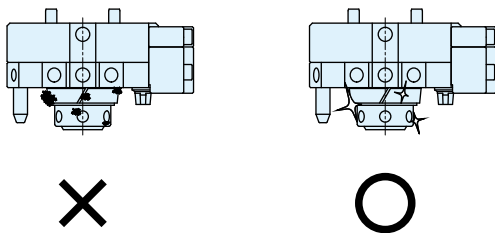
Maintenance • Inspection

1) Removal of the Machine and Shut-off of Pressure Source

- Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
- Make sure there is no abnormality in the bolts and respective parts before restarting.

2) Cleaning of Master Cylinder • Tool Adapter

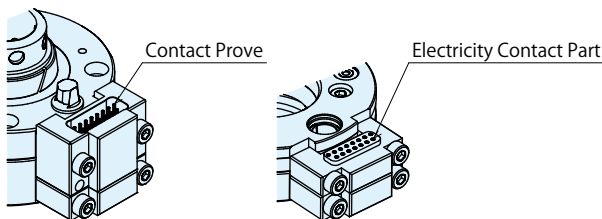
- If using the product when the taper reference surface or seat check surface of master cylinder/tool adapter are contaminated with dirt, it may lead to locating accuracy failure, malfunction or air leaks. (Do not apply grease on the taper reference surface.)



3) Regularly tighten pipes, 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 prove of master cylinder has abnormality, it has to be repaired.



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.

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.

※ Please refer to P.363 for common cautions. • Notes on Handling • Maintenance/Inspection • Warranty

 **MEMO**

**Locating
+
Clamp**

Locating

Clamp

Support

Valve · Coupler

Cautions · Others

**Robotic
Hand Changer**

SWR

Pneumatic
Location Clamp

SWT

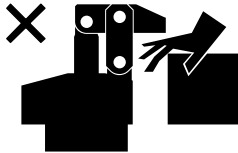
High-Power Pneumatic
Pallet Clamp

WVS

● Cautions

● Notes on Handling

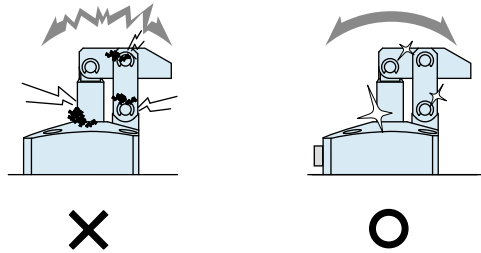
- 1) It should be handled by qualified personnel.
 - The hydraulic machine and air compressor should be handled and maintained by qualified personnel.
- 2) Do not handle or remove the machine unless the safety protocols are ensured.
 - ① The machine and equipment can only be inspected or prepared when it is confirmed that the preventive devices are in place.
 - ② Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
 - ③ After stopping the machine, do not remove until the temperature cools down.
 - ④ Make sure there is no abnormality in the bolts and respective parts before restarting the machine or equipment.
- 3) Do not touch clamps (cylinder) while clamps (cylinder) is working. Otherwise, your hands may be injured due to clinching.



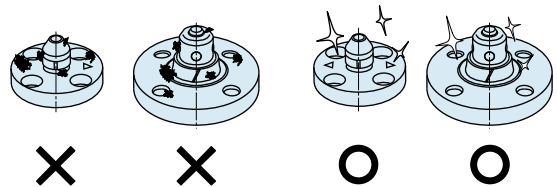
- 4) Do not disassemble or modify.
 - If the equipment is taken apart or modified, the warranty will be voided even within the warranty period.

● Maintenance and Inspection

- 1) Removal of the Machine and Shut-off of Pressure Source
 - Before the machine is removed, make sure that the above-mentioned safety measures are in place. Shut off the air of hydraulic source and make sure no pressure exists in the hydraulic and air circuit.
 - Make sure there is no abnormality 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 and air leaks.



- 3) Please clean out the reference surface regularly (taper reference surface and seating surface) of locating machine. (SWT/VRA/VRC/VX/VXF/WVS/WM/WK)
 - Location products, (except VRA/VRC/VX/VXF model, and SWR with air port option only) can remove contaminants with cleaning functions. When installing pallets make sure there is no thick sludge like substances on pallets.
 - Continuous use with dirt on components will lead to locating functions not work properly, leaking and malfunction.



- 4) If disconnecting by couplers on a regular basis, air bleeding should be carried out daily to avoid air mixed in the circuit.
- 5) Regularly tighten nuts, bolts, pins, cylinders and pipe line to ensure proper use.
- 6) Make sure the hydraulic fluid has not deteriorated.
- 7) Make sure there is smooth action and no abnormal noise.
 - Especially when it is restarted after left unused for a long period, make sure it can be operated correctly.
- 8) The products should be stored in the cool and dark place without direct sunshine or moisture.
- 9) 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 If the product is used while it is not suitable for use based on the operator's judgment, resulting in defect.
- ③ If it is used or handled in 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.
- ⑦ 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](#)
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Cautions

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Sales Offices

Sales Offices

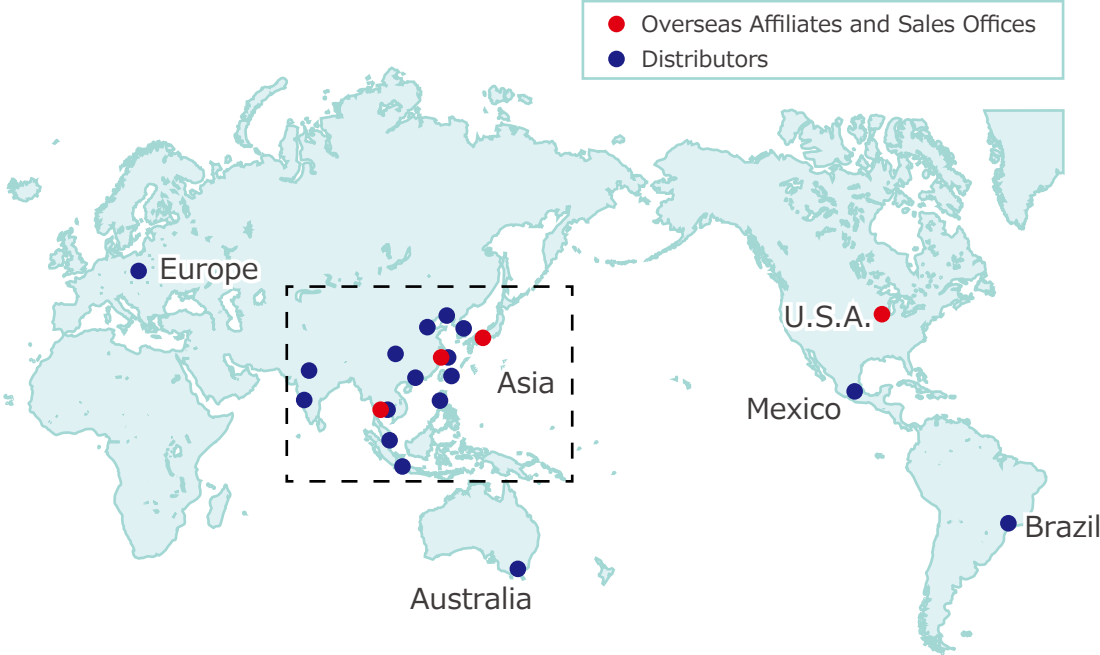
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Global Network



Asia Detailed Map



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Harmony in Innovation

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