

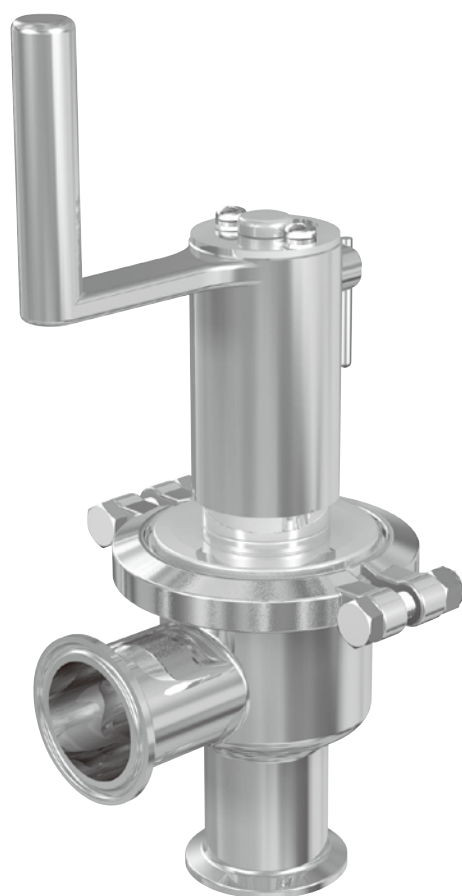


*Hygienic*  
**Sanitary Valves**

Reliable and  
advanced products



Auto valve



Hand valve

## ► Features of sanitary valves

- This valve uses a pneumatic actuator cylinder.
- The main body is designed as high as the pipe inside diameter, which prevents liquid or air remaining.
- A yoke is provided at the joint between the cylinder and valve main body, which are completely separated so that leakage can be detected at an early stage and operation air is prevented from being mixed with fluids.
- The yoke is provided on the valve side, making cleaning easy and providing sanitary conditions.
- Two types, with limit switch and without limit switch, are available.
- Two types, normally closed type and normally open type are available.
- As the material for the seat ring, ethylene-propylene rubber, silicone rubber, and fluororubber are available as standard specifications; however, PTFE lining gasket and PTFE gasket are available if required.

### Features

L-type, T-type, F-type, flow-adjustment, and relief valves are available.

(1) These valves can replace previous U-series valves.

(2) For WL, WT, WF and flow-adjustment valves, shaft packing is used as the shaft seal, which increases cleaning performance by CIP.

(3) PTFE guide rings are provided on all models, expanding freedom in attachment direction.

Our sanitary valves are select products manufactured through well-coordinated teamwork between the technical team and production team based on stainless steel technologies, experience and knowhow accumulated over many years.

### Material

SUS-304 (or equivalent)

SUS-316L (or equivalent)

### Production standard

Surface finish	Internal: #320 to #400 buff polishing External: #180 hairline finish
Dimensional tolerance	Surface-to-surface length: $\pm 1.5\text{mm}$ Parallelism of end surfaces: $\pm 0.5^\circ$ or less
Main body max pressure	1MPa (water pressure, normal temperature)
Valve seat max pressure	According to the characteristics table on page 8 (Hydraulic pressure, normal temperature)
Automatic valve operating air pressure	0.4~0.7MPa
Operating air hole size	Rc 1/4
Heat resistance	120°C

## ► Valve selection and ordering

Please use valves according to respective valve specifications. If an application exceeds the range of specifications, high safety design is required. We would be pleased to offer consultation if you provide us with information.

### ► Tube end

Clamp and male type tube ends are available as standard; however, other tube ends can be manufactured if required.

### ► Ordering

○ If there is any request of surface finish, please specify both internal and external surface.

○ For further details, refer to the type symbols on page 10.

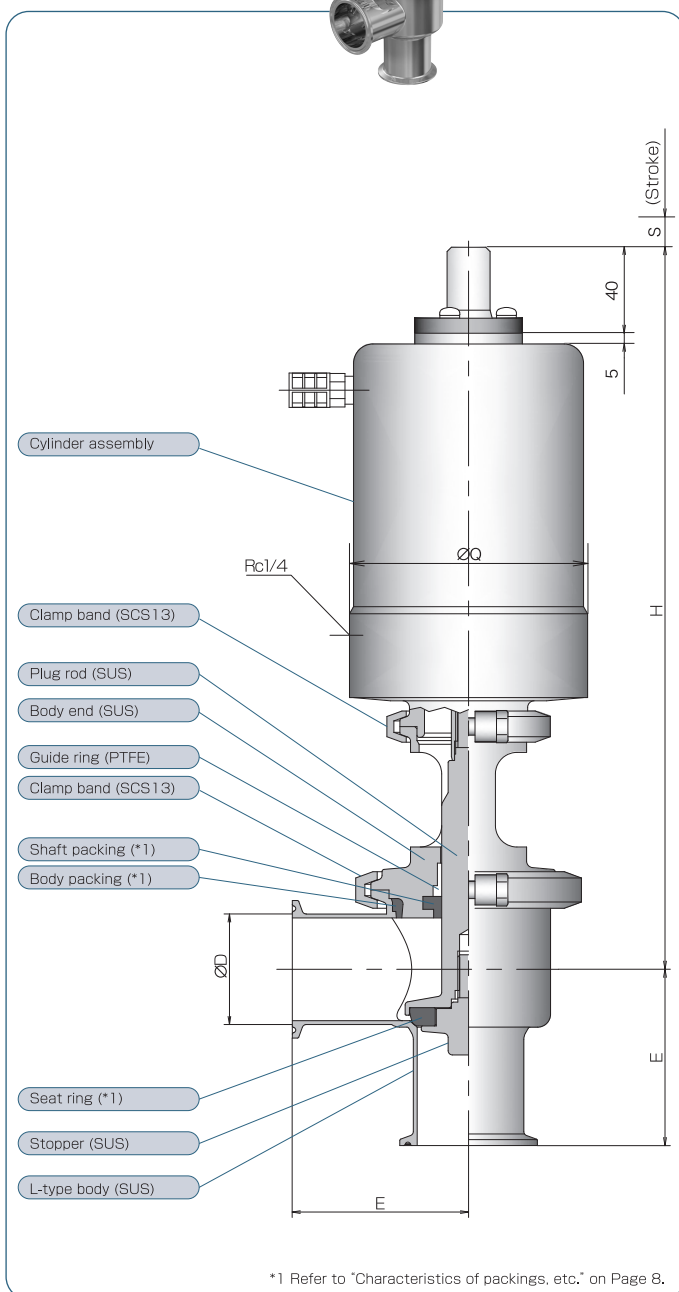
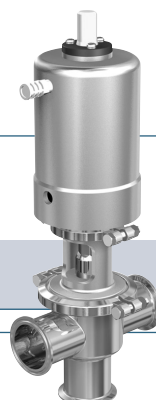
Auto valve

# WL type

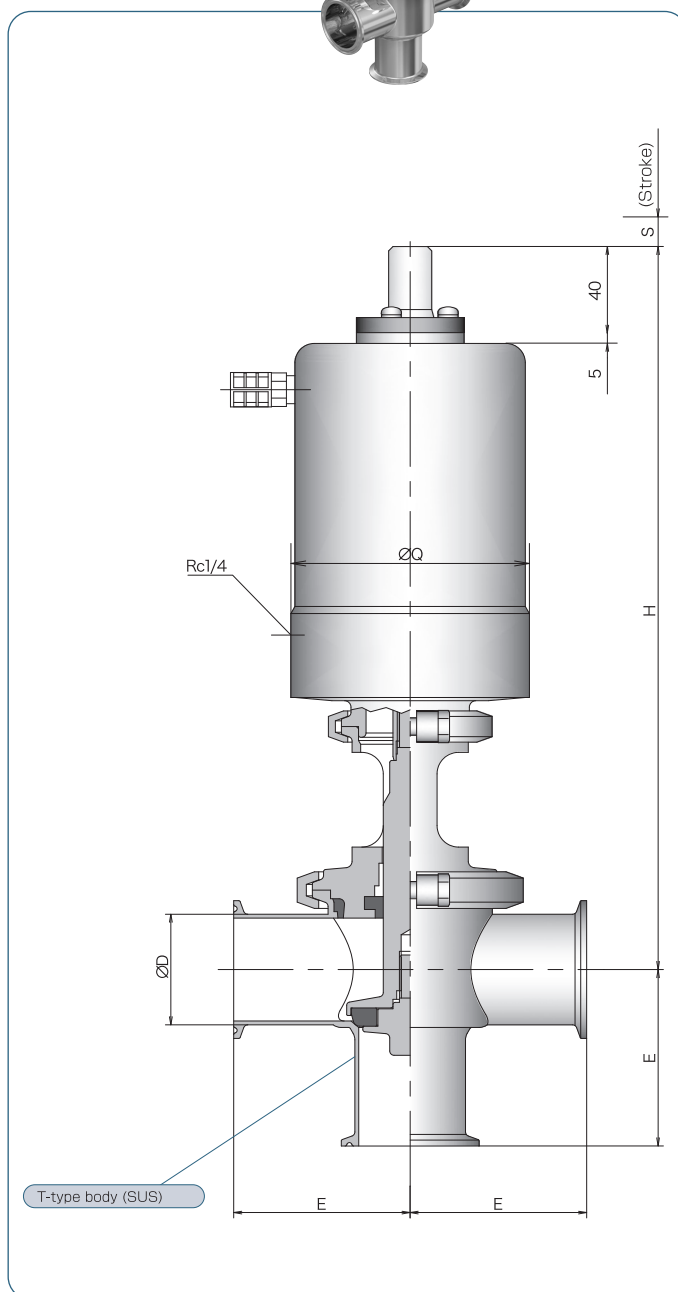


Auto valve

# WT type



\*1 Refer to "Characteristics of packings, etc." on Page 8.



(mm)

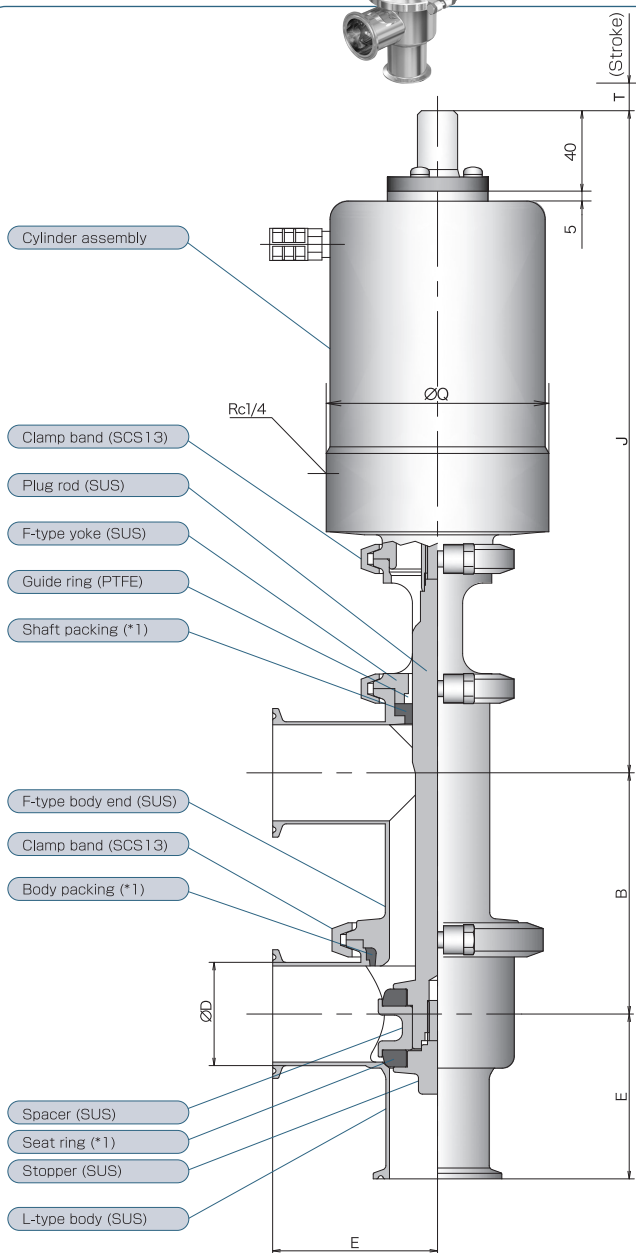
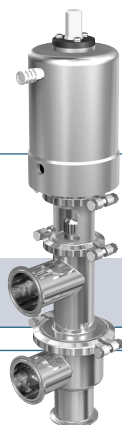
SIZE	D	E (Note)	B	H	J	S	T
1	25.4	55	80	318	317	15	10
1½	38.1	70	100	322	330	15	10
2	50.8	82	120	336	329	20	15
2½	63.5	105	140	409	390	25	20
3	76.3	110	150	421	388	25	20
4	101.6	160	197	478	463	30	25

Note) For male or clamp tube ends

## Auto valve

**WF**type

- Shaft packing F-type valve

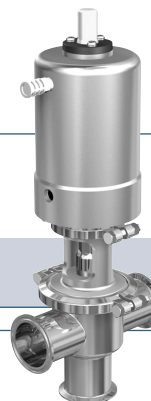


\*1 Refer to "Characteristics of packings, etc." on Page 9.

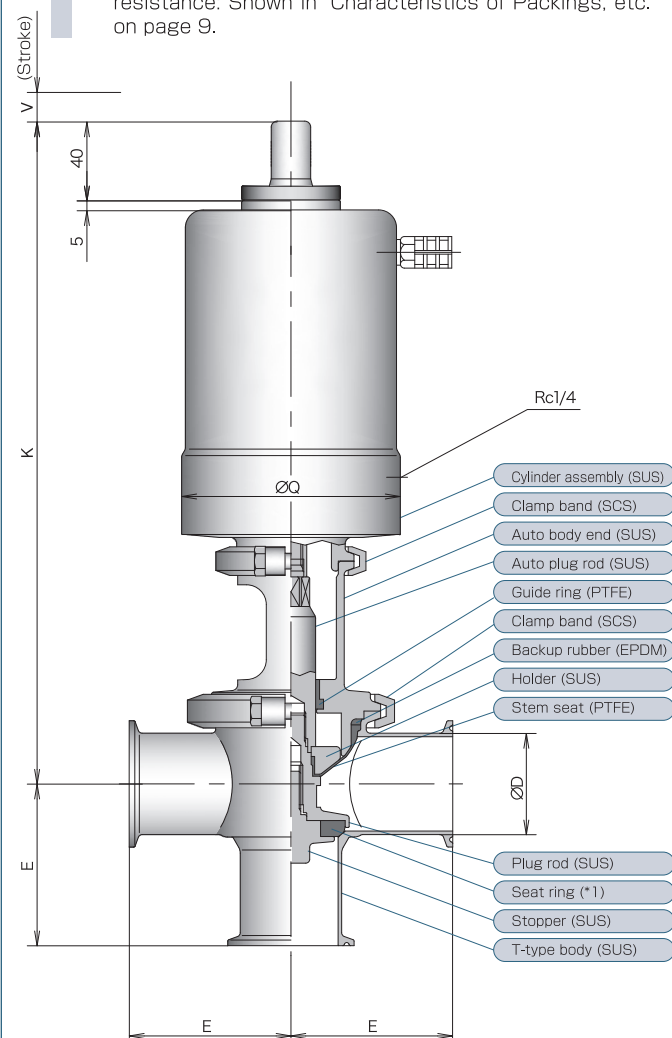
## Auto valve

**MT**type

- Diaphragm ON/OFF valve



- For MT type, the shaft is sealed with a PTFE diaphragm, which prevents shaft from touching outside air during operation of valve.
- ML type with a 2-port body is also available.
- Basic specifications: Max pressure: 0.5MPa; Heat resistance: Shown in "Characteristics of Packings, etc." on page 9.



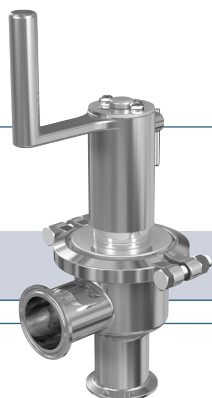
(Kg)

SIZE	Weight		
	WL type	WT type	WF type
1	5.2	5.2	5.9
1 1/2	5.5	5.6	6.5
2	7.4	7.5	8.5
2 1/2	12.3	12.5	14.1
3	13.7	14.0	15.8
4	20.2	20.7	24.6

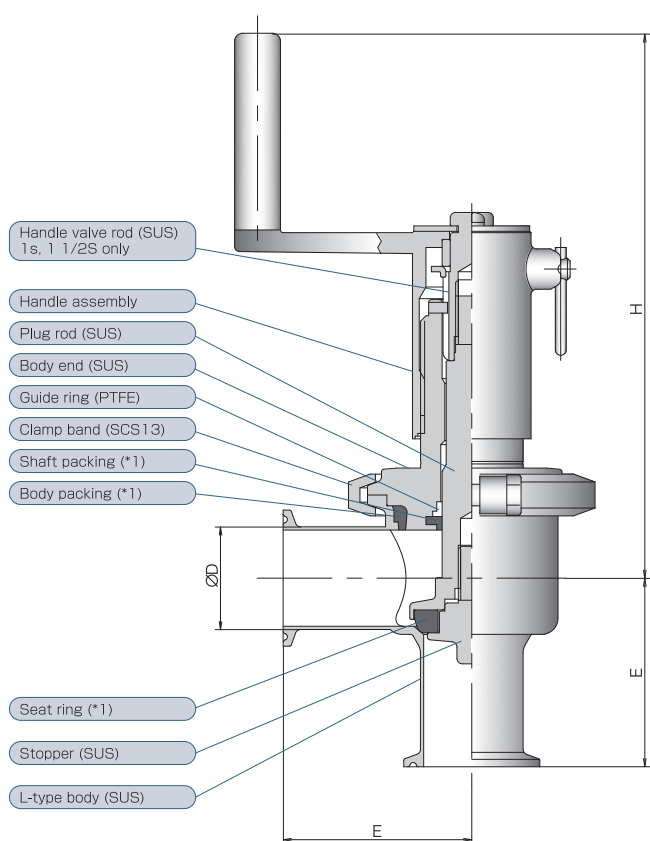
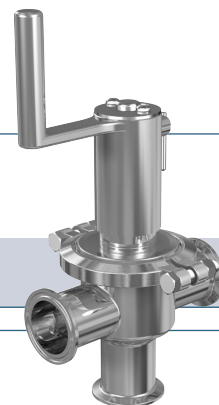
Note) For male or clamp tube ends

SIZE	φD	E (Note)	K	φQ	V
1	25.4	55	318	89.1	8
1 1/2	38.1	70	326.9	89.1	9
2	50.8	82	335.9	110.8	12
2 1/2	63.5	105	369.3	135.5	15
3	76.3	110	445.1	160.5	18
4	101.6	160	457.8	214	25

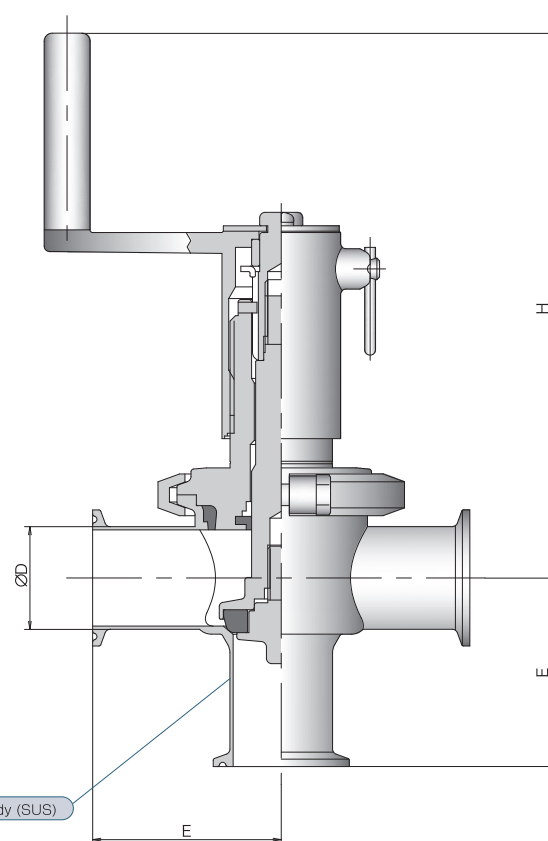
Hand valve

**WL type**

Hand valve

**WT type**

\*1 Refer to "Characteristics of packings, etc." on Page 9.



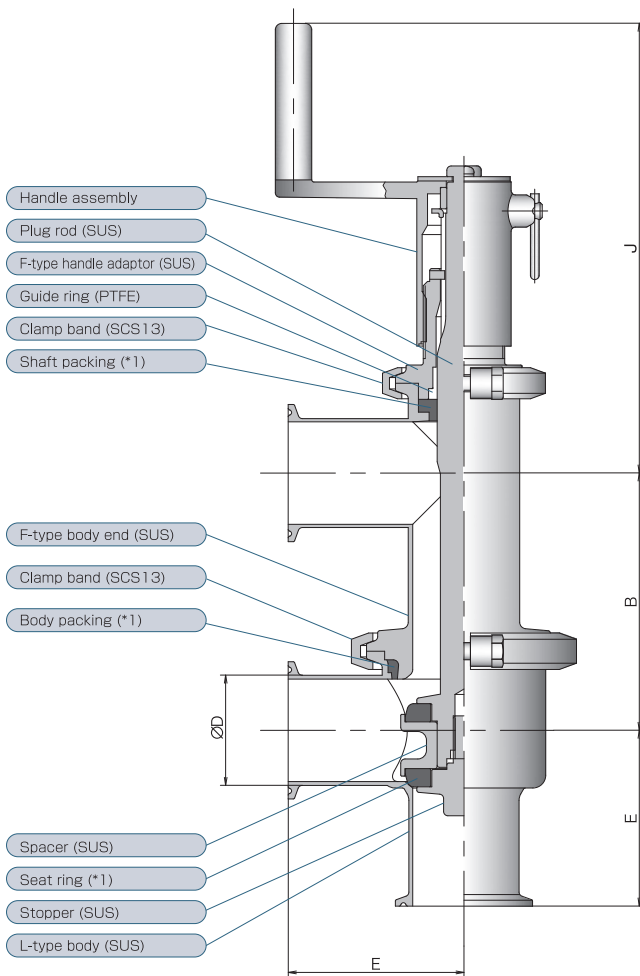
(mm)

SIZE	D	H	J	B	E (Note)
1	25.4	207	199	80	55
1 1/2	38.1	202	205	100	70
2	50.8	209	208	120	82
2 1/2	63.5	216	216	140	105
3	76.3	222	222	150	110
4	101.6	235	240	197	160

Note) For male or clamp tube ends

## Hand valve

## WF type



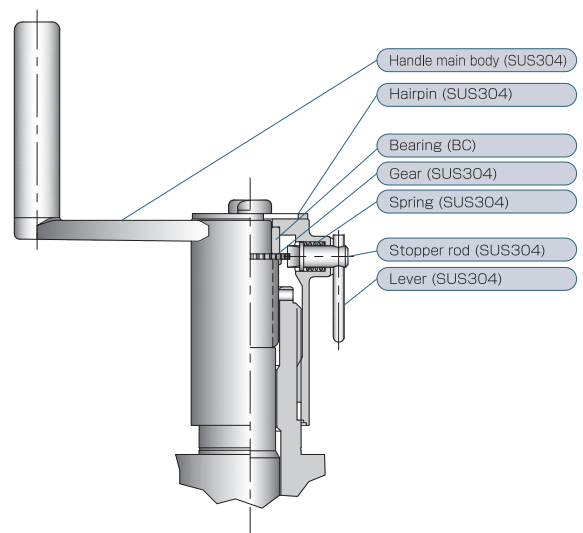
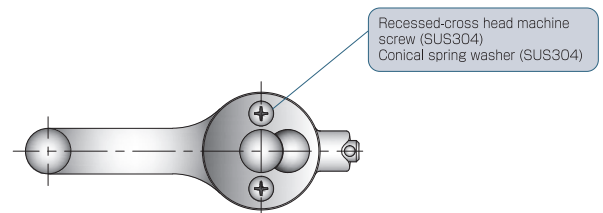
\*1 Refer to "Characteristics of packings, etc." on Page 9.

(Kg)

SIZE	Weight		
	WL type	WT type	WF type
1	2.1	2.2	2.8
1 1/2	2.4	2.5	3.2
2	3.0	3.1	4.3
2 1/2	4.3	4.5	6.4
3	5.3	5.5	8.3
4	8.0	8.4	13.3

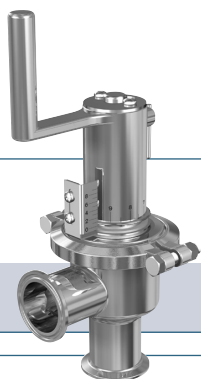
## ► Hand-lock mechanism of hand valve

Moving the lever to horizontal position releases the lock. Be sure to release the lock before operating the handle. Moving the lever to perpendicular position locks the handle. Check that the handle is completely locked.

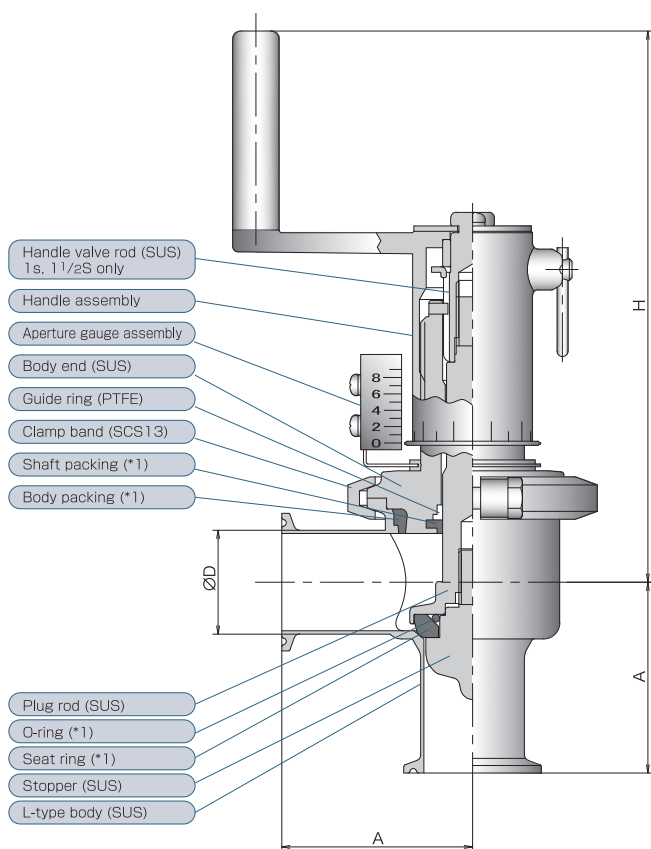
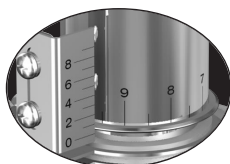


## Flow control valve (flow-adjustment valve)

# WC type



- Use this valve as a throttle valve, etc. on the pump discharge side.
- Aperture gauge is equipped as standard.



\*1 Refer to "Characteristics of packings, etc." on Page 9.

(mm)

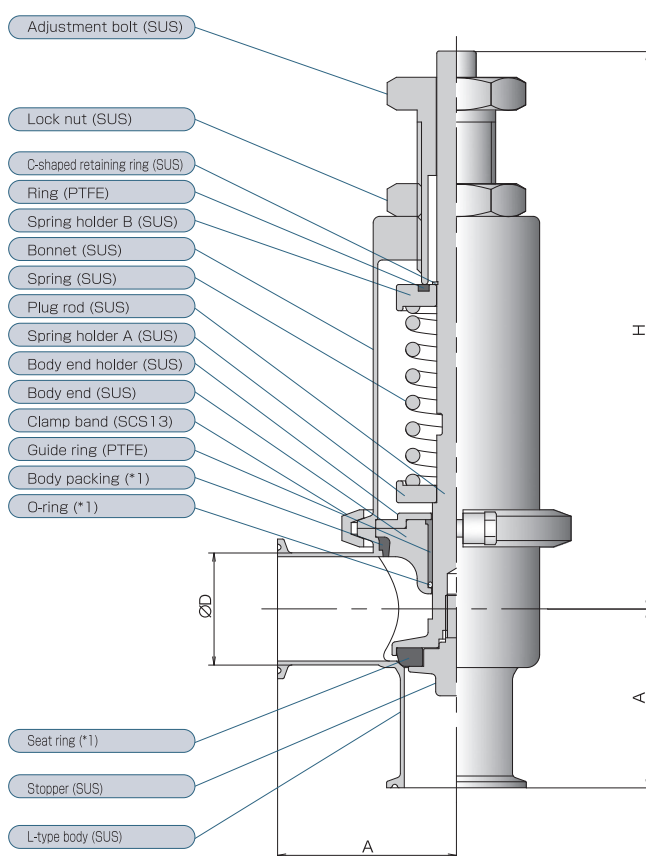
SIZE	H	A
1	210	55
1 1/2	201	70
2	207	82
2 1/2	214	105
3	220	110

## Relief valve

# WR type



- The standard settable pressure range is 0.1 MPa to 0.5 MPa. If it is necessary to use the valves other than the standard pressure range, please contact us.



\*1 Refer to "Characteristics of packings, etc." on Page 9.

(mm)

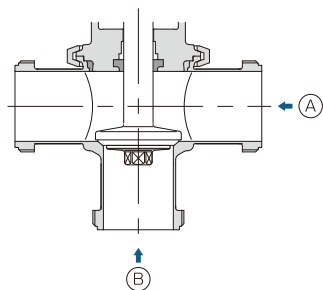
SIZE	H	A
1	235	55
1 1/2	240	70
2	256	82
2 1/2	280	105
3	298	110

## Technical material

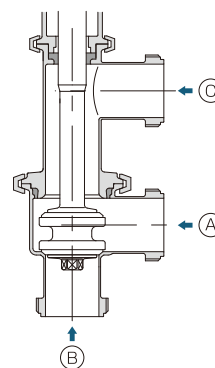
Max pressure for main body and actuator					1MPa or less						Operation air pressure					
Heat resistance for main body					up to 120℃						Standard: 0.4 to 0.5MPa Option: 0.7 to 0.8MPa (For 2s to 4s, cylinders can be downsized.) * If a single-action cylinder is used for double-action operation, there are restrictions on					
Max pressure characteristics (tolerable fluid differential pressure: MPa)																
Specifications	Normally closed type				Normally open type			Double-action type								
Size	type	Flow channel									Bore diameter	Internal volume		Flow rate coefficient		Valve stroke
		(A)	(B)	(C)	(A)	(B)	(C)	(A)	(B)	(C)		Single-action operation (L)	Flow channel	Cv value		
1	WL・T	0.80	0.80	—	0.80	0.80	—	0.80	0.80	—	80	0.17		Ⓑ→Ⓐ	12	15
	WF	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	80	0.15		Ⓐ→Ⓑ Ⓐ→Ⓒ	11 7	10
1½	WL・T	0.51	0.50	—	0.57	0.47	—	0.80	0.80	—	80	0.17		Ⓑ→Ⓐ	24	15
	WF	0.51	0.50	0.70	0.57	0.47	0.75	0.80	0.80	0.80	80	0.15		Ⓐ→Ⓑ Ⓐ→Ⓒ	22 15	10
2	WL・T	0.47	0.45	—	0.55	0.47	—	0.80	0.80	—	100	0.31		Ⓑ→Ⓐ	65	20
	WF	0.47	0.45	0.54	0.55	0.47	0.55	0.80	0.80	0.80	100	0.27		Ⓐ→Ⓑ Ⓐ→Ⓒ	60 50	15
2½	WL・T	0.49	0.45	—	0.57	0.49	—	0.80	0.80	—	125	0.54		Ⓑ→Ⓐ	100	25
	WF	0.49	0.45	0.54	0.57	0.49	0.48	0.80	0.80	0.80	125	0.48		Ⓐ→Ⓑ Ⓐ→Ⓒ	85 70	20
3	WL・T	0.35	0.35	—	0.37	0.35	—	0.66	0.70	—	125	0.54		Ⓑ→Ⓐ	132	25
	WF	0.35	0.33	0.35	0.37	0.35	0.33	0.66	0.70	0.78	125	0.48		Ⓐ→Ⓑ Ⓐ→Ⓒ	110 92	20
4	WL・T	0.29	0.27	—	0.30	0.25	—	0.54	0.56	—	150	0.96		Ⓑ→Ⓐ	180	30
	WF	0.29	0.27	0.24	0.30	0.25	0.29	0.54	0.56	0.61	150	0.87		Ⓐ→Ⓑ Ⓐ→Ⓒ	152 130	25
If the seat ring material is EPDM, the max pressure can be improved by changing the combination of cylinders as options; however, the service life for the seat may be shortened in the case of combinations whose main body max pressure exceeds 0.98MPa. If the seat ring material is FKM or VMQ, the service life for the seat may be shortened in cases other than single-action operation in a standard combination.																

## ► Flow channel direction schematic diagram

WL·T Type



WF Type



## Lubricant application specifications

Application specifications	Application range	Note
Standard specifications	Sliding seal part	—
Wetted surface lubrication prohibited area	No application	Be sure to make the sliding packing area smooth with fresh water, etc.
Lubricant	NOK Kluber PARALIQ GTE 703*1 (NSF category H1)	

\*1 Conforming to the Food Sanitation Law

## Technical material

## ► Characteristics of Packings

Item		Standard					Option	
Packing material		EPDM (Ethylene propylene rubber)	FKM (Fluororubber)	UC rubber (High-function fluororubber)	VMQ (Silicon rubber)	NBR (Nitrile rubber)	PTFE (Fluororesin lining)	PTFE Fluororesin
Material code		E81	F8	F802	SE72	NBR	TL□	TFE
Color		Black	Black	Black	Gray	Black	White	White
Resistance to liquid	Steam	◎	△	○	△	○	○	◎
	Caustic soda	◎	△	○	△	◎	◎	◎
	Nitric acid	○	◎	◎	△	△	◎	◎
	Acetic acid	○	○	◎	△	△	◎	◎
	Sodium hypochlorite	○	○	◎	○	○	◎	◎
	Peroxyacetic acid	△	×	○	○	×	◎	◎
	Fragrance (limonene, etc.)	×	○	○	×	△	◎	◎
	Animal and vegetable oil	×	○	◎	○	○	◎	◎
General characteristics	Heat resistance	130℃	100℃ (120℃ SIP)	130℃	100℃ (120℃ SIP)	120℃	130℃	130℃
	Elasticity	○	○	○	○	○	△	△
	Intensity	○	△	○	△	◎	○	◎
Applicable size		1S~4S	1S~4S	1S~4S	1S~4S	WR 1S~3S	1S~4S	1S~4S
Remarks	Part name	Seat ring	Seat ring	Seat ring	Seat ring	O-ring	Seat ring	Seat ring
		Body packing	Body packing	Body packing	Body packing	—	Body packing	—
		Shaft packing	Shaft packing	Shaft packing	Shaft packing	—	Shaft packing	—
	Note	—	—	—	—	—	*A special part is required. (Yoke, body end) *Material code and core rubber material: TLX: VMQ (Silicone) TLE: EPDM (Ethylene propylene rubber) TLZ: NBR (Nitrile rubber)  Use a seat ring in combination with O-ring.	
The Food Sanitation Law conformity test		Acceptable						

## ► List of consumable parts (Size code list)

Product code Size	Seat ring A SEATRING	Seat ring ASEATRING	Body packing SQBP	Shaft packing SQPS	Shaft packing SQPSD	Shaft packing SQPS	Rod O-ring O-RING	Seat O-ring O-RING	Guide ring			
	Product code is described in the list.											
1	10	10	10	03-10	03-10	03-10	P-22	P-16	Automatic 03-10 SQPGR Manual 10 SQPGRB	10 SQPGRB	10 WRPGR	
1 1/2	15	15	15	03-10 ※1	03-10 ※1	03-10 ※1	P-22	P-24	Automatic 03-10 SQPGR-AW Manual 15 SQPGRB-W	15 SQPGRB-W	15-20 WRPGR	
2	20	20	15-20	15-20	15-20	15-20	P-22	G-30	Automatic 20-40 WLFAPGR	Automatic 20-40 WLFAPGR	15-20 SQPGR	
2 1/2	25	25	25	15-20	15-20	15-20	P-25	G-35				
3	30	30	30	15-20	15-20	15-20	P-25	G-50	Manual 20-40 WLPMPGR	Manual 20-40 WFPMPGR	—	
4	40	40	40	15-20	15-20	15-20	—	G-75				
Remarks	E81, F8 materials are ASEATRING. SE72 material is ASEATRING only for 1s and AKSEATRING for others.		TLE, TFE materials	—	E81 material 1s, 1.5s: SQPSC 2s-4s: SQPSD	F8 material	SE72 material	WR relief valve	If seat ring material is TFE	For WL, WT	For WF	WR relief valve

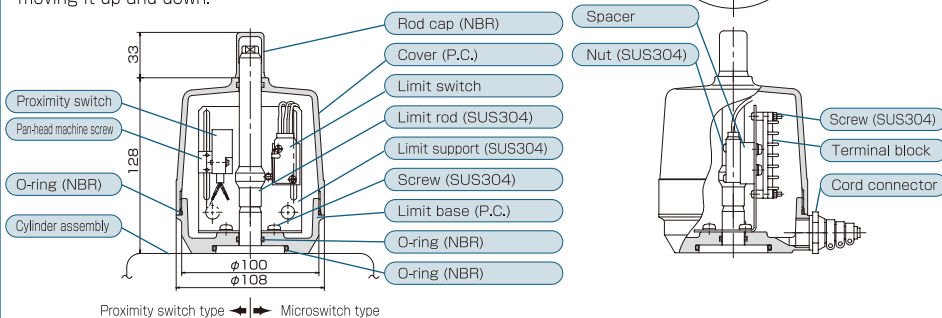
\*1: In the case of 1 1/2S shaft packing, -W is added to the end of code.

## ► Switch assembly with cover (Proximity or micro)

A polycarbonate-resin-based limit base made by injection molding and a watertight micro switch are incorporated in the cover, which enhances the insulation withstand characteristics. Furthermore, in order to simplify instrumentation, a terminal block is provided. Perform adjustment by loosening the limit switch attachment screw and moving it up and down.

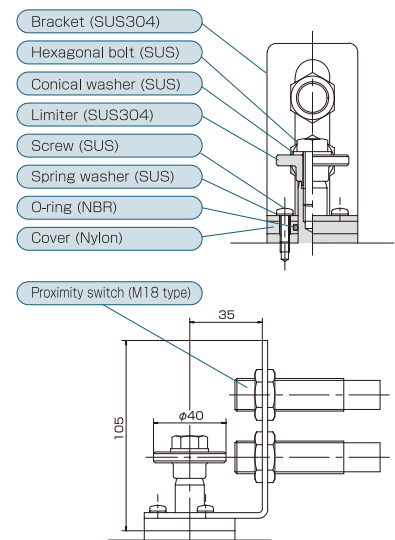
## Mechanical specifications

- Proximity switch  
2-wire type DC24V 100mA
- Limit switch  
NC, NO, 250V 4A
- Cord connector PF 1/2  
Terminal block 6P



CF/AF type with a compact cover is also available as an option. For further details, refer to the catalog for No. 18 valve control head.

## ► Proximity switch assembly (stay attachment type)



## Sanitary valve type symbol table

Name	JIS material classification	Finish classification	Pipe end classification	Size classification	Product name/type
		X	X X	X X	
Symbol	<b>3 1 6 L</b>	<b>0 P · 1 P</b>	<b>M · C · W</b>	X X	
	①	②	③	④	⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

## ① Material classification (main body)

Category	Symbol	Material
Standard	<b>304</b>	SUS 304 (or equivalent)
	<b>316L</b>	SUS 316L (or equivalent)
Special	—	—

## ② Finish classification (valve main body)

Category	Symbol	Finish	
		Internal finish	External finish
Standard	<b>0P</b>	Pickling	Pickling and beads shot blast
	<b>1P</b>	#320 to #400 buff polished finish	Pickling and beads shot blast
	<b>2P</b>	#320 to #400 buff polished finish	#180 Hairline finish
Option	<b>ODP</b>	Pickling	#180 Hairline finish
	<b>EP</b>	Electrolytic polishing finish	#180 Hairline finish

## ③ Pipe end classification

Category	Symbol	Details
Standard	<b>M</b>	ISO male on both ends
	<b>C</b>	ISO clamp on both ends
Option	<b>W</b>	Weld
	<b>N</b>	ISO nut
	<b>T</b>	Sanitary flange

## ④ Size classification

Symbol	Size
<b>10</b>	1S
<b>15</b>	1 1/2S
<b>20</b>	2S
<b>25</b>	2 1/2S
<b>30</b>	3S
<b>40</b>	4S

## ⑤ Type Classification

Symbol	Shaft seal	Details
<b>WL</b>	Shaft packing type	L-type valve
<b>WT</b>		T-type valve
<b>WF</b>		F-type switching valve
<b>WC</b>		Flow control valve
<b>WR</b>	O-ring type	Relief valve
<b>ML</b>	Diaphragm type	L-type auto valve
<b>MT</b>		T-type auto valve

## ⑥ Drive classification

Category	Symbol	Details
Standard	<b>C</b>	Automatic normally close
	<b>O</b>	Automatic normally open
Option	<b>W</b>	Double action
	<b>M</b>	Manual
Special	<b>X</b>	—

## ⑦ Seat ring material

Symbol	Material
<b>E</b>	EPDM standard
<b>S</b>	SE72 Silicone rubber
<b>T</b>	PTFE
<b>F</b>	UC rubber
<b>V</b>	Fluororubber
<b>L</b>	Fluororesin lining

## ⑧ Body packing and shaft packing (O-ring) material

Symbol	Material
<b>E</b>	EPDM standard
<b>N</b>	NBR O-ring
<b>S</b>	SE72 Silicone rubber
<b>F</b>	UC rubber
<b>V</b>	Fluororubber
<b>L</b>	Fluororesin lining

## ⑨ Cylinder type

Symbol	Bore diameter	WL, WT, WF type	ML, MT type
<b>08M</b>	80	1~1 1/2	1~1 1/2
<b>10M</b>	100	2	2
<b>13M</b>	125	2 1/2~3	2 1/2
<b>15M</b>	150	4	3
<b>20M</b>	200	—	4

## ⑩ Feedback switches classification

In the valve control system, different types are used for (10) and (11). Consult with our company.

Category	Symbol	Type/manufacturer	Usable power voltage range	Maximum switching current	Operation style	Type or attachment
Standard	<b>D</b>	No feedback switch	—	—	—	—
	<b>C</b>	D2VW-5L2A-1M Limit switch made by OMRON	AC/DC<250V	4A	NO,NC	Type with cover
	<b>A</b>	FL2R-4J6SD Proximity switch made by Yamatake	DC10~30V	100mA	NO	Type with cover
	<b>J</b>	IGC2005-APKG/UP Proximity switch made by Efeetor	DC10~36V	100mA	NO	Type with M18 stay
	<b>U</b>	FL7M-7J6HD Proximity switch made by Yamatake	DC10~30V	100mA	NO	Type with M18 stay
	<b>R</b>	FL7M-7K6H Proximity switch made by Yamatake	DC10~30V	100mA	NC	Type with M18 stay
Special	<b>Z</b>	For nonstandard specifications with proximity switch supplied				Type with cover
	<b>P</b>					Type with stay
	<b>B</b>	Asi: For uni-wire system with a solenoid valve: For further details, refer to the catalog of valve control head.				

Note) Above parts may be subject to substitution with equivalent parts due to change in model of switch manufacturer. Select a standard model as much as possible.

## ⑪ Number of switches used

Symbol	Details	Symbol	Details
<b>0</b>	No switch	<b>A</b>	With M12 proximity switch attachment washer
<b>1</b>	One switch on closed side	<b>B</b>	1 pc. at closed side (in the case of M12)
<b>2</b>	Two switches on open and closed sides	<b>C</b>	1 pc. each at open/closed sides (in the case of M12)
<b>3</b>	One switch on closed side	<b>D</b>	1 pc. at open side (in the case of M12)

\* In the case of proximity switch attachment washer only: JO (M18), JA (M12)

## ⑫ Option

Symbol	Details
<b>00</b>	No switch
<b>SC</b>	With speed controller
<b>2P</b>	Two-position type
<b>3P</b>	Three-position type
<b>WS</b>	Two-position type with speed controller
<b>TS</b>	Three-position type with speed controller

## Section for entry of special notes

- If using nonstandard specifications for the lubricant application specifications on Page 1~2, be sure to designate them.
- If the specification is not specified, lubricant is applied.
- Safety of lubricant to be applied:
- NSF category H1
- Conforming to the Food Sanitation Law



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