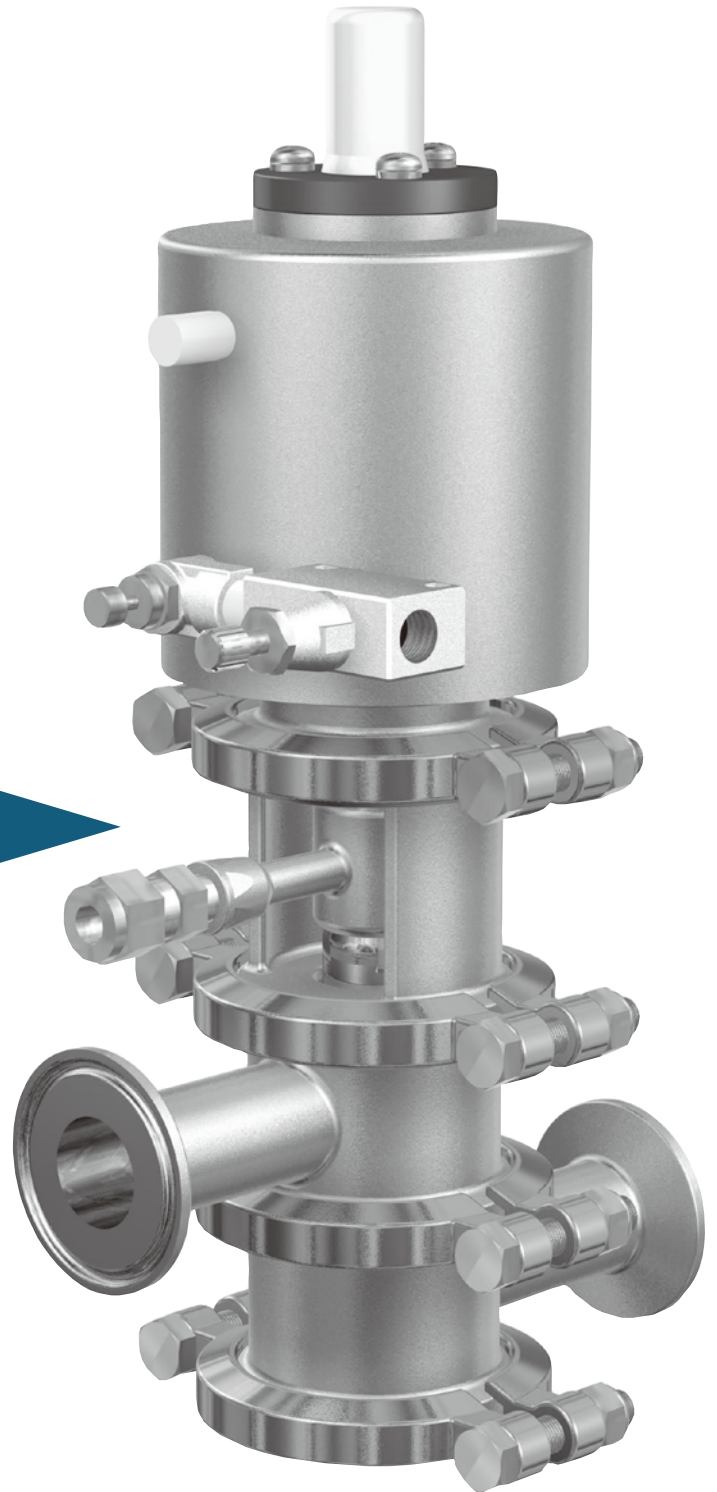




Hygienic

Double Seal Sequence Valves Small Dia

High reliability
products derived
from advanced
technologies



Recently, the importance of quality control in the field of food, distilling, dairy, chemical and pharmaceutical, biotechnology and other industries has been increasing. In addition, demands for saving space, reducing labor, saving energy, and reducing facility costs have also increased. Due to the various factors above, double-seal valves have become widely spread.

In order to cope with demands for small-lot production, sampling, and dosing in particular, small-diameter (10A to 1S) sequence valves have been developed and released.

Using these in combination with regular-sized (1 1/2 to 6S) sequence valves yields significant benefits.

Material

SUS-304 (or equivalent)

SUS-316L (or equivalent)

Production standard

Surface finish	Internal: #320 to #400 buff polishing External: Beads shot brasting
Dimensional tolerance	Surface-to-surface length: $\pm 1.5\text{mm}$ Squareness: $\pm 0.5^\circ$
Main body withstand pressure	1Ma (fluid pressure, normal temperature)
Valve seat max pressure	As shown in selection table on page 8 (fluid pressure, normal temperature)
Operating air pressure	0.4MPa
Operating air connection hole	Rc1/4
Heat resistance	Depending on packing materials. (As shown in characteristics table on page 8)

► Valve selection and ordering

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

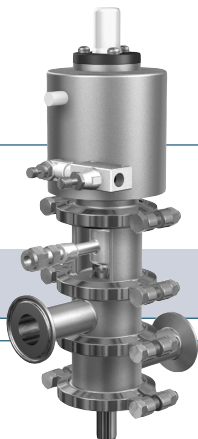
► Ordering

- If there is any request of surface finish, please specify both internal and external surface.
- For further details, refer to the sequence valve type details on Page 9 to 10.

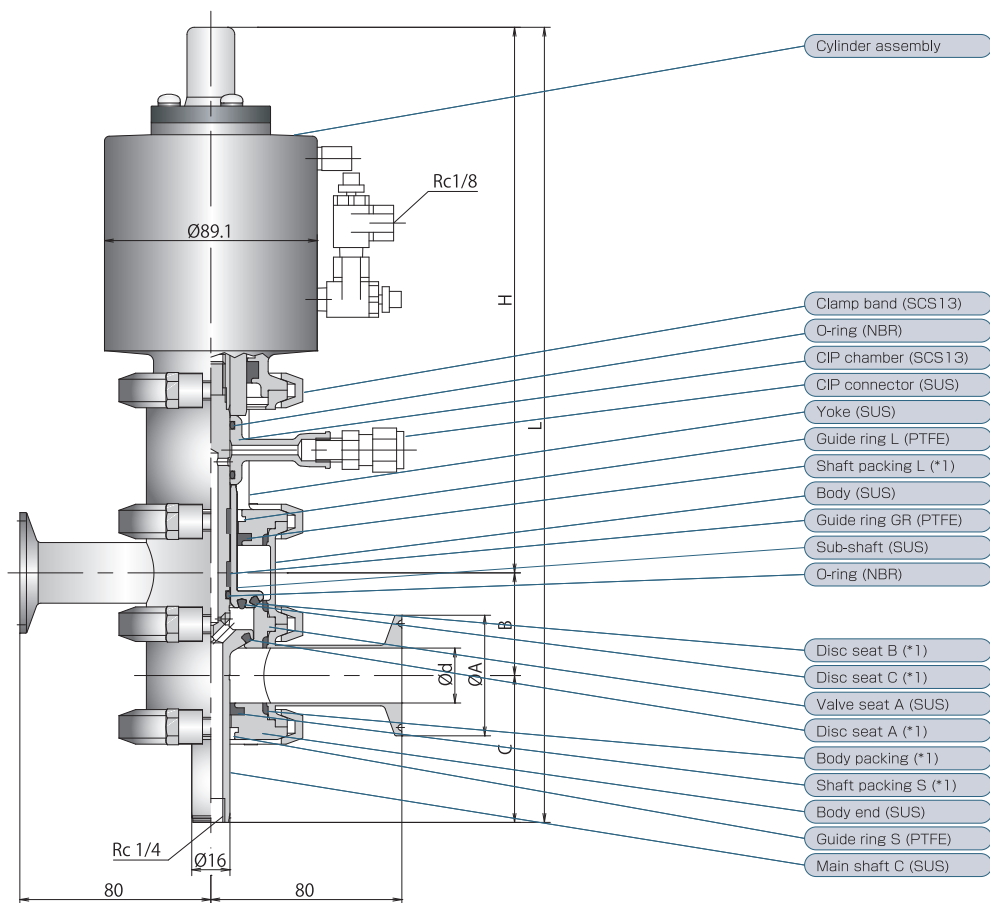
Double-seal valve

DU type

- ON/OFF valve
- Bottom-up type



This valve is a double-seal valve with a vent tube and is equipped with a valve CIP function to prevent mixing of the two liquid. Both bottom-up type (DU type) and top-down type (DD type) are available. This valve is used when the drain liquid includes perishable material, and is mainly for product lines.



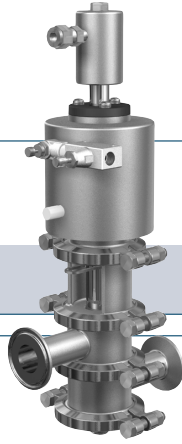
*1 Refer to "Characteristics of packings." on Page 8.

SIZE	L	H	B	C	A	d	S	(mm)
10A	298	207	34	57	34	14.0	18	
15A	306.8	209.2	38.4	59.2	34	18.4	20	
1S	327.5	211.5	43	73	50.5	23.0	20	

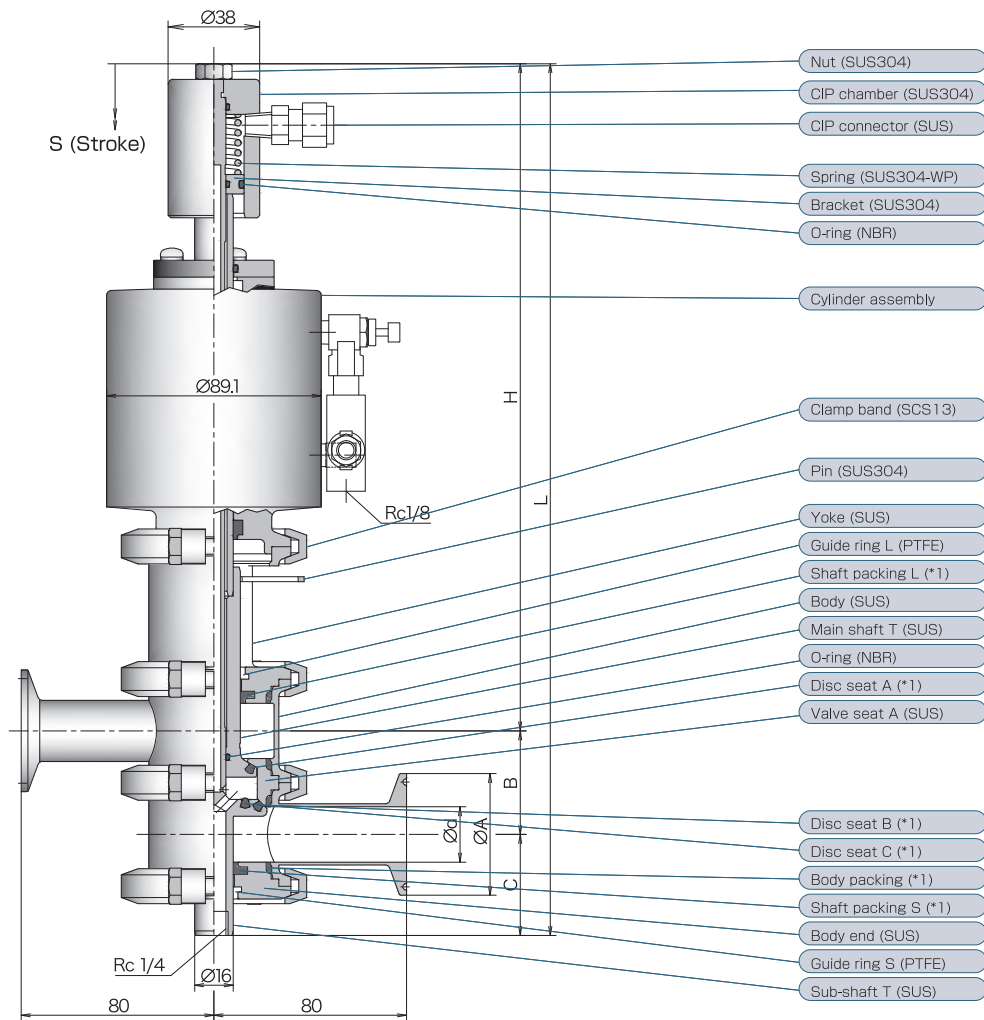
Double-seal valve

DD type

- ON/OFF valve
- Top-down type



This valve is a double-seal valve with a vent tube and is equipped with a valve CIP function to prevent mixing of the two liquid. Both bottom-up type (DU type) and top-down type (DD type) are available. This valve is used when the drain liquid includes perishable material, and is mainly for product lines.



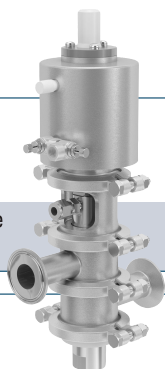
SIZE	L	H	B	C	A	d	S
10A	344	273	34	37	34	14.0	18
15A	352.8	275.2	38.4	39.2	34	18.4	20
1S	362	277.5	43	41.5	50.5	23.0	20

(mm)

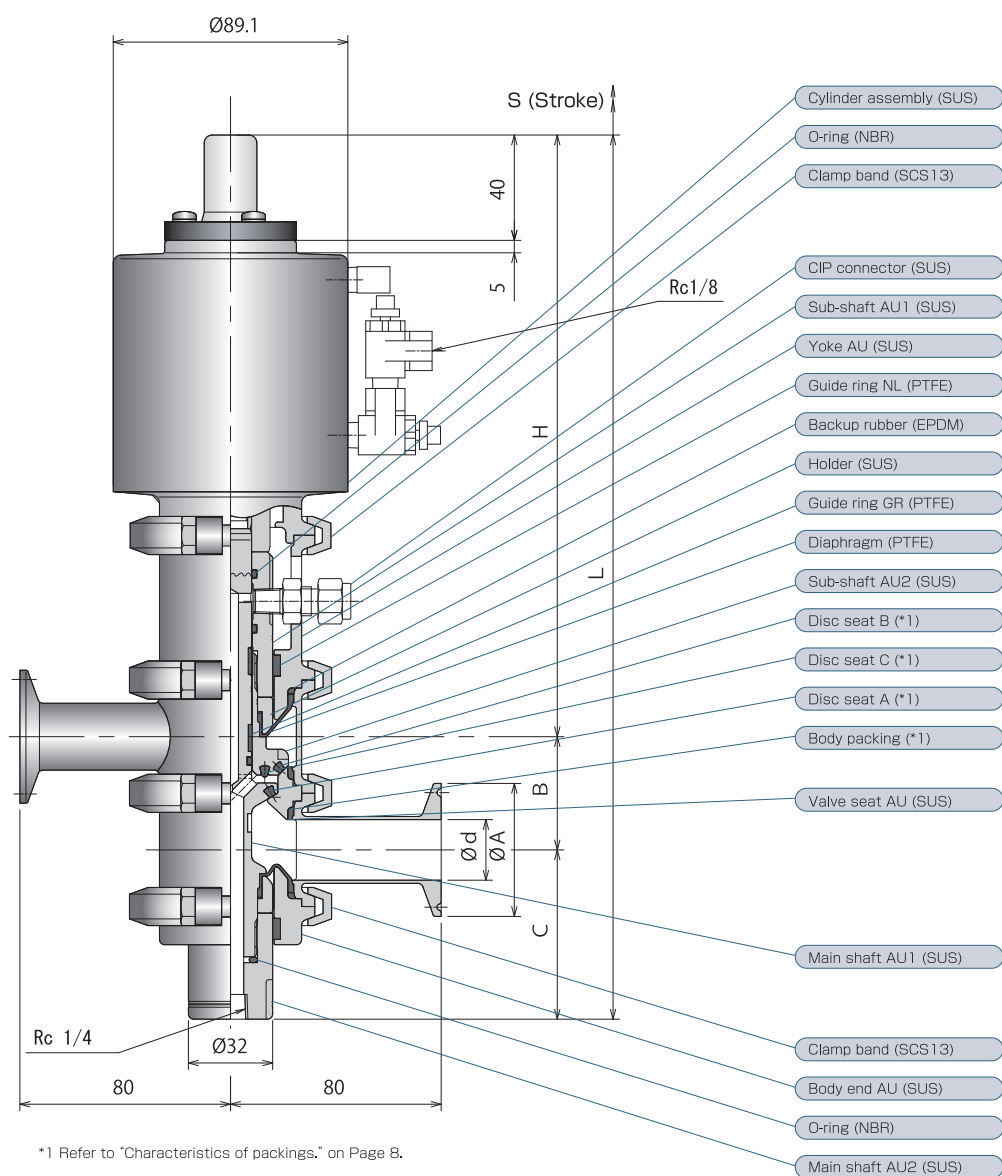
Double-seal valve

MU type

- Diaphragm type ON/OFF valve
- Bottom-up type



This MU-type valve is a valve which shaft is sealed with a PTFE diaphragm, which prevents contamination during operation of the valve.



SIZE	L	H	B	C	A	d	S	(mm)
1	335.8	228.5	43	64.3	50.5	23	9	

Double-seal valve

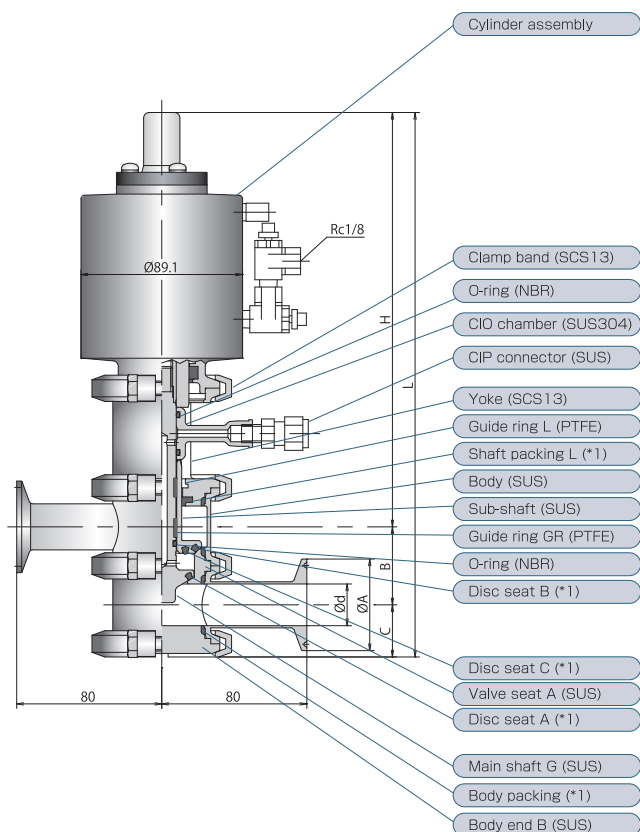
GU type

- ON/OFF valve
- Double-seal valve for gas

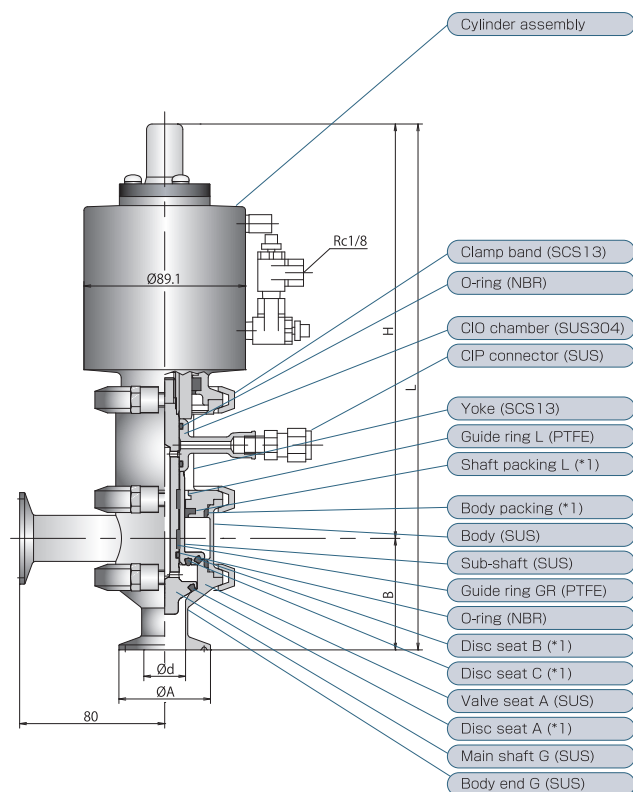
This GU type valve is used for piping systems which are separated by the double seal and do not require cleaning of the intermediate chamber.

Air/ CO₂

Freshwater/ NaOH



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



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

SIZE	L	H	B	C	A	d	S
10A	265.3	207	34	24.3	34	14.0	18
15A	274.1	209.2	38.4	26.5	34	18.4	20
1S	283.3	211.5	43	28.8	50.5	23.0	20

(mm)

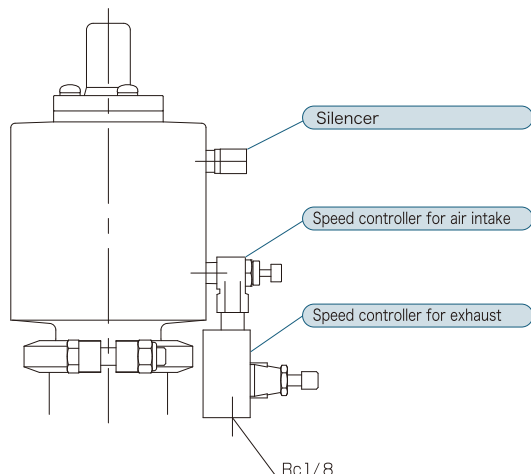
SIZE	L	H	E	A	d	S
10A	264	207	57	34	14.0	18
15A	268.4	209.2	59.2	34	18.4	20
1S	273	211.5	61.5	50.5	23.0	20

(mm)

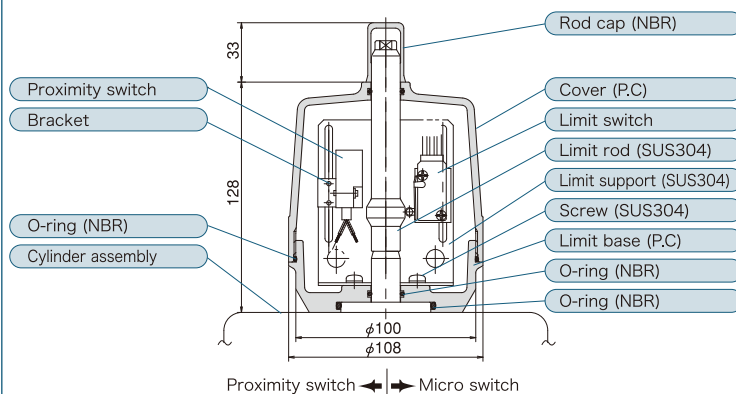
Option

► Speed controller

- The valve speed from opening to closing and from closing to opening can be controlled with the speed controller unit.

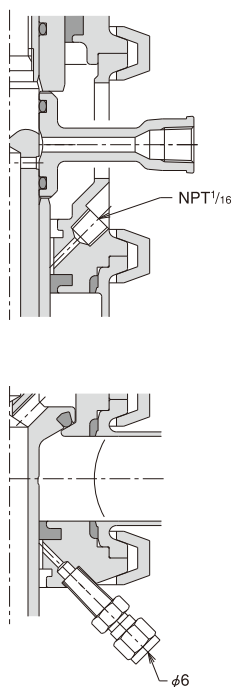


► Switch assembly with cover (proximity and micro switches)

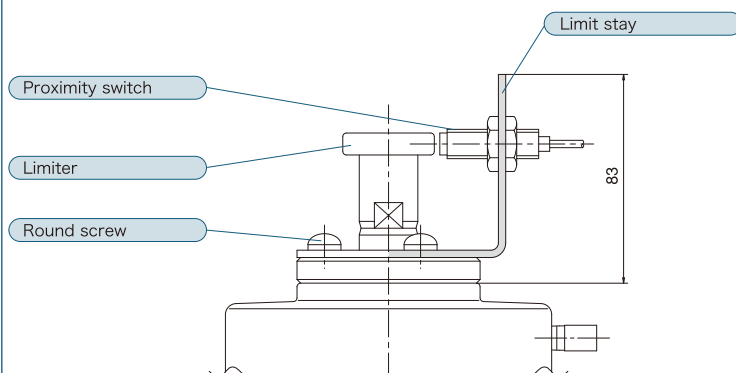


○ CF/AF type with compact cover is also available as an option. For further details, refer to the catalog of No. 18 valve control head.

► Shaft quenching



► Feedback



Technical material

► List for consumable parts

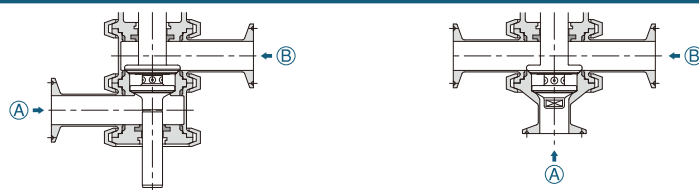
Code SIZE	Disc seat A SQPA	Disc seat B SQPB	Disc seat C SQPC	Shaft packing ※SQPSC	Shaft packing ※SQPSC-W	Body packing SQBP	Shaft O-ring O-RING	Chamber O-ring O-RING	Guide ring SQPGRA	Guide ringL SQPGRA-W	Guide ring (for quenching) SQPGRC	Upper guide ring (for quenching) SQPGFC-W
10A 15A 1S	03—10	03—10	03—10	03—10	03—10	03—10	P—12	P—16	03—10	03—10	03—10	03—10

※ E81 : SQPSC/SQPSC_WyF8 : SQPSD/SQPSD_WSE72: SQPS/SQPS-W

► Sequence valve specifications and withstand pressure characteristics table

Withstand pressure characteristics (tolerable fluid differential pressure MPa)				Operation air pressure	
Specifications		Normal closed type		Standard: 0.4MPa	
SIZE	Type	Flow channel		Bore diameter	Internal volume single operation (ℓ)
		Ⓐ	Ⓑ		
10A	DU	0.5	0.5	80	0.09
15A	DD	0.5	0.5		0.09
1s	GU	0.4	0.5		0.09

► Flow channel direction illustration diagram



► Characteristics of packings

Item		Standard				
Packing material		EPDM(Ethylene propylene rubber)	FKM(Fluororubber)	UC rubber(High-function fluororubber)	VMQ(Silicon rubber)	HNBR(Hydrogenated nitrile rubber)
Material code		E81	F8	F802	SE72	Z85
Color		Black	Black	Black	Gray	Black
Resistance to liquid	Steam	◎	△	○	△	○
	Caustic soda	◎	△	○	△	◎
	Nitric acid	○	◎	◎	△	△
	Acetic acid	○	○	◎	△	△
	Sodium hypochlorite	○	○	◎	○	○
	Peroxyacetic acid	△	×	○	○	×
	Fragrance (limonene, etc.)	×	○	○	×	△
	Animal and vegetable oil	×	○	◎	○	○
General characteristics	Resistance to heat	130℃	120℃	130℃	120℃	120℃
	Elasticity	○	○	○	○	○
	Intensity	○	△	○	△	◎
Applicable size		10A~1S	10A~1S	10A~1S	10A~1S	10A~1S
	Part name	Disc seat	Disc seat	Disc seat	—	Disc seat
		Body packing	Body packing	Body packing	Body packing	—
		Shaft packing	Shaft packing	Shaft packing	Shaft packing	—
	Note	—	—	—	Combination where no packing material is designated as valve product symbol	
The Food Sanitation Law conformity test		Acceptable				

Lubricant application specifications

Application specifications	Application range	Note
Standard specifications	Sliding seal part	—
Wetted surface lubrication prohibited area	Apply lubricant only to the main functional part (sliding part).	Be careful to prevent the body packing from peeling. Be sure to lubricate the sliding seal part with freshwater, etc. before starting operation.
Lubricant	NOK Kluber PARALIQ GTE 703*1 (NSF category H1)	

*1 Conforming to the Food Sanitation Law

Sequence valve type code table

Name	JIS material classification	Finish classification	Pipe end classification	Size classification	Product name/type
Symbol			X X	X X	
	①	② ③	④	⑤	⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬

① Material classification (main body)

Category	Symbol	Material			
		Metal part	Body packing	Disc seat	Shaft packing
Standard	316L	SUS316L(or equivalent)	SE72 silicone rubber	Z85 HNBR	SE72 silicone rubber
	316L-E9	SUS316L(or equivalent)	E81 EPDM	E81 EPDM	E81 EPDM
	316L-F	SUS316L(or equivalent)	F8 fluororubber	F8 fluororubber	F8 fluororubber
	316L-FU	SUS316L(or equivalent)	F802 UC rubber	F802 UC rubber	F802 UC rubber

② Finish classification (valve main body)

Category	Symbol	Finish	
		Internal finish	External finish
Standard	0P	Pickling	Pickling or beads shot brast
	1P	#320 to #400 buff polished finish	Pickling or beads shot brast
	EP	Electrolytic polishing finish	Pickling or beads shot brast
Option	XP	Other	Other

③ Shaft surface specifications

Symbol	Details
(GR)	Guide ring type (In the case (6) type classification is DU, GU and MU)
(NM)	Non-plated type (In the case (6) type classification is DD)

④ Pipe end classification

Category	Symbol	Details
Standard	M	ISO male
	C	ISO clamp
	T	Sanitary flange
	R	Sanitary flange (loose)
Option	N	ISO nut
	W	Weld
	X	Other

⑤ Size classification

Symbol	Size
03	10A
04	15A
10	1S

⑥ Type Classification







Symbol	Details
DU	Double seal
DD	
GU	
MU	

Sequence valve type code table

⑦ Drive classification

Category	Symbol	Details
Standard	C	Automatic normally close
	O	Automatic reciprocating operation
Option	W	Manual

⑧ Main body quantity and type

Symbol	2A	2B	2C	2D	2L	2T
Sketch						

Number in sketch shows number of ports.

⑨ Cylinder type (Refer to the cylinder selection table.)

Symbol	Type
08M	φ80 (for double seal valve)

⑩ Feedback switches classification

Category	Symbol	Type/manufacturer	Usable power voltage range	Operation style	Type or attachment
Standard	D	No feedback switch	—	—	—
	C	D2VW-5L2A-1M Limit switch made by OMRON	AC/DC<250V	NO,NC	Type with cover
	A	FL2R-4J6SD Proximity switch made by Azbil	DC10~30V	NO	Type with cover
	J	IGC2005-ARKG/UP Proximity switch made by Efecter	DC10~36V	NO NPN/PNP	Type with M12 stay
Special	Z	For nonstandard specifications with proximity switch supplied			Type with cover
	P				Type with stay
	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
0	No switch
A	With switch attachment washer
B	One Switch or closed sides
C	Two switches on open and closed sides
D	One switch on open side
X	Other

⑫ Main body options

Symbol	Details
0	No option
C	With shaft quenching

⑬ Cylinder option

Symbol	Details
0	No option

Section for entry of special notes

- If using nonstandard specifications for the lubricant application specifications on Page 20, 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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