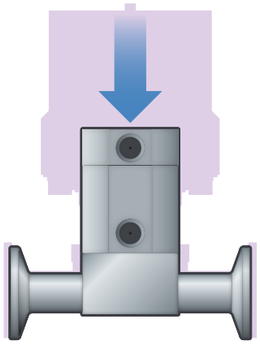
Compact and high durability

The technology developed for the semiconductor manufacturing process is applied to pharmaceuticals and foodstuffs for high cleanliness, durability, and maintainability. Ideal for the production process of pharmaceuticals and foods.

Lightweight and compact

Adopts a simple poppet structure, and is even lighter and more compact than the conventional weir diaphragm valve. Contributes to space and energy savings of equipment.



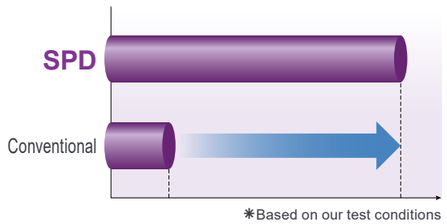
Height 35% Reduced*

*8A size

Weight 20% Reduced*

High durability

Applying liquid control technology from the semiconductor industry, which requires high cleanliness and durability. The durability of the diaphragm has been greatly improved from the conventional weir diaphragm valve, and stable operation realized for long periods.

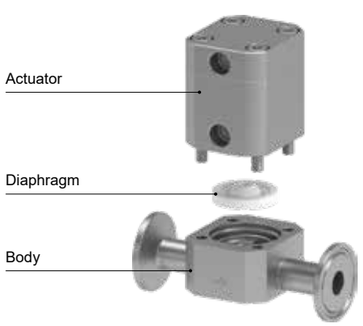


*Based on our test conditions

Durability 5 times or more

Maintainability

The diaphragm can be replaced. It can be easily replaced in a short time, reducing maintenance time.



Easy replacement

System image of related products

Use DVL to change the operation speed when closing the valve. The nozzle tip drainage can be adjusted.

Application

Pharmaceutical manufacturing process

Food manufacturing process

Poppet Diaphragm Valve

SPD Series

●Connection: ISO ferrule

Japan only release

RoHS

How to Order

SPD - 1 1 08 Y F 1

- SPD: Model No.
- 1: ❶ Series
- 1: Actuation: NC (normally closed)
- 08: ❷ Connection Bore size
- Y: Connection: Clamp fitting
- F: Material: Actuator A5056, diaphragm PTFE, body SUS316L
- 1: ❸ Operating port direction

❶ Series

Code	Description
1	Size 1
2	Size 2

Note: ❷Refer to the port size table and select the port size.

❷ Port size

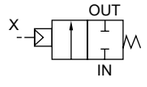
Code	Description	Model No. SPD-1	Model No. SPD-2
08	8 A	●	
15	15 A		●

❸ Operating port direction

Code	Description
1	Direction 1: With valve viewed from above, ⇨ indicates fluid flow direction and ➡ indicates operating port direction. (1)

Circuit diagram Code Specifications

● NC (normally closed)



Item		SPD-1108	SPD-2115
Actuation		NC (normally closed)	
Working fluid		Water, pure water, chemical liquids (fluids that do not corrode wetted part materials)	
Working pressure	MPa	0 to 0.3	
Back pressure	MPa	0 to 0.1	
Proof pressure (water pressure)	MPa	0.9	
Fluid temperature	°C	5 to 90 (Allowable for 20 minutes or less during steam sterilization of 130°C)	
Ambient temperature	°C	0 to 60	
Frequency	cycles/min.	30 or less	
Valve seat leakage	cm^3/min	0 (water pressure)	
Operating port		Rc1/8	
Operating fluid		Air	
Operating pressure	MPa	0.3 to 0.5	
Cv		1.9	4.6
Kv value (✳1)		1.6	4.0
Material	Diaphragm	PTFE	
	Body	SUS316L (buff polishing #400 or equiv., electrolytic polishing)	
	Actuator	A5056 (anodization)	

✳1: Kv value is refer to the Intro page of "Fluid control valves" (RJ-013AA).

How to order repair parts (diaphragm)

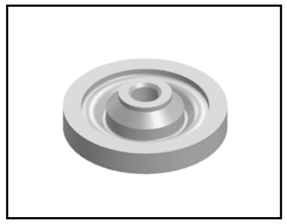
SPD - 1 PT

- 1: ❶ Series

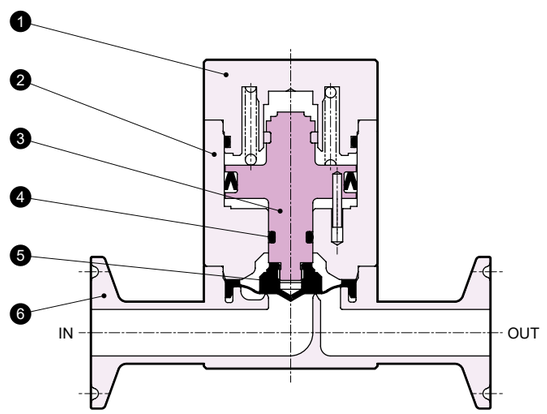
❶ Series

Code	Description
1	Size 1
2	Size 2

Note: Hexagon socket head cap screw included

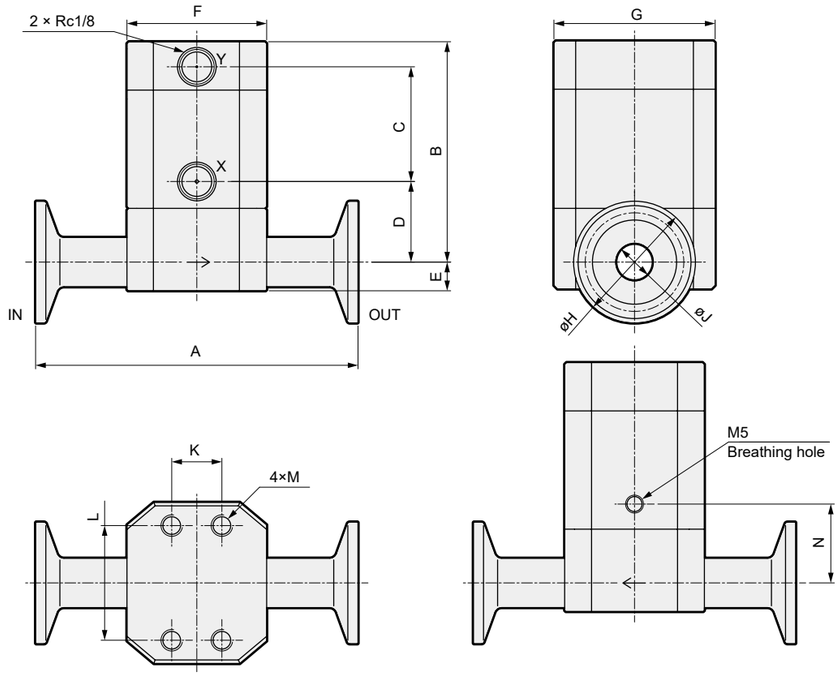


Internal Structure Diagram / Material



Part No.	Part name	Material	
1	Cover	A5056	Aluminum
2	Cylinder	A5056	Aluminum
3	Piston rod	A5056	Aluminum
4	O-ring	FKM	Fluoro rubber
5	Diaphragm	PTFE	Fluororesin
6	Body	SUS316L	Stainless steel

Dimensions



Model No.	A	B	C	D	E	F	G	H	J	K	L	M	N	Weight [kg]
SPD-1108	90	61.5	32	22.5	8	39	45	34	10.5	14	32	M6 depth 9	22	0.5
SPD-2115	108	81.9	39	30.9	12	48.4	56	34	17.5	20	42	M8 depth 12	23.9	0.9

Safety Precautions

Be sure to read this section before use.
Read safety precautions for "Fluid control valves (RJ-013AA)" as well

Product-Specific Cautions: Poppet diaphragm valve SPD Series

Design / Selection

⚠WARNING

■This product cannot be used as an emergency shut-off valve.
It is not designed to function as a safety valve, such as an emergency shut-off valve. When using in such a system, always take separate measures that will ensure safety.

■Incorrect equipment selection and handling can cause problems not only in this product, but also to your system. For component selection and handling, it is the customer's responsibility to check the specifications of this product and the compatibility with your system before use.

■Take measures to prevent physical harm or property damage in the event of breakdown of this product.

■Liquid ring
When the valve opens and closes, the diaphragm moves up and down, which causes the flow path capacity to change inside the valve. For this reason, if the fluid is an incompressible fluid (liquid), extreme pressures will be created in the valve when operating under conditions that seal the fluid in the valve (liquid ring). In this case, install a release valve on the primary or secondary side of the valve, preventing a liquid ring circuit from forming.

■Working fluids
Check the compatibility of product component materials and working fluids.

■Fluid temperature
Use within the specified fluid temperature range.

■Fluid pressure range
Use within the specified working pressure range.

■Iron rust and debris in the fluid can cause operation faults or leaks and deteriorate product performance. Provide measures to remove foreign matter.

■Use in high temperatures and steam
When hot fluid flows during steam sterilization, the valve body becomes hot, so do not touch with your hand or body. There is a risk of burns if these coils are touched directly.

⚠CAUTION

■Rapid changes in fluid temperature may cause internal leakage.

■While the upper side of the diaphragm (actuator side) does not come into contact with the fluid, due to changes in fluid type and fluid temperature, fluid may permeate and turn into fluid atmosphere.

■As for compressed air for actuator operation, use air or inert gas passed through a filter with a filtration rating of 5 μm or more.

■If the product has been out of use for one month or more, perform a test run before starting actual operation.

■When the product will not be used for one month or more, completely remove any water left in the product. Water residue will cause rusting and may lead to malfunction or leaks. If residual water cannot be eliminated, operate the valve several times a day and pass water through to ensure ideal use.

■When the operating air supply time or exhaust time is short, the valve actuation may be unable to keep up.

■Do not allow fluid to come into contact with the product body.

■Water hammer and vibration may occur in certain fluid pressure and piping conditions. In most cases, this can be resolved by adjusting the open-close speed using a speed controller, etc. If a problem persists, review and revise the fluid pressure and piping conditions.

■Do not use valves as a footing or place any heavy objects on top of the valves.

■Use the operating air pressure within the specified working pressure range.

■Observe the operating frequency. Operating frequency is 30 cycles/min or less.

For cautions for mounting, installation, adjustment, use and maintenance, refer to the CKD components Product Site (https://www.ckd.co.jp/kiki/jp/en/) → "Model No.→ Instruction manual for details.

MEMO

SWD / MWD
SWD-T
SPD
HYA
HYN