

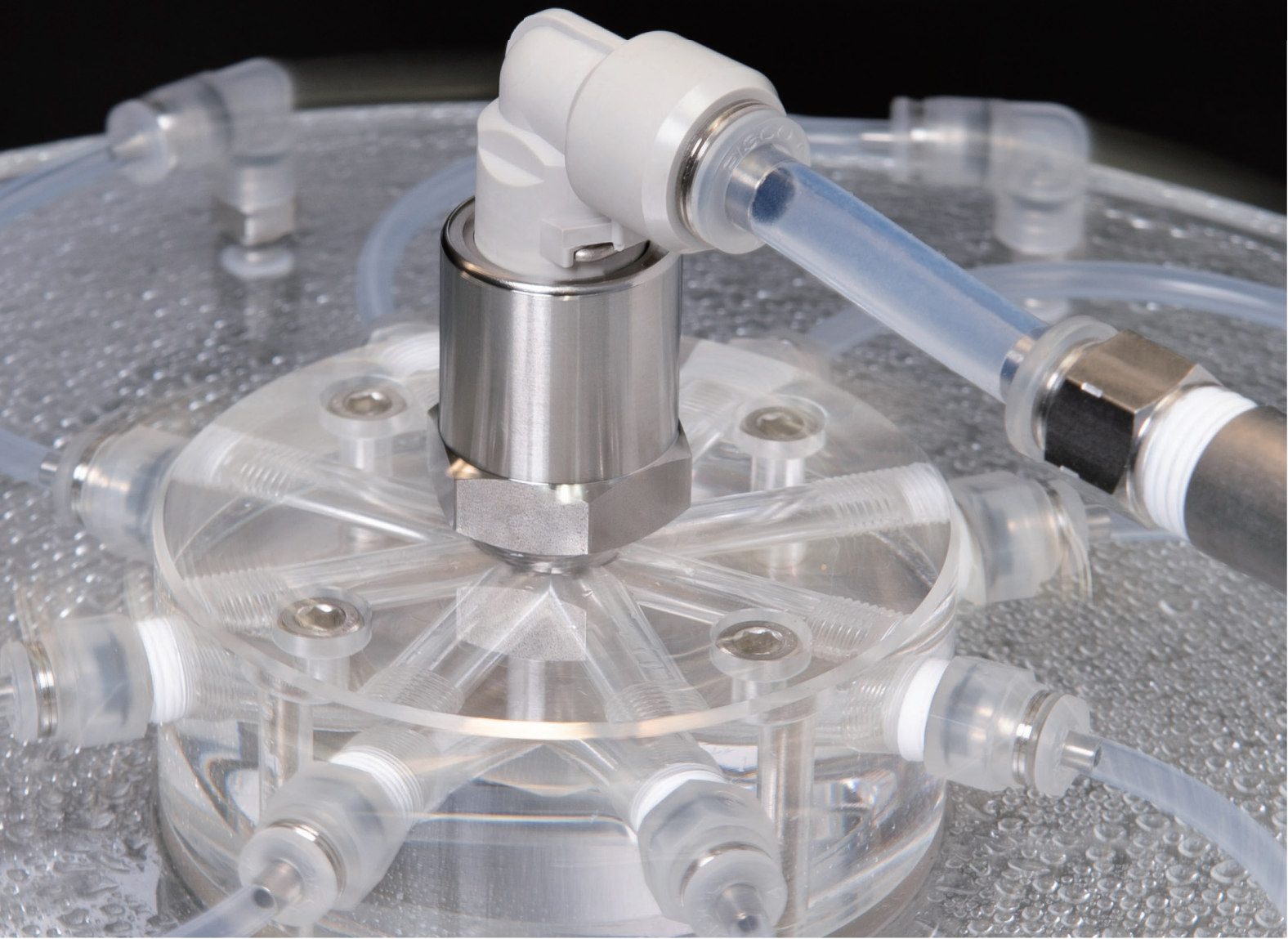
New Rotary joint for water

Rotary joint SUS304 **NEW**

For
Semiconductor field

For
Rechargeable batteries etc.

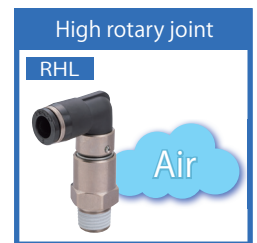
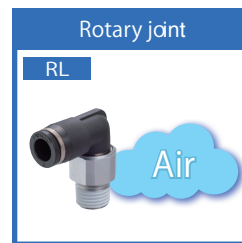
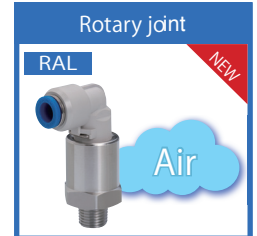
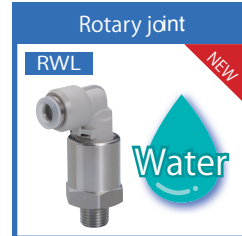
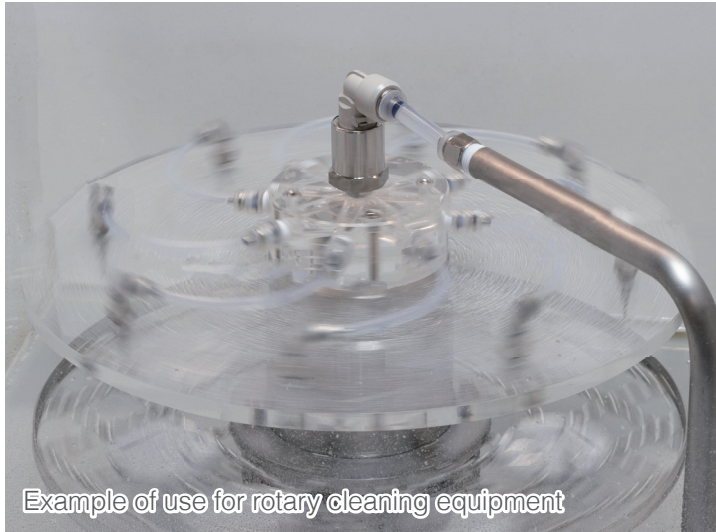
Oil-free



Characteristics

- New push-in fitting for swinging and rotating applications made of **SUS304** that can be used with water.* Two types of fluids: water and air.

*Only for water specification (RWL).



- Chemical-resistant and corrosion-resistant **PPS, SUS304**, etc. are used for the fluid contact parts.

*Refer to the sectional drawing for materials used.

- No copper-based materials are used.
- Parts that come in contact with fluids are **oil-free**.

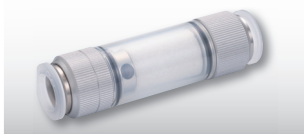
*Parts not in contact with fluid are not oil-free.

- **EPDM** and **FKM** seal packing are available.

Related products

Underwater debris removal device

Filter for water

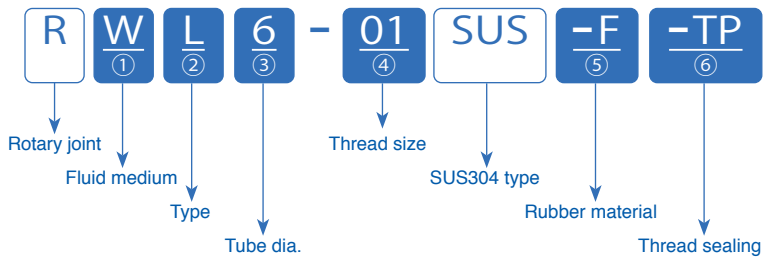


-S3
Oil-free
Special
 -S3 spec. (Standard) Non-grease Special order

- In-line type filter with filtration accuracy: **100μm** (collection efficiency: 95%)
- Element material: **PP** (excellent durability and chemical resistance)

Visit Non-standard products page to see the product details. ⇒ <https://www.pisco.co.jp/en/product/special/>

Model Designation (Example)



①. Fluid medium

Code	A	W
Fluid	Air	Water

②. Type

Code	L
Type	Elbow

③. Tube dia.

■ mm size

Code	4	6	8	10	12
Tube O.D. (mm)	ø4 (5/32in.)	ø6	ø8 (5/16in.)	ø10	ø12

■ Inch size

Code	1/4	3/8	1/2
Tube O.D. (mm)	ø6.35	ø9.53	ø12.7

④. Thread size

Code	Metric Thread		Taper pipe thread			
	M5	M6	01	02	03	04
Size	M5×0.8	M6×1	R1/8	R1/4	R3/8	R1/2

⑤. Rubber material

Code	No code	-F
Material	EPDM	FKM

⑥. Thread sealing

Code	No code	-TP
Material	No seal (PPS gasket for M5 and M6)	Seal tape applied (Seal tape is applied on thread part)

Tube - Thread size list

Thread Size	Tube O.D.							
	4(5/32)	6	8(5/16)	10	12	1/4	3/8	1/2
M5×0.8	●	●	—	—	—	—	—	—
M6×1	●	●	—	—	—	—	—	—
R1/8	●	●	●	●	—	●	●	—
R1/4	—	●	●	●	●	●	●	●
R3/8	—	—	●	●	●	—	●	●
R1/2	—	—	—	●	●	—	●	●

Specifications

Fluid medium code	A	W
Fluid medium	Air, other gases (conditional *1)	Water, other liquids (conditional *2)
Max. operating pressure	0.7MPa	
Max. vacuum	-100kPa	—
Operating temp. range	0~60°C (No freezing)	
Allowable rotation	500min ⁻¹	

△ Warning

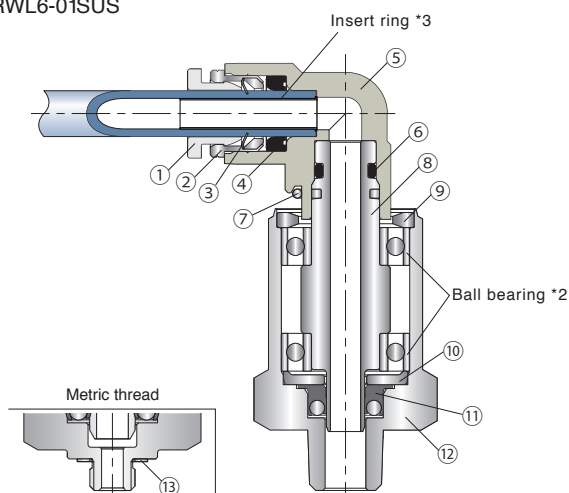
*1. As for mixed gas, etc., they may vary depending on the conditions of use, so please check the compatibility of our specifications before use.

*2. The following conditions must be observed when the fluid medium is water or liquid.

- When using water or liquid, the surge pressure must be kept below the maximum operating pressure.
- General tap water in Japan, free from foreign substances or contamination, can be used. Carry out the evaluation under an actual operating condition for using other kind of water.
- Be sure to use Insert Ring (WR) when using water or liquid as a fluid medium.
- As for chemicals, etc., they may vary depending on the conditions of use, so please check the compatibility of our specifications before use.

Sectional drawing

■ RWL6-01SUS



No.	Parts	Material	
		RAL	RWL
①	Release-ring	PP: Blue	PP: Transparent
②	Guide ring	SUS304	
③	Lock claws	Stainless steel	
④	Elastic sleeve	Standard: EPDM, Option: FKM	
⑤	Resin body	PPS	
⑥	O-ring	Standard: EPDM, Option: FKM	
⑦	Fixing pin	SUS304	
⑧	Shaft	SUS304	
⑨	Retainer	SUS304	
⑩	Seal retainer	SUS304	
⑪	Radial Seal	Fluororesin+SUS302	Polyolefin+SUS302
⑫	Metallic body	SUS304	
⑬	Gasket *1	PPS	

*1. Included with metric screw type.

*2. NBR is used for bearings.

*3. Insert rings (sold separately) are made of SUS304.

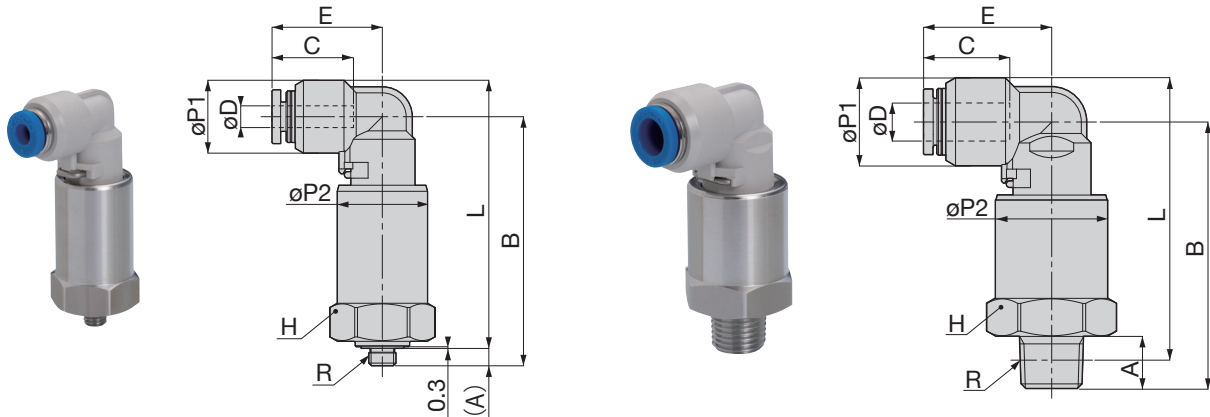
*4. Insert ring (sold separately) is not necessary for RAL.

△ Notes

- △ Warning
1. When fluid leakage occurs, immediately close the valve to stop the fluid and stop using the product. Continued use with fluid leakage may cause a serious incident.
 2. Check chemical resistance before using the products, when the fluid medium is chemicals, solvent or mixed gases. Depending on the usage conditions, it may cause damage to the fitting body, disengagement of the tube, or leakage.
 3. This product is available in different seal rubber materials, but there is no identification based on seal material. Make sure not to mix the product with other seal materials when opening the packaging. Mixture may cause unexpected situations.
 4. PP resin can be deteriorated by being exposed to direct sunlight or ultraviolet rays.
 5. Install a filter or strainer on the secondary side of the product to prevent possible contamination of seal material wear debris.
 6. Use the product applicable to the fluid to be used. Use of fluids other than those specified may cause damage to the product or leakage.
- △ Caution
1. PPS resin has the property of discoloring when exposed to direct sunlight, fluorescent light, mercury light, and high temperature atmospheres for a long period of time, but discoloration does not affect performance.
 2. Note that EPDM (sealing rubber material) is not suitable for piping in general pneumatic circuits due to its inferior resistance to mineral oil-based oils.
 3. No Sealock (thread sealant) is coated on taper pipe thread, be careful when installing them. When using sealing tape, sealing agent, etc. on the thread, wrap or apply it leaving 1.5 to 2 thread from the thread point.
 4. Tube connection into a tube fitting is harder than that of standard spec. due to its oil-free specification. When using, make sure that the tube is inserted all the way to the tube end of the fitting. When inserting a tube, apply a liquid that is not problem to use on the tube surface to improve smoothness of tube connection.
 5. The corrosive and dusting properties of the fitting depend on the operating environment. If there is concern about adverse effects on machinery or equipment, evaluate the adoption of the product in accordance with the operating conditions in advance.
 6. Do not apply a radial load. It may shorten the service life.
 7. For violent oscillations or swings, use polyurethane tubes. Rigid (hard) tubes, such as nylon tubes, can be a source of radial loading.
 8. Over-tightening with excessive torque can deform the metal hexagonal column and cause structural rotational failure and leakage.
 9. Use clean fluid, as foreign matter on the rotating seal surface may cause a decrease in product life. Remove foreign matter from the piping when piping.
 10. Rotational torque may vary depending on the used fluid and operating conditions.
 11. Do not leave any liquid residue inside the product when the machine is not operated for a long period of time. It may affect the function and life of the product.
 12. This product generates heat by rotation and may become hot depending on the operating pressure and rotation speed. When touching the product, make sure that the temperature has cooled down sufficiently after the rotation is stopped.
 13. When using this product in the opposite rotation of the screw tightening direction, the screws may loosen, and periodic maintenance and retightening should be conducted.

Sectional drawing

RAL Elbow (For air and other gases)



■ mm size

Unit: mm

Model code	Tube O.D. øD	R	A	B	L	øP1	øP2	Tube end C	E	Wrench size H	Allowable rotation (min ⁻¹)	Rotational torque (cN·m)	Starting torque (cN·m)	Weight (g)	Orifice dia. (ømm)		
RAL4-M5SUS 5	4	M5x0.8	3.2	45.8	49.3	13.4	16.6	15	20.3	17	500	6	6	43	2.4		
RAL4-M6SUS 5		M6x1	4.2	46.8											3		
RAL4-01SUS 5		R1/8	8	49.9											20.4	67	3.6
RAL6-M5SUS 5	6	M5x0.8	3.2	45.8	49.3	13.4	16.6	17.1	20.9	17	500	6	6	43	2.4		
RAL6-M6SUS 5		M6x1	4.2	46.8											3		
RAL6-01SUS 5		R1/8	8	49.9											20.4	67	4
RAL6-02SUS 5		R1/4	11	51.7											52.4	69	6
RAL8-01SUS 5	8	R1/8	8	55.7	60.9	18.5	23.6	18.1	26.9	24	500	13	13	92	6		
RAL8-02SUS 5		R1/4	11	56.1	59.3										88	6.7	
RAL8-03SUS 5		R3/8	12	59	91										6		
RAL10-01SUS 5	10	R1/8	8	55.7	60.9	18.5	23.6	20.4	27.4	24	500	13	13	93	6		
RAL10-02SUS 5		R1/4	11	56.1	59.3										89	7.5	
RAL10-03SUS 5		R3/8	12	59	92										7.5		
RAL10-04SUS 5		R1/2	15	55.7	56.7										100	7.5	

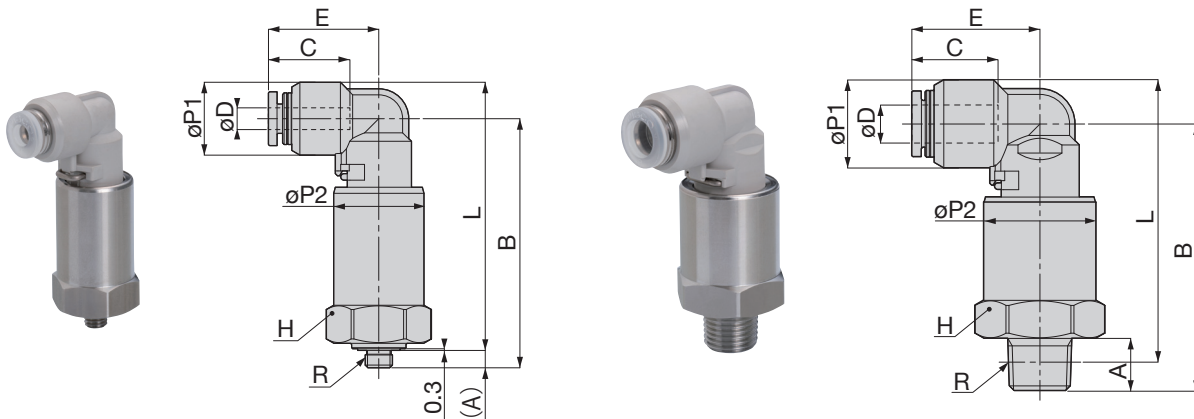
■ Inch size

Unit: mm

Model code	Tube O.D. øD (in)	R	A	B	v	øP1	øP2	E	Wrench size H	Allowable rotation (min ⁻¹)	Rotational torque (cN·m)	Starting torque (cN·m)	Weight (g)	Orifice dia. (ømm)		
RAL1/4-01SUS 5	1/4	R1/8	8	49.9	52.6	13.4	20.4	17.1	20.9	21	500	6	6	67	4	
RAL1/4-02SUS 5		R1/4	11	51.7	52.4									69		
RAL3/8-01SUS 5	3/8	R1/8	8	55.7	60.9	18.5	23.6	20.4	27.4	24	500	13	13	93	6	
RAL3/8-02SUS 5		R1/4	11	56.1	59.3										89	7.5
RAL3/8-03SUS 5		R3/8	12	59	92										7.5	
RAL3/8-04SUS 5		R1/2	15	55.7	56.7										100	7.5
RAL1/2-02SUS 5	1/2	R1/4	11	64.5	69.5	22	26.6	23.9	29.9	27	500	25	25	128	8.5	
RAL1/2-03SUS 5		R3/8	12	69.2	130									9.8		
RAL1/2-04SUS 5		R1/2	15	63.9	66.7									134	9.8	

*"L" is a reference value for height dimension after tightening thread.

RWL Elbow (For air and other gases)



■ mm size

Unit: mm

Model code	Tube O.D. øD	R	A	B	L	øP1	øP2	Tube end C	E	Wrench size H	Allowable rotation (min ⁻¹)	Rotational torque (cN·m)	Starting torque (cN·m)	Weight (g)	Orifice dia. (ømm)
RWL4-M5SUS 5	4	M5×0.8	3.2	45.8	49.3	13.4	16.6	15	20.3	17	500	6	14	43	2.4
RWL4-M6SUS 5		M6×1	4.2	46.8											3
RWL4-01SUS 5 6		R1/8	8	49.9	52.6		20.4			21					3.6
RWL6-M5SUS 5	6	M5×0.8	3.2	45.8	49.3	13.4	16.6	17.1	20.9	17	500	6	14	43	2.4
RWL6-M6SUS 5		M6×1	4.2	46.8											3
RWL6-01SUS 5 6		R1/8	8	49.9	52.6		20.4			21					4
RWL6-02SUS 5 6		R1/4	11	51.7	52.4									69	6
RWL8-01SUS 5 6	8	R1/8	8	55.7	60.9	18.5	23.6	18.1	26.9	24	500	17	21	92	6
RWL8-02SUS 5 6		R1/4	11	56.1	59.3										88
RWL8-03SUS 5 6		R3/8	12	59	90										6.7
RWL10-01SUS 5 6	10	R1/8	8	55.7	60.9	18.5	23.6	20.4	27.4	24	500	17	21	93	6
RWL10-02SUS 5 6		R1/4	11	56.1	59.3										89
RWL10-03SUS 5 6		R3/8	12	59	91										7.5
RWL10-04SUS 5 6		R1/2	15	55.7	56.7										99

■ Inch size

Unit: mm

Model code	Tube O.D. øD (in)	R	A	B	L	øP1	øP2	Tube end C	E	Wrench size H	Allowable rotation (min ⁻¹)	Rotational torque (cN·m)	Starting torque (cN·m)	Weight (g)	Orifice dia. (ømm)
RWL1/4-01SUS 5 6	1/4	R1/8	8	49.9	52.6	13.4	20.4	17.1	20.9	21	500	6	14	66	4
RWL1/4-02SUS 5 6		R1/4	11	51.7	52.4									69	
RWL3/8-01SUS 5 6	3/8	R1/8	8	55.7	60.9	18.5	23.6	20.4	27.4	24	500	17	21	93	6
RWL3/8-02SUS 5 6		R1/4	11	56.1	59.3									89	
RWL3/8-03SUS 5 6		R3/8	12	59	91									7.5	
RWL3/8-04SUS 5 6		R1/2	15	55.7	56.7									100	
RWL1/2-02SUS 5 6	1/2	R1/4	11	64.5	69.5	22	26.6	23.9	29.9	27	500	32	45	127	8.5
RWL1/2-03SUS 5 6		R3/8	12	69.2	129										
RWL1/2-04SUS 5 6		R1/2	15	63.9	66.7									133	

**"L" is a reference value for height dimension after tightening thread.