NON PARTICLES

The FV Series is a revolutionary slight leak mechanism which eliminates the problem of perticles. Our Semiconductor Production Process creates a super-clean environment.

DIW Supply Floating Valve

FV Series

ADVANCE

Revolutionary slight leak FV Series creates a particle free semiconductor production environment.

DIW Supply Floating Valve

FV Series

Eliminating particles for DIW supply has been a critical objective. This non-touch slight leak mechanism has achieved a particle free environment in the washing process.

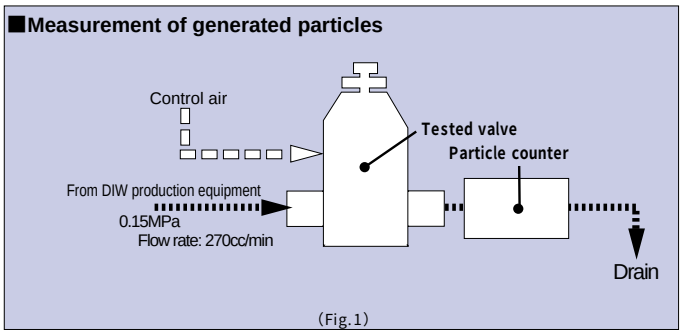
■Unique slight leak mechanism that generates very few particles

The table below shows that very few particles are generated in models with the non-touch slight leak mechanism, compared to previous models. For previous models, particles are generated due to vibration caused by air operated valves.

■Test Results

	Test No	Particle size and numbers		
		0.1～0.2μ	0.2～0.5μ	0.5μ以上
Non by-pass type FV-7279-131P	1	1	0	0
	2	0	0	0
By-pass type AV-7279-131PW	1	16	1	1
	2	3	1	1

■Measurement of generated particles



(Fig.1)

■Testing Method

1.Thoroughly flush the air operated valve, and start testing. (Operate each valve 1000 times under normal DIW flow conditions).

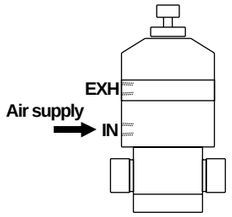
2.Configure the cycle shown in Fig. 1, and operate each valve 120 times (ON 2.5 sec, OFF 2.5 sec) under normal DIW flow conditions, and count generated particles.

DIW Supply Floating Valve

FV-5269·7279 Series PAT.

1 Valve Operation

The valve is opened when the specified pressure is applied to the IN port (operating air port) after air tubes are connected. (Use the speed controller during valve operation.)

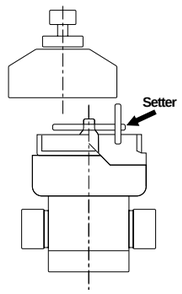


Single action is standard for the FV-5000 • FV-7000 Series. The valve closes when operating air is cut off.

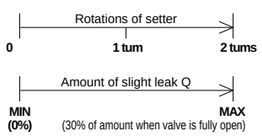
2 Slight Leak Control

(Slight leak control when valve is closed)

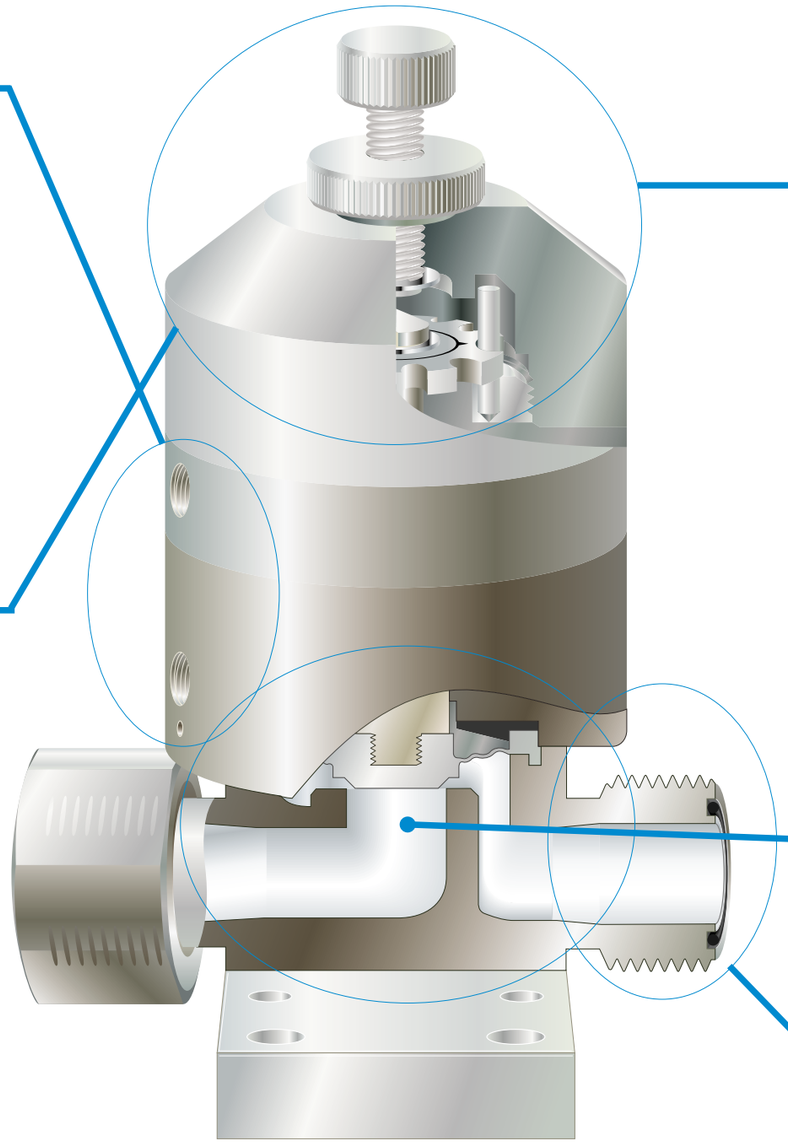
Amount of slight leak can be controlled by turning the setter.



Relationship between slight leak control and flow rate



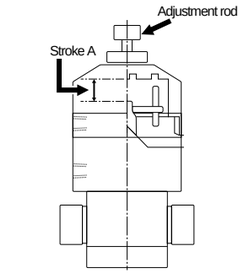
●Refer to the attached sheet for control method.



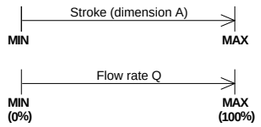
3 Flow Rate Control

(Flow rate control when valve is open)

Dimension A (stroke) can be adjusted by turning the adjustment rod.



Relationship between stroke and flow rate



Adjust the stroke by turning the adjustment rod to control flow rate when the valve is open.

4 Duct Structure

Previous models have a main duct and a by-pass duct. This causes fluid clogging or generation of particles when the valve is closed (Fig. 1). To eliminate this problem, a unique slight leak mechanism that curbs particle generation has been developed (Fig. 2).

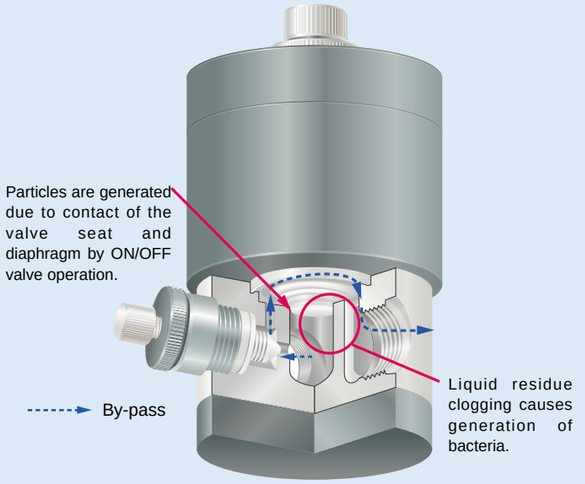
5 Connection

Integral joint structure is standard.
Effective in preventing liquid residues in connecting sections, thus preventing external leakage.

This non-touch slight leak mechanism has revolutionized the washing process.

Previous Slight Leak Control

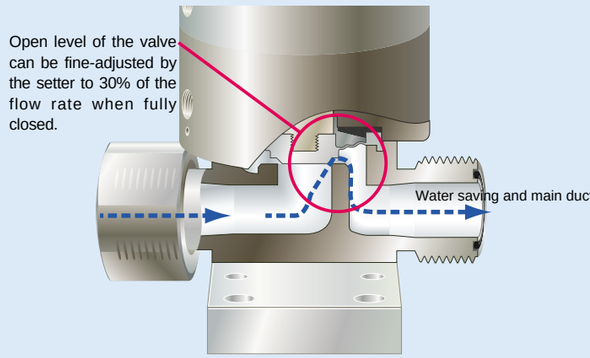
The main duct is shut and slight leak begins from the by-pass duct.



<Fig.1>

New Slight Leak Control

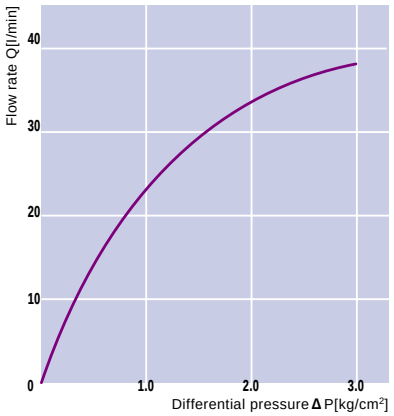
The structure below achieves slight leak without closing the main duct.



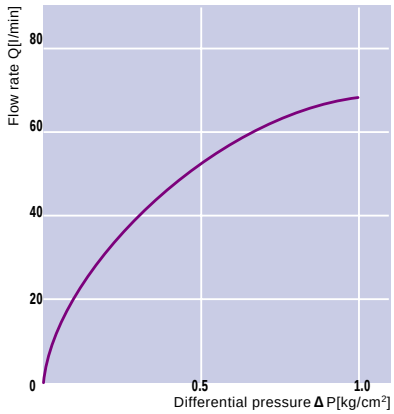
<Fig.2>

Flow Rate Characteristics

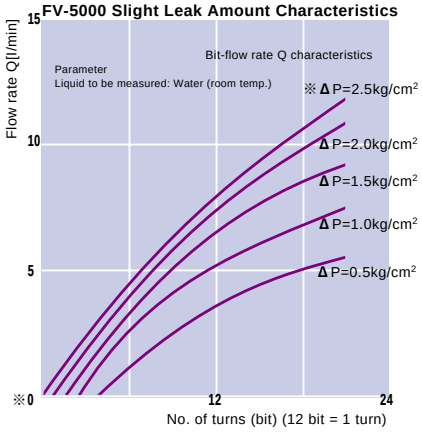
FV-5000 Series Main Flow Rate Characteristics



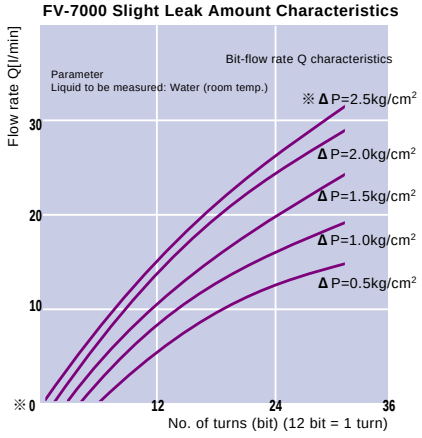
FV-7000 Series Main Flow Rate Characteristics



FV-5000 Slight Leak Amount Characteristics



FV-7000 Slight Leak Amount Characteristics



Notes

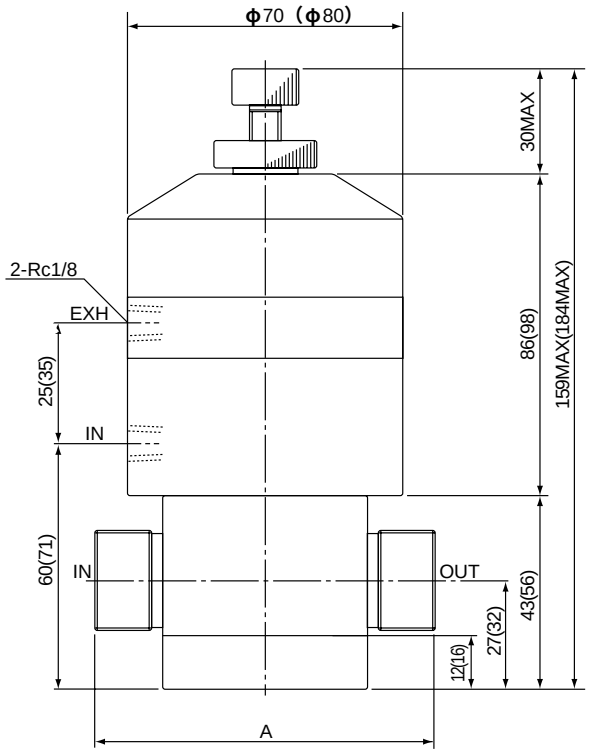
1) Point zero (0): the control point where fluid starts flowing on the secondary side after 2.5 kg/cm² pressure is applied to the fluid on the primary side, while the valve is not operated.
2) ΔP=Differential pressure (P1—P2)

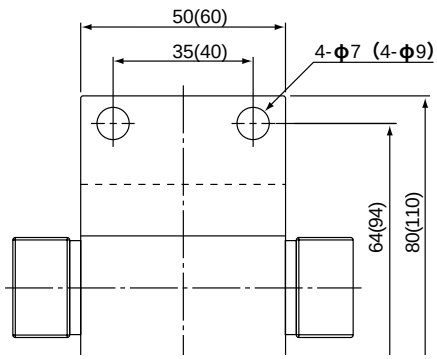
Notes

1) Point zero (0): the control point where fluid starts flowing on the secondary side after 2.5 kg/cm² pressure is applied to the fluid on the primary side, while the valve is not operated.
2) ΔP=Differential pressure (P1—P2)

Standard Specifications

Figures in the brackets are dimensions for 7279 Series.



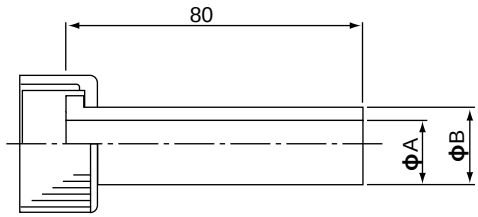


Fluid pressure	IN side	**0.3MPa**
	OUT side	**0.1MPa**
Fluid temp.	**10～100℃**	
Actuation	Spring return format	
Actuating pressure	**0.3～0.6MPa**	

	Dimension A	
	FV-5269	**FV-7279**
Flowell 20 Series	**80**	**98**
Pillar Super Type	**90**	**112**
Union Type	**90**	**110**

(mm)

Union Dimension Table



series	Material	Temp.	Dimension A	Dimension B	Provided O ring material
FV-5269-331U3	**PVdF**	**100℃**	**16.2**	**20**	**FKM**
FV-5269-331U4	**PVC**	**40℃**	**16**	**22**	**FKM**
FV-5269-331U5	**CPVC**	**80℃**	**16**	**22**	**FKM**
FV-7279-631U3	**PVdF**	**100℃**	**21.2**	**25**	**FKM**
FV-7279-631U4	**PVC**	**40℃**	**20**	**26**	**FKM**
FV-7279-631U5	**CPVC**	**80℃**	**20**	**26**	**FKM**

(mm)

Model Configuration List

Series	Series No.	Operation	Orifice	Cv valve	Base	Body material	Diaphragm material	Connection
FV-5269-331Pi	1/2class	**NC**	**ϕ12**	**1.6**	Flange base	**PFA**	**P・TFE**	Flowell
FV-5269-331Ci	1/2class	**NC**	**ϕ12**	**1.6**	Flange base	**PFA**	**P・TFE**	Pillar
FV-5269-331U3	1/2class	**NC**	**ϕ12**	**1.6**	Flange base	**PFA**	**P・TFE**	Union PVdF
FV-5269-331U4	1/2class	**NC**	**ϕ12**	**1.6**	Flamge base	**PFA**	**P・TFE**	Union PVC
FV-5269-331U5	1/2class	**NC**	**ϕ12**	**1.6**	Flange base	**PFA**	**P・TFE**	Union CPVC
FV-7279-331Pi	3/4class	**NC**	**ϕ18**	**4.5**	Flange base	**PFA**	**P・TFE**	Flowell
FV-7279-331Ci	3/4class	**NC**	**ϕ18**	**4.5**	Flange base	**PFA**	**P・TFE**	Pillar
FV-7279-631U3	3/4class	**NC**	**ϕ18**	**4.5**	Flange base	**PVdF**	**P・TFE**	Union PVdF
FV-7279-631U4	3/4class	**NC**	**ϕ18**	**4.5**	Flange base	**PVdF**	**P・TFE**	Union PVC
FV-7279-631U5	3/4class	**NC**	**ϕ18**	**4.5**	Flange base	**PVdF**	**P・TFE**	Union CPVC

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